

ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA

**THE IMPACT OF ECONOMIC VARIABLES ON THE SOCIAL DIMENSION
OF DEVELOPMENT: EDUCATION AND HEALTH**

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Summary

The present study is focused on 11 of the 13 ESCWA members. It includes Bahrain, Egypt, Lebanon, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, Yemen and the United Arab Emirates, and compares the achievements and improvements these countries have recorded in human development. The study outlines the broad patterns of economic development in these countries and their social spending on health and education during the period 1975-2002. The data presented below reveal the economic, educational and health challenges in the ESCWA region. One of the main findings of the study is that there has been a steady improvement in key educational indicators, as well as an impressive decline in mortality rates with increases in social spending.

Since 1975, the ESCWA member countries have devoted a considerable proportion of their public resources to health and education. Consequently, over the past few decades, substantial progress has been made in lowering mortality rates. Life expectancy in these countries increased by 15 years, and mortality rates fell significantly. In particular, infant mortality decreased by more than 71 per cent and child mortality by 67 per cent for the period 1975-2002. On any scale, these are remarkable public health achievements.

Impressive progress was also made with regard to education in the ESCWA region. This progress is reflected in a stable, upward trend in both adult and youth literacy rates, and in the large increases in the number of students enrolled in school, which is in line with the increasing numbers of the school-age population. In 2001, more than 83 per cent of school-age children in the ESCWA region were enrolled in primary school, up from 76 per cent in the 1990s. Youth literacy rates increased from 51 to 81 per cent between 1975 and 2002, and adult literacy rates increased from 37 to 65 per cent over the same period. However, the high illiteracy rate is still a big problem. Approximately 35 per cent of people age 15 and above in the ESCWA region are illiterate.

This study takes into account a combination of variables, making it possible to shed additional light on the interaction between economic performance and broader social indicators. The indicators used include internationally comparable estimates of gross domestic product (GDP) per capita, measured in terms of 1995 purchasing power parity (PPP); social spending; infant mortality rates; under-5 mortality rates; life expectancy; school enrolment rates; and the literacy rates of those over 15 as well as those between 15 and 24 years of age. The study raises questions: how do these different indicators interact, and what is the relation between social conditions and economic variables? In other words, the study assesses the importance of real income level relative to social spending, in order to enhance social development. The relation between social and economic development in the countries under review is investigated using two overlapping perspectives (a cross-country correlational analysis and a panel data analysis) for the period 1975-2002.

The cross-country correlational analysis shows that webs of association link economic and social indicators. Such webs make it difficult to disentangle causal relationships, especially when the theorizing is weak, the number of observations is small and the data are not reliable. The analysis corroborates the finding that not only are there important links between economic variables (income and social spending) and various social indicators, but that social indicators also show evidence of strong interaction among themselves.

The panel data analysis of the 11 countries reviewed in the study shows that per capita spending on both health and education have a positive, and significant, direct impact on the different health and education indicators. This finding reaffirms the conclusion that social spending affects the accumulation of education and health capital. Without negating the role of per capita GDP and its effectiveness in promoting human development, this approach places more emphasis on the public policy stance, through which social spending on human capital results in better education and improved health indicators. This public policy stance, using a human development approach, can play a very important role in human development and can be more effective in the ESCWA member countries in achieving the United Nations Millennium Development Goals (MDGs) than policies that focus on economic growth using an income-centred approach.

Higher spending alone is not sufficient to improve human development and to achieve the MDGs. Given that a significant link exists between economic and social development, an integrated policy framework should also be developed. Such a framework would require the following: appropriate

institutional support, which in turn would mandate the participation of various social agents (including civil society and the private sector) to stand and speak for the poor and participate in the formulation of economic and social policies; systems to allow the definition of explicit and realizable social targets of public sector policies; and efficient systems to ensure harmonization between economic and social authorities.

Given the importance of public policy intervention, the efforts undertaken to meet the MDGs must be wide-ranging. The macroeconomic environment must be strengthened by improving fiscal management and by strengthening the public sector. There are strong links between the macroeconomic environment and the state of human development. It is obvious that (a) social policies and reforms intended for improving human development needs stable funding, which is not always available owing to macroeconomic constraints; and (b) macroeconomic instability, especially during periods of recession or during periods when peace and security are lacking, increases poverty and inequality. Therefore, a sound macroeconomic policy based on sustainable and predictable rates of aggregate economic variables is a precondition for a successful social agenda.

The study concludes with a note of caution on interpreting the data. The findings set out in the panel regression analysis are consistent with other studies on the topic. They are based on a cross-sectional analysis, which limits the ability to assign cause and effect. In addition, care must be exercised in interpreting associations between grouped data and events that occur at an individual level. Finally, since the study is based on aggregated national data and does not analyse individual-level data, a great deal of the underlying intra-country differences are not fully captured through aggregation.

Despite the above limitations, this study is useful in highlighting the problems detected through the available data. It also clearly shows that economic growth is not enough to improve human development. The countries in the ESCWA region need to ensure that all people, especially the poor, have access to good quality education and health care. This can be achieved by broadening and enhancing the efficiency and effectiveness of both spending on, and service delivery systems of, human services. Increases in spending are likely to have little impact unless money and services are targeted at those who need them most.

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LIST OF ABBREVIATIONS

GCC	Gulf Cooperation Council
GDP	gross domestic product
IMF	International Monetary Fund
IMR	infant mortality rate
MDGs	United Nations Millennium Development Goals
MENA	Middle East and North Africa
ODA	official development assistance
OECD	Organisation for Economic Cooperation and Development
OPEC	Organization of Petroleum Exporting Countries
PPP	purchasing power parity
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WDI	World Development Indicators
WHO	World Health Organization

Introduction

Growth in income represents only one dimension of development. The other dimensions cover health (including nutrition), education, the environment, gender and quality of life. Therefore, from the overall development viewpoint, it is not only per capita income growth that matters, but also human development.

Human development, broadly defined, is a process of widening people's choices, and improving the level of their well-being. In theory, these choices can be endless and change with time. In addition to higher per capita income, the most critical are the choice to have better health and nutrition in order to lead a long and healthy life, to have more equitable education and job opportunities, and to enjoy a decent standard of living. Thus the concept of human development focuses on the ends rather than the means of "development" and progress.¹

A variety of social outcomes affecting the well-being of people can result from these choices. Most important are life expectancy, infant mortality rates, literacy, enrolment ratios and per capita income. These social outcomes are valued ends in themselves. It should be noted, however, that per capita income includes other characteristics of well-being not captured by the indicators on social achievements in education and health.

Good health and education improve people's abilities to shape their futures, thus strengthening their performance in society and directly contributing to their welfare. Better-educated women, for example, have healthier and fewer children, which thereby reduces infant and child mortality rates. Good education and good health are required if the skills, creativity and productive abilities of people are to be maximized and to benefit both current and future generations. Education and good health increase the ability of the poor to handle changes in their environment. They allow them to switch jobs and offer protection against times of slowdowns in economic activity. Investment in human capital is therefore crucial for poverty reduction and has a positive impact on economic growth and human development.

Up until the late 1960s, the concept of human development was frequently misinterpreted and confused with the concept of economic growth, and the two concepts were treated as synonymous. Unlike human development, economic growth is a means and not an end of development. The previously touted theory held that increases in national income would ultimately "trickle down" to the people, and their standard of living would improve. However, global experience did not lend empirical support to this approach. It shows differing patterns of progress and under performance in achieving growth and translating it to human development. Therefore, the approach started changing in the 1970s, and the idea of development became one that put people at the forefront of all aspects of the development process, making it a people-centred rather than a goods-centred approach to sustainable development.

Thus the problem facing policy makers is how to increase the social benefits of the people without holding back economic growth. This raises the fundamental question of whether a country should attempt to improve human development, as measured by social indicators, through targeted spending, or whether it should focus exclusively on economic growth and leave the question of the basic needs of the public to take care of itself.

The question raised at the level of development economists and policy makers was: what promotes human development? This question is integrally linked to the research on a related question: does economic growth influence the standard of living? The latter question is important since a positive answer would offer support for policies that are aimed solely at increasing the level of income in developing countries. However, the answer to the question was not easy to ascertain. As noted in chapter I below, the many volumes of empirical literature published on the subject conclude that per capita income cannot be the sole determinant in achieving human development. The public provision of social services also has a significant role to play in raising standards of living.

In addition to income and public spending, other researchers in their analysis of the relation between economic growth and human development have taken into account other previously overlooked country-

¹ UNDP, *Human Development Report, 1995*, chap. 1.

specific factors. Human development can also be influenced by factors such as good governance, endowments, location, and cultural values or languages. Other country characteristics that clearly play a role in determining human development and income include: (a) high levels of external debt and debt services; (b) instability in the price of oil, particularly in countries that are oil-dependent; (c) official development assistance (ODA), particularly important in those countries in which ODA plays a major role in their budgets; and (d) “involuntarily” implemented government policies such as privatization and structural adjustment programmes, which could also be dominant determinants of the levels of human development and income. Increasingly, indebted developing countries are required to implement policies as a condition of eligibility of their access to foreign credit. These have included exchange rate and trade liberalization contractionary monetary policies (higher interest rates and tighter credit), public spending cuts, reform the public-entreprise sector (through privatization and lay-offs), increasing foreign reserve requirements, and a long list of “micro-interventions” varying from user fees for primary education and health care to the elimination of various government subsidies. All of these factors could influence human development directly through their effects on income, or indirectly through their impact on public spending. In these cases, the cross-country analysis between economic growth and human development indicators would need to be qualified.

The goal of the present study is to analyse the impact of public policy on human development, as measured in terms of public spending on education and health. This study does not attempt to refute previous extensive work on the link between the growth of per capita income and human development; rather, it emphasizes that income has a substantial impact on human development through higher public spending on health and education. The vital questions addressed in this study are: does public policy make an impact on human development, and to what extent?

The study also compares achievements (levels) and improvement (changes) in human development across 11 ESCWA member countries: Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen. The measurement of human development should ideally incorporate all the capabilities that improve human well-being, but, from an empirical standpoint, this is not practicable. The focus is rather on those capabilities that have the most direct link with human development. Life expectancy at birth, infant mortality and literacy rates are some of the important indicators of the standard of living used by analysts, primarily because the cross-country data are readily available.

The analysis in this study will be carried out using two overlapping perspectives. The first perspective is a broad one: an assessment of the determinants of human development on a cross-national basis. The study tests the statistical relationship between (a) the indicators of human development in the ESCWA member countries; and (b) their per capita GDP. The second perspective employed sharpens the focus of the study through a cross-section time-series panel data model.

The study is divided into six chapters. Following the present introduction, chapter I addresses the theoretical issues related to the treatment of the relation between human development and economic growth. The survey of the literature on the subject will cover only the established empirical evidence on the extent to which the changes in per capita income, which provides people with the means to achieve a better life, can explain a country’s improvement in human development. Chapter II deals with the choice of suitable indicators, or variables, and their sources and quality. Chapter II also examines how the different member countries are performing in terms of economic growth. Owing to data constraints, this study is limited to the above-mentioned 11 of the 13 ESCWA members. Chapter III provides an overview of the macroeconomic performance over the past three decades of the countries under review. Chapter III also analyses patterns of health and education spending and their relation to income. Chapter IV analyses the achievements and improvements in both the health and the education sectors, and examines the relation between health and education indicators and GDP per capita and social spending. Chapter V employs an econometric approach, which permits a close examination of the question of the effectiveness of public policy intervention versus “growth mediated” human development. Chapter V also tests the statistical relation between the human development indicators of the ESCWA members, their per capita GDPs and their corresponding public spending, and explores the impact of public expenditure on human development. Finally, chapter V summarizes the results of the economic cross-section correlational analysis and the economic cross-section time-series model employed in the study. The conclusions are outlined in chapter VI.

I. ANTECEDENTS IN THE LITERATURE ON ECONOMIC GROWTH AND SOCIAL DEVELOPMENT

The second half of the twentieth century witnessed unparalleled growth in the world economy. Economies grew significantly and steadily both in the advanced countries and in many less developed countries. The leading ideology of the times viewed growth as inherently a good thing, and essentially in the interest of society, through its creation of more jobs, more income, more goods and services to be enjoyed (Goldstein 1985).

However, the ideology of economic growth came under attack in the early 1970s, as it did not adequately anticipate the ecological, international and domestic consequences of growth. By the early 1970s, it was obvious that widespread poverty had not vanished and that economic growth had widened the gap between the rich and industrialized countries of the North and the poorer countries of the South (see chapter III for more details on global growth).

A good government is expected to pursue a goal ensuring that social progress and economic growth go hand in hand, enabling the whole population to enjoy the fruits of economic growth. Therefore, basic human needs, improvement in quality of life and human development began to emerge as new frameworks for looking at economic development. There is general dissatisfaction with the utilization of per capita GDP as the only measure of the standard of living or well-being, and the emphasis has shifted to focus on alternative measures of development. Quality of life, social indicators, and basic needs are the new approaches that are being discussed.² All these approaches are clearly related to the concept of the standard of living. Kakwani (1993) defines the standard of living in terms of functioning and capabilities. Functioning is an achievement, and a capability is the ability to achieve. Therefore, functioning is directly related to what life people really lead, while capabilities are linked with the freedom that people have in the choice of life or functioning.

Consequently, the problem faced by policy makers is whether a country should attempt to improve social development, as measured by social indicators, or focus solely on economic growth and leave the question of social development to take care of itself.

As noted below, the research on development is not consistent in its treatment of the relation between social development and economic growth. Researchers have identified at least four ways of treating the relation between social development and economic growth:³ (a) the trickle-down approach, in which social development is a product of economic growth; (b) the view that economic growth and social development are two separate variables; (c) the view that neither social development nor economic growth is a primary cause of the other, but that they are related; and (d) the trickle-up approach, in which social development precedes economic growth.

The first approach, that social development is a product of economic growth, has generally been adopted in development policy. These policies are inclined to put a heavy emphasis on economic programmes and are based on the assumption that economic growth tends to produce social development.⁴

Although this trickle-down approach has been criticized since 1970 for being ineffective in meeting basic needs, studies that follow this approach still appear. To cite but two examples, Ram (1985) proposes that the increase in average per capita income should improve the level of basic needs fulfilment, and Goldstein (1985) hypothesizes a causal model based on the assumption that economic factors will strongly

² Illuminating reviews of these approaches have been provided. See N. Hicks and N. Streeten, "Indicators of development: the search for a basic needs yardstick", *World Development* 7, 1979; P. Dasgupta, "Well-being and the extent of its realization in poor countries", *Economic Journal* 100 (400), Conference Papers, 1-32, 1990; and S. Annand and M. Ravallion, "Human development in poor countries: on the role of private incomes and public services", *The Journal of Economic Perspectives*, 7 (1), 1993.

³ See, for example, Mazumdar (1996) and Newman and Thomson (1989).

⁴ Chapter III of this study reviews three different explanations advanced by economists regarding the existence of the positive relation between human development and aggregate wealth.

affect at least one component of basic needs, the infant mortality rates, and that this basic needs indicator will have a weak impact on the economic indicator, if at all.

More recently, Pritchett and Summers (1996), following Preston (1975), supported the view that, other things being equal, the level of income has a positive impact on health. The mechanism through which this association works is straightforward. Income directly affects health through its influences on individuals' consumption of commodities. Pritchett and Summers found that "wealthier is healthier" and that higher income causally lowers infant mortality. On the basis of 81 indicators in cross-country data over 1960, 1970, 1980 and 1990, Easterly (1999) established that there was a positive relation between income per capita and many indicators of the quality of life, although it took a long and variable time for economic growth to exert its effect. Barro and Sala-I-Martin (1995) also found that per capita income was positively associated with two measures of health: infant mortality and life expectancy. Bils and Klenow (2000) found that growth led to more schooling. Dollar (2001), and Dollar and Kraay (2000) noted that economic growth improved peoples' health.

All of this literature on the first approach has featured cross-national association. However, a spurious correlation between income and social development indicators may be made for the following two reasons: first, if other variables that may matter a great deal are correlated with average incomes; and secondly, if there are country fixed factors.⁵

The second approach, that social development and economic growth are unrelated events, is illustrated in a paper by Newman and Thomson (1989), in which they highlighted the view of Zuvekas (1979), who showed that economic growth can occur without social development and expressed the opinion that the distribution of domestic benefits of growth could be limited to a privileged elite at the expense of widespread social welfare development. Consequently (according to Newman and Thomson) Zuvekas argues that without specifically targeting the poor for assistance in meeting basic needs, economic growth could produce an ever-widening gap between the wealthy and the poor.

The analysis of empirical evidence by Grant (1973) lends support to the above contentions. Using correlational analysis, London and Williams (1988) propose that basic needs measures are both analytically and empirically distinct from economic growth measures.

Mazumdar (1996) cites Sirinivasan (1977) as one of the pioneers of the third view, that economic growth and social development are highly interdependent. Sirinivasan is of the view that policies for economic growth and policies promoting basic needs development are interwoven. Mazumdar states that too much stress on basic needs would, at least in the short run, hurt economic growth, which consequently, would harm future improvement in the fulfilment of basic needs. Fedderke and Klitgaard (1998), who studied the connection between social conditions and economic growth, showed that webs of association link economic indicators and social indicators. Such webs of association suggest the possibility of distinct groupings of social indicators with differentiated effects on economic growth. However, such correlations, especially when the theorizing is weak, the data are not reliable, and the number of observations is small,

⁵ There is no scarcity of country fixed factors in the new growth literature. For example, Hall and Jones suggest distance from the equator and use of a European language as an instrument of "social infrastructure" measured by openness and institutions, which in turn is an explanatory variable for productivity (see R. Hall and C. Jones, "What have we learned from recent empirical growth research? Levels of economic activity across countries", *American Economic Review*, May 1997; and "Why do some countries produce so much more output per worker than others?" in *The Quarterly Journal of Economics*, February 1999). Easterly and Levine point to ethnolinguistic fragmentation as a fixed factor holding back Africa's economy (see W. Easterly and R. Levine, "Africa's growth tragedy: policies and ethnic divisions", *The Quarterly Journal of Economics*, November 1997). These fixed factors may also affect the life indicators. For example, Filmer and Pritchett found that ethnolinguistic fractionalization increased infant mortality (see D. Filmer and L. Pritchett, *Child Mortality and Public Spending on Health: How Much Does Money Matter?* [Washington, D.C., 1997, World Bank]). There are other country characteristics besides income that clearly play a large role in determining social development. Waldman found a positive association between infant mortality and the income of the rich (see R. Waldman, "Income distribution and infant mortality", *The Quarterly Journal of Economics*, November 1992). Caldwell found that higher status of women had an impact on health (see J. Caldwell, "Routes to low mortality in poor countries", *Population and Development Review* 12, No. 2, June 1986).

also make it difficult to disentangle causal relationships. Mazumdar (1996) showed that there is no uniform causal relationship between social development and economic growth. According to Mazumdar, this relation varies with change of variables as well as with change of income group.

There are some studies in economic development that express the fourth approach, that social development precedes economic growth. Streeten (1977) provided a critique of the income approach to poverty reduction by pointing out that extra income would not always be spent on items basic to the individual's welfare. In addition, Streeten noted that public services (including access to clean water, schools and health services) could effectively satisfy some basic needs and, as a result, were not directly associated with individual income. Based upon data for 46 countries over 1960, 1970 and 1980, and utilizing a lagged dependent variable model, Newman and Thomson (1989) reported that economic and social developments are correlated and that, with a lag, the index for physical quality of life affects economic development positively, but not vice versa. Barro (1991), in his analysis of the growth rate of real per capita GDP for 98 countries in the period 1960-1985, found a positive relation between per capita GDP and initial human capital, represented by 1960 school enrolment rates. According to Hanushek and Kimko (2000) and Chen and Dahlman (2004), schooling is a major determinant of economic growth.

The survey conducted for this study indicates that the literature on the subject has not provided a clear and consistent answer to the question of causality between economic growth and social development. As a matter of fact, the direction of causality between social development and economic growth varies with the choice of country group and choice of indicators measuring social development and economic growth.

It should be noted that the choice of one of these four sets of assumptions about the relationship has important implications for both the interpretation of the findings and for policy implications.

FROM A REVIEW OF THE LITERATURE TO POLICY IMPLICATIONS

It is frequent to equate a person's "well-being" with his or her command over commodities. The exact measure used in practice is money income, and its command over commodities is what matters in assessing well-being. For this approach to the meaning of development, income growth is what development is all about.

This view came under attack from A. K. Sen,⁶ who argued that well-being has to do with being well, which is about being able to live long, being well-nourished, being healthy, and being literate. What is valued essentially are people's achievements or their capabilities to function. Wealth can also have importance as a tool for extending capabilities.

As pointed out by Annand and Ravallion (1993), the distinction between the income-centred approach to development policy and the capabilities approach may be demonstrated further by considering the respective treatment of means and ends. The income-centred approach assesses investment in human capital entirely in terms of the extra income or output the investment generates. Alternatively, advocates of the capabilities approach would argue that the improvement of people's ability to read and write, or to be healthy, should be considered ends in themselves.

Proponents of the human development approach tend to assign greater importance to providing public services as tools of public action for increasing private income, unlike the advocates of an income-centred approach to development objectives. The first approach was promoted by the UNDP Human Development Report (UNDP 2004) and the World Bank's World Development Report (World Bank 2004), which viewed the public provisioning of social services and making them work for poor people as a leading instrument for human development.⁷

⁶ For a comprehensive review of Sen's work, see Annand and Ravallion, *op. cit.*

⁷ According to Annand and Ravallion (*ibid.*), the World Development Report in the early 1990s was taking a different approach that was not consistent with that of the capabilities approach of the Human Development Report. The World Development Report attached great importance to economic growth as the instrument for reducing poverty when poverty reduction, in terms of income, was viewed as the fundamental objective of development.

While neither approach rejects the notion that both private incomes and public services matter, their differences in focus involve various development policies for an economy. The focus of the present study, however, will be on the relative importance of private incomes and public services in securing some basic human capabilities that are still lacking in varying degrees in the ESCWA region. Particular emphasis will be on the extent to which private incomes matter relative to public services.

If income and capabilities relative to other factors are weakly linked, then the human development approach could clearly entail less emphasis on private income, except in so far as growth facilitates the financing of public services. However, if private incomes are a forceful tool for expanding capabilities, then a focus on income may be justified from either approach. Therefore, before an assessment can be made of the policy implications of the human development approach, that empirical question needs to be addressed.

II. THE CHOICE OF SUITABLE INDICATORS

A. INDICATORS OF SOCIAL DEVELOPMENT

There is no easy measure to represent social development or progress in human development. A variety of social indicators can be used, including: education, health, clean water, sanitation, and electricity. However, for practical purposes, this study focuses on those indicators that have the most direct link with human development: the education and health indicators. The indicators used by UNDP to monitor the progress in achieving the United Nations Millennium Development Goals (MDGs), in particular goals 2 and 4.⁸

1. *Indicators to measure education outcomes*

Net enrolment ratio in primary education. Net enrolment ratio is defined as the ratio of the number of children of official school age enrolled in primary education to the population of the corresponding official school age. Alternatively, gross enrolment ratios are defined as the ratio of the number of students enrolled in primary education to the total population of the corresponding age group. While some economists view enrolment ratios for different levels of schooling as indicators of the stock of human capital (Barro 1991), they may be inappropriate proxies for human capital stocks for current economic production. One problem with this approach is that enrolment ratios are both flow variables, which represent human capital investment flows and the stock itself (Thomas and others 2000).

Adult literacy rate. Literacy is typically defined as the ability to read and write, with understanding, a simple statement related to everyday life. The adult literacy rate is defined as the number of literate adults (persons aged 15 years or more) as a percentage of the adult population. Alternatively, the youth literacy rate for those 15-24 years old is defined as the number of literate adults (persons between 15-24 years of age) as a percentage of the adult population. These indicators are direct measures of the attainment of one basic human right, a minimum education. These indicators are also associated with many other indices of the quality of life, such as measures of employment, income or health, and therefore adult literacy can be considered an excellent overall quality of life indicator. While there has been some criticism concerning the international comparability of the adult literacy rate because of the difficulty of ensuring that it is applied systematically (Chen and Dahlman, 2004), it is commonly used to measure progress in achieving universal primary education. For the purpose of monitoring progress in meeting needs for primary education, adult literacy is a better indicator than primary school enrolment since it is oriented towards effects rather than efforts (Hicks 1980).

2. *Indicators to measure health outcome*

Life expectancy at birth. Life expectancy is the number of years a newborn infant would live if prevailing patterns of age-specific mortality rates at the time of birth were to stay the same throughout the child's life. In other words, it is the theoretical number of years a newborn will live if the age-specific mortality rates in the year of birth are taken as constant. It seems appropriate to use life expectancy at birth as one basic measure of the efficacy of a country's success in providing for basic needs (Hicks 1980). This single indicator directly reflects the level of health, nutrition, sanitation improvements, clean water and income, and thus indirectly links employment and shelter (Mazumdar 1996). It is clear that when life expectancy is low in a country, there is a sizeable percentage of the population who face poor living conditions as well as a lack of adequate health facilities.

The infant mortality rate. This is the probability of dying between birth and exactly one year of age, expressed per 1000 live births. In addition to performing a significant role in interpreting life expectancy in a country, infant mortality is a good indicator of the availability of the sanitation and clean water facilities that are crucial because of the susceptibility of infants to water-borne diseases. Infant mortality has also been characterized as an outcome variable summarizing the degree of existence of contagious disease in a country,

⁸ Goal 2 of the MDGs is to achieve universal primary education, and goal 4 is to reduce child mortality.

as infants are more susceptible to these problems. In addition, this indicator demonstrates rapid response to many health policies. Thus a high figure would show that there are many people living in conditions under which basic health needs are not met (Mazumdar 1996; Goldstein 1985).

The under-five mortality rate. This is the probability of dying between birth and exactly five years of age, expressed per 1000 live births. It is widely documented as the most appropriate indicator of the cumulative exposure to the risk of death because it provides the best means of capturing mortality risks during the most vulnerable years of childhood, the first five years of life. It has several advantages over the infant mortality rate as a composite measure of health risks at childhood. Specifically, the risk of death from several of the diseases that are primary causes of infant mortality remains high in the early years of childhood. Consequently, it is also a suitable outcome measure in assessing the impact of various intervention programmes intended at improving child survival (Ahmad and others 2000).

B. INDICATORS OF ECONOMIC DEVELOPMENT

1. *GDP per capita*

Per capita gross domestic product (GDP) is unquestionably the standard measure of economic growth and a broadly acceptable indicator for measuring a specific country's economic performance. However, its usefulness in cross-country studies is not beyond question. Usually, GDP figures are not directly comparable across countries or time, because each country measures GDP in its own currency and inflation varies across time and economic sectors. In addition, the fact that non-tradables are generally cheaper in poorer countries implies that comparisons of GDP per capita at official exchange rates are likely to exaggerate the differences in real income across countries.

The indicator that results from converting national GDPs into United States dollars implicitly assumes that the purchasing power of US\$ 1 is equivalent in all the countries being compared. Since this assumption is incorrect, per capita GDP cannot be used as an indicator for comparing the level of economic development of all countries, in particular those with wide differentials in living standards and quality of life. Therefore, for purposes of comparison, the indicator used to measure economic growth should be adjusted for price level differences across countries despite the above-mentioned limitations of the comparison. Accordingly, the growth indicator chosen in the present study is taken from the UNDP *Human Development Report*, wherein real GDP is presented as per capita GDP adjusted for PPP, expressed in 1995 international dollars. This measure of GDP was used in all surveys conducted for this study. However, comparisons using PPP (purchasing power parity)-adjusted GDP per capita will not take due account of quality differentials in the provision of non-tradable services such as health and education. Accordingly, using PPP to adjust incomes will entail a bias towards reducing differentials among countries.

2. *Health and education expenditure: levels and components*

It is difficult to acquire accurate data on social spending (health and education) in the region, and most countries do not collect information on private social spending, especially on education. As a result, the data should be interpreted with caution.

A frequent indicator used in international comparisons of education and health resources is the percentage of GDP spent on these services. This is important since national resources are limited, and health and education must compete for their share of GDP with many other country programmes such as defence, infrastructure and communication. Thus the percentage of GDP spent on health and education illustrates the relative importance of health and education to a country in addition to showing how much of a nation's resources are devoted to building human capital.

Given that sufficient data on private education spending are not available, the data on spending that will be analysed are:

(a) On education: public education spending as a percentage of GDP and public education spending per capita adjusted for PPP, expressed in 1995 international dollars;

(b) On health: total (public and private) health spending as a percentage of GDP, share of public spending in total health spending, per capita total health spending adjusted for PPP, expressed in 1995 international dollars, and per capita public health spending adjusted for PPP, expressed in 1995 international dollars.

C. DATA SOURCES AND THEIR QUALITY

Data collection in developing countries is not high on the list of priorities, and data collected by individual developing countries tend to be unreliable. In addition, in some cases the data available from national sources were significantly different from those provided by international organizations, as was the case in Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic and Yemen. The annex tables in annex C to this study list data on the different social indicators taken from different sources (World Bank World Development Indicators and the indicators for the United Nations Millennium Development Goals provided by national Governments).

For data on youth literacy rates, in three of the above seven countries (Kuwait, Qatar and the Syrian Arab Republic) included in this study, data from national sources were consistently higher than those given by the World Bank's World Development Indicators. In the case of the other four of the above seven countries (Bahrain, Oman, Saudi Arabia and Yemen), however, they had similar and identical observations during the 1990s to those provided by the World Development Indicators. Moreover, data from national sources on net primary school enrolment, in Bahrain, Oman, Saudi Arabia and Yemen were higher than World Development Indicators (WDI) figures during the period 1990-2002. For example, Saudi Arabia's official data on net primary school enrolment ratio for the year 2000 show an indicator of 96, compared with 59 in the World Development Indicators. It is worth noting that Kuwait is an interesting case, since the data provided by the Government on net primary school enrolment ratio for the year 2001 show an indicator of 77, which is below the one provided by the World Development Indicators (85). In addition, according to national sources in Qatar, net primary school enrolment ratios dropped from 96 in 1996 to 95 in 2001.

With regard to data on health status indicators (under-five mortality rate [U5R]) and infant mortality rate (IMR), in two countries (Kuwait and Oman) out of the above seven, data on both U5R and IMR provided by the national Governments are surprisingly higher than the rates provided by the World Development Indicators. The other five countries reported similar and identical rates to those provided by the World Development Indicators during the 1990s. However, the rates reported for the period 2000-2002 are significantly lower. For example, in 2002, Bahrain reported an U5R of 1.9,⁹ much lower than the 16 reported by the World Development Indicators, and an IMR of 6.9 compared with the World Development Indicators IMR of 13.

In general, these differences can be attributed to the different procedures and methodologies used in conducting surveys and preparing the data. The data differ significantly according to the source, both in terms of level of attainment and direction of change. The choice of source will have different implications regarding the prospects of achieving the MDGs, as well as comparing achievements and improvements in human development in the ESCWA region with other regions of the world.

With regard to the decision on which sets of data to use (the one provided by the World Development Indicators or those provided by national governments), it must be noted that social indicators have maximum limits and bounds,¹⁰ and as a country gets closer to that limit, incremental improvements from a higher base represent a much greater achievement than similar incremental improvements made from a lower base. Thus the higher the base level, the more difficult it is to achieve improvements. This could cast doubt on the reliability of some of the observations contained in the data provided by national Governments.

Data from national sources were available for only 7 of the 11 countries profiled in this study. (The seven countries were Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic and the United

⁹ This is significantly below the OECD U5R of 7 for Bahrain.

¹⁰ This will be explained in more detail below.

Arab Emirates). Moreover, this data set is limited in coverage (data are available for only four indicators out of the six used in the study, and do not include life expectancy or adult literacy). Finally, the data provided by national sources in some cases are scant. Some data are for single time points within a time period or, occasionally, are for two time points. This limits the ability of the study to measure and compare rates of improvements attained, with regard to a specific indicator, among the different countries in the ESCWA region.

If one were to compare the progress of the different regions of the world in achieving the MDGs, it would be apparent that consistency in the choice of data source is vital, as it guarantees that the same methods and procedures are followed in collecting and reporting data. Different sources of data will reflect different ways of defining an indicator or different methodologies of data collection, and not necessarily the success or failure of a country's experience or policies designed to achieve the MDGs.

For the above reasons, and to ensure the largest possible number of observations to make it possible to conduct a statistically meaningful econometric analysis, the data for the period 1975-2002 on all the social and economic indicators considered in this study will be taken from international sources. The data have been derived from different issues of the International Monetary Fund's *World Economic Outlook*, the UNDP *Human Development Report* and the World Bank's *World Development Report* (see references section). As noted above, this study profiles 11 of the 13 ESCWA members: Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen.

The estimates given below should not be evaluated without prior consideration of the data. The following observations should also be kept in mind in interpreting the results. Despite the choice made in the present study to use international rather than national sources, the diversity and range of the variables examined raise immediate analytical problems (see annex A for a list of the variables, periods of coverage and exact sources). The coverage of the data by country and by time period is inconsistent. The data available sometimes cover all 11 countries in the study, and sometimes only 7 countries or 4 countries. Some data provide 25-year averages, some data are for single time points within a time period or, occasionally, outside of it. All of these samples are small for serious statistical purposes.

Most social indicators measure the average level of social progress for the whole society. Consequently, the figures on average life expectancy, average infant mortality and adult literacy rates do not provide any notion of the scope between rich and poor. Two countries with the same average statistics for infant mortality, for example, could have different infant mortality rates for their least privileged groups. It would be more helpful if social indicators provided data independently for the different income groups within a population (Hicks 1980).

As noted in the above-mentioned World Bank publications (World Bank 1993), the reported figures for infant mortality are frequently based on extrapolation, interpolations, or just on comparisons with other countries. While these estimated figures would probably be reasonably accurate for their intended role of comparing levels across countries at a given point in time, a great deal of the variations over time in the reported series are entirely artificial (Pritchett and Summers 1996).

III. ECONOMIC TRENDS

A. ECONOMIC GROWTH IN THE ESCWA REGION

Since the 1970s, economic growth in the countries in the ESCWA region has been much lower than in most other middle- and low-income regions. As a consequence of the poor growth performance, the majority of the Governments in the region had only limited financial means available to address the severe social problems that their countries faced, especially in the areas of education and health. This chapter prepares the ground for an analysis of the relation between the macroeconomic variables and various social indicators by re-examining the growth performance of the ESCWA member States from 1975 to 2002. Because of problems with data, the 1995-2002 average growth rate of ESCWA members is based on only seven countries: Egypt, Jordan, Kuwait, Oman, Saudi Arabia, the Syrian Arab Republic and the United Arab Emirates.¹¹

Box. Measuring growth rates over time

In any assessment and comparison of the economic performance of countries over time, growth rates of GDP per capita are always at the focus of the analysis. As pointed out by N. Kakwani in 1997,^{a/} higher average growth rates are usually assumed to be associated with higher welfare. However, computing average growth rates over a certain time period and relating them directly to aggregate welfare is not a straightforward and unambiguous process. Indeed, economic analysis applies different methods for the calculation of average growth rates over time. The most widely used methods are the least-squares growth rate, in which the natural logarithm of GDP per capita is regressed on time and the geometric mean growth rate, which uses only the first and last observation of the period. The geometric mean procedure gives zero weight to all observations between the end points, whereas the least squares method attaches higher weight to growth rates in the middle of the time period than to the ones at the beginning and at the end. Growth rates computed by these alternative procedures might therefore vary significantly. Moreover, as demonstrated by N. Kakwani, for certain time paths of income, both methods yield misleading conclusions on welfare. For an alternative procedure that avoids these shortcomings, see the work of N. Kakwani.^{a/} The present study compared growth rates calculated by the least squares method with the geometric mean growth rates. Except for a few cases, the differences in the resulting growth rates were found to be relatively small and the qualitative conclusions remained unchanged.^{b/} To ensure consistency with other studies, it was decided to report only the average growth rates calculated by the least squares procedure.

a/ See N. Kakwani, "Growth rates of per capita income and aggregate welfare: an international comparison," *Review of Economics and Statistics* 79 (2): 201-11.

b/ Significant differences were found in the following (the first number between parentheses being the least squares growth rate and the second number the geometric mean growth rate): United Arab Emirates, 1975-1980 (-2.48% / -0.61%); Bahrain, 1991-1995 (2.23% / 0.48%); Kuwait, 1991-1995 (8.71% / 5.75%); and Lebanon, 1991-1995 (10.91% / 13.50%).

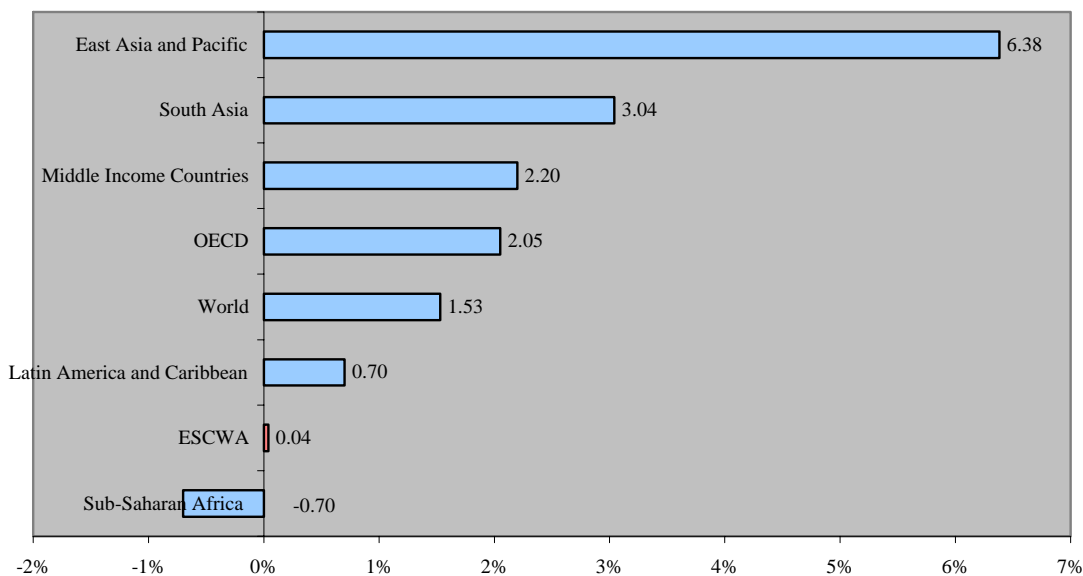
Average annual growth of real GDP per capita in the ESCWA region in the period 1975-2002 was virtually zero.¹² Given the high annual growth rates achieved in East Asia and the Pacific (6.38 per cent) and in South Asia (3.04 per cent) during this period, and the solid growth performance in the OECD countries (2.05 per cent), the growth performance in the ESCWA region has to be considered as very poor (see figure 1 below). How much ground the ESCWA region has lost in the past few decades becomes apparent when its

¹¹ Owing to the lack of reliable data, ESCWA members Iraq and Palestine were excluded from the growth analysis. For Lebanon and Yemen, reliable PPP data were only available from 1990 on, while for Bahrain they were available from 1980 on. For Qatar, only GDP data for the period 1997-2002 were included. All available GDP per capita data for ESCWA member countries and comparator regions are presented in annex table B.11 of this study.

¹² Throughout this chapter, GDP data are measured in purchasing power parity (PPP) adjusted units, which are expressed in constant 1995 international dollars. Using PPP exchange rates facilitates comparability of GDP across countries and allows the calculation of regional averages.

growth performance is compared with middle-income countries in general.¹³ An average annual growth rate of 2.20 per cent for this group of countries implies that real GDP per capita in 2002 was almost 80 per cent higher than it had been in 1975. In contrast, real GDP per capita in the ESCWA region in 2002 was at the same level as in 1975.

Figure 1. GDP per capita (PPP), average annual growth rate in different regions of the world, 1975-2002



Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

Table 1 below presents the average growth rates in different regions of the world for five-year periods, as well as the average growth performance in period 1990–2002, and for the entire period under consideration (1975-2002). As can be seen from the table, following a significant increase in the second half of the 1970s (a period that coincided with a strong increase in oil prices), real GDP per capita in the ESCWA region declined sharply by an annual rate of 4.65 per cent between 1981 and 1985 (a period of high and then steeply falling oil prices). After a period of stagnation in the second half of the 1980s, a moderate recovery took place in the period 1991-1995 and thereafter. In that period, the average annual growth rate of GDP per capita amounted to 1.70 per cent, a figure slightly above the average for the group of middle-income countries (1.58 per cent). However, in the period 1996-2002, when per capita GDP growth accelerated in most of the middle-income countries, the annual growth rate in the ESCWA region dropped to a meagre 1.18 per cent.

In addition to very low long-run averages of growth rates, the ESCWA region also experienced high volatility of growth rates in the period 1975-2002. Figure 2 below displays GDP per capita growth rates of the ESCWA region and of middle-income countries in general. While growth rates were highly volatile in the ESCWA region until the early 1990s, volatility declined significantly in the past decade. As oil prices show a similar pattern of high volatility throughout the 1970s and 1980s and a much lower volatility in the 1990s, growth rates in the ESCWA region appear to be closely related to the development of oil prices.¹⁴

¹³ According to the most recent data from the World Bank's World Development Indicators, 95 countries are classified as middle-income countries with a gross national income in 1993 between \$765 and \$9,385.

¹⁴ The role of oil prices as an explanatory factor of growth in the ESCWA region is examined in more detail below.

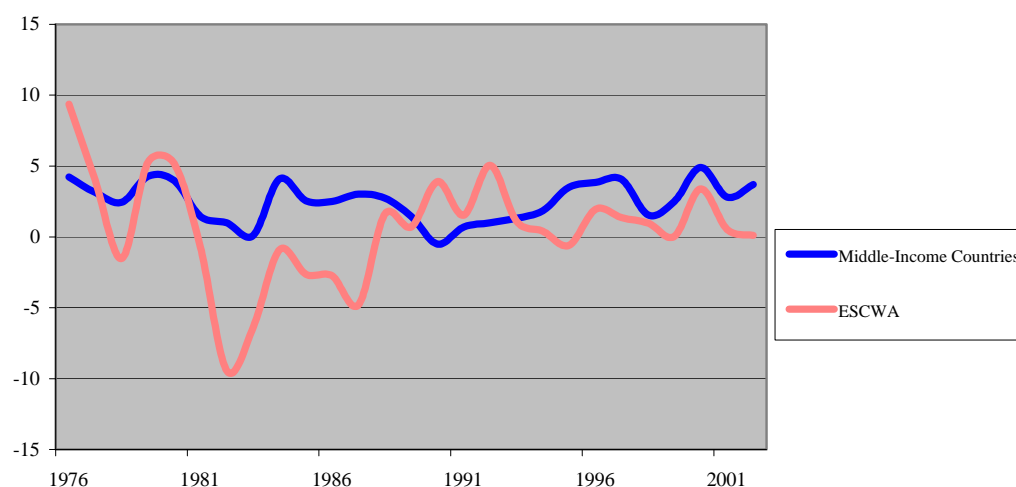
TABLE 1. AVERAGE ANNUAL GROWTH RATES OF GDP PER CAPITA IN DIFFERENT REGIONS OF THE WORLD
(Purchasing power parity in constant 1995 international dollars)

Region/area	1975-1980	1981-1985	1986-1990	1991-1995	1996-2002	1990-2002	1975-2002
ESCWA members	3.67	-4.65	-0.34	1.70	1.18	1.23	0.04
East Asia and Pacific	5.51	6.12	5.85	8.58	5.14	6.73	6.38
South Asia	0.98	3.03	3.91	3.00	3.32	3.43	3.04
Latin America and Caribbean	3.13	-1.15	-0.34	1.73	0.62	1.30	0.70
Sub-Saharan Africa	-0.65	-2.23	0.10	-1.65	0.76	0.08	-0.70
OECD	2.82	1.86	2.89	1.25	1.94	1.80	2.05
Middle-income countries	3.43	1.74	1.98	1.58	3.18	2.74	2.20
World	2.16	1.09	1.99	0.96	2.03	1.75	1.53

Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

Note: ESCWA region average growth rates include all countries, for which PPP data are available, see footnote 11.

Figure 2. Growth rates of GDP per capita in the middle-income countries in the ESCWA region (PPP), 1976-2002

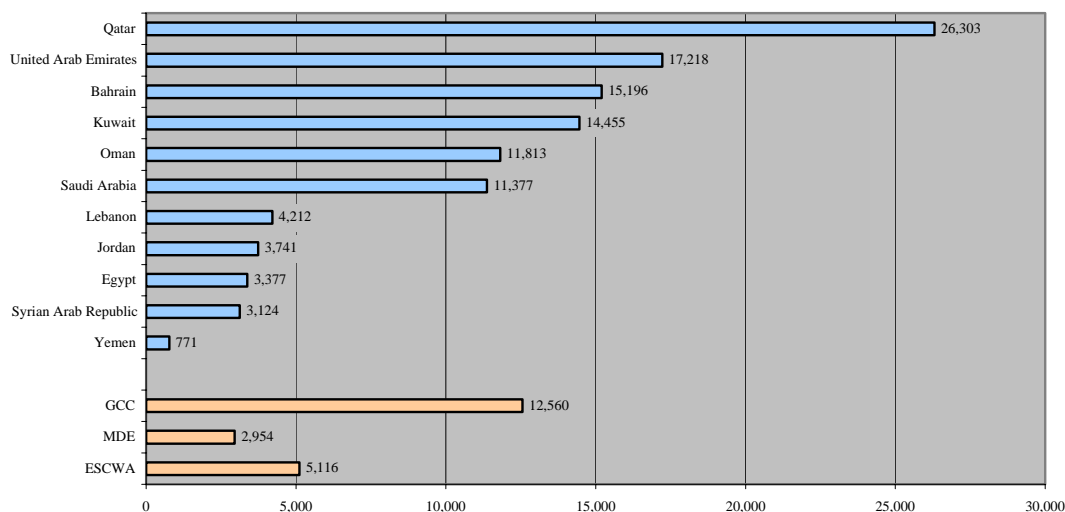


Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

In order to account for very different economic structures and large differences in average per capita income, the ESCWA sample in this study has been divided into two groups: the oil-exporting countries members of the Gulf Cooperation Council (GCC) comprising Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates; and the more diversified economies in the region, including Egypt, Jordan, Lebanon, the Syrian Arab Republic and Yemen.

Figure 3 below shows the huge disparities in per capita income between the GCC countries and the more diversified economies in the ESCWA region. On average, real per capita GDP measured in PPP exchange rates is still more than four times higher in the oil-rich GCC countries than in the more diversified economies.

Figure 3. GDP per capita in the ESCWA region, 2002
(PPP, 1995 international dollars)



Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

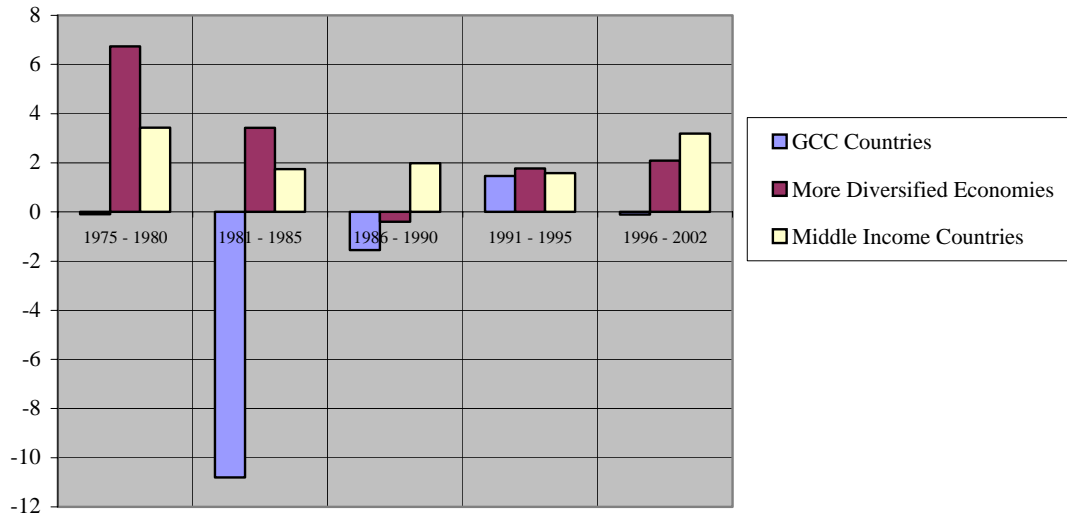
Note: Regional averages are calculated by aggregating PPP-adjusted GDP data for each country, and then dividing the result by aggregate population.

However, a comparison of growth performances in the past few decades revealed that the GCC countries had a particularly poor record relative to both the more diversified economies of the region and middle-income countries in general. In fact, real GDP per capita shrank by an average annual rate of 2.23 per cent in the period 1975-2002. As illustrated in figure 4, the bulk of this sharp decline in per capita GDP occurred in the first half of the 1980s, when annual growth was -10.80 per cent. Growth rates remained predominantly negative until the period 1991-1995, when the downward trend in real GDP per capita in the GCC countries came to an end. However, economic growth continued to be weak and in the period 1990-2002, the average annual growth rate for the group of GCC countries amounted to only 0.13 per cent.

In contrast to the GCC countries, the more diversified economies in the ESCWA region have a positive growth record over the past 30 years. Between 1975 and 2002, real GDP per capita in these countries grew at an average annual rate of 2.12 per cent.¹⁵ However, growth rates showed a strong downward trend. From 1975 to 1985, the group of more diversified economies experienced high growth rates of GDP per capita. After a slump in the second half of the 1980s, positive growth rates of GDP per capita returned in the 1990s. However, an average annual growth rate since 1990 of around 2 per cent is significantly lower than the growth rates during the period 1975 to 1985. Given the manifold economic and social challenges lying ahead of the more diversified economies in the ESCWA region, they need to reach a higher and more stable and sustainable growth path in the future.

¹⁵ Reliable data for Lebanon and Yemen are not available until 1990. Averages that include the period 1975-1989 are therefore based solely on data from Egypt, Jordan, and the Syrian Arab Republic.

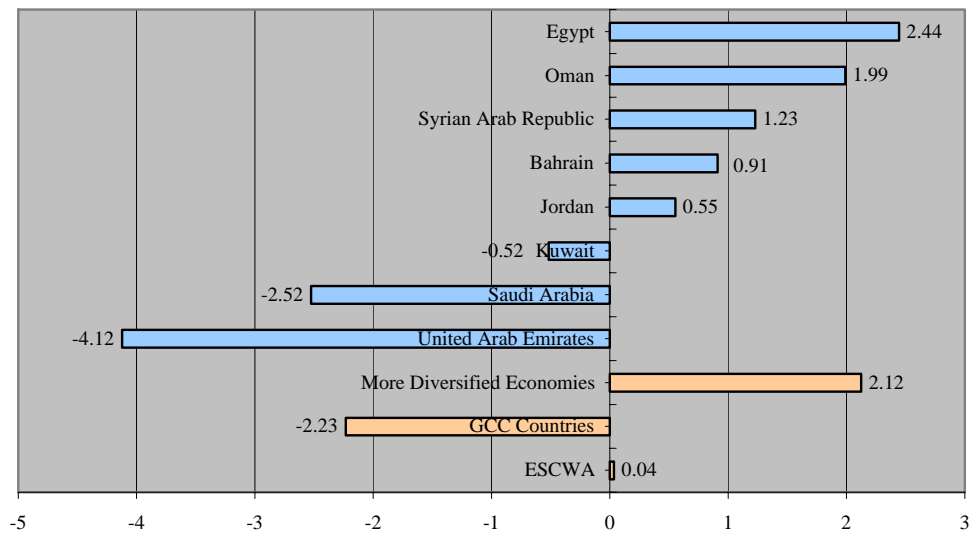
Figure 4. ESCWA region growth performance, 1975-2002
(Average annual growth rate of real GDP per capita, in percentage)



Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

Because there are considerable variations in the growth performance of the ESCWA member countries, this study also undertakes a close examination of individual countries' growth performances. Figure 5 below shows the 1975-2002 average annual growth rates for the eight ESCWA member countries that have comprehensive data over that period.

Figure 5. GDP per capita, average annual growth rates in the ESCWA region, 1975-2002
(Percentage)



Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

Note: Average growth rate for Bahrain refers to the period 1980-2002.

Table 2 below presents a detailed account of average growth rates of the ESCWA member countries over five-year periods from 1975 to 2002, as well as over the periods, 1990-2002 and 1995-2002. The

growth pattern of the group of GCC countries is strongly correlated with that of Saudi Arabia, which has by far the largest economy within this group. Saudi Arabia's growth performance over the period 1975-2002 is slightly below the GCC average. This is mainly due to the fact that the economic slump of the first half of the 1980s was more pronounced in Saudi Arabia than in the rest of the region. While economic activity in Saudi Arabia recovered to a certain extent in the 1990s, the United Arab Emirates experienced negative growth in all five periods. This resulted in the worst economic performance within the ESCWA region in the period under consideration. Between 1975 and 2002, real GDP per capita in the United Arab Emirates declined at an annual rate of more than 4 per cent. The growth pattern of Kuwait corresponds by and large to the overall GCC growth pattern. However, between 1992-1995, Kuwait achieved very high growth rates, bringing GDP per capita to levels significantly above those prevailing before the war. In the period 1996-2002, in contrast, Kuwait had a poor growth performance, with real per capita income declining at an annual rate of around 2 per cent. Bahrain and Oman are the only GCC countries that achieved positive growth rates of GDP per capita between 1975 and 2002. Like Kuwait, Saudi Arabia, and the United Arab Emirates, Bahrain also suffered a severe contraction of real per capita GDP in the first half of the 1980s. Since then, Bahrain's growth rates have been positive, though with a slightly decreasing trend. The growth performance of Oman over the last three decades deviates sharply from the performance of the other GCC countries. Real per capita income in Oman increased strongly between 1981 and 1985 (average annual growth of 9.09 per cent), when all the other GCC countries experienced severe contractions of per capita GDP. That period of strong expansion was followed by stagnation in the second half of the 1980s and slow growth throughout the 1990s. Finally, Qatar experienced stable robust growth, significantly above average GCC members' growth rates, in the period 1997-2002.

TABLE 2. AVERAGE ANNUAL GROWTH RATE OF GDP PER CAPITA IN THE ESCWA REGION
(Purchasing power parity in constant 1995 international dollars)

	1975- 1980	1981- 1985	1986- 1990	1991- 1995	1996- 2002	1990- 2002	1975- 2002
ESCWA members							
Bahrain	..	-4.46	3.30	2.23	1.69	1.41	0.91 ^{a/}
Kuwait	-5.07	-7.26	-0.24 ^{b/}	8.71 ^{c/}	-2.09	-1.17 ^{d/}	-0.52
Oman	-3.54	9.09	-0.11	0.48	1.26	0.90	1.99
Saudi Arabia	0.48	-13.30	-1.28	0.68	-0.18	-0.14	-2.52
United Arab Emirates	-2.48	-8.49	-2.42	-5.56	-0.94	-2.18	-4.12
GCC countries	-0.10	-10.80	-1.55	1.46	-0.11	0.13	-2.23
Egypt	7.45	4.64	-0.15	0.88	2.89	2.22	2.44
Jordan	10.77	2.01	-4.85	1.46	-0.17	0.29	0.55
Lebanon	..	..	..	10.91	1.08	3.98	..
Syrian Arab Republic	2.62	-1.40	0.16	3.48	0.70	1.83	1.23
Yemen	..	..	..	3.81	1.70	2.70	..
More diversified economies	6.73	3.42	-0.40	1.76	2.08	2.02	2.12
ESCWA region	3.67	-4.65	-0.34	1.70	1.18	1.23	0.04

Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

^{a/} Refers to the period 1980-2002;

^{b/} Refers to the period 1986-1989;

^{c/} Refers to the period 1992-1995;

^{d/} Refers to the period 1992-2002.

Average annual growth rates for the different periods are calculated by the least squares method.

Regional average growth rates are averages of all available country level data in the respective period. They are constructed by aggregating PPP-adjusted GDP data for each country, dividing it by aggregate population, and then applying the least squares method. Owing to the lack of World Bank data for the period during the first Gulf war, average GDP growth rates for Kuwait exclude the years 1990 and 1991. Using ESCWA secretariat estimations for Kuwait's GDP in that period would not result in significant changes in the 1990-2002 and 1975-2002 average growth rates.

Within the group of more diversified economies, Egypt has by far the largest population and economic size. Thus the growth cycle of the group as a whole is strongly influenced by Egypt's economic performance. Over the entire period 1975-2002, Egypt had the best growth performance in the ESCWA region, averaging an annual per capita growth of 2.44 per cent. Egypt achieved very high growth rates in the period 1975-1985, but experienced a slight contraction of GDP per capita in the second half of the 1980s (average annual growth of -0.15 per cent). Since 1991, growth rates in Egypt have been positive, and its average annual growth rate of 2.89 per cent in the period 1996-2002 was the highest in the ESCWA region. Jordan's growth performance between 1975 and 1990 was characterized by a very high volatility of growth rates. Average annual growth decreased from almost 11 per cent in the period 1975-1980 to approximately 2 per cent between 1980 and 1985. In the second half of the 1980s, Jordan faced a significant contraction of economic activity. Real GDP per capita shrank by an annual rate of 4.85 per cent in this period. Since then, growth rates have been mainly positive but low, averaging only 0.29 per cent per year over the period 1990-2002. All in all, Jordan's average annual growth rate for the period 1975-2002 amounts to a meagre 0.55 per cent. While growth rates were less volatile in the Syrian Arab Republic, its average growth performance in the period under consideration was also disappointing. An average annual growth rate for the period 1975-2002 of only 1.23 per cent did not allow the country to reach the growth path experienced by other developing countries.

Emerging from the agony of years of civil strife (1975-1990), Lebanon enjoyed very high growth rates in the first half of the 1990s. Since 1997, however, economic growth has significantly slowed. Average annual growth of GDP per capita in Lebanon amounted to only 1.08 per cent between 1996 and 2002. Yemen's growth performance in the first half of the 1990s was superior to that of most other ESCWA member countries. However, an average annual growth rate of only 2.70 per cent from 1990 to 2002 has to be considered disappointing, given the very low level of GDP per capita in Yemen. Moreover, as in Lebanon and the Syrian Arab Republic, the average growth rate in Yemen dropped sharply over the last decade.

The above data lead to the question of what are the reasons for the poor growth performance of the ESCWA member countries in the last few decades. A second question is: how can one explain the observed differences in the growth performance between the GCC countries and the more diversified economies, on the one hand, and between individual countries, on the other hand?

A few recent studies have attempted to shed light on the causes behind the weak growth performance of Arab countries in the last few decades.¹⁶ Drawing on insights provided by the theoretical and empirical growth literature, these studies mostly tried to identify variables that contributed significantly to the negative growth performance of the MENA or Arab region relative to other regions such as East Asia, South Asia and Latin America. In a second step, some authors also examined intraregional growth differences, in particular those between the oil-exporting and the non-oil-exporting countries in the Arab region. Overall, these studies suggest that the poor growth performance of the Arab countries in the last few decades resulted from a combination of a large set of microeconomic, macroeconomic and political factors.

Unfortunately, the studies on regional growth involve a number of serious and all-pervasive methodological and measurement problems that beset the literature on empirical growth.¹⁷

First, until now, growth theory does not provide clear guidance in the search for the "true" variables to be included in the regressions that attempt to identify the major determinants of growth. The estimation

¹⁶ Recent studies of economic growth and its determinants in the Middle East and North Africa or the Arab world include: S. Makdisi, Z. Fattah, and I. Limam, "Determinants of Growth in Arab Countries", Arab Planning Institute Working Paper Series, No. 03/01 (Kuwait, 2000); X. Sala-i-Martin and E. Artadi, "Economic Growth and Investment in the Arab World", Economics Working Paper No. 683, Department of Economics and Business, Universitat Pompeu Fabra (Barcelona, 2003); G. Abed and H. Davoodi, "Challenges of Growth and Globalization in the Middle East and North Africa" (Washington, D.C., International Monetary Fund, 2003); and D. Hakura, "Growth in the Middle East and North Africa", IMF Working Paper (2004). However, only Makdisi, Fattah and Limam, and Hakura, perform regression analyses.

¹⁷ See X. Sala-i-Martin, "I Just Ran Four Million Regressions", Columbia University and Universitat Pompeu Fabra Working Paper, 1997, on this issue.

results therefore depend on the subjective selection of the explanatory variables. A prominent example in this context is whether to include investment or not as a regressor. As Hakura (2004) points out, investment can be regarded as a kind of “intermediate” variable, through which other key variables affect economic growth. When investment is included in the regression, the effects that stem from these other key variables might therefore be underestimated. In contrast to Makdisi, Fattah, and Limam (2000), Hakura (2004) thus does not consider investment as an explanatory variable in her analysis.

Secondly, any empirical growth analysis has to deal with the simultaneity problem that occurs when some of the explanatory variables are in fact endogenous. The presence of a simultaneity bias renders ordinary least squares estimation inconsistent, requiring an instrumental variable estimation. However, in practice, it is often difficult to find adequate instruments for some of the variables that are exposed to the simultaneity bias.

Thirdly, several possible growth determinants, such as the quality of institutions, the role of the public sector, the role of human capital, are very difficult to quantify and to compare across countries. For the above-mentioned studies on Arab or Middle East and North Africa (MENA) growth determinants, this problem is aggravated by the incompleteness and limited reliability of data.

Despite the above limitations, the recent literature on growth in the Arab countries has pointed out some crucial structural causes for the weak performance of the region in the last decades. The major results of these studies are summarized below, with an emphasis on the variables that, it is believed, have the largest explanatory power for the growth performance of the region. The process will emphasize the fundamental differences in the growth experiences between the GCC countries and the more diversified economies.

Political tensions and instability certainly represent an obstacle to growth in ESCWA. Misallocation of resources to security and defence rather than the financing of development leads to reductions in regional investment. In fact, investment ratios declined from 29 per cent in 1978 to 16 per cent in 2002, a major reason behind the weak economic performance.¹⁸ War hinders development and prevents ESCWA member countries from a net welfare effect that could have been remarkable if the countries had spent less on war needs and more on growth-enhancing activities. While there are no reliable quantitative data about the extent to which war affected the growth performance in the different ESCWA member countries, the long-lasting conflicts in the region undoubtedly discourage investment and lead to misallocation of resources, a brain drain and massive capital flight.¹⁹ One of the difficulties in isolating the effect of the conflict variable is the high correlation with institutional quality indicators, which is examined below.

In the case of the GCC countries, one of the major factors responsible for the poor growth performance in comparison with the more diversified economies in the region, as well as with other regions in the world, is the high initial income in the GCC countries (Hakura, 2004).²⁰ In fact, in 1975 average purchasing power parity-adjusted income per capita in the GCC countries (excluding Bahrain and Qatar) was US\$ 20,550—almost 15 times higher than average per capita income in the more diversified economies of Egypt, Jordan, and the Syrian Arab Republic and around 8 times higher than in the middle-income countries in general. Within the group of GCC countries, average per capita income in Oman was significantly lower than in Kuwait, Saudi Arabia and the United Arab Emirates. The “catching-up” factor thus helps to explain why the growth performance of Oman was vastly superior to that of other GCC countries. For Bahrain, the same argument applies, although to a lesser extent, as differences in per capita income were much smaller than in the case of Oman.

The relatively poor quality of institutions in both the GCC countries and the more diversified economies appears to explain a significant fraction of the growth differential with respect to other regions

¹⁸ See the *Survey of Economic and Social Developments in the ESCWA Region, 2003-2004*.

¹⁹ Ibid.

²⁰ According to the concept of conditional convergence in growth theory, a country’s growth rate is negatively related to its relative initial income level. This implies that countries that are further away from their individual “steady state” level of income are expected to achieve higher growth rates.

(Makdisi, Fattah, and Limam [2000]); Hakura [2004]). The effect is particularly strong with respect to the fast-growing countries of East and South Asia, and most pronounced for the more diversified economies. In order to measure the quality of institutions, authors generally construct an index that computes the average over various indicators, such as bureaucratic quality, risk of expropriation, control of corruption, government stability, and rule of law. The specific forms of this index differ substantially between the studies. Nevertheless, there is broad-based evidence that institutional quality is one of the major determinants of growth in the region (see also Abed 2003). Institutional reforms should therefore be put at the top of the political agenda.

Another main factor in the disappointing growth performance of the GCC countries and the more diversified economies appears to be the size of the public sector in combination with its low efficiency. The relevance of public sector size is highlighted by Abed (2003) and empirically examined by Hakura (2004), who uses the ratio of government consumption to GDP as a proxy for the size of the public sector. This variable turned out to be particularly important for the GCC countries, where high oil revenues in the 1970s led to a strong expansion of already large public sectors. As the government frequently serves as an employer of last resort and tends to pay workers wages above their marginal productivity, national markets for educated labour are fundamentally distorted (Pritchett, 1999). As a consequence, the development of a strong non-oil private sector is hampered, which lowers economy-wide productivity. Indeed, several studies claim that total factor productivity declined over the past 20 years in Kuwait, Saudi Arabia, and the United Arab Emirates (Sala-i-Martin and Artadi [2002]; Hakura [2004]). These were the three countries with the worst growth performance in the period under consideration. Therefore, since the size of government is a relevant determinant of growth rates in the region, increasing its efficiency and improving the incentive structure should be a priority in any agenda for reform.

The role of demographic factors in the weak growth performance of the region is a controversial issue. In general, theoretical growth models do not provide a clearly unambiguous relation between population growth (or fertility rates) and economic growth. Hence, it comes as no surprise that Makdisi, Fattah, and Limam (2000) find the population growth variable to be insignificant. Owing to the weak theoretical basis of the population growth variable, some growth studies prefer to examine the role of alternative demographic variables, such as the ratio between total population growth and labour force growth (Hakura 2004). A high growth rate of the labour force relative to total population is expected to have a positive effect on per capita GDP growth as the productive capacity of the economy on a per capita basis expands and savings and investments ratios are likely to increase. As in other developing countries, excluding East Asia, the total population in the GCC countries grew at a rate that exceeded the rate of labour force growth in the period under consideration.²¹ In contrast, the more diversified economies mostly experienced rapid growth of the working population relative to the population as a whole. Consequently, Hakura (2004) finds that the demographic variable only contributes to explaining the weak performance of the GCC countries relative to East Asia. As the relation between total population growth and working population growth is becoming more favourable in the ESCWA member countries, demographic changes present an opportunity for gains in economic growth. However, improvements in economic growth can only be achieved, if the countries are capable of absorbing the large youth cohort into productive employment. Certainly, this constitutes one of the most important challenges facing the ESCWA countries in the next decade.

The theoretical literature on economic growth has long emphasized the decisive role of human capital in the process of development. As a consequence, international organizations have strongly advocated higher levels of public (and private) investment in education, especially in less developed countries. It was expected that these investments would eventually result in a higher stock of human capital, which would translate into higher rates of economic growth through increases in productivity and innovation. In the Arab region, however, the improvements in education did not pay off in terms of higher growth rates in the past few decades. Pritchett (1999) uses the term “micro-macro paradox” to characterize the expansion in education in the Arab countries. Although better education has had a significant pay-off at the individual level, it has not

²¹ Within the region, population growth was highest in the United Arab Emirates, where population grew at an annual rate of almost 8 per cent between 1975 and 2002 if expatriates are included. Total population in 2002 was therefore more than seven times higher than in 1975, while real GDP increased only by a factor of three in the same period.

resulted in higher country-wide productivity and GDP per capita levels. There are several possible explanations for this phenomenon. One of them centres on the link between education and productivity. As noted above, labour markets in most ESCWA member countries are highly distorted, with relatively large public sectors resulting from the Government being the principal and most sought-after employer of educated labour. This leads to productivity levels of qualified labour far below their potential. A second explanation for the lacking growth effect of the expansion in education is the relatively poor quality of this education in the Arab countries.²² Quantitative indicators, such as youth and adult literacy and school enrolment rates, generally measure educational but not learning achievements. These indicators do not account for the large differences between individual abilities and therefore capture only part of the educational situation of a country. In fact, as pointed out by various recent studies, problem-solving and innovative-thinking capacities appear to be very weak in most Arab countries, especially in comparison with the middle-income countries of East and South Asia. Unfortunately, it is still difficult to obtain adequate qualitative indicators on educational achievements.

The results of recent empirical analyses of the Arab region should not be interpreted as meaning that education and human capital accumulation are unimportant in reaching higher growth rates. They rather indicate that the process through which higher levels of educational achievements are transformed into higher productivity and growth is very complex. Policy reforms should hence aim at improving the quality of education and strengthening the link between education and employment.

Underdeveloped financial markets also seem to be a key impediment to growth for most Arab countries (Abed 2003). A low level of integration into international capital markets, poor financial regulation, a significant lack of transparency, and inappropriate interest rate policies have created major obstacles to channelling savings into productive investment activities and thereby hampered the growth performance of the countries. Although some important steps to promote greater efficiency of financial intermediation have been undertaken in most ESCWA member countries during the past decade, further strengthening of financial markets must be a key issue of policy reform.

Somewhat surprisingly, Makdisi, Fattah and Limam (2000) and Hakura (2004) have shown that several of the macroeconomic variables that are usually expected to have a strong impact on growth appear to be of only secondary importance in the region. Trade openness, terms of trade volatility, and real exchange rate overvaluation helped to explain only a relatively small part of the growth differential with respect to other world regions. While terms of trade volatility turned out to be a more relevant factor for the GCC countries, real exchange rate overvaluation and trade openness matter more for the more diversified economies of the region.

A growth determinant that is of particular interest for the ESCWA region is the abundance of oil. An analysis of the developments on the international oil market in the past few decades throws some additional light on the poor growth performance of the GCC countries in general as well as on differences between them.

Production structures in the GCC countries are heavily dominated by the oil sector. As a consequence, the growth performance of these countries depends to a large extent on oil income and on the way the financial resources stemming from oil exports are utilized. The steep increase in oil prices and oil revenues during the 1970s directly raised income and consumption levels in the GCC countries. In the light of the enormous revenue windfalls, the respective Governments pursued expansionary fiscal policies. The main characteristics of these policies are a large expansion of the public sector and the establishment of an extensive system of subsidies, which undermined the incentives of economic agents to undertake growth-enhancing activities. These policies turned out to be largely inefficient, generated public deficits, and further increased the region's dependence on oil instead of contributing to a more diversified production structure of the economies. While real oil prices remained relatively high until 1983-1984, crude oil production of the OPEC member States Kuwait, Saudi Arabia and the United Arab Emirates decreased sharply from 1981 on. In Saudi Arabia, average daily crude oil production declined from 9.9 million barrels in 1980 to 3.4 million

²² The importance of the quality of education is examined in chapters IV and VI of this study.

barrels in 1985 (Energy Information Administration, *Monthly Energy Review*, December 2004).²³ In combination with steeply falling oil prices in 1984 and 1985, this resulted in a deep slump of oil revenues for the GCC countries that led to the observed huge decrease in real per capita income in the period 1981-1985.

While oil revenues of the OPEC member States shrank dramatically in this period, Oman, which is not a member of OPEC, increased its production level and benefited from an increase in oil revenues that contributed significantly to the country's high growth rates between 1981 and 1985. Moreover, it was not only the Omani oil sector that expanded strongly in this period; wholesale and retail trade, manufacturing and construction also grew. In the case of Bahrain, which is also not an OPEC member State, oil revenues decreased in the first half of the 1980s, although much less than in Kuwait, Saudi Arabia, and the United Arab Emirates. In addition, Bahrain had a more diversified production structure, in which natural resources contributed only 35 per cent to GDP in 1980;²⁴ this can be compared with around 70 per cent in Kuwait, Saudi Arabia and the United Arab Emirates in the same year. This diversification resulted in a smaller decrease in Bahrain's real per capita GDP in the period 1981-1985 and helped the country to achieve relatively high growth rates thereafter.

From 1986 on, average annual oil prices, adjusted for exchange rate movements and inflation, remained at low to moderate levels until 2002, which meant that they did not provide a strong stimulus for growth in the GCC countries. Production levels in the OPEC member States slowly recovered from their lows in 1985, but increasing oil revenues only prompted significant positive growth effects in the period 1990-1991. Altogether, the stabilization of both oil prices and production from 1986 onwards, led to a decrease in the volatility of GCC growth rates, but did not allow the countries to reach a higher growth path.

Makdisi, Fattah and Limam (2000) and Hakura (2004) examine the growth effects of oil. While Makdisi, Fattah and Limam introduce a variable that measures a country's abundance of natural resources, Hakura uses a "dummy" for OPEC membership. The empirical results are somewhat ambiguous for the GCC countries. Makdisi, Fattah, and Limam obtain a much stronger impact regarding the respective variable than Hakura does. For the more diversified economies in the region, the developments in the oil market were only of secondary importance, although workers' remittances are a substantial part of income in some of these countries.

To sum up, the ESCWA members' weak economic performance over the past three decades has significantly constrained member countries' progress in human development. In terms of disposable income per capita, the stagnation of real economic activity in the region implies that ESCWA members lost a lot of ground relative to other middle- and high-income regions. Moreover, the poor growth performance also limited the resources of the individual Governments that are available for social programmes and policies, mainly in the areas of education and health.

Achieving a reasonable and stable growth rate must therefore be a top priority item on national agendas. It must also be kept in mind that political stability is a precondition for economic stability. ESCWA member countries should thus concentrate their efforts on attaining a high level of stability and predictability in all spheres: political, economic, and social.

In the light of the record highs in oil revenues, the short- and medium-term economic prospects for the 11 ESCWA member countries profiled in this study are much more favourable than previously expected. In fact, recent growth rates and forecasts for the next few years suggest there will be a robust growth performance, particularly in the GCC countries but also in the more diversified economies. This presents a golden opportunity for the region to undertake significant investments in the formation of human and physical capital, which will then result in higher productivity levels and a more sustainable growth pattern.

²³ The enormous decline in oil production can mainly be attributed to a fall in global demand for OPEC oil and the implementation of an OPEC quota system aimed at stabilizing oil prices. This decline has primarily resulted from an increase in the supply of non-OPEC oil.

²⁴ Estimates based on ESCWA *National Accounts Studies* data.

This could reverse the previous trend, in which large sectors of the region's population did not benefit from higher oil prices and revenues.

In order to reach a more robust and equitable growth path, the ESCWA member countries must undertake serious efforts to overcome the major structural weaknesses highlighted above. These efforts should include the strengthening of the macroeconomic environment, broad-based institutional and public sector reform, and measures to increase efficiency in the investment in physical and human capital. A favourable political and economic environment with sustainable rates of economic growth would then provide the basis for a successful social agenda to improve human development in all dimensions.

However, if these measures are not undertaken, and if the pattern of weak economic performance continues, the gains made in human development by the ESCWA member countries will be seriously jeopardized.

B. PUBLIC POLICY STANCE AND HUMAN DEVELOPMENT

Economic theory indicates several reasons why human development is promoted through a public policy stance.²⁵ First, human development is an end itself. Secondly, it has economic appeal because it is a means for achieving higher productivity. Thirdly, it has social appeal because alleviating poverty contributes to healthy civil society, democracy and social stability. Fourthly, it has political appeal because it can minimize civil disturbances and enhance political stability.

The arguments for a public policy stance, in terms of expenditure as a key policy instrument, are based on the fact that the mere functioning and performance of the market cannot, in itself, trigger a signal to economic agents to respond and mobilize to ensure hypothetically ideal allocative efficiency. Market failure is a necessary condition for government intervention to be efficiency-increasing. Market place fails in its assigned tasks of resource allocation for a number of reasons in addition to anti-competitive behaviour:

(a) Not all goods and services are traded in private markets, and thus markets cannot determine the optimal prices of public goods and so create a straightforward justification for collective action;

(b) Goods characterized by externalities (positive or negative) in production and consumption create a wedge between market prices and social valuation and the market will not ensure a socially desired and efficient level of production;

(c) Some goods exhibit increasing returns to scale. In such cases, society can gain from higher output at lower prices when the public sector is the producer or a subsidy is paid to the private sector to cover the losses of producing the optimal level of output;

(d) State intervention is essential for securing income distribution. State intervention can contribute to the public good by subsidizing consumers too poor to buy health and education-related activities.

Appropriate intervention in any of the above areas can contribute to one or more of the principal results that people appear to want from a given government intervention, especially in the education and health sectors: good quality public goods; low cost; satisfaction on the part of both producers and consumers; and equity, both in terms of access to and utilization of services, and the ability to pay.

There is no doubt that higher real income can make it possible for people to live the kind of life that is not accessible to those with lower levels of income. Empirical evidence furnished by (Annand and Ravallion 1993) has shown that virtually half of the variations in life expectancy are attributable to differences in GDP per capita. In this context, it is imperative to note the significant impact of higher GDP per capita on life expectancy as well as other social indicators, including higher literacy levels and lower child and infant mortality rates (Chakraborty 2003). This impact is evident when public policy plays a significant role.

²⁵ See, for example, Chakraborty (2003).

C. EDUCATION SPENDING PATTERNS

Acquiring information on educational expenditure in the region is problematic, as most countries do not collect information on private spending on education. As a result, the data should be interpreted with caution.

1. *Education spending as a percentage of GDP*

A frequent indicator used in international comparisons of education resources is the percentage of GDP spent on education. This is important since national resources are limited, which means that education must compete for its share of GDP with many other sectors, including defence, infrastructure and communications. Thus the percentage of GDP spent on education not only shows how much of a country's resources are devoted to education, but also reveals the relative importance of education to that country.

Since the 1970s, the countries in the ESCWA region have devoted a great deal of their efforts to education. As a result, most ESCWA member countries have made significant improvements in literacy rates and primary school net enrolment. The commitment to education made by the Governments in the region is reflected in their levels of spending on education. As can be seen from table 3 below, these levels are significantly above spending levels in high-performing Asian economies and are close to spending levels in the United States of America. On average, for the period 1975-2001, ESCWA member countries allocated some 5.4 per cent of their GDP to the education sector, compared with 6.9 per cent in Norway, 5.6 per cent in the United States and 3.5 per cent in Singapore. However, expenditures on education as a percentage of GDP seem to be levelling off despite the apparent increase in spending in Jordan, Oman, the United Arab Emirates, Bahrain, Kuwait and Yemen.²⁶

Within the ESCWA region, GCC countries such as Kuwait and Saudi Arabia currently spend the most on education, with 5.9 and 6.9 per cent of their respective GDPs allocated to education.

2. *Per capita public spending on education in PPP-based United States dollars*

Tables 3A and 3B below show per capita public spending on education in PPP-based United States dollars, as well as public spending on education as a percentage of GDP. In addition, the tables compare the simple average of spending on education in the ESCWA region relative to other developed countries outside the region. Average per capita education spending varies to a great extent by country as well as by region. ESCWA member countries have spent significantly less (both as a percentage of GDP and as per capita) than the more industrialized countries of the world. However, expenditures on education in the ESCWA region seem to be levelling off and may be declining in some countries, reflecting their poor economic performance. By the mid-1990s, per capita expenditure on education in the ESCWA region was reportedly only about 12-19 per cent of the levels of expenditure per capita in the more industrialized countries. In addition, Singapore and Hong Kong, two Asian tigers, spend about 1.53 times the amount spent by ESCWA member countries on average. Among the ESCWA member countries, Saudi Arabia spends the most on education (\$898 per student), followed by Kuwait (\$763) and Bahrain (\$478). Yemen spends the least on education (\$47 per student), and Lebanon spends the second lowest amount (\$88).²⁷

²⁶ Annex figures B.F.I and B.F.II contained in annex B to this study show that what might have led to the levelling of public spending on education as a percentage of GDP is the lack of change in Saudi Arabia's public spending, as well as Egypt's decline in spending.

²⁷ Lebanon's small amount of public spending on education can be explained by the fact that its education system is, to a large extent, private.

TABLE 3A. PUBLIC SPENDING ON EDUCATION AS A PERCENTAGE OF GDP

	As a percentage of GDP							
	1975	1980	1985	1990	1995	1997	2001	Average ^{a/}
Bahrain	..	2.8	3.8	4.1	3.6	3.6	3.2	3.7
Egypt	5.0	5.2	5.7	3.9	4.7	4.9	..	4.9
Jordan	3.8	6.8	6.8	8.1	8.2 ^{b/}	6.3	4.6	5.9
Kuwait	3.2	2.8	5.5	4.8	6.1	6.1	..	5.9
Lebanon	..	..	..	..	2.7	2.4	2.9	2.5
Oman	1.3	1.9	3.6	3.2	3.9	3.4	3.9	3.3
Saudi Arabia	7.9	4.1	7.5	6.5	5.5	6.7	..	6.9
Syrian Arab Republic	4.0	4.6	6.1	4.0	3.2	2.8	4.1	4.3
United Arab Emirates	0.9	1.3	1.8	1.8	1.9	1.8	..	1.8
Yemen	..	..	..	..	4.5	5.2	10.0	6.6
ESCWA region ^{b/}	5.0	4.0	6.0	5.1	4.8	5.2	..	5.4
Norway	6.2	6.3	5.8	7.1	8.0	..	..	7
United States	7.3	6.6	4.8	5.1	..	..	..	6
Hong Kong	2.5	2.4	2.8	2.8	2.9	..	..	2.7
Singapore	2.9	2.7	4.6	3.1	3.1	..	..	3.5

Source: ESCWA secretariat calculations, based on World Bank, World Development Indicators), available at <http://www.worldbank.org>.

Note: Per capita public spending is calculated by multiplying public spending on education as a percentage of GDP by GDP per capita.

a/ Arithmetical average of individual national values available (1975-2001).

b/ ESCWA region averages excluding Lebanon and Yemen for consistency in the time series and Bahrain for 1975. Were Lebanon and Yemen to be included, public spending as a percentage of GDP for 1993-1997 would decline by around 0.5 percentage points, and ESCWA region per capita public spending for 1993-1997 would be around \$35 lower.

TABLE 3B. PUBLIC SPENDING ON EDUCATION PER CAPITA

	Per capita PPP dollars							
	1975	1980	1985	1990	1995	1997	2001	Average ^{a/}
Bahrain	..	417	426	535	489	492	467	478
Egypt	72	110	151	105	130	143	..	122
Jordan	86	269	295	286	307	230	167	224
Kuwait	834	518	616	740	1 038	914	..	763
Lebanon	..	..	..	..	103	94	121	88
Oman	100	127	387	337	430	378	476	343
Saudi Arabia	1 552	864	864	717	640	779	..	898
Syrian Arab Republic	85	117	151	98	93	86	127	114
United Arab Emirates	381	558	480	433	337	350	..	439
Yemen	..	..	..	..	31	37	76	47
ESCWA region ^{b/}	286	243	293	246	253	280	..	274
Norway	954	1 221	1 296	1 708	2 227	..	..	1 691
United States	1 357	1 390	1 117	1 335	..	..	..	1 381
Hong Kong	183	269	372	519	631	..	..	419
Singapore	175	244	454	415	551	..	..	420

Source: ESCWA secretariat calculations, based on World Bank, World Development Indicators, available at <http://www.worldbank.org>.

Note: Per capita public spending is calculated by multiplying public spending on education as a percentage of GDP by GDP per capita.

a/ Arithmetical average of individual national values available (1975-2001).

b/ ESCWA region averages exclude Lebanon and Yemen for consistency in the time series and Bahrain for 1975. Were Lebanon and Yemen to be included, public spending as a percentage of GDP for 1993-1997 would decline by around 0.5 percentage points, ESCWA region per capita public spending for 1993-1997 would be around \$35 lower.

D. HOW EDUCATION EXPENDITURE LEVEL AND COMPOSITION ARE RELATED TO INCOME

1. *Relation of educational spending as a percentage of GDP to per capita GDP*

In countries with higher per capita incomes, the public share, as a percentage of total education spending, is also expected to be higher. As explained above, educational spending is directly related to countries' per capita incomes. As income rises, total spending and public spending also rise, with public spending being more responsive than private spending to income changes. The reasons for this include the improved ability of richer countries to collect revenue from growing formal and urban sectors, shifts of population to urban areas, and growth of easier-to-tax enterprises, as well as Governments' choices on whether to improve access to education through public spending rather than private financing.

While it is expected that higher income countries will devote absolutely and relatively more resources to their education sectors, in some ESCWA member countries, there is a substantial disparity concerning public education expenditure and GDP levels. Data from these countries exhibit a slightly negative relation between educational spending as a percentage of GDP and GDP per capita levels (see figure 6 below, which profiles the 10 ESCWA member countries analysed in this section). For example, while Jordan had the seventh-highest income level among the countries in the ESCWA region in 1997,²⁸ it spent 6.3 per cent of its GDP on education, the third highest ratio among all of the ESCWA member countries, after Saudi Arabia (6.7 per cent) and Yemen (6.4 per cent). At the other extreme, the United Arab Emirates, with the highest income level among the countries in the ESCWA region, spent only 1.8 per cent of its GDP on education, the lowest among all of the ESCWA member countries.²⁹ This is probably because of the diversity of approaches to educational financing in the region, a diversity that reflects differences in political systems and economic structures. Education systems based on Socialist principles, such as those in Yemen and Egypt, show relatively high levels of educational spending. Furthermore, in a country such as Jordan, donor countries' direct contributions to improve the education system, as part of their official development assistance packages, might also explain the relatively high education expenditure level. None the less, countries such as Lebanon, with increasingly market-driven economies, show lower levels of Government education spending owing to the great importance of private schooling. A secondary factor that may also contribute to high public education expenditures in the poor nations profiled in this study may be the limited ability of these countries to compile adequate and sufficient data from private sources of financing, which could result in exaggeration of the public share of total education expenditure.

2. *Relation of per capita spending on education with per capita GDP*

There is no doubt that Governments of richer countries usually allocate larger proportions of per capita income to social services, in particular education and health.

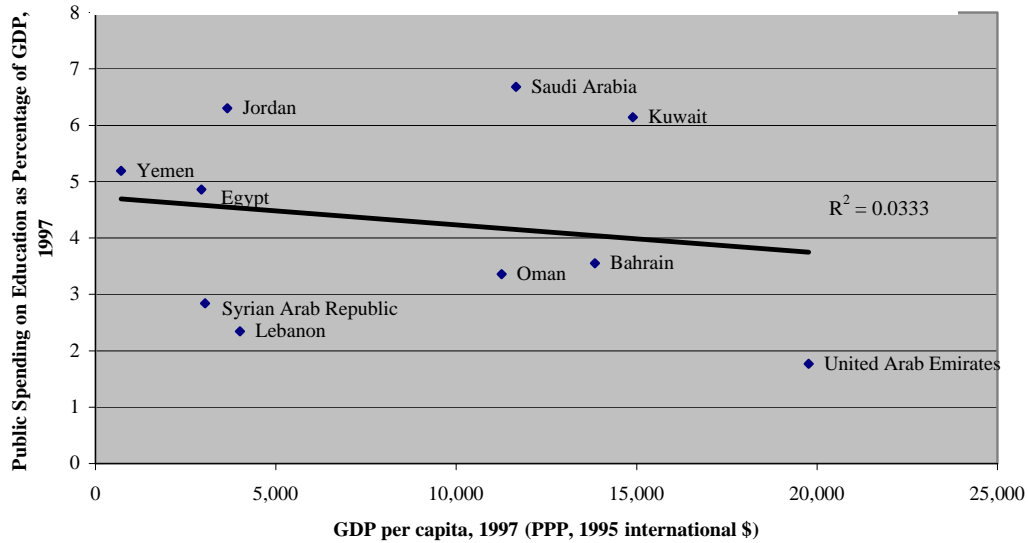
The 10 ESCWA member countries profiled in this section showed a strong positive relation between per capita GDP and per capita educational expenditure. The large intra-regional differentials noted in educational spending reflect the variances in countries' public spending on education in comparison with their GDP per capita, as shown in figure 7 below. The GCC countries' spending is higher than spending in the poorer countries among the more diversified economies. In 1997, Kuwait with the second highest per capita GDP among ESCWA members, spent the most on education per capita (\$914), and Yemen, with the lowest per capita GDP, spent the least on education per capita (\$37). However, there are irregularities within

²⁸ Only 6 of the 10 countries profiled in this section have readily available data on education spending for the year 2001. (Qatar was excluded in this section from the original 11 countries in the study analysis owing to lack of data.) The six countries are Bahrain, Jordan, Lebanon, Oman, the Syrian Arab Republic and Yemen. The available data for the four others (Egypt, Kuwait, Saudi Arabia and the United Arab Emirates) cover only up until 1997, so this study chose to test for this relation with a common year for all the countries in order to include as many countries as possible to ensure a meaningful cross-country analysis.

²⁹ The same negative relation emerges if the average level of spending ratio for each country beginning with 1975 is plotted against its corresponding GDP per capita for the year 2001. That is, for Jordan and Yemen, with their lower GDPs, their average spending on education as a percentage of GDP is higher than spending levels by countries with higher GDPs, such as Bahrain and the United Arab Emirates.

this general pattern. Saudi Arabia, with a lower GDP per capita than Bahrain, spent more on education per capita (\$779) than Bahrain (\$492) did in 1997.³⁰

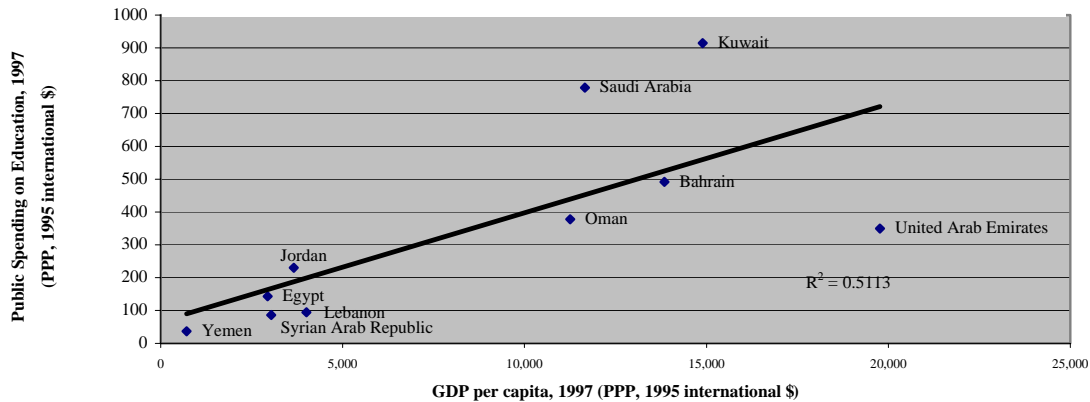
Figure 6. Public spending on education as a percentage of GDP versus GDP per capita, 1997



Source: World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

Figure 7. Public spending on education versus GDP per capita, 1997



Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

³⁰ The same pattern and the deviation around the upward trend arise if the average levels of spending measured in PPP are plotted against the 2001 GDP. For example, Kuwait, with the second highest per capita GDP, spends the second highest amount on education, averaging \$763 per capita. Yemen, with the lowest per capita GDP of ESCWA members, spends the least on education per capita, averaging \$47. Saudi Arabia, with a lower GDP than Bahrain, spends more on education per capita (\$898, the highest amount among ESCWA member countries) than Bahrain does (\$478).

E. HEALTH SPENDING PATTERNS

Tables 4A and 4B below show per capita total health spending in PPP-based United States dollars, total health spending to GDP ratios, public health spending as a share of GDP, and the public spending share of total health spending. The methods through which health systems are financed and the money spent affects the equity of the system and access to it, as well as its economic efficiency and financial sustainability.

TABLE 4A. PUBLIC EXPENDITURE ON HEALTH

	As a percentage of total health spending				As a percentage of GDP			
	1997	1999	2001	Average ^{a/}	1997	1999	2001	Average ^{a/}
Bahrain	70.5	69.3	69.0	69.5	3.4	3.3	2.9	3.2
Egypt	46.3	46.3	49.0	46.6	1.8	1.8	1.9	1.8
Jordan	54.5	50.9	47.1	51.2	4.4	4.4	4.5	4.4
Kuwait	79.5	78.8	78.8	78.9	2.9	3.1	3.0	3.0
Lebanon	31.2	26.7	28.1	28.5	3.7	3.2	3.4	3.5
Oman	81.9	82.4	80.8	81.6	2.8	2.9	2.4	2.7
Qatar	76.8	76.1	73.4	75.4	3.0	2.9	2.2	2.7
Saudi Arabia	77.4	73.8	74.6	75.3	4.1	3.3	3.4	3.6
Syrian Arab Republic	59.8	57.1	53.0	55.9	1.5	1.6	1.8	1.6
United Arab Emirates	76.8	75.8	75.8	76.2	2.8	2.8	2.6	2.8
Yemen	30.8	32.8	34.8	34.7	1.2	1.3	1.6	1.4
ESCWA region ^{b/}	52.4	51.6	52.7	52.2	2.3	2.2	2.3	2.2
Norway	84.3	85.2	85.5	85.0	6.6	7.3	6.8	6.9
United States	45.3	44.2	44.4	44.5	1.4	1.5	1.3	1.5
Singapore	39.0	38.3	33.5	37.5	2.1	2.1	2.1	2.2
Thailand	57.2	57.6	57.1	58.0	5.9	5.7	6.2	5.9

Source: ESCWA secretariat calculations, based on World Health Organization, available at www.who.int.

a/ Arithmetical average from 1997-2001 (all five years included).

b/ ESCWA regional averages are calculated as the population weighted average of the individual national values available.

TABLE 4B. TOTAL EXPENDITURE ON HEALTH

	As a percentage of GDP				Per capita (PPP\$)			
	1997	1999	2001	Average ^{a/}	1997	1999	2001	Average ^{a/}
Bahrain	4.8	4.8	4.1	4.6	702	670	664	664
Egypt	3.9	3.9	3.9	3.9	121	134	153	134
Jordan	8.2	8.6	9.5	8.7	323	350	412	358
Kuwait	3.7	3.9	3.9	3.9	638	617	612	631
Lebanon	11.8	12.1	12.2	12.2	642	719	673	706
Oman	3.4	3.5	3.0	3.3	348	357	343	351
Qatar	3.9	3.8	3.1	3.6	842	874	782	845
Saudi Arabia	5.3	4.5	4.6	4.8	680	583	591	620
Syrian Arab Republic	2.5	2.8	3.4	2.9	194	233	266	232
United Arab Emirates	3.6	3.7	3.5	3.7	727	710	921	779
Yemen	3.8	4.0	4.5	4.1	52	58	69	60
ESCWA region ^{b/}	4.3	4.3	4.5	4.4	260	261	283	268
Norway	7.8	8.5	8.0	8.1	2 193	2 550	2 920	2 571
United States	13.0	13.0	13.9	13.2	3 939	4 287	4 887	4 350
Singapore	3.7	4.0	3.9	3.9	834	947	993	925
Thailand	3.7	3.7	3.7	3.7	247	233	254	242

Source: ESCWA secretariat calculations, based on World Health Organization, available at www.who.int.

a/ Arithmetical average from 1997-2001 (all five years included).

b/ ESCWA regional averages are calculated as the population-weighted average of the individual national values available.

1. *Total health spending as a percentage of GDP*

The relative importance that a given country ascribes to health care is reflected in how much of that country's resources are devoted to health care, as illustrated by the percentage of GDP dedicated to health care spending. In 2001, the ESCWA member countries allocated some 4.5 per cent of their GDP to the health sector, compared with 8 per cent in Norway, 13.9 per cent in the United States, and 3.7 per cent in Thailand (see table 4B).

Among the ESCWA member countries profiled in this study, the values representing the average health sectors' consumption of GDP for the period 1997-2001 vary greatly, as can be seen in table 4B. The Syrian Arab Republic spends the lowest amount (2.9 per cent of GDP). It is interesting to note that Yemen, with a relatively weak economy and poor health indicators, spends larger proportions of its GDP on health care (approximately 4.1 per cent) than countries with stronger economies, such as the GCC countries. This may be due partly to the already low GDP levels of Yemen and thus low total absolute amounts spent on health care.

The more market-driven health sectors of Jordan and Lebanon spend high proportions of their GDP on health care (8.7 per cent and 12.2 per cent respectively), more than the average of the reported comparator countries members of the OECD and the Asian tigers. This brings up issues of sustainability as to whether these countries can sustain such high expenditures, particularly with rapidly growing populations and not so rapidly growing economies.

Table 4A indicates that, for the ESCWA region as a whole, the population-weighted average public share of spending is 52.2 per cent for the period 1997-2001. This is based on individual percentages ranging from 28.5 per cent in Lebanon to over 80 per cent in Oman. Clearly, private spending is an exceptionally important source of health care spending. The public share of 52.2 per cent in the ESCWA region is relatively low in comparison with the 85 per cent in the high-income country of Norway and the 58 per cent in the high-performing Asian country of Thailand. This observation has an important policy implication. Since half of health spending in the ESCWA region is privately financed, policy makers ought to concentrate on making efficient use of both public and private sources of funding.

2. *Per capita total health spending in PPP-based United States dollars*

Average per capita health spending varies to a great extent by country as well as by region. Developed countries spend more than ESCWA member countries. For example, on average the United States and Norway spend respectively more than 16 and 10 times the amount spent in the ESCWA region (\$268). Singapore, an Asian tiger, spends more than 3.5 times the amount spent by ESCWA member countries, while Thailand spends an amount comparable to that in the ESCWA region. Total spending on health in the more diversified economies is in general much lower than that in the GCC countries. Among the ESCWA member countries for the period 1997-2001, Qatar spends the highest on health (\$845), followed by the United Arab Emirates (\$779) and Lebanon (\$706). Yemen spends the least on health (\$60), followed by Egypt (\$134).

While five countries (Bahrain, Kuwait, Oman, Qatar and Saudi Arabia) experienced a marginal decline in their spending per capita, the other six ESCWA member countries covered in this study, mainly non-GCC countries, experienced a marginal increase in their health spending per capita. As noted below, the positive relation between public spending and GDP might explain the marginal change in health spending during the past three decades.

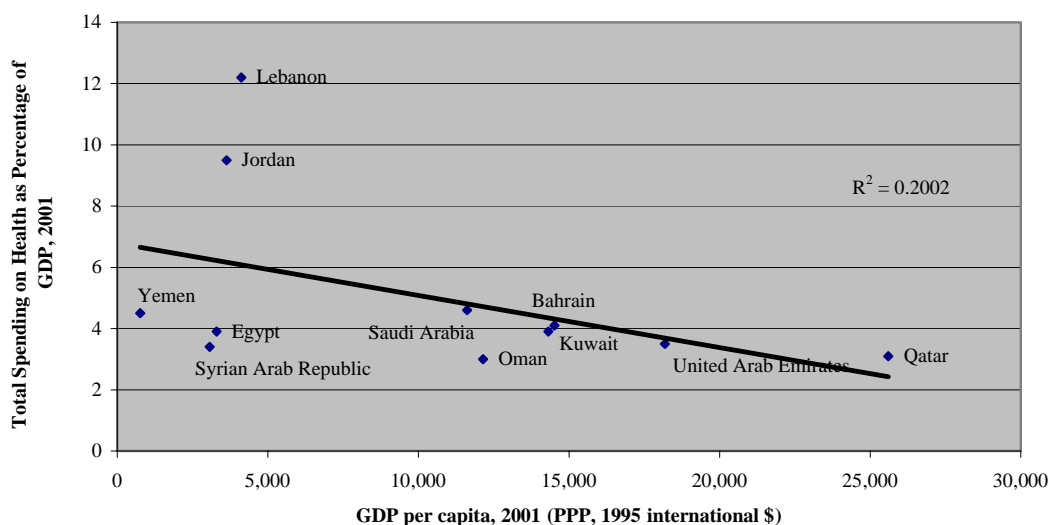
F. HOW HEALTH EXPENDITURE LEVEL AND COMPOSITION ARE RELATED TO INCOME

1. *Relation of total health expenditure (public and private) as a percentage of GDP with per capita GDP*

On a global scale, there is a positive relation between total health expenditure as a percentage of GDP ratios and per capita GDP (higher income countries devote absolutely and relatively more resources to their health sectors). However, data from the ESCWA member countries for the period 1997-2001 show a negative correlation between total health spending as a percentage of GDP and GDP per capita level

(figure 8). For example, while Lebanon has the sixth-highest income level among the countries in the ESCWA region, it spends on average more than 12.2 per cent of its GDP on health, the highest among all of the ESCWA member countries, followed by Jordan (seventh-highest income), which spent 8.7 per cent of its GDP on health. At the other extreme, Oman, with the fourth-highest income level among the countries in the ESCWA region, spent 3.3 per cent of its GDP on health, the lowest among all of the ESCWA member countries, followed by the United Arab Emirates (highest income) which spent only 2.9 per cent of its GDP on health.

Figure 8. Total spending on health care as a percentage of GDP versus GDP per capita, 2001



Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

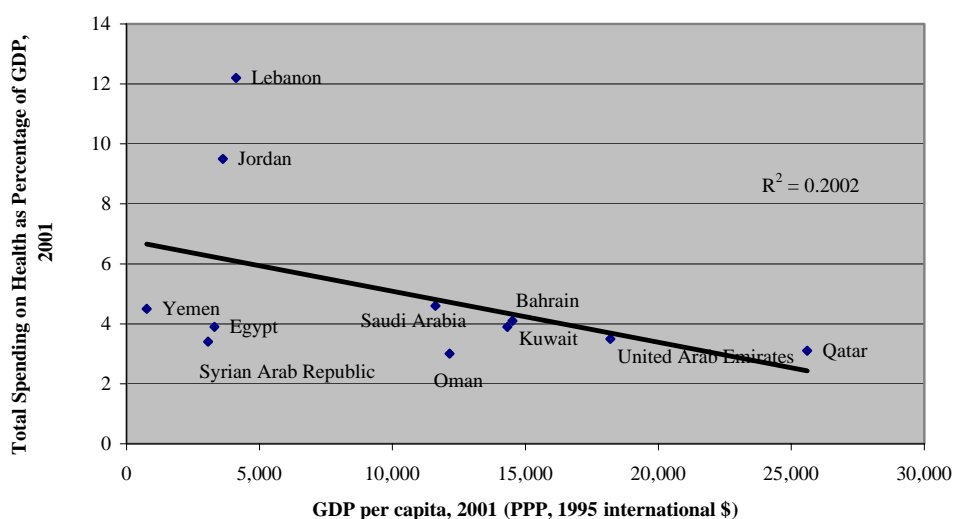
Like the education sector, there is a diversity of approaches to health care financing in the region that seems to reflect differences in political systems and economic structures. Health systems based on Socialist principles, such as those in Yemen and Egypt, show relatively high levels of public health spending. In a country such as Jordan, donor countries’ direct contributions to improve the health system, as part of their official development assistance packages, might also explain the relatively high health expenditure level. None the less, countries such as Lebanon, with increasingly market-driven economies, have lower levels of government spending on health. As in the education sector, the accuracy of figures on the health sector is affected by the limited ability of these countries to compile adequate and sufficient data from private sources of financing, which can result in exaggeration of the public share of total health expenditure.

2. Relation of per capita total health spending with per capita GDP

Globally, there is a strong positive relation between GDP per capita and health spending per capita. Richer countries usually allocate larger proportions of per capita income to health care services. This pattern might possibly result from the increased ability of individuals within these countries to afford health care, as well as Governments’ ability to increase their collection of tax revenues.

Like almost all previous analyses of this question (Musgrove 1996; Schieber and Maeda 1999), figure 9 below shows that, at the low incomes typical of the more diversified economies, total spending on health is about \$400. Spending on health rises to over \$600 in most GCC countries, however. This increase in spending relative to income is not surprising, given the contribution health care can make to welfare.

Figure 9. Total spending on health versus GDP per capita, 2001



Source: World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

In line with the global trend, the 11 ESCWA member countries analysed in this study show a strong positive relation between per capita GDP and per capita health expenditure (figure 9). In 2001, the United Arab Emirates, with the second highest per capita GDP in the ESCWA region, spent the most on health care per capita (\$921). Yemen, with the lowest per capita GDP in the ESCWA region, spent the least on health care per capita (\$69). However, irregularities can be discerned within this general pattern. Lebanon, with its lower GDP, spends more on health per capita (\$673) than Kuwait (\$612), Saudi Arabia (\$591) or Oman (\$343). Jordan spends more on health than Oman, a country with higher GDP. As noted above, this anomaly may be due in part to Jordan’s spending high proportions of its GDP on the public delivery sector, and from donors’ direct contributions to the Jordanian health sector.

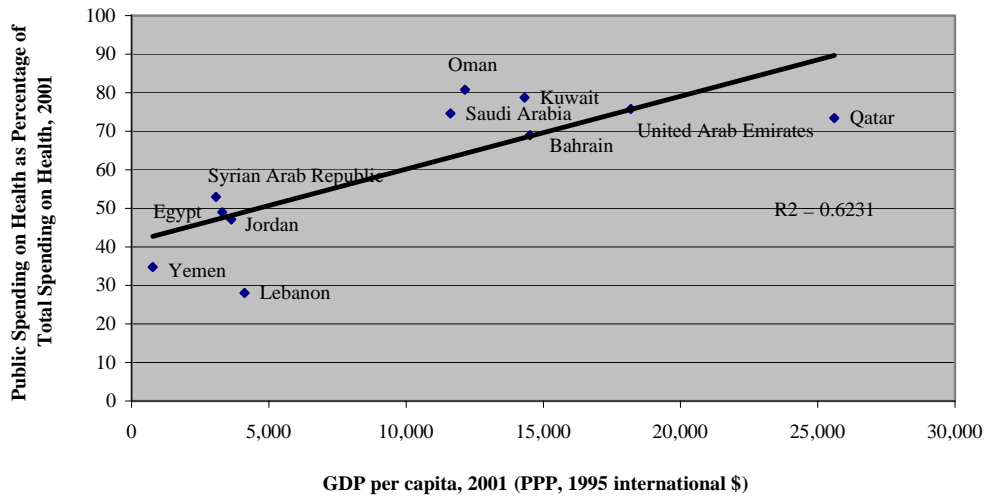
3. Relation of public health spending as a share of total health spending with per capita GDP

Health expenditures are closely linked to an individual country’s income. As countries’ incomes increase, a larger share of total health spending derives from public sources. This seems to reflect not only the relatively greater revenue-raising capacity of higher-income countries but also governments’ choice to counteract health sector and health insurance market failures through public spending rather than private financing.

On a global scale, in those countries with higher per capita incomes, the public share as a percentage of total health spending is also higher (Schieber and Maeda 1999).

The data on the ESCWA member countries show that they follow a similar pattern, with a positive relation between the public share of health spending and the GDP level (see figure 10 below). As figure 10 shows, the share that is financed directly by the Government increases from a maximum of 52 per cent in the more diversified economies to over 70 per cent in some of the GCC countries. The large intraregional differentials in public spending shares reflect the prevailing wide variability with regard to the upward trend in public shares relative to per capita GDP, as shown in figure 10. The GCC countries’ public share is higher than those in the more diversified economies, which have much lower incomes.

Figure 10. Public spending on health as a percentage of total spending on health versus GDP per capita, 2001



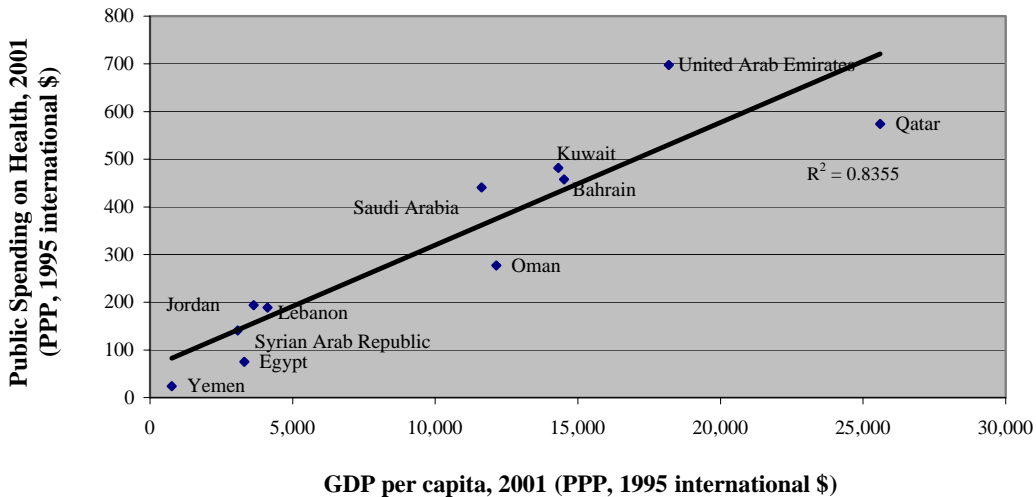
Source: World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

However, there is a slight disparity concerning public health expenditure and GDP levels. For example, the Syrian Arab Republic, Egypt and Jordan have a higher public share of health spending than Lebanon, a country with a stronger economy and a higher GDP per capita. Oman and Kuwait also have a higher public share of health spending than Qatar or Bahrain, both countries with higher incomes.

While public health spending per capita exhibits a similar positive pattern with GDP per capita (see figure 11 below), public health spending as a percentage of GDP showed no significant relation with GDP per capita (see figure 12).

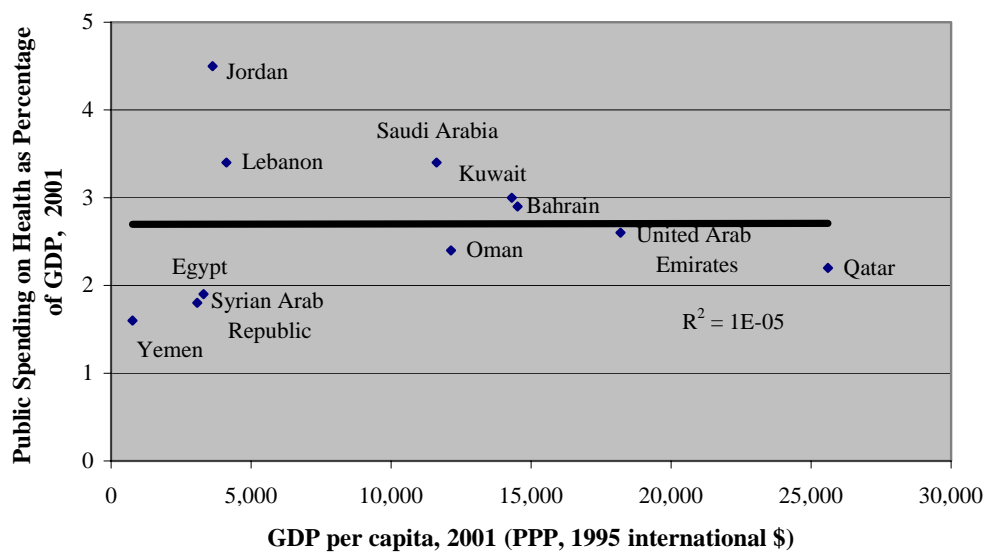
Figure 11. Public spending on health versus GDP per capita, 2001



Source: World Bank, *World Development Indicators* and World Health Organization.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

Figure 12. Public spending on health as a percentage of GDP versus GDP per capita, 2001



Source: World Bank, *World Development Indicators* and World Health Organization.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

IV. SOCIAL TRENDS

A. EDUCATION IN THE ESCWA REGION

The countries in the ESCWA region have made considerable progress in increasing access to and improving the quality and more equitable distribution of education resources in the past three decades. This is reflected in the stable upward trend in literacy rates, both adult and youth rates, and greatly enlarged net primary school enrolment in line with the increasing growth of the school-age population. In addition to its positive impact on productivity, the social benefits of education have been great: literacy, life expectancy, infant mortality and many more social indicators have improved significantly over the past three decades. This is also reflected in the significant and highly positive correlation coefficient between the different health and education indicators.³¹ However, much remains to be done, and considerable new challenges threaten to erode many of the advances that have been made.

Achievements and improvements

The annex tables in annex B to this study include levels (achievements) and changes (improvements) in adult and youth literacy indicators, as well as in primary school net enrolment rates for the ESCWA region and other regions of the world.

In 1990, net enrolment in primary education in the ESCWA region was just 76 per cent (annex table B.3), compared with 97 and 89 in East Asia and in Latin America and the Caribbean, and the net enrolment rate in of 95 in the middle-income countries.

On average, in the year 2000, and despite the increase in access to education, net enrolment rate at the primary school level in the ESCWA region was estimated at a low rate of 82 per cent, a rate equal to that found in the much poorer region of South Asia, but still below the world rate of 88 per cent enrolment (annex table B3). The rate in the ESCWA region for 2000 was also still considerably below the 92 per cent reported for middle income countries, and well below the 95 per cent reported for the countries of Latin America and the Caribbean. However, comparisons of averages conceal disparities in the rates reported for the countries in the ESCWA region. In the ESCWA member countries for which data are available, net primary enrolment rates ranged from a low of 59 per cent in Saudi Arabia to a high of 96 per cent in the Syrian Arab Republic, according to the World Bank World Development Indicators. However, national sources indicated that in 2000 the net school enrolment ratio for Saudi Arabia was a significantly higher 96.1 per cent (see annex table C.1).³²

In a comparison of the 11 ESCWA member countries covered in this study, annex table B.3³³ shows that with regard to primary school net enrolment indicators in 2001, 7 of the 11 countries were above the regional average of 83. The best performing country in terms of enrolment in the year 2001 was the Syrian Arab Republic, with a net enrolment of 98 per cent, followed by Qatar (94), Bahrain and Jordan (91), and Lebanon and Egypt (90). For the same year, net enrolment figures in Yemen and Oman were 67 per cent and 75 per cent respectively. These results are based on World Bank data. National data give a different ranking.

As shown in annex table B.3, the improvement in the primary school enrolment rate for the ESCWA region was 9.2 per cent, smaller than the improvement rate in Latin America and the Caribbean (10.6 per cent), but above that of East Asia (-5.2 per cent) and the OECD member countries (3.2 per cent).³⁴

³¹ Results of correlation tests are reviewed below.

³² It should be emphasized that enrolment rates reported in this study diverge significantly from those provided by national sources. In general, and apart from Kuwait, national sources report higher rates. For more on this issue, see chapter II, section C, on data sources and their quality and the reasons for the decision to use World Development Indicators rather than national sources.

³³ Based on World Bank data.

³⁴ The ESCWA region's improvement rate would have been higher if data on enrolment ratios had been taken from national sources instead of the World Bank World Development Indicators.

Improvement has been uneven across countries. Net enrolment rates actually fell in some GCC countries (Bahrain, Saudi Arabia and the United Arab Emirates). The proportion of children of official school age enrolled in school out of all the population at the corresponding official school age dropped from 94 per cent in 1990 to 81 per cent in 2001 in the United Arab Emirates, from 63 per cent in 1995 to 59 per cent in 2001 in Saudi Arabia, from 99 per cent in 1990 to 91 per cent in 2001 in Bahrain, and from 93 per cent in 1996 to 90 per cent in 2001 in Egypt. A lack of access to primary education remains a major challenge in many countries.

With regard to adult literacy (see annex table B.4), in the year 2000 the adult literacy rate in the ESCWA region reached 62 per cent, a rate equal to that in the much poorer region of sub-Saharan Africa, but below the world average of 79 per cent, and considerably below the reported 90 per cent for middle-income countries, and the reported 89 per cent for Latin America and the Caribbean.

Annex table B.4 shows that eight ESCWA member countries were above the regional average (65 per cent) for the adult literacy rate in 2002. The best performing country in terms of adult literacy was Jordan (91), followed by Bahrain (88.5), and Qatar (84). The worst performing country was Yemen (49), followed by Egypt (55.6).³⁵

In the year 2000, the youth literacy rate in the ESCWA region was 78 per cent (see annex table B.5). This rate is above that for the much poorer region of South Asia (56 per cent), but below the world average of 87 per cent. The ESCWA region average is also considerably below that reported for middle-income countries (97 per cent) and for the countries of Latin America and the Caribbean (95 per cent).

Comparing countries inside the ESCWA region with regard to youth literacy, annex table B.5 shows that eight ESCWA members were above the regional average of 81 per cent for 2002. The best performing countries in this respect were Bahrain, Jordan and Oman, all with a percentage of 99. The country with the lowest percentage was Yemen (68), followed by Egypt (73).

Literacy increased significantly in almost all countries in the ESCWA region from 1975 to 2002, more than doubling in those countries, such as Oman and Yemen, which started with a low base. Improvements in the literacy rates (youth literacy improved by 60 per cent and adult literacy improved by 76 per cent) for the period 1975-2000 were larger than in any other region, with the exception of sub-Saharan Africa, where youth literacy improved by 67 per cent and adult literacy by 97 per cent. This improvement was mainly due to the fact that sub-Saharan Africa started with lower rates of literacy in 1975 than those of the countries in the ESCWA region.

Another measure of educational attainment is the average number of years of schooling. This measure has largely been used as a proxy for human capital (Barro 1991) and reported on for the population in the 15-24 age group. Annex table B.6 made use of the latest available information from Barro and Lee (2001) and the new data set on human capital from Cohen and Soto (2001).

Annex table B.6 indicates that, as a result of government investment in education, there has been dramatic progress in the average educational accomplishment of the labour force. The table shows that, according to Barro and Lee, the overall simple average of years of schooling for some of the countries in the ESCWA region (Egypt, Iraq,³⁶ Jordan and the Syrian Arab Republic) for which the relevant data were available was only 3.2 years in 1980. The table also shows that, according to Cohen and Soto, the average was 4.3 years of schooling for the same year. This measure increased progressively to reach 5.54 years (Barro and Lee) and 7.5 years (Cohen and Soto) by the year 2000. However, for the year 2000, according to Barro and Lee, the population-weighted average of educational attainment in ESCWA member countries Bahrain, Egypt, Iraq, Jordan, Kuwait, the Syrian Arab Republic and the United Arab Emirates was lower than the world average of 6.66, and also lower than the average in all other regions except South Asia and sub-Saharan Africa. The table also shows that, according to Barro and Lee, among the ESCWA member

³⁵ Again, great caution must be exercised with regard to the data on youth literacy, since the two sources of data diverge significantly, especially in Kuwait, Qatar and the United Arab Emirates. The rates reported in this study underestimate youth rates in comparison with national data sources.

³⁶ Iraq is included in the table for purposes of comparison.

countries for which the relevant data were available, the best performing country in terms of average years of schooling was Jordan, with 6.91 years. Cohen and Soto, also found that Jordan was the best performer with regard to average years of schooling (10.28), an average that is higher than all other regions except for high-income countries.

While not a final system objective, this educational attainment is an important national achievement. According to the World Bank (1999), this level indicates an approximate “take-off” point, a threshold of education in the workforce at which point increasing returns to scale for human capital start to accumulate. When this minimum average attainment is present, the quality of labour arrives at a critical mass allowing greater overall productivity.

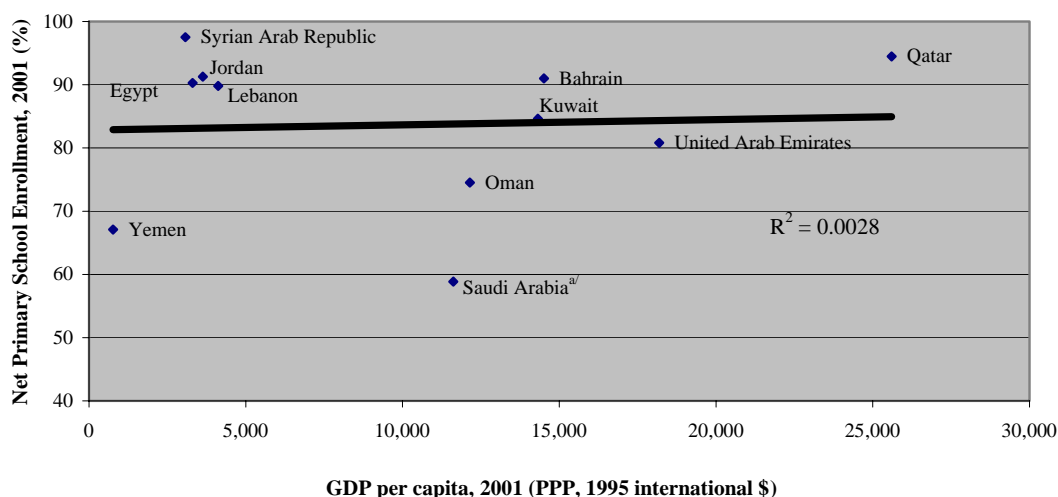
Irrespective of the scarcity of information, what is known about the quality of education in the region is not encouraging. With regard to the middle-income ESCWA member countries and the Islamic Republic of Iran, only the Islamic Republic of Iran and Jordan have participated in international assessment studies. Jordan participated in the 1991 International Assessment of Educational Progress (IAEP) and in the 1995 Third International Mathematics and Science Study (TIMSS). Jordan was near the bottom in math and science in the international assessments in which the country participated. In addition, in Jordan a national assessment found that students are not meeting learning objectives in Arabic, math and science. While end-of-stage promotion exams offer some national information as to quality, they cannot be used for cross-country performance comparisons. In Egypt, one study suggested that acquisition of basic literacy and mathematics skills had deteriorated since the late 1980s (World Bank 1999).

B. EXPLAINING EDUCATION OUTCOMES

1. GDP per capita and education outcomes

Enrolment rates in the ESCWA member countries are not strictly linked to income, as shown in figure 13 below. There is no significant relation between per capita income and enrolment rates, and variability and inconsistencies exist among countries, which indicates the strong influences of social and cultural factors as well as the differences in the availability, accessibility and efficiency of spending for education as well as the education programmes. In general, girls’ educational levels lag behind those of boys in the region, and such gender differences are believed to hinder improvements in general educational status.

Figure 13. GDP per capita versus primary school enrolment, 2001



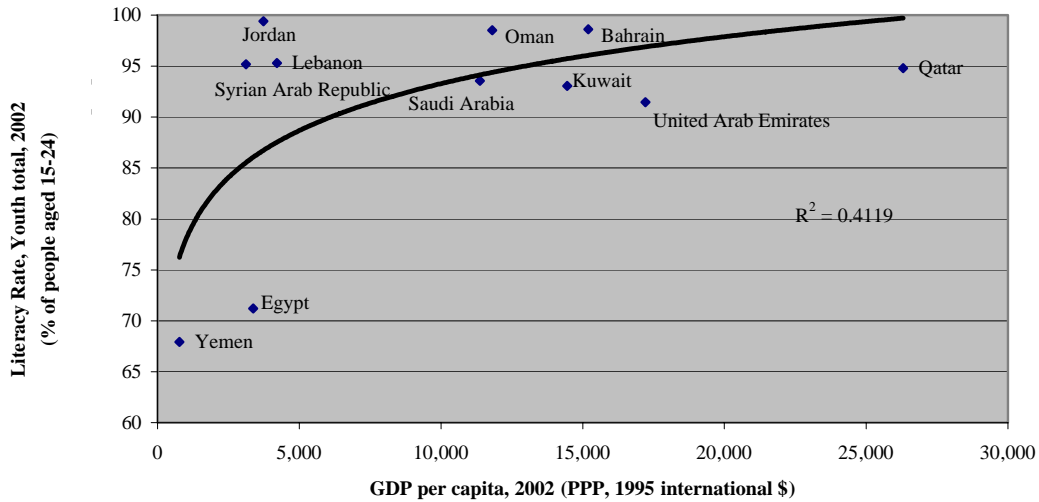
Source: World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

a/ With regard to Saudi Arabia, national sources report much higher rates of school enrolment.

Unlike school enrolment rates, both youth and adult literacy rates are linked to income among the countries in the ESCWA region, as shown in figures 14 and 15 below. There is a statistically significant relation overall between per capita income and literacy rates, with some variability and inconsistencies among the countries. Exceptions to the overall trend are Jordan, Lebanon and the Syrian Arab Republic, which have lower GDPs than Saudi Arabia, Oman and the United Arab Emirates although they have significantly higher literacy rates (both youth and adult).

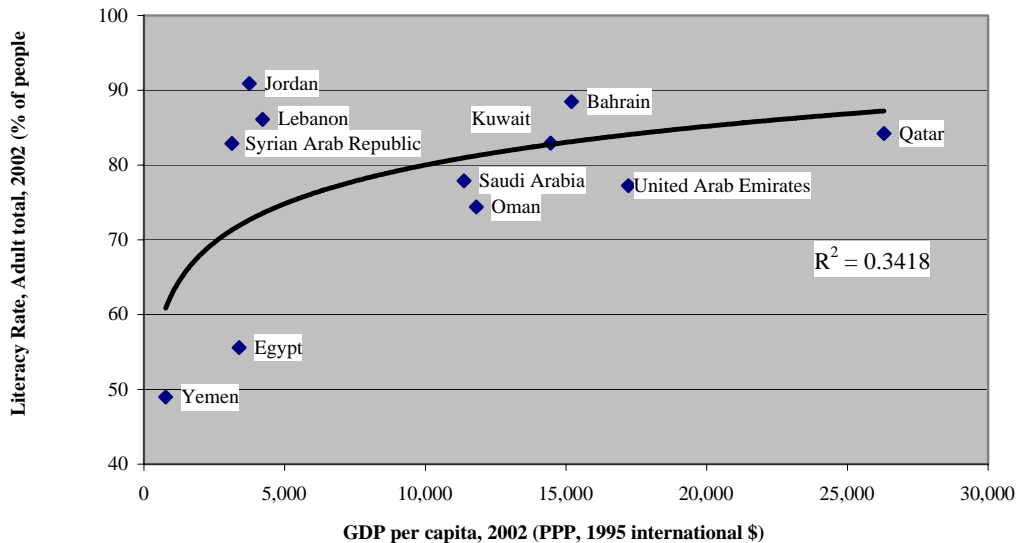
Figure 14. GDP per capita versus youth literacy, 2002



Source: World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

Figure 15. GDP per capita versus adult literacy, 2002



Source: World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

Figures 13, 14 and 15 demonstrate clearly that some countries reach educational levels far above those that would seem to be dictated by their economies, while others are far below what would seem to be dictated by their economies. Chapter V of this study explores the reasons behind this apparent contradiction.

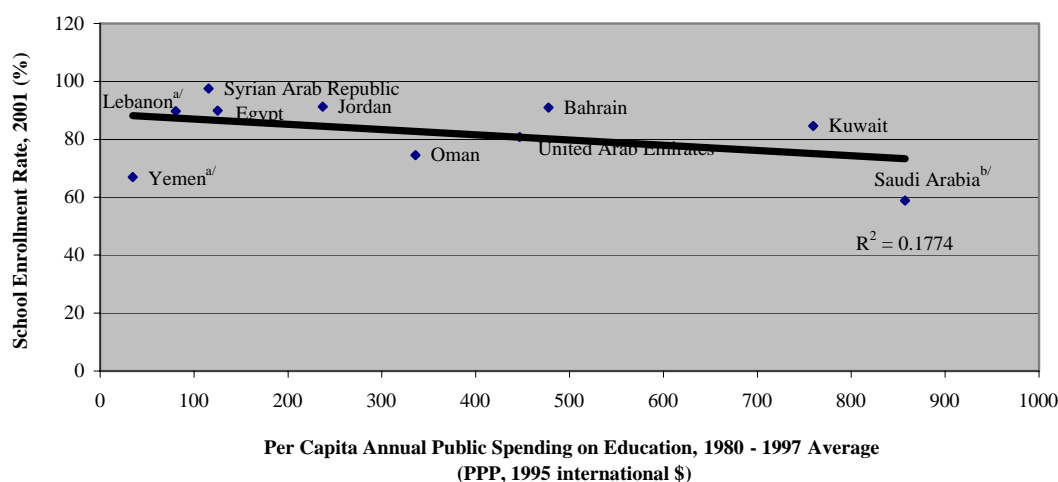
2. Education expenditures and education outcomes

Economic levels are an important determinant of educational outcomes. Major improvements in education have been achieved over the past three decades, and they can be credited in part to general social and economic development. However, broad differences in economic development and educational status persist in the region.

When education outcomes (youth literacy, adult literacy and enrolment rates) are charted against the matching education expenditures per capita, there is no pattern of rising education attainment correlated with countries that allocate more financial resources to the education sector with regard to net enrolment ratio (figure 16). As for adult and youth literacy, however, figures 17 and 18 show that spending on education is—however weakly—positively related to these two education indicators.

According to the data, there is considerable inconsistency regarding educational spending and education outcomes. On average, the GCC countries have spent substantially more on education (Saudi Arabia with \$898 per capita, Kuwait with \$763 per capita) than the more diversified economies in the ESCWA region (the Syrian Arab Republic with \$114 per capita, Jordan with \$224 per capita), as shown in tables 3A and 3B. Spending levels in Saudi Arabia and Kuwait are also much higher than in the high-performing Asian countries and comparable to those in developed countries (the United States and Norway). However, according to World Bank data, enrolment rates in the GCC countries are not only lower than in the comparator countries but also lower than in the more diversified economies, with the exception of Yemen. For example, the Syrian Arab Republic has on average spent only \$114 per capita—the third lowest amount in the ESCWA region—but it achieved the highest school enrolment rate in 2001 (98 per cent). If the World Bank data are accurate, this suggests that the GCC countries’ considerable investment in education is relatively less efficient and more inequitably concentrated on a privileged few than in the more diversified economies.

Figure 16. Public spending on education and school enrolment



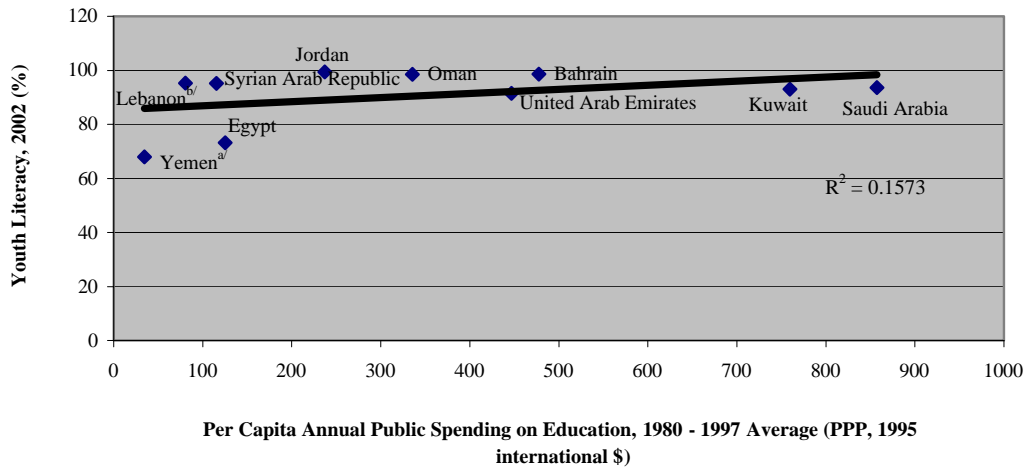
Source: World Bank, *World Development Indicators*.

Note: R^2 indicates the percentage of variation in the dependent variable accounted for by the regression line; it therefore measures the “goodness of fit” of the regression line.

^{a/} Owing to the lack of data, average public spending in Lebanon and Yemen refers to a shorter time period than the one indicated.

^{b/} National sources report much higher school enrolment ratios in Saudi Arabia.

Figure 17. Public spending on education and youth literacy



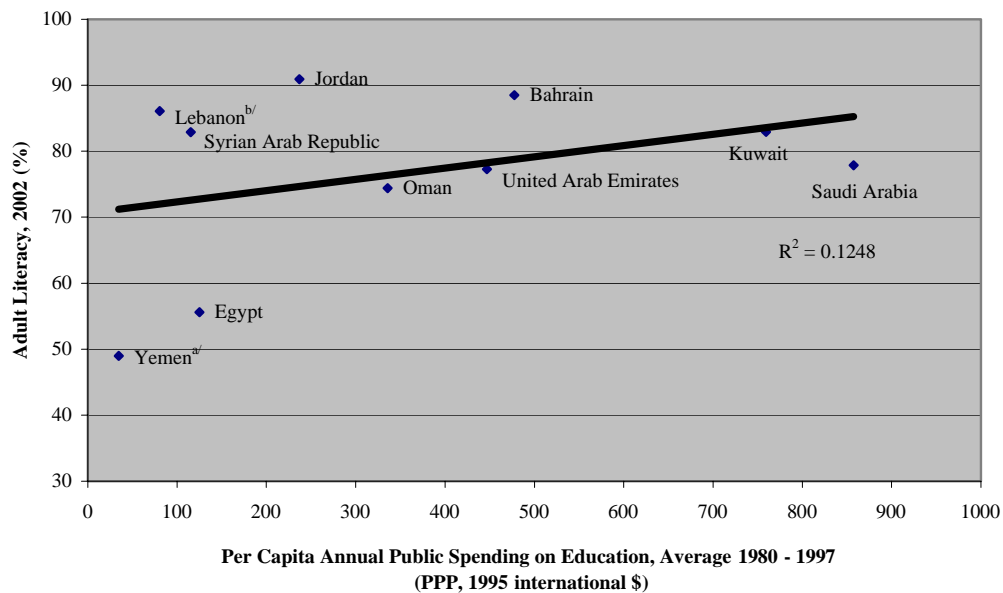
Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line; it therefore measures the “goodness of fit” of the regression line.

^{a/} Youth literacy rate in Lebanon refers to the year 2000.

^{b/} Owing to the lack of data, average per capita public spending in Lebanon and Yemen refers to a shorter time period than the one indicated.

Figure 18. Public spending on education and adult literacy



Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

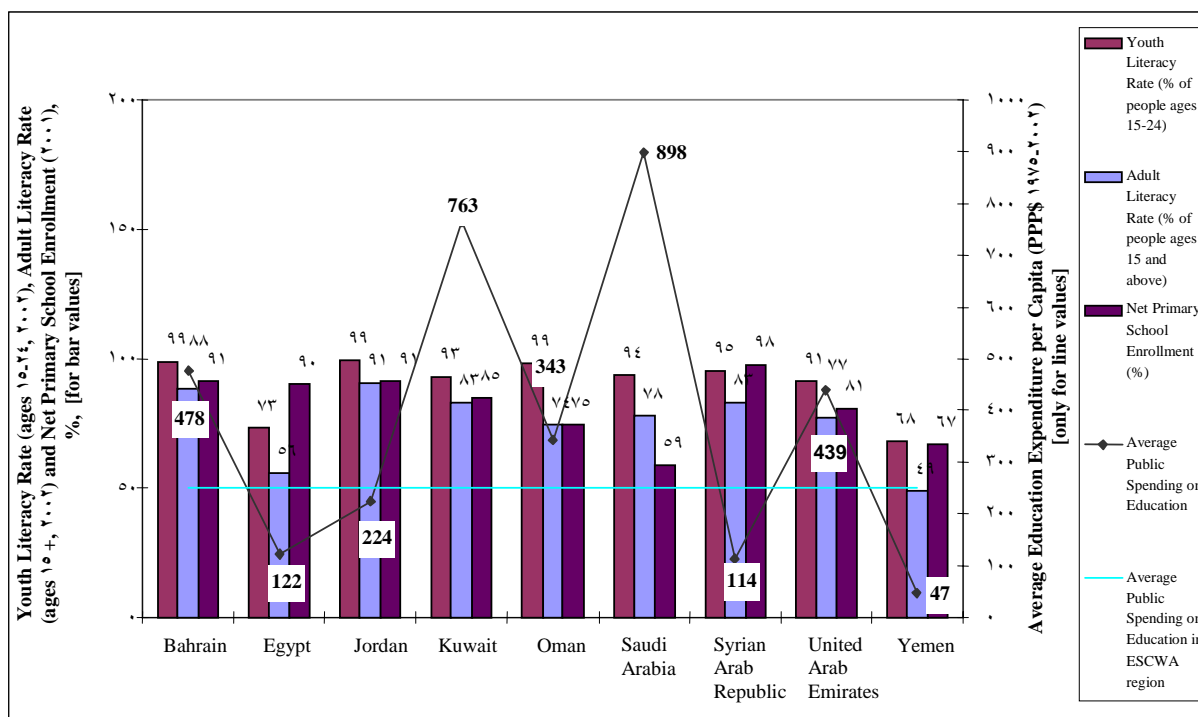
Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line; it therefore measures the “goodness of fit” of the regression line.

^{a/} Youth literacy rate in Lebanon refers to the year 2000.

^{b/} Owing to the lack of data, average public spending in Lebanon and Yemen refers to a shorter time-period than the one indicated.

The above finding regarding educational expenditure and outcome is further illustrated in figure 19 below. The figure shows the relation between the level of education attained by the year 2002 (measured by the three education indicators) and the average spending on education for the period 1975-2002. It is clear that there is inefficiency in spending in some member ESCWA countries, and that some countries have achieved higher education levels despite their relatively moderate spending levels.

Figure 19. Average education expenditure per capita and education indicators



Source: ESCWA secretariat calculations, based on World Bank, *World Development Indicators*.

3. Why public spending is weakly related to outcomes

The amount spent on education is certainly important, but so too are other factors, such as the allocation and distribution of resources within the education sector, health, income of individuals and basic infrastructure such as schools, teachers and teaching, training programmes, qualified teachers and curricula.

The extensive body of cross-country studies on public spending and human development appears ambiguous at best. The results of different studies on industrial and developing countries are summarized in Hanushek (1995) and Kremer (1995) respectively, although they arrive at different conclusions regarding the effectiveness of public spending. As noted above, in developing countries the relation between resources spent and educational outcome appears to be weak.

This leads to the question of why public spending is not strongly related to outcomes. It is instead the quality and distribution of educational services and the productivity of human capital that have the greatest impact. The World Bank's *World Development Report* (2004) and Thomas and others (2000 a, b) show that in developing countries that already allocate a considerable proportion of public financing to social services, further spending may not improve education outcomes for the poor. Reallocating public spending and improving its effectiveness can improve outcomes, particularly when public resources are subsidizing education for the affluent. Economy-wide strategies and policies also matter; subsidies to attract foreign capital may, under certain conditions, bias the rate of return against human capital. Distortions in the labour

market can also create disincentives for investing in education. In addition, to be productive, people must have access to other productive assets, including credit, capital, land, and job opportunities in open and competitive markets (Thomas and others, 2000 b).

Another important factor that might explain the weak relation between educational expenditure and education outcomes is the quality of the education itself. Because private education is feasible only for the affluent, poor-quality public schools severely decrease the income-generating potential of children who come from poor families

C. HEALTH IN THE ESCWA REGION

While there has been a considerable improvement in life expectancies, as well as a substantial reduction in mortality rates in the ESCWA region in the past three decades, these improvements have been mixed among the countries of the region, according to the data and estimates.

Achievements and improvements

With regard to infant mortality rates (IMR), the main trend in the ESCWA region has been an impressive drop in the IMR, from 119 per 1000 in 1975 to 35 per 1000 in 2002, although this is still considered unacceptably high, since countries with a GDP corresponding to that of ESCWA members as a region had, on the whole, lower mortality rates. These countries included middle-income countries (IMR of 30) and Latin America and the Caribbean (IMR of 28).

Infant mortality decreased significantly in almost all countries from 1975 to 2002, by more than 75 per cent in countries that started with high rates (Egypt, Oman and Saudi Arabia). The improvement in IMR (71 per cent) was larger than in any other region except the OECD.³⁷

Differentials in under-five mortality rates show similar patterns. Between 1975 and 2002 the under-five mortality rate in the ESCWA region fell from about 174 to 43 deaths per 1000 live births, a reduction of 75.1 per cent (annex table B.7), largely as a result of improved living conditions and the availability of medicines. This was accompanied by a substantial reduction in infant mortality rates. Of the 11 ESCWA member countries covered in this study, eight achieved reductions of their under-five mortality rates by at least 67 per cent over the past three decades (annex table B.7). Yemen had the lowest ranking in this respect, with a decline of only 55 per cent in under-five mortality over the past three decades. The reason for Lebanon's relatively small reduction rate of 35 per cent is mainly attributed to its initial relatively low under-five mortality rate of 49 in 1975. For the ESCWA member countries as a group, the under-five mortality rate of 43 per 1000 live births is more than six times that in developed countries and higher than the rates in Latin America and the Caribbean (34) and the middle-income countries in other regions (38). However, in 2002, the ESCWA region rate was below the world rate (81) and well below rates in South Asia (95) and sub-Saharan Africa (174).³⁸

The high mortality rates (infant and under-five) in the ESCWA region, well above those found in other regions with the same income level, raise questions regarding both the effectiveness of public health spending and the low educational achievements.

³⁷ Great caution should be exercised in interpreting the data, since the two sources of data (national sources and the World Bank) on infant mortality rates diverge significantly. In the case of Kuwait and Oman, data on infant mortality rates are higher than those provided by the World Bank's World Development Indicators, while the infant mortality rates reported by the Governments of Bahrain, Qatar, Saudi Arabia and Yemen are lower than those provided by the World Development Indicators.

³⁸ Similar to the case of infant mortality rates, both sources on under-five mortality rates differ significantly from each other. While Kuwait and Oman reported infant mortality rates higher than those provided by the World Bank's World Development Indicators, Bahrain, Qatar, Saudi Arabia and Yemen reported lower infant mortality rates than those provided by the World Development Indicators.

It has been noted that the health of a country's population is dependent, among other things, on the educational attainments and standards of those who care for children in their most formative years, and on the education of professionals in health care services who provide support. While both these categories are improving over time in the ESCWA region, the inequalities in education translate into inequalities in health also. This is evidenced in the high correlation between education indicators and health outcomes noted above (see annex tables B.8 and B.9).³⁹

Annex table B.10 shows the levels and improvement rates of increases in life expectancy in the countries in the ESCWA region, as well as the rates in other regions of the world. In the year 2002, the population-weighted average of life expectancy in the ESCWA region (69 years) was slightly above the world average (67 years). While, it is low in comparison with Latin America (71 years) and the middle-income countries (70 years), both regions with the same level of income, it is well below the OECD average of 78 years. However, the fact that only Yemen has a life expectancy rate (57 years) that is below the average in the ESCWA region implies that life expectancy in the region excluding Yemen is higher than 69 years. In its comparison of the countries in the ESCWA region, annex table B.10 shows that the best performing country in terms of this particular health indicator was Kuwait (77 years), followed by Qatar and the United Arab Emirates (75 years). The ESCWA member country with the lowest rate was Yemen (57 years, as noted above), followed by Egypt (69 years).

Life expectancy increased significantly in almost all countries from 1975 to 2002. This improvement is due to the impressive drop in mortality rates, both infant and child, as well as the improvement in educational attainment. It is evidenced in the high correlation coefficient between life expectancy and mortality rates and in the high positive correlation between life expectancy and different educational indicators (see annex tables B.8 and B.9).

As shown in annex table B.10, the improvement in life expectancy in the ESCWA region for the period 1975-2002 was larger than in any other region in the world. By 2002 the ESCWA region had experienced a considerable improvement in average life expectancies, going to 69 years from 54 years in 1975. This addition of 15 years to the expectation of life at birth, which took place over 27 years of elapsed time, means an average addition of 0.55 years per year with regard to the expectation of life at birth for that period. This is a remarkable public health achievement. The 15 years gained in the ESCWA region can be compared with the 8 years gained in Latin America and the Caribbean, and the 7 years gained in the middle-income countries.

D. EXPLAINING HEALTH OUTCOMES

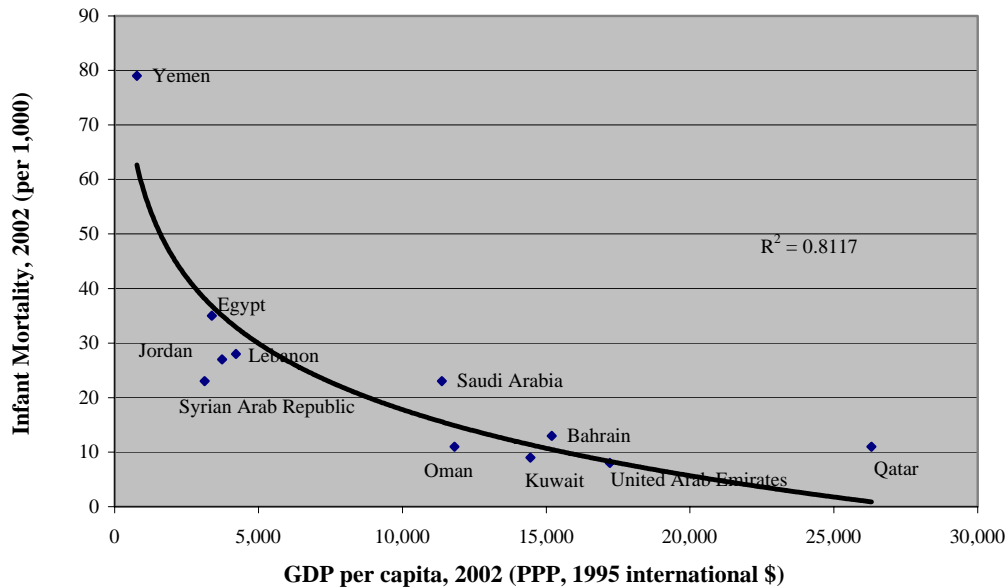
1. *GDP per capita and health outcomes*

Both infant mortality rates and under-five mortality rates are linked to income in the ESCWA member countries, as shown in figures 20 and 21. Similar to the global pattern, there is an inverse relation between per capita income and under-five mortality and between per capita income and infant mortality rates. However, some variability and inconsistencies exist among countries. For example, Jordan and Lebanon both have higher GDPs than the Syrian Arab Republic, but the Syrian Arab Republic has lower under-five and infant mortality rates. Oman and Kuwait have better health outcomes than Bahrain, in terms of infant and child mortality rates, despite their lower GDPs in comparison with Bahrain.

Infant mortality and life expectancy improve sharply with rising income, especially at low levels of GDP per capita. Rising income, especially for the poor, leads to better nutrition, lower child mortality, better maternal health, and also better education (especially for females), which contributes to these health outcomes.

³⁹ The effect of education on health is reviewed below.

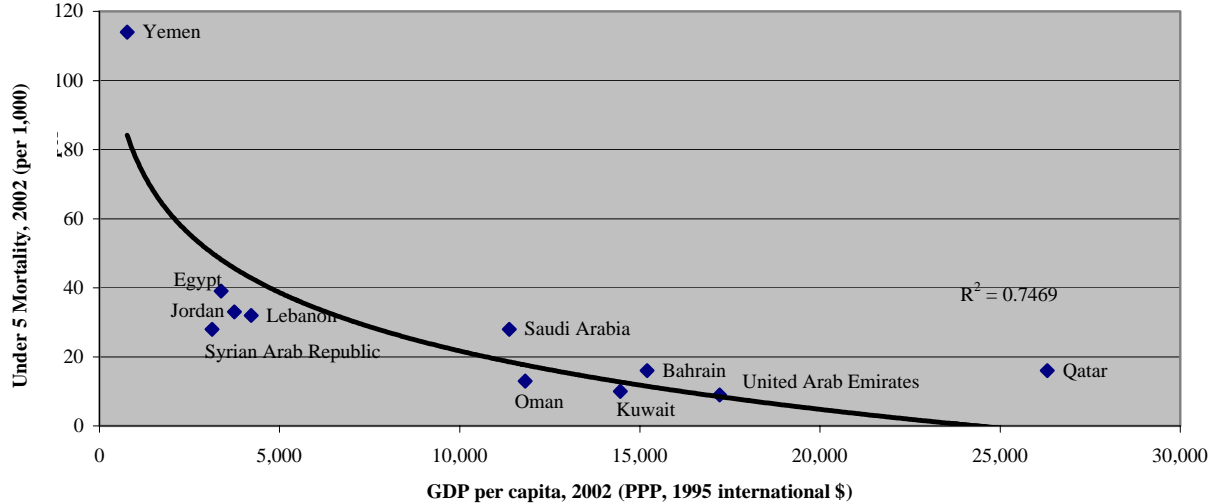
Figure 20. GDP per capita versus infant mortality, 2002



Source: World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

Figure 21. GDP per capita versus under-five mortality, 2002



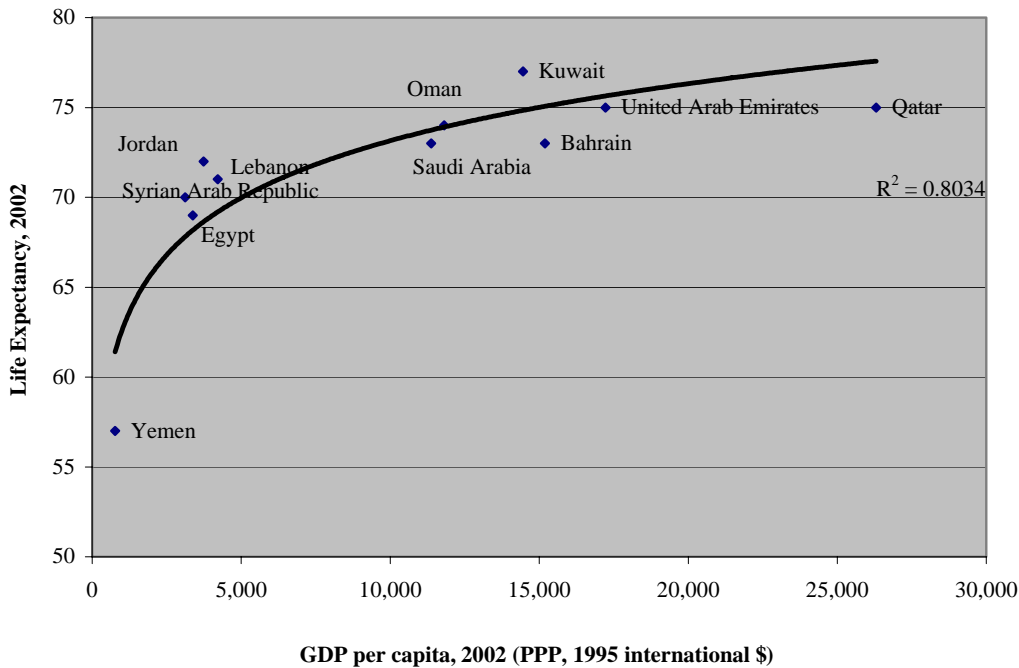
Source: World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

In addition, life expectancy is also linked to income among the ESCWA member countries, as shown in figure 22. There is a positive relation between per capita income and life expectancy, with some variability around the positive trend among ESCWA member countries. For example, Jordan has lower GDP per capita than Lebanon, but Jordan has higher life expectancy. Moreover, Kuwait and Oman have lower GDPs per capita than Bahrain, yet their life expectancies are higher than that of Bahrain.

As noted above with regard to educational outcomes, some countries reach health levels far above those that would seem to be dictated by their GDP per capita and other countries fall far below what would be expected (see figures 20, 21 and 22). This indicates the strong influences of social and cultural factors as well as the differences in the availability, accessibility and efficiency of targeted child health programmes. Education is, however, another important and significant factor that has an effect on these differences (see annex tables B.8 and B.9 for the correlation between the education and health indicators).

Figure 22. GDP per capita versus life expectancy, 2002



Source: World Bank, *World Development Indicators*.

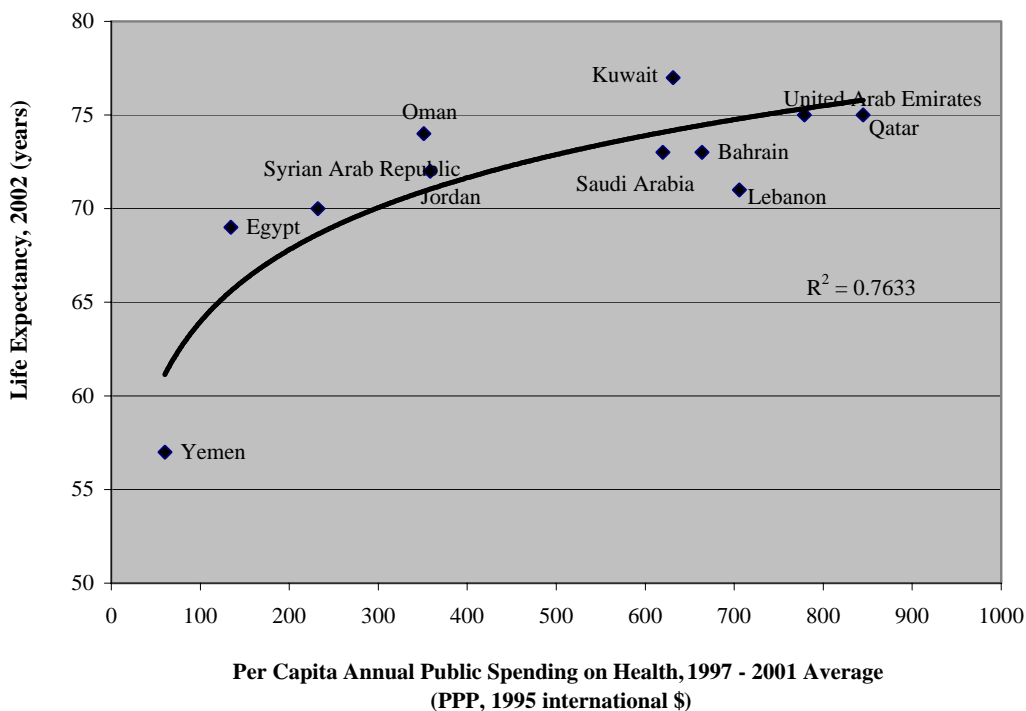
Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

2. Total health spending and health outcomes

An analysis of the patterns in figures 23 and 25 below poses the question of how the amounts spent on health care, and the shares of public and private expenditure, influence measures of health outcomes. Worldwide, there is a positive correlation between health care spending per capita and health outcomes (Schieber and Maeda 1999). When life expectancies of the world’s countries are charted against their matching health expenditures per capita, there is a pattern of increasing life spans correlated with countries

that allocate more financial resources to the health sector.⁴⁰ In the ESCWA region, there is a significant correlation between these two variables (see figure 23 below). Yet this relation is not straightforward, and there are many divergences from this pattern. For example, while Lebanon spends more on health per capita than Saudi Arabia, Oman and Kuwait, Lebanon's population still has lower life expectancy.

Figure 23. Total spending on health versus life expectancy



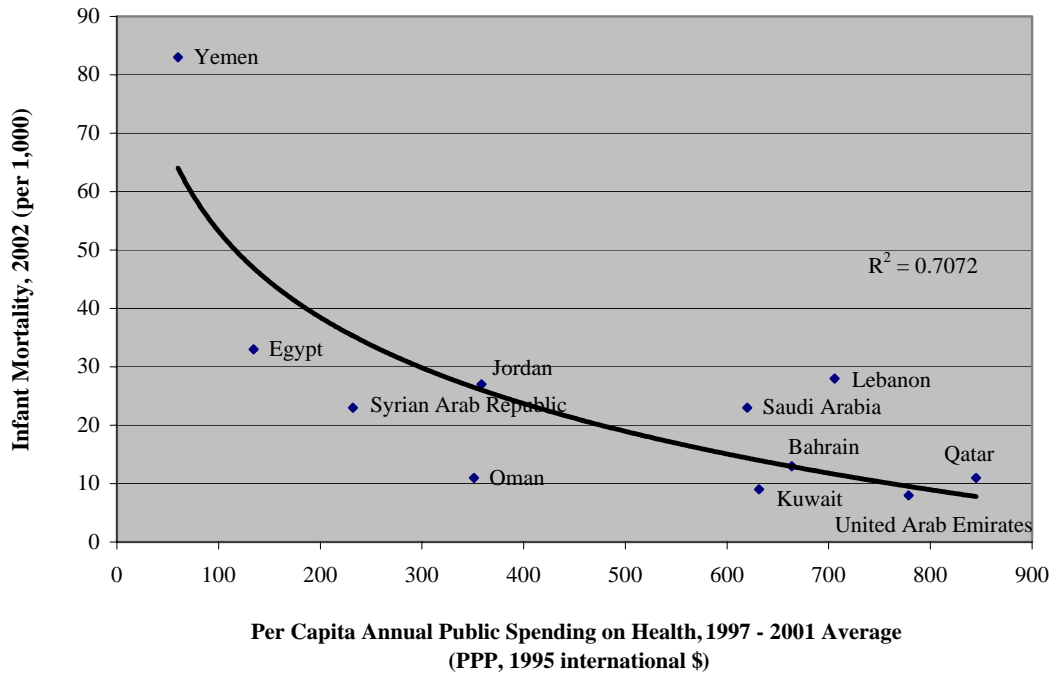
Source: ESCWA calculations, based on World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

The patterns produced by relating health care spending with mortality rates (infant and under-five) are shown in figures 24 and 25. As could be expected, the figures show that countries with very low levels of health care spending, such as Egypt and Yemen, have acutely high infant and under-five mortality rates. At the opposite end of the spectrum, countries that spend much more on health care in general have lower mortality rates. However, in the ESCWA region, this relation is not linear and not all nations with good health outcomes automatically spent a large amount on health care services. Oman is a good example of this; its health outcomes are among the best in the region, in spite of its medium level of spending on health care. This may be due to partly to Oman's concentration on primary and preventive health care, rather than curative care. Lebanon is an example of the opposite case; while it has the third-highest spending level among the ESCWA member countries, it none the less has a high infant mortality rate of 28 deaths per 1000 live births, the third highest death rate after Yemen (83) and Egypt (33).

⁴⁰ Since aging is a biological process that responds only marginally to health care interventions, life expectancy seems to have a natural upper limit. It is not surprising that as the population approaches that boundary, additional spending on health care stops extending life. However, when life expectancy is still well below any biological boundary, health care does make a difference.

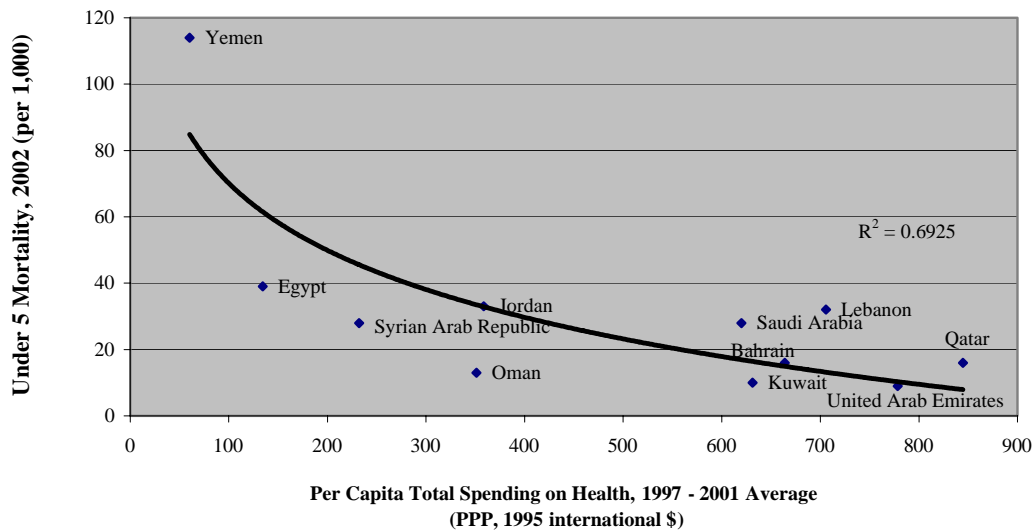
Figure 24. Total spending on health versus infant mortality



Source: ESCWA calculations, based on World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

Figure 25. Total spending on health versus under-five mortality

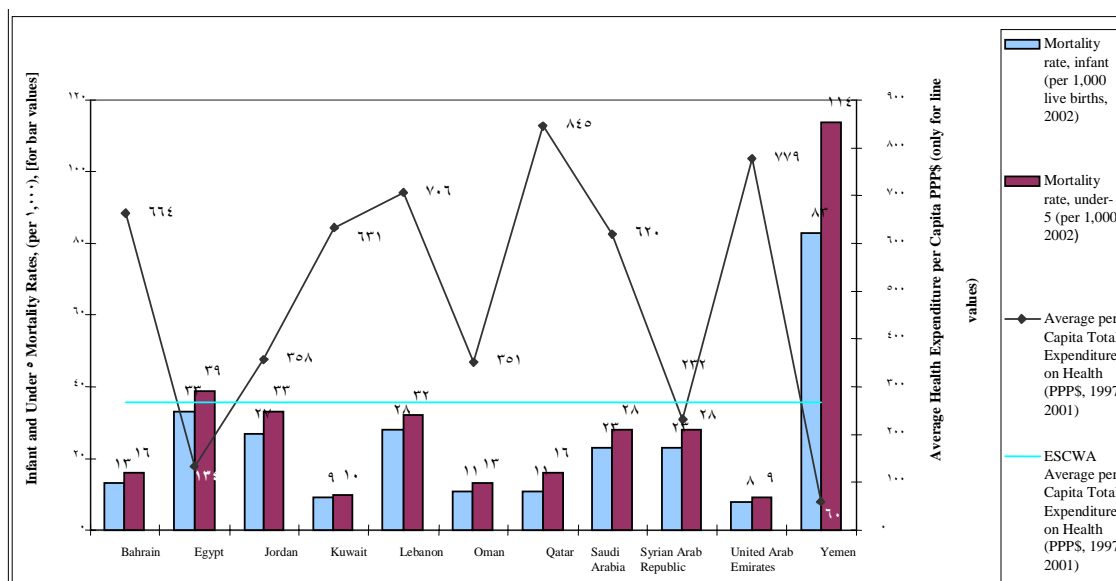


Source: ESCWA calculations, based on World Bank, *World Development Indicators*.

Note: R^2 denotes the percentage of variation in the dependent variable accounted for by the regression line. It therefore measures the “goodness of fit” of the regression line.

Figure 26 below also illustrates the above point regarding the not always direct relation between health care spending and outcomes by showing graphically the relation between mortality rates (infant and child) and average spending for the period 1997-2001. Figure 26 indicates that countries that spend a large share of income on health care do not necessarily buy greater longevity, and that some countries manage to spend less than expected and still enjoy longer life expectancy.

Figure 26. Average health expenditure per capita and health indicators, 2002



Source: ESCWA calculations, based on World Bank, World Development Indicators (WDI), available at www.worldbank.org, and World Health Organization (WHO) available at www.who.int.

Note: Population-weighted average health expenditure in the ESCWA region for 1997-2001 was 268 PPP\$, while ESCWA region infant mortality (2002) was 35 per 1000 and under-five mortality (2002) was 43 per 1000.

As in the case of spending on education the amount spent on health care is certainly important, but so too are other factors, such as the allocation and distribution of resources within the health sector, education, income of individuals, and basic infrastructure such as sanitation and potable water. In addition, current evidence indicates that total public spending on health has had much less effect on average health status than might have been expected. Filmer and Pritchett (1998) discovered that income and female education explain most cross-country variations in child mortality rates, and that the share of public spending on health in GDP is small and statistically insignificant.

Other multivariate estimates of the determinants of life expectancy and child mortality also show that although income is always a significant determinant, the same does not hold true for public expenditure on health as a share of GDP (Musgrove 1996). Bidani and Ravallion (1995) find, however, that public spending has a large impact on the health status of the poor, but not on the aggregate health status (of the poor and non-poor taken together).

Recently, a number of studies have argued that the ambiguity concerning the relation between public spending and growth, as well as the insignificant positive effect from social sector spending to outcomes, is likely to reflect problems of identification, broadly defined. More spending does not necessarily mean more public services (Pritchett 1996; Reinikka 2001; Reinikka and Svensson 2002). From the supply side one can identify two broad explanations for the ambiguity. First, low effectiveness in the transfer of funds within the public sector (for example, a leakage of funds) may prevent spending from reaching the intended end-producer (such as schools or hospitals). Secondly, low efficiency of the end-use in creating valuable goods and services (even if the funds reach the intended end-user), and waste and corruption (within schools or health clinics, for example) may severely hinder the production of valuable services.

V. IMPACT OF ECONOMIC VARIABLES ON HUMAN DEVELOPMENT

The average annual growth of real GDP per capita in the ESCWA region in the period 1975-2002 was virtually zero, as noted above in chapter III. This growth rate was lower than in any other region of the world with the exception of sub-Saharan Africa (see figure 1 above). Given this economic performance, it may be interesting to examine the impact of economic changes on human development, that is, to examine whether progress in social development can be explained by economic variables.

A. AN ECONOMETRIC CROSS-SECTION ANALYSIS: CORRELATION COEFFICIENTS

The analysis in chapter IV above demonstrated clearly that economic levels are an important determinant of human development. Both education and health outcomes were found to be linked to income as well as to different components of spending among the ESCWA member countries. In addition, the analysis showed that some countries reach health and education levels far above those that would seem to be dictated by their economies while others fall far below what would be expected. These results indicate that social and cultural factors have a strong influence, as do differences in the availability, accessibility and efficiency of targeted spending programmes. Moreover, countries that spend a large share of income on health care do not necessarily buy greater longevity; some countries manage to spend less than expected and still enjoy longer life expectancies. In addition, as noted in chapter IV, there is a strong positive relation between GDP per capita and public spending in the ESCWA region.

This section attempts to test some of these conclusions by looking at correlations across countries among health indicators, education indicators, and economic measures for the 11 ESCWA member countries targeted in this study. The focus is on the behaviour and interrelations among the various indicators, both social and economic. The purpose is to test the relation between human development and economic development, as well as the inter-relations between the six different social indicators (three health indicators and three education indicators).

It is important first to examine the correlation across countries between the various social indicators and the level of per capita GDP, and with different components of spending. The results lend prima facie support to the findings of a number of other studies, which concluded that social indicators are associated with economic variables. In particular, the implication is that levels of income and levels of spending are all associated with social indicators (health and education).

Annex tables B.8 and B.9 show correlations between human development (measured in terms of progress in education and health outcomes), income levels and the different components of social spending.

The tables show that GDP per capita is significantly and positively correlated with a reduction in under-five mortality rates, infant mortality rates and increase in life expectancy, with no differences in strength. In addition, GDP is correlated positively with total health spending in PPP, with public spending on health as a percentage of total health spending (public and private) and with per capita public spending on education in PPP. In the 11 ESCWA member countries, the correlation between GDP per capita and expenditure on health per capita is as high as 78 per cent, and with public spending as a percentage of total spending on health as high as 79 per cent (annex table B.8). This is not only because the higher the value of GDP per capita the greater the possibility of expenditure on health, but also because countries with good health outcomes and high expenditures on health have a greater potential of increasing GDP per capita. Moreover, as shown in annex table B.9, the correlation between GDP per capita and per capita public spending on education in PPP is as high as 72 per cent. This high correlation happens not only because the higher GDP affords greater per capita spending on education but also because the expansion in education raises GDP itself.⁴¹

⁴¹ This proposition has been evaluated by the means of correlation between GDP per capita and human capital. The results showed that GDP is positively related with the number of years of schooling (as a measure of human capital) in the ESCWA region ($R^2 = 0.15$). This relatively low R^2 might be attributed to Jordan's high number of years of schooling relative to other countries with higher GDPs.

Other associations between GDP and changes in educational attainments do have the right signs, but they are not statistically significant. These preliminary correlations suggest that GDP growth is a crucial, but partial, indicator of development when it is imperfectly associated with certain aspects of human development, and at times when it is not.

In addition, annex tables B.8 and B.9 show that health indicators, mortality rates (infant and child) and life expectancy correlated positively with each other. The obvious reason for the existence of this web of interrelations among these indicators is that improvements in child mortality depend on reductions in infant mortality rates. In addition, life expectancy increased significantly in almost all the ESCWA member countries from 1975 to 2002. This improvement was due to the impressive drop in mortality rates, both infant and under five-mortality rates. This is evidenced in the high correlation coefficient between life expectancy and mortality rates (98 per cent).

Another important finding is the correlation between health indicators and the components of health spending. Infant and under-five mortality rates are correlated significantly with per capita total health spending (69 per cent) and public spending as a share of total spending. In addition, life expectancy is correlated significantly with the public share of health spending as a percentage of total health spending as well as with per capita total spending on health.

Education is another important and significant factor that has an effect on improving health indicators. The social benefits of education have been great: literacy, child and infant mortality and life expectancy have improved significantly over the past three decades. This is reflected in the significant and highly positive correlation coefficient between the different health indicators and education attainment (literacy rates).

The benefits of education on health are illustrated in annex tables B.8 and B.9. Education increases productivity and thus also influences health. The higher income resulting from increased market productivity should lead to increased expenditures on food, housing, and medical care, resulting in improved health. The annex tables reveal the following:

(a) There is a highly positive correlation coefficient between the different health indicators and educational attainment. It has been noted that the health of a population is dependent, among other things, on the educational attainment and standard of those who care for children in their most formative years, and on the education of professionals in the health care services who provide support. While both these categories are improving over time in the ESCWA region, the inequalities in education translate into inequalities in health also. This is evidenced in the high correlation between educational and health outcomes (annex tables B.8 and B.9);

(b) Other associations between health indicators and primary school net enrolment rates are not statistically significant. This may be attributed to the doubtful quality of the data on net enrolment rates.

It is important to note that the relations reviewed above are between levels of income and human development indicators. Relations in most cases are weaker with growth of income and changes in indicators. These results confirm those reached by Fedderke and Klitgaard (1998) and Kakwani (1993). Easterly (1999) looks at this discrepancy, hypothesizing that cross-country analysis of income levels may capture long-term trends that are not discernible in the analysis of shorter periods, and that growth may lead to improvements in human development with long and varying lags. Alternatively, country-specific factors, such as endowments and locations, could be dominant determinants of levels of both income and human development indicators. In that case the cross-country correlations between income and social indicators would need to be qualified. This subject is addressed in section B below.

The appeal of the findings is that they appear to identify two distinct dimensions of economic variables that are significantly associated with human development. However, income is of surprisingly little importance, especially with regard to its impact on educational attainment.

Section B econometrically examines the effectiveness of public policy intervention versus “growth-mediated” human development.

B. AN ECONOMETRIC CROSS-SECTION TIME-SERIES MODEL

The data strongly suggest that growth of per capita income is not the primary determinant of improvement in human development. For example, Jordan's social indicators are high relative to income, which generates the hypothesis that social spending can have an impact on improvements in social indicators. However, at the same time, Oman's social indicators are not commensurate with the expected levels of a much higher per capita GDP and its growth over the period 1975-2002 (table 2).

Figures 20, 21 and 22 in chapter IV above plotted the simple relation between per capita GDP and the three measures of a country's health performance: life expectancy, infant mortality rate, and under-five mortality rates for 11 ESCWA member States for the year 2002. All three indicators improve with rising income. The main feature of the ESCWA version of Preston's (1975) curve is that the slope of life expectancy with respect to income is steep among countries with relatively low-income levels, that is the non-GCC countries (figure 22).⁴² This is also true for the other two indicators, infant mortality and the under-five mortality rate (figures 20 and 21). The concavity (convexity) of the relation among the non-GCC countries implies that increases in average income are strongly associated with increases in life expectancy and decreases in infant mortality and in under-five mortality rates, but this relation grows weaker as income per head rises. People in rich countries tend to have greater capabilities than those who live in poor countries and therefore are more likely to avoid hunger, malnutrition and illiteracy. Thus, the higher the average income of a country, the more likely it is that its population will be healthy and able to enjoy full, healthy and long lives. This strong relation between a country's income and health outcome was also evident in the correlational analysis contained in annex table B.8.

Figures 13, 14 and 15 in chapter IV showed the same simple association between GDP per capita and the three indicators of educational performance: enrolment ratio, adult literacy and youth literacy. It is apparent that adult and youth literacy improve with rising income, especially at low-income levels. However, no relation was found between the enrolment ratio and GDP per capita. Moreover, correlational analysis did not reveal any significant relation between GDP per capita and educational outcomes.

This empirical observation may lead to the conclusion that human development is a product of economic growth and thus lend support to the trickle-down approach reviewed above. However, this study inquires as to whether the observation that the relatively richer countries of the ESCWA region tend to have better social indicators necessarily implies that economic growth should be at centre stage in discussions on how to promote human development in the relatively poorer countries of the region.

One problem with interpreting figures 13, 14, 15, 20, 21 and 22 (in chapter IV above) as evidence that human development is a product of economic growth is that other variables that may matter a great deal are correlated with average per capita incomes. These variables may drive a spurious correlation between income and social development indicators. Analysts including Annand and Ravallion (1993) have proposed different explanations for the observed association between human development indicators and aggregate wealth. These explanations include the three following views:

(a) Social development through economic growth. In this view, economic growth expands capabilities directly or indirectly through poverty reduction. This view argues that as average income increases, individuals have greater command over the relevant goods and services, such as food, health care, medical services and basic education, which in turn leads to improved health and nutrition. All capabilities expand with economic growth, hence the improved social outcomes;

(b) Social development through social services. In this view, the public provision of essential goods and services, such as clean drinking water, sanitation, health care and elementary education, promotes human development. Growth only matters if it is used to fund appropriate public services;

⁴² These indicators (unlike GDP) have asymptotic limits, reflecting physical and biological maxima. Another important characteristic, according to P. Dasgupta (op. cit.), is that as the standard of living reaches progressively higher limits, incremental improvement would represent much higher levels of achievement than similar incremental improvements from a lower base.

(c) Country fixed factors. According to this view, there are a host of variables other than income and public spending that greatly matter for social indicators. Country-specific factors, such as endowments, location, and social and economic factors that can be measured by openness and institutions, which in turn are explanatory variables for productivity, could be dominant determinants of levels of both human development indicators and income. Other country characteristics that researchers cited and that can clearly play a determinant role in human development and income include: ethnolinguistic fragmentation as a fixed factor holding back a country's economy; distribution of income, particularly income of the rich; and higher status of women and its impact on health. In addition, high levels of external debt and debt services; instability in the price of oil, especially in countries that are oil-dependent; official development assistance (ODA), especially in countries in which ODA plays a major role in their budgets; and "involuntary" implemented government policies such as privatization and structural adjustment programmes could also be dominant determinants of the levels of human development as well as income.⁴³ Although there is well-established evidence concerning the relation between income and social indicators, this study also provides evidence on the importance of public spending, as well as an explanation of social outcomes with the exception of net enrolment, which is corroborated by the correlational analysis contained in annex tables B.8 and B.9 and referred to in chapter IV above.

Since social indicators are strongly related to a country's public spending, the effect of public spending needs to be accounted for in any analysis of the impact of income on social outcomes. If this is not done, it may incorrectly appear that income is very effective in producing better health and education outcomes, and also, because the public share of spending rises with income, that higher levels of income yield better health and educational outcomes.

In order to sharpen the focus of the study and to shed further light on the relation between GDP per capita, public spending, and the level of the different health and education indicators, this study has constructed a panel model for the ESCWA region. The panel analysis accounts for both the cross-country and the time-series dimension of this relation. The approach is similar to that of Chakraborty (2003), who investigates the link between public expenditure on health and education and the Human Development Index. This study's sample includes the following 11 countries: Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, the United Arab Emirates and Yemen. The data are taken from World Bank's World Development Indicators, the World Health Organization, and the International Monetary Fund's Government Finance Statistics Yearbook 2004 and cover the period 1975-2002. The availability of reliable data for the various variables that are used in the panel analysis differs substantially between countries. For Qatar, Lebanon and Yemen, in particular, when data were only available from 1990 onwards, few observations could be included in the panel regressions.

The objective of the panel analysis is to determine the relative explanatory power of real GDP per capita and of public spending for the observed levels of the various social indicators. The model therefore includes GDP per capita and per capita public expenditure on health and education as regressors.

There are three basic types of panel data models:⁴⁴ They are: the constant coefficient model, which assumes both constant intercepts and slopes; the basic fixed effects model with constant slopes, but different intercepts according to the country; and the random effects model, which treats the intercept as a random variable. As country-specific effects are undoubtedly significant in the study sample, the constant coefficient model is not suitable for the analysis. Whether the fixed effects or the random effects model is more

⁴³ There is no scarcity of country fixed factors in the new growth literature. For example, Hall and Jones (op. cit.) suggest distance from the equator and use of a European language as an instrument of "social infrastructure" measured by openness and institutions, which in turn is an explanatory variable for productivity. Easterly and Levine (op. cit.) point to ethnolinguistic fragmentation as a fixed factor holding back Africa's economy. These fixed factors may also affect the life indicators. Filmer and Pritchett (op. cit.) found that ethnolinguistic fractionalization increased infant mortality. Other country characteristics besides income clearly play a large role in determining social development. For example, Waldman (op. cit.) found a positive association between infant mortality and income of the rich, and Caldwell (op. cit.) found a positive association between higher status of women and its impact on health.

⁴⁴ For more on this topic, see R. Yaffee, "A primer for panel data analysis", *Connect Information Technology at NYU*, Fall 2003 Edition.

appropriate for this study depends on the existence of correlation between the unobserved country-specific random effects and the regressors. If there is such a correlation, then the fixed effects model should be used. If no significant correlation is found, then the random effects model would be the model of choice. The two models were estimated and a comparison of the covariance matrices of the two models revealed that the correlations of random effects with the regressors are statistically significant in this case. Therefore, the model of choice is the fixed effects model that captures country-specific effects through different intercepts. In order to determine whether to estimate a weighted or unweighted model, it was necessary to test for heteroscedasticity. A White test was applied and the null hypothesis of homoscedasticity was rejected; the fixed effects model was therefore estimated by the weighted least squares technique.

To investigate the roles of GDP per capita and public spending in explaining social outcomes in the ESCWA region, two forms of regressions were run. First, GDP per capita in PPP-adjusted units was used as the only explanatory variable for the respective social indicator. Secondly, public spending on either health or education was added as a second explanatory variable to the regression. Both GDP per capita and public spending were introduced as variables with a five-year lag, thereby capturing the idea that income and public expenditures affect social indicators with a lag. This seems to be a more reasonable assumption than an instantaneous effect of economic variables on social indicators. At the same time, while this study agrees with the notion that income and public spending might influence social indicators with a longer lag (more than five years), the choice of a five-year lag made it possible to maintain a relatively large number of observations, which usually guarantees more reliable and statistically more meaningful results.⁴⁵

Following Annand and Ravallion (1993) and Ahsan and Pehazi (2004), a nonlinear transformation of the different social indicators is performed. This is done to measure the proportionate reduction in the shortfall of an indicator from its maximum (minimum) attainable value given current best practices in developed OECD countries. Social indicators have maximum (minimum) limits and bounds given current best knowledge and practices. Thus, as a country gets closer to that limit, an incremental improvement would represent much higher levels of achievement than a similar incremental improvement from a lower base. This difficulty in achieving an additional improvement in a given indicator is controlled for and captured by this nonlinear transformation. Therefore, dependent variables are expressed as the difference between the indicator and the highest (lowest) level achieved by the best performing country in the world, that is, the best practice case at the time. On a global scale, Sweden has been the best performing country in the area of health during the past few decades. It had the highest life expectancy level in 1975 and the lowest infant and under-five mortality rates both in 1975 and in 2002.⁴⁶ Therefore, Sweden was taken as the best practice case country, with which this study's sample countries are compared in order to measure the shortfall of an indicator from its best value at a given point in time. For example, in 1975, Yemen's life expectancy was 45 years (in comparison with 75 in Sweden) and in 2002, Yemen's life expectancy had increased to 57 years (in comparison with 80 in Sweden). Therefore, the shortfall of Yemen's life expectancy from its highest level in 1975 was 30 years (75-45) and was reduced to 23 years (80-57) in 2002. The same constructions were made for mortality rates (infant and under-five). Again, the indicators are expressed as the difference between a country's indicator and Sweden's (Yemen's mortality rate – Sweden's mortality rate) at each point in time.

For the education indicators (literacy rates and net school enrolment ratio), there was a similar process. However, since the goal of universal primary education was achieved in the 1970s in most of the OECD countries, the dependent variables were expressed as (100 – a country's education indicator), where 100 is the highest level of literacy and primary school enrolment ratios (100 per cent).

The regressions include logarithmic values of the variables. Consequently, the following specifications were chosen for the health and education indicators in the regressions.

⁴⁵ Another reason for choosing a five-year lag rather than a longer lag is the relatively small number of observations, stemming from the short period of time under consideration when the relevant data were available.

⁴⁶ In 2002, life expectancy in Sweden was the second highest in the world, slightly lower than in Japan.

Social indicator	Corresponding specification
Life expectancy (LE)	Log (Sweden _{LE} -LE)
Under-five mortality (U5M)	Log (U5M-Sweden _{U5M})
Infant mortality (IM)	Log (IM-Sweden _{IM})
Adult literacy (AL)	Log (100-AL)
Youth literacy (YL)	Log(100-YL)
School enrolment rate (SE)	Log (100-ER)

- Sweden_{LE} represents the value of life expectancy in Sweden in the corresponding period;
- Sweden_{U5M} represents the value of the under-five mortality rate per 1000 live births in Sweden;
- Sweden_{IM} represents the value of the infant mortality rate per 1000 live births in Sweden;
- The number (100) in (100-AL), (100-YL) and (100-ER) refers to the maximum values of literacy and enrolment ratios that can be achieved by a country.

The models are therefore specified in the following way:

$$(1) \quad \log SI_{i,t}^X = \alpha_i + \beta_1 \log GDP_{i,t-5} + \varepsilon_{i,t}$$

$$(2) \quad \log SI_{i,t}^X = \alpha_i + \beta_1 \log GDP_{i,t-5} + \beta_2 \log PS_{i,t-5}^X + \varepsilon_{i,t},$$

where SI = social indicator under study

X = either education or health depending on the social indicator under study

α_i = country-specific intercepts

GDP = real gross domestic product per capita in PPP units

and PS = real public spending per capita in PPP units

While some caution is obviously needed in interpreting the estimates, it is possible to draw several conclusions. The results of the panel analysis are presented in table 5 (education) and table 6 (health) below. The educational indicators examined include youth and adult literacy rates as well as school enrolment rates. Equations (1) in table 5 show that when youth literacy or school enrolment is regressed on GDP, the expected negative sign is obtained.⁴⁷ Higher levels of GDP are associated with higher levels of youth literacy and school enrolment. However, none of the effects is significant, even at the 10 per cent level. In addition, GDP surprisingly has the “wrong” sign when adult literacy is the dependent variable. However, when public spending on education is added as an explanatory variable to the regression, equations (2) in table 5, it turns out that the public spending variable always has the “right” sign, indicating that higher expenditures are associated with higher levels of the various social indicators. In all of the three cases, public spending coefficients are significant at the 1 per cent level. However, when public spending is included in the regression, GDP has always the “wrong” sign. Altogether, the education results suggest that educational enhancements cannot be explained by GDP but are strongly linked to public spending on education.

Similar to the procedure implemented for the education indicators, the health indicators (life expectancy, under-five mortality and infant mortality) are first regressed only on GDP and then on both GDP and public spending on health. The results in table 6 indicate a significant impact of GDP only on under-five mortality rates when GDP is the sole explanatory variable (equations 1). These results corroborate the correlational analysis above. However, when public spending is added to the regression, the GDP variable has the “wrong” sign⁴⁸ in the case of infant and under-five mortality rates, with both coefficients being insignificant (equations 2). Similar to the education results, the coefficient of public spending has the “right”

⁴⁷ Interest is focused on the proportionate reduction in shortfall of an indicator from its desirable maximum or minimum value. As income increases, it is expected that adult literacy, youth literacy and enrolment ratio will also increase. This implies that the difference between the maximum level of the indicator and the country/s level will decrease. This explains the expected negative sign.

⁴⁸ As GDP increases, it is expected that the infant and child mortality rates decline. This implies that the differences (IM-5) and (U5M-5) decline as well.

sign in both cases. It is significant at the 5 per cent level for the under-five mortality rate and at the 20 per cent level for the infant mortality rate. Regarding life expectancy, both GDP and public spending do not show any explanatory power. In both equations 1 and 2, the respective coefficients are statistically insignificant.

According to Pritchett and Summers (1996), there might be two reasons to expect that the results for life expectancy will be more questionable or weak than for infant (or child) mortality. First, a recent review of adult health shows that, in general, the causes of death in adults are much less probable to decline with income, and actually may increase. Secondly, as a pure measurement issue, the data on life expectancy are much weaker than those on infant or child mortality. In effect, life expectancy figures are usually derived from model life tables rather than observed directly from death registrations. The life expectancy estimates reported in the World Bank's World Development Report, for example, are just updated using infant or child mortality figures applied to the model life table (which provides mortality rates for each age). Given the infant or child mortality, the artificial figure for the life expectancy is derived from these assumed mortality rates. Therefore in almost all cases for developing countries, the changes in life expectancy will hold no new information beyond that contained on changes in infant or child mortality.⁴⁹

All in all, in five out of the six regressions when public spending is included as an explanatory variable, public spending has a significant impact on the level of social indicators. In four of these cases (youth literacy, adult literacy, school enrolment, under-five mortality), the coefficient is at least significant at the 5 per cent level, while for the infant mortality rate the level of significance is 20 per cent. Per capita GDP, in contrast, seems to be only weakly associated with most of the education and health indicators. The results therefore suggest that, in ESCWA member countries, per capita public spending on health and education is a more important determinant of social indicator levels than per capita GDP per se. This finding is broadly in line with the results of Annand and Ravallion (1993) and Chakraborty (2003).

TABLE 5. FIXED-EFFECT PANEL ANALYSIS: THE IMPACT OF GDP AND PUBLIC SPENDING ON EDUCATION INDICATORS

	Youth literacy		Adult literacy		School enrolment	
	Equation 1	Equation 2	Equation 1	Equation 2	Equation 1	Equation 2
GDP (per capita)	-0.14	0.34 ^{a/}	0.06	0.19 ^{a/}	-0.19	0.21
t-statistic	(-1.36)	(2.60)	(1.14)	(2.92)	(-1.16)	(1.04)
Public spending (PS)		-0.69 ^{a/}		-0.31 ^{a/}		-0.43 ^{a/}
t-statistic		(-5.53)		(-5.01)		(-4.34)
Unweighted R ²	0.70	0.77	0.74	0.80	0.77	0.78
Weighted R ²	0.99	0.98	0.99	0.99	0.98	0.98
BH-Constant	1.08	0.92	0.96	1.26	1.23	0.72
EG-Constant	2.05	1.82	1.51	1.70	1.63	1.13
JO-Constant	0.94	0.73	1.02	1.24	2.00	1.55
KW-Constant	1.68	1.59	1.12	1.45	2.22	1.78
OM-Constant	1.58	1.25	1.38	1.61	2.24	1.69
SA-Constant	1.72	1.69	1.26	1.62	2.40	1.99
SY-Constant	1.75	1.46	1.32	1.48	1.43	0.91
UAE-Constant	1.80	1.44	1.18	1.42	2.08	1.43
YE-Constant	1.96	1.63	1.57	1.67	2.12	1.63

BH = Bahrain, EG = Egypt, JO = Jordan, KW = Kuwait, OM = Oman, SA = Saudi Arabia, SY = Syrian Arab Republic, UAE = United Arab Emirates, YE = Yemen.

a/ indicate rejection of the null hypothesis that the true coefficient is zero at the 1 per cent significance level.

⁴⁹ These results are partially coherent with analyses based directly on public expenditure alone, without taking into consideration private spending. (See P. Musgrove, *Public and Private Roles in Health: Theory and Financing Patterns*, Health, Nutrition and Population Discussion Paper (Washington, D.C., World Bank.) In Latin American countries at mid- to high incomes, more public spending does extend life, although for a set of 58 countries at all income levels, there is no significant relationship between public spending and longevity. Since these studies do not take account of total health spending, it is not surprising that public expenditure does not show a systematic impact.

TABLE 6. FIXED-EFFECT PANEL ANALYSIS: THE IMPACT OF GDP AND PUBLIC SPENDING ON HEALTH INDICATORS

	Infant mortality		Life expectancy		Under-five mortality	
	Equation 1	Equation 2	Equation 1	Equation 2	Equation 1	Equation 2
GDP (per capita)	-0.2	0.17	-0.01	-0.05	-0.43 ^{a/}	0.14
t-statistic	(-0.78)	(0.55)	(-0.08)	(-0.28)	(-1.67)	(0.42)
Public spending (PS)		-0.18		0.06		-0.30 ^{a/}
t-statistic		(-1.33)		(0.84)		(-2.14)
Unweighted R ²	0.7	0.92	0.84	0.93	0.69	0.90
Weighted R ²	0.99	0.99	0.98	0.97	0.99	0.99
BH-C	1.83	0.75	0.84	0.85	2.91	1.32
EG-C	2.42	1.36	1.20	1.19	3.32	1.78
JO-C	2.19	1.18	0.98	0.98	3.11	1.63
KW-C	1.81	0.60	0.53	0.51	2.86	1.11
OM-C	2.02	0.79	0.96	0.89	3.05	1.31
SY-C	2.14	1.04	1.08	1.11	3.03	1.44
UAE-C	1.73	0.41	0.71	0.69	2.82	0.89
YE-C						

BH = Bahrain, EG = Egypt, JO = Jordan, KW = Kuwait, OM = Oman, SY = Syrian Arab Republic, UAE = United Arab Emirates, YE = Yemen.

^{a/} indicate rejection of the null hypothesis that the true coefficient is zero at the 5 per cent significance level.

The evidence points to the importance of sufficient public expenditure in explaining social outcomes. Sufficient and adequately provided public expenditures, through effective intervention, are important in preventing infant and child mortality and in improving access to education.

VI. CONCLUSIONS

As noted above, this study has focused on 11 of the 13 ESCWA members and compares achievements and improvements in human development within the ESCWA region and among different regions of the world. The study also outlines broad patterns of economic development and social spending (health and education) during the period 1975-2002. The data and the analysis of the data highlighted the economic challenges, as well as the challenges to education and health in the ESCWA region. One of the main findings to emerge from this study is that there has been steady improvement in key education indicators and an impressive decline in mortality rates⁵⁰ as social spending has increased.

With regard to economic development, the average annual growth of real GDP per capita in the ESCWA region in the period 1975-2002 was virtually zero. The region now has a per capita national income of \$5,116 (in 1995 PPP dollars), which places it in the category of the middle-income countries in the world.

ESCWA member countries face rapidly increasing populations, along with a growing need for more costly education and health services. Given the current situation, and if the region continues to record low economic growth rates in the future, it is critical for ESCWA member countries to re-examine and reorient their education and health financing strategies to ensure the sustainability of provisioning these public services.

The data analysed in this study show that there is a strong association between social spending and GDP per capita. The policy implication is that continuing weak economic performance raises serious questions and even alarm about the region's future ability to maintain or improve social expenditure levels. This means that ESCWA member countries are likely to confront serious constraints and limits as they try to expand social spending to meet the rising demand for education and health for their rapidly growing populations. Therefore, achieving a reasonable and stable growth rate must be a top priority item on national agendas.

In order to reach a more robust and equitable growth path, it is indispensable that the ESCWA member countries undertake serious efforts to overcome the major structural weaknesses that have been highlighted above. These efforts should include (a) the strengthening of the macroeconomic environment; (b) broad-based institutional and public sector reform; (c) achieving higher efficiency of investment in physical and human capital; and (d) strengthening the domestic financial systems.

Failure to correct these problems will seriously jeopardize the gains in human development made in the ESCWA region. A favourable political and economic environment with stable and sustainable rates of economic growth would provide the basis for a successful social agenda to improve human development in all its dimensions. However, it must be kept in mind that political stability is a precondition for greater economic stability with dynamism. The ESCWA member countries should thus concentrate their efforts on attaining stability and predictability at all levels—political, economic, and social—to meet the United Nations Millennium Development Goals.

In the area of health, the main trends noted in the ESCWA region have been a dramatic decline in child mortality, as shown by a reduction in the under-five mortality rate from 174 per 1000 in 1975 to 43 per 1000 in 2002. The 2002 figure is still considered unacceptably high, however, given that countries in other regions (Latin American and middle-income countries) with a GNP equivalent to that of ESCWA member countries had, on the whole, much lower mortality rates. In addition, among the ESCWA member countries profiled in this study, while the under-five mortality ratios have declined significantly in most of the higher income countries (such as Saudi Arabia and Oman), very high rates persist in Yemen (114) and Egypt (39). With regard to infant mortality ratios, in 2002 the ratio varied from 83 deaths per 1000 live births in Yemen to only 8 per 1000 in Kuwait. The ESCWA member countries added 15 years to average life expectancy in the region, thereby making substantial progress in closing the gap in life expectancy vis-à-vis wealthier and healthier countries in other regions.

⁵⁰ Improvements in health status can also be credited partly to improved technology.

The evidence presented in this study that health indicators are strongly correlated with education indicators, suggesting that health in the ESCWA region is dependent, among other things, on the educational experience and standards of those who care for children in their most formative years⁵¹ and on the education of professionals in health services. While both these categories are improving over time, poor education indicators still translate into poor indicators in health as well.

The lower than expected health indicators will necessitate drastic economic and social measures to achieve lower child and infant mortality rates. Economic measures must include:

(a) Ensuring financial access to affordable health care services for all, by pooling the population's health risks through effective public/private financing mechanisms (such as affordable insurance arrangements), particularly, children and pregnant women;

(b) Increasing basic health services (including basic immunization coverage) to underserved and poor populations;

(c) Greater focus on preventive health care rather than the more expensive curative care;

(d) Increasing access to an improved water source and ensuring safe drinking water, which is a major determinant in infant and child mortality rates;

(e) Improving the efficiency and quality of service delivery systems by promoting greater decentralization mechanisms of management to regional and individual levels, as well as reconsidering the appropriate number, type and geographic distribution of human and physical resources;

(f) Finally, despite the fact that private sector participation in health has a problem in reaching the poor, countries should increase their efforts to attract the private sector and encourage its participation, but at the same time maintain effective regulation to ensure quality services at reasonable prices. The data presented in the study show that the share of the private sector in total health expenditure was fairly stable in the ESCWA region as a whole, at 47.8 per cent. The fact that approximately half of total spending on health in the ESCWA region is privately financed poses an important challenge to policy makers, as well as another reason to regulate health care provided by the private sector and to encourage households to use those resources for the most efficient and socially responsive services. This can be done through consultation with consumer groups.

Social measures include breaking the vicious cycle of early marriage and high fertility, which, although it is encouraged by deeply entrenched cultural values such as the preference for sons and family interdependency, can lead to high mortality and malnutrition.

With regard to the education sector, educational attainments in the ESCWA region have been remarkable as reflected in the stable upward trend in literacy rates, both adult and youth rates, and in the greatly enlarged school enrolments in keeping with the increasing growth of the school-age population. In 2001, more than 83 per cent of school-age children in the ESCWA region were enrolled in primary schools, up from 76 per cent in the 1990s. Youth literacy rates increased from 51 to 81 per cent between 1975 and 2002, while adult literacy rates increased from 37 to 65 per cent for the same period. However, one of the most important problems is the high illiteracy rate. Approximately 35 per cent of people age 15 and above in the ESCWA region are illiterate. This rate varies from as high as 51 per cent and 44 per cent in Yemen and Egypt respectively, to a low of 9 per cent in Jordan.

In addition to poverty, two reasons might explain the low literacy and enrolment rates in the ESCWA region relative to other regions. First, because literacy increases more rapidly in urban areas, countries with a

⁵¹ According to the World Bank's World Development Indicators, females' educational achievements generally lag behind those of males in the region, and such gender disparities are believed to hamper improvement in general health status.

very significant rural population (such as Egypt and Yemen) also have lower literacy rates. Another reason might be the high illiteracy rates among women.

The necessity for educational reform in the ESCWA region has become urgent. ESCWA's unskilled work force is a reflection of its failure in education and training. If education systems are not adjusted, and instead continue to be planned to produce only civil servants, they will clash progressively more with economic realities. Education systems must be capable of producing a skilled labour force well matched with the requirements for higher productivity. As a primary first step in these reforms, the countries in the ESCWA region will need to re-evaluate more cautiously the quality of education and the type of skills being taught.⁵² To achieve the goal of improved educational quality, countries are required to undertake routine national measurements of student performance and assign accountability for student learning to the education system, and not to the student.

Other urgent priorities include the following:

(a) Spending on and upgrading the quality and equity of at least primary schooling. This is very important, especially in addressing the problems facing countries with high rates of birth and high population growth, and would result in reduction in poverty and a real increase of the standard of living. This policy should include not only child education but also adult education;

(b) Improving the distribution and efficiency of expenditures on all levels of education in order to improve the quality of and access to education, especially for girls and people in rural and poor areas;

(c) Improving the mobilization and the efficient utilization of additional resources on all levels of education;

(d) Strengthening teacher training programmes and conditions of service for teachers in order to elevate the quality of teaching. Teachers should be exposed to effective teaching strategies, different modes of learning and different motivational techniques. It is critical for teaching and teachers in the region to keep pace with rapid global and technological changes,⁵³

(e) Providing educational for all. Market forces on their own will not deliver essential public goods as they are motivated by profits. Markets alone will not guarantee access for all, since they provide exclusively for the privileged, creating education for the elite and not education for the masses. Therefore, the government must be prepared and willing to defend the interest of the public and provide education for all. This does not imply that governments should crowd other players out, but they must be prepared to work as a guide, facilitator, and provider of funds in some areas, and as a strategic planner and regulator to ensure quality and maintain national identity (Bloom and others 2001).

Therefore, in order to make universal enrolment attainable in the ESCWA region, it is imperative to devote serious effort to improving the quality of schools and to reducing social exclusion to ensure that the poor and females have access to the educational system.

The study examined the impact of social spending relative to GDP per capita on human development across the ESCWA member countries. The panel data analysis revealed that per capita spending on both education and health has a positive and significant direct impact on the accumulation of education and health capital. This results in the transformation of social spending on human capital formation (in terms of education and health) into the end-result of better education and health indicators. It also implies that the public policy stance plays a very important role in human development and can be more effective in ESCWA

⁵² For a good review of the status of education and the evolution of educational systems in some ESCWA member countries, as well as different strategic paths towards learning for development, see World Bank, "Education in the Middle East and North Africa: A Strategy Towards Learning for Development", Middle East and North Africa Region, 1999.

⁵³ For more on challenges to educational development in the Arab world see United Nations Development Programme and Arab Fund for Economic and Social Development, *Arab Human Development Report 2003: Building a Knowledge Society*.

member countries in achieving the Millennium Development Goals than an income-centred approach, that is, policies focused on economic growth.

Given the importance of public policy intervention, the efforts to meet the MDGs will need to be wide-ranging and must also strengthen the macroeconomic environment. A sound macroeconomic policy that pursues a sustainable and predictable rate of aggregate economic variables is a precondition for a successful social agenda. This is crucial since social policies and reforms aimed at improving human development needs stable funding, which is not always available owing to macroeconomic constraints. Macroeconomic instability, especially during a recession or during periods when peace and security are lacking, also increases poverty and inequality.

In addition, the relative importance of the impact of social spending on human development corroborates the important role of the reforms implemented to enhance the efficiency and targeting performance of expenditures. Therefore, reducing corruption and increasing the transparency and accountability of public spending are no less important than increasing spending. Macroeconomic policies, such as improving fiscal balances, also have positive effects on growth and in turn on public spending and human development.

Finally, given that a significant link exists between the economic growth and the state of human development, an integrated policy framework should be developed. However, such a framework requires the creation of appropriate institutions for it to function. Such institutions should include the participation of various social agents (including civil society and the private sector) to stand and speak for the poor and participate in the formulation of economic and social policies; systems to allow the definition of explicit and realizable social targets of public sector policies; and efficient systems to ensure complementarity in work and harmonization between economic and social authorities to avoid a duplication and overlap or a clash in priorities.

It should be noted that this study is cross-sectional in its statistical approach, thus limiting the ability to assign cause and effect. In addition, care must be exercised in interpreting associations between grouped data and events that occur at an individual level. Owing to the fact that the country study is based on “aggregated” national data and does not analyse individual-level data, a great deal of the underlying intra-country differences are not fully captured through aggregation.

Annex A

**COUNTRIES COVERED IN THE STUDY, PERIODS OF COVERAGE, SOURCES
USED, AND ECONOMIC, EDUCATION AND HEALTH INDICATORS**

This study relies on the World Bank's World Development Indicators (WDI) as its data source. The main reason for using the WDI data was the long time series available—from 1975-2002—and the consistency of the WDI with the data of many other international organizations, in particular the United Nations and its specialized agencies (including WHO and the IMF), as well as OECD. Owing to deficiencies in some of the indicators, it was necessary to improvise by using other sources in addition to the WDI. These sources included UNDP, UNESCO, WHO and IMF. Data from these sources corroborated the World Bank WDI in respect of many figures (UNESCO being the source for education indicators and WHO and IMF for health spending), thus maintaining uniformity in the data sets.

Educational data from many of the sources, including the WDI and the United Nations Statistics Division, relied on UNESCO for most of the time series. It was not possible to base all the educational data on UNESCO or other agency sources, owing to the fact that their data usually provided information back to the mid-1990s only and thus did not cover the entire period focused on by the study. According to the World Bank, its data are collected directly through national statistics organized and financed by local governments and indirectly from other United Nations agencies, the IMF, and the OECD. The reason that there are no data for some years is mainly attributed to the lack of compatibility with international standards. The UNDP Human Development Report claims that significant dissimilarities exist between national and international statistics owing to the lack of coordination between the two sources. Furthermore, international figures may not contain up-to-date national data. However, in spite of the above difficulties, every effort was made in this study to present the most coherent and reliable data available.

Great discrepancies were found in comparing data collected from the various international agencies with reports prepared by the national Ministries of Planning concerning the United Nations Millennium Development Goals (MDGs). National MDG figures appeared to diverge significantly with respect to both infant and under five-mortality, youth literacy and net primary school enrolment, and minor deviations were evident in the remaining indicators. The figures compiled had underestimated the social indicators relative to national sources, especially in countries such as Bahrain, Kuwait, Saudi Arabia and the Syrian Arab Republic. Such a lack of harmonization across sources can be attributed to different reporting standards across countries, which emphasizes the need to adopt internationally agreed standards and methods. There were not sufficient national sources available to replace World Bank figures, owing to the insufficient number of years covered by these sources (usually only two to three data points were given). It should be pointed out that the data from the early 1990s were closer to WDI figures than are the current figures. In the light of the conflicting data available across sources, a great effort was made to ensure quality in output. The World Bank WDI provided relatively consistent data and long-time series, which made a stronger analysis possible. None the less, great caution must be exercised with respect to the interpretation of results in which two sources significantly diverge and can thus affect the final analysis, as was the case with education in Saudi Arabia and health in Bahrain and the Syrian Arab Republic.

Countries covered in the study: Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen

Economic development indicator

GDP per capita (PPP, constant 1995 international dollars): Gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the United States dollar has in the United States. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 1995 international dollars.

Source: WDI

All countries except for Bahrain, Lebanon, Qatar and Yemen: 1975-2002

Bahrain: 1980-2002

Lebanon: 1989-2002

Qatar: 1997-2002

Yemen: 1990-2002

Education indicators

- **Literacy rate, youth total (percentage of people ages 15-24):** The percentage of people ages 15-24 who can, with understanding, both read and write a short, simple statement related to their everyday life.

Source: WDI

All countries except for Lebanon, and Qatar: 1975-2002

Egypt: 1975-1996

Qatar: 1975-1997

Lebanon: No data

- **Literacy rate, adult total (percentage of people ages 15 and above):** The percentage of people ages 15 and above who can, with understanding, both read and write a short, simple statement related to their everyday life.

Source: WDI

All countries except for Lebanon and Qatar: 1975-2002

Egypt: 1975-1996, 2002

Qatar: 1975-1997, 2002

Lebanon: no data

- **School enrolment, primary (percentage net):** The ratio of the number of children of official school age (as defined by the national education system) who are enrolled in school to the population of the corresponding official school age. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art and music. Based on the International Standard Classification of Education (ISCED).

Source: WDI

Bahrain, Saudi Arabia, Syrian Arab Republic: 1975, 1980, 1985, 1990-2001

Egypt: 1993, 1996, 1998-2000

Jordan: 1975, 1980, 1990-1993, 1995, 1998, 1999, 2001

Lebanon: 1996-2001

Kuwait: 1975, 1980, 1985, 1991, 1993, 1995-2001

Oman: 1975, 1980, 1985, 1990-2001

Qatar: 1975, 1980, 1985, 1990-1993, 1997-2001

United Arab Emirates: 1980, 1985, 1990-2001

Yemen: 1998-2000

- **Average years of schooling:** The years of formal schooling received, on average, by adults over age 15.

Source: Barro - Lee data set

Jordan, Bahrain, Kuwait, Syria Arab Republic: 1960-2000, five-year intervals

Egypt: 1975-2000, five-year intervals

No data for the remaining countries

Cohen and Soto:

Egypt, Iraq, Jordan, Syrian Arab Republic: Every 10 years as of 1960 to 2010

Public spending on education

- **Public spending on education, total (percentage of GDP):** The percentage of GDP accounted for by public spending on public education plus subsidies to private education at the primary, secondary, and tertiary levels.

Source: WDI

Bahrain: 1980-2001

Egypt: 1975, 1981-1995

Jordan: 1975, 1980-1999, 2001

Kuwait: 1975, 1980-1997

Lebanon: 1988, 1989, 1992-1996, 1998-2001

Oman: 1975, 1980, 1981, 1984-1999, 2001

Qatar: 1975, 1980-1985, 1987-1994, 1998

Saudi Arabia: 1975, 1980-1998

Syrian Arab Republic: 1975, 1980-1992, 1994-1999, 2001

United Arab Emirates: 1975, 1980-1998

Yemen: 1993-1997, 2000, 2001

- **Per capita public spending on education (PPP, constant 1995 international dollars):**

Source: ESCWA calculations based on WDI data

Bahrain: 1980-2001

Egypt: 1975, 1981-1995

Jordan: 1975, 1980-1999, 2001

Kuwait: 1975, 1980-1989, 1991-1997

Oman: 1975, 1980, 1981, 1984-1999, 2001

Qatar: No data as GDP per capita not available

Saudi Arabia: 1975, 1980-1998

Syrian Arab Republic: 1975, 1980-1992, 1994-1999, 2001

United Arab Emirates: 1975, 1980-1998

Health indicators

- **Life expectancy at birth:** The number of years a newborn infant would live if prevailing patterns of age-specific mortality rates at the time of birth were to stay the same throughout the child's life.

Source: WDI

All countries: 1975-2002, every two or three years.

- **Infant mortality rate (per 1000 live births):** The probability of dying between birth and exactly one year of age, expressed per 1000 live births.

Source: WDI

All countries: 1975, 1980, 1990, 1995, 2000, 2002

- **Under-five mortality rate (per 1000 live births):** The probability of dying between birth and exactly five years of age, expressed per 1000 live births.

Source: WDI

All countries: 1975, 1980, 1990, 1995, 2000, 2002

Public, private and total spending on health

- **Health expenditure, private (percentage of GDP):** Direct household (out of pocket) spending, private insurance, spending by non-profit institutions serving households and direct service payments by private corporations. Together with public health expenditure, it makes up total health expenditure.

Source: WHO

All countries: 1997-2001

- **Health expenditure, public (percentage of GDP):** Current and capital spending from government (central and local) budgets, external borrowing and grants (including donations from international agencies and non-governmental organizations) and social (or compulsory) health insurance funds. Together with private health expenditure, it makes up total health expenditure.

Source: WHO (Used for descriptive statistical analysis)

All countries: 1997-2001

Source: IMF: Government Finance Statistics Yearbook 2004 (Used for time series-cross section study).

Bahrain: 1981-2002 except 1999

Egypt: 1981-2002 except 1998 and 1999

Jordan: 1981-2002

Kuwait: 1980-1999

Oman: 1981-2001

Syrian Arab Republic: 1980-1999 except 1982-1985

United Arab Emirates: 1980-1999

- **Health expenditure, total (percentage of GDP):** Private plus public health expenditures.

Source: WHO

All countries: 1997-2001

- **Private expenditure on health as a percentage of total expenditure:** Private expenditure on health comprises the outlays of insurers and third-party payers other than social security, mandated employer health services and other enterprise-provided health services, non-profit institutions and non-governmental organizations financed health care, private investments in medical care facilities and household out-of-pocket spending.

Source: WHO

All countries: 1997-2002

- **Per capita total expenditure on health (PPP, constant 1995 international dollars):** Total health expenditure per capita is the per capita amount of the sum of public health expenditure (PHE) and private expenditure on health. The international dollar is a common currency unit that takes into account differences in the relative purchasing power of various currencies. Figures expressed in international dollars are calculated using purchasing power parities (PPP), which are rates of currency conversion constructed to account for differences in price level between countries.

Source: WHO

All countries: 1997-2001

- **Per capita government expenditure on health (PPP, constant 1995 international dollars):** Public health expenditure per capita is the per capita amount of the sum of outlays on health paid for by taxes, social security contributions and external resources (without double-counting the

government transfers to social security and extrabudgetary funds). The international dollar is a common currency unit that takes into account differences in the relative purchasing power of various currencies. Figures expressed in international dollars are calculated using purchasing power parities, which are rates of currency conversion constructed to account for differences in price level between countries.

Source: WHO (Used for time series-cross section study).

All countries: 1997-2002

Source: IMF: Government Finance Statistics Yearbook 2004 (Used for time series-cross section study).

Bahrain: 1981-2002 except 1999

Egypt: 1981-2002 except 1998 and 1999

Jordan: 1981-2002

Kuwait: 1980-1999

Oman: 1981-2001

Syrian Arab Republic: 1980-1999 except 1982-1985

United Arab Emirates: 1980-1999

Annex B

**TRENDS OF ECONOMIC AND SOCIAL INDICATORS AND
SUMMARY OF CROSS-SECTION CORRELATIONS**

Annex C

**WORLD DEVELOPMENT INDICATORS AND ESTIMATES BY NATIONAL
SOURCES OF SOME SOCIAL INDICATORS: A COMPARISON**

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ANNEX TABLE B.1. PUBLIC SPENDING ON EDUCATION IN THE ESCWA REGION AND OTHER COUNTRIES/AREAS

	Bahrain		Egypt		Jordan		Kuwait		Lebanon		Oman		Saudi Arabia		Syrian Arab Republic		United Arab Emirates		Yemen		ESCWA ^{b/}		Norway		United States		Hong Kong		Singapore	
	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$	% GDP	Per capita PPP\$
1975	..	..	5.0	72	3.8	86	3.2	834	..	..	1.3	100	7.9	1552	4.0	85	0.9	381	..	..	5 [#]	286 [#]	6.2	954	7.3	1357	2.5	183	2.9	175
1980	2.8	417	5.2	110	6.8	269	2.8	518	..	..	1.9	127	4.1	864	4.6	117	1.3	558	..	..	4.0	243	6.3	1221	6.6	1390	2.4	269	2.7	244
1981	2.8	364	5.3	114	5.1	203	3.0	381	..	..	2.2	164	4.9	1025	5.4	146	1.0	415	..	..	4.5	268	6.1	1194	6.4	1358	1.8	216	3.5	323
1982	3.3	379	5.6	130	5.0	203	5.1	548	..	..	2.5	197	7.6	1267	5.9	159	1.3	472	..	..	6.0	325	6.3	1227	6.6	1348	2.8	332	4.2	394
1983	3.9	457	5.5	131	4.8	196	5.2	602	..	..	2.8	247	7.3	1018	6.2	162	1.8	570	..	..	5.8	295	6.2	1254	6.5	1404	2.8	349	..	..
1984	3.5	412	5.6	139	5.8	249	5.2	620	..	..	3.2	309	8.5	1100	6.2	150	1.7	537	..	..	6.3	318	6.0	1274	6.4	1443	2.7	372	4.4	455
1985	3.8	426	5.7	151	6.8	295	5.5	616	..	..	3.6	387	7.5	864	6.1	151	1.8	480	..	..	6.0	293	5.8	1296	4.8	1117	2.8	372	4.6	454
1986	4.7	527	5.2	140	3.6	161	6.9	686	..	..	3.8	401	8.8	992	5.6	131	2.2	479	..	..	6.4	305	6.2	1424	6.6	1586	2.8	413	4.2	433
1987	4.4	527	4.5	110	3.5	156	6.0	706	..	..	3.7	363	8.4	873	4.6	108	2.2	482	..	..	5.9	267	6.5	1505	4.9	1191	2.5	412	3.9	439
1988	4.3	558	4.6	114	4.2	183	6.9	649	..	..	3.8	393	8.0	862	3.6	94	2.3	469	..	..	5.8	268	6.6	1550	5.0	1250	2.6	456	3.4	412
1989	4.3	535	5.2	134	5.8	211	5.8	658	3.2	51	3.4	348	7.6	785	4.0	96	2.2	466	..	..	5.8	270	6.9	1634	5.0	1304	2.5	456	3.0	389
1990	4.1	535	3.9	105	8.1	286	4.8	740	..	..	3.2	337	6.5	717	4.0	98	1.8	433	..	..	5.1	246	7.1	1708	5.1	1335	2.8	519	3.1	415
1991	3.9	459	4.1	107	8.0	267	14.4	870	..	..	3.4	363	5.8	683	3.9	99	2.0	440	..	..	4.9	240	7.2	1792	..	..	2.9	561	3.8	535
1992	4.0	508	4.2	112	6.5	241	7.7	994	2.2	71	3.5	377	6.7	811	2.9	82	2.0	438	..	..	5.2	266	7.5	1915	5.2	1382	2.9	580	3.3	467
1993	3.7	524	4.5	122	7.6	277	6.2	1091	1.9	66	4.0	426	7.1	851	3.2	92	2.0	412	5.7	35	5.5	285	8.0	2070	5.1	1366	2.8	576	3.1	504
1994	3.7	516	4.6	125	7.1	259	6.2	1134	2.1	77	4.0	438	6.4	764	3.6	101	2.0	374	5.5	35	5.2	273	8.1	2188	5.2	1423	..	..	3.1	533
1995	3.6	489	4.7	130	8.2	307	6.1	1038	2.7	103	3.9	430	5.5	640	3.2	93	1.9	337	4.5	31	4.8	253	8.0	2227	..	..	2.9	631	3.1	551
1996	3.5	472	4.8	136	7.4	275	5.7	903	2.6	101	3.2	356	4.6	539	3.7	111	1.7	332	5.1	35	4.4	236	7.4	2163	..	..	..	..	..	..
1997	3.6	492	4.9	143	6.3	230	6.1	914	2.4	94	3.4	378	6.7	779	2.8	86	1.8	350	5.2	37	5.2	280	..	..	..	..	..	..	..	..
1998	3.7	507	..	..	6.1	221	..	..	2.1	84	4.1	470	8.3	972	3.7	118	1.9	359	..	..	..	..	7.7	2384	5.0	1511	..	..	..	..
1999	3.5	503	..	..	5.0	179	..	..	2.0	80	4.0	450	..	..	3.4	106	..	..	..	..	..	..	7.4	2328	5.1	1570	..	..	..	..
2000	3.0	438	..	..	..	..	..	..	3.0	118	..	..	..	..	..	..	..	..	10.0	76	..	..	6.9	2208	5	1523	..	..	..	..
2001	3.2	467	..	..	4.6	167	..	..	2.9	121	3.9	476	..	..	4.1	127	..	..	10.0	76	..	..	..	..	..	..	..	..	..	..
Average ^{d/}	3.7	478	4.9	122	5.9	224	5.9	763	2.5	88	3.3	343	6.9	898	4.3	114	1.8	439	6.6	47	5.4	274	6.9	1691	5.6	1381	2.7	419	3.5	420

Source: World Bank, World Development Indicators (WDI), available at <http://www.worldbank.org>, ESCWA calculations.

Notes: Per capita public spending on education is calculated by multiplying public spending on education as a percentage of GDP by GDP per capita (PPP).

a/ Arithmetical average of individual national values available.

b/ ESCWA average excludes Lebanon and Yemen for consistency in the time series. Bahrain is excluded for 1975. Were Lebanon and Yemen to be included, public spending as a percentage of GDP for 1993-1997 would decline by around 0.5 percentage points, ESCWA per capita public spending for 1993-1997 would be around \$35 lower.

ANNEX TABLE B.2. HEALTH EXPENDITURES IN THE ESCWA REGION AND OTHER COUNTRIES

	Public Expenditure on Health								Total expenditure on health							
	As a percentage of total health spending				As a percentage of GDP				As a percentage of GDP				Per capita (PPPs)			
	1997	1999	2001	Average ^{a/}	1997	1999	2001	Average ^{a/}	1997	1999	2001	Average ^{a/}	1997	1999	2001	Average ^{a/}
Bahrain	70.5	69.3	69.0	69.5	3.4	3.3	2.9	3.2	4.8	4.8	4.1	4.6	702	670	664	664
Egypt	46.3	46.3	49.0	46.6	1.8	1.8	1.9	1.8	3.9	3.9	3.9	3.9	121	134	153	134
Jordan	54.5	50.9	47.1	51.2	4.4	4.4	4.5	4.4	8.2	8.6	9.5	8.7	323	350	412	358
Kuwait	79.5	78.8	78.8	78.9	2.9	3.1	3.0	3.0	3.7	3.9	3.9	3.9	638	617	612	631
Lebanon	31.2	26.7	28.1	28.5	3.7	3.2	3.4	3.5	11.8	12.1	12.2	12.2	642	719	673	706
Oman	81.9	82.4	80.8	81.6	2.8	2.9	2.4	2.7	3.4	3.5	3.0	3.3	348	357	343	351
Qatar	76.8	76.1	73.4	75.4	3.0	2.9	2.2	2.7	3.9	3.8	3.1	3.6	842	874	782	845
Saudi Arabia	77.4	73.8	74.6	75.3	4.1	3.3	3.4	3.6	5.3	4.5	4.6	4.8	680	583	591	620
Syrian Arab Republic	59.8	57.1	53.0	55.9	1.5	1.6	1.8	1.6	2.5	2.8	3.4	2.9	194	233	266	232
United Arab Emirates	76.8	75.8	75.8	76.2	2.8	2.8	2.6	2.8	3.6	3.7	3.5	3.7	727	710	921	779
Yemen	30.8	32.8	34.8	34.7	1.2	1.3	1.6	1.4	3.8	4.0	4.5	4.1	52	58	69	60
ESCWA ^{b/}	52.4	51.6	52.7	52.2	2.3	2.2	2.3	2.2	4.3	4.3	4.5	4.4	260	261	283	268
Norway	84.3	85.2	85.5	85.0	6.6	7.3	6.8	6.9	7.8	8.5	8.0	8.1	2 193	2 550	2 920	2 571
United States	45.3	44.2	44.4	44.5	1.4	1.5	1.3	1.5	13.0	13.0	13.9	13.2	3 939	4 287	4 887	4 350
Singapore	39.0	38.3	33.5	37.5	2.1	2.1	2.1	2.2	3.7	4.0	3.9	3.9	834	947	993	925
Thailand	57.2	57.6	57.1	58.0	5.9	5.7	6.2	5.9	3.7	3.7	3.7	3.7	247	233	254	242

Source: World Health Organization, available at www.who.int, ESCWA calculations.

a/ Arithmetic average from 1997-2001 (all 5 years inclusive).

b/ ESCWA regional averages are calculated as the population weighted average of the individual national values available.

ANNEX TABLE B.3. SCHOOL ENROLLMENT, PRIMARY LEVEL, IN THE ESCWA REGION AND OTHER AREAS
(Percentage net)

	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Syrian Arab Republic	United Arab Emirates	Yemen	ESCWA ^{a/}	East Asia and Pacific	South Asia	Latin America and Caribbean	Sub-Saharan Africa	Middle income	OECD	World	
1975	70	..	79	69	..	27	81	42	86		..	..	..	..	..	..	..	..	..	..
1980	80	..	73	85	..	43	85	49	89	74	..	..	..	..	..	..	..	..	..	..
1985	96	..	..	87	..	66	91	51	95	77	..	..	..	..	85	..	..	95	..	..
1990	99	84	66	45	78	70	87	59	95	94	52	76	97	..	89	..	95	98	..	..
1991	97	84	69	45	87	70	82	59	96	90	52	77	96	..	89	..	94	..	..	..
1992	99	..	69	..	..	72	79	61	95	86	..	..	95	..	90	..	93	95	..	..
1993	99	88	69	54	77	72	80	62	94	83	..	..	95	..	90	..	93	95	..	..
1994	98	..	..	..	..	71	..	..	92	83	..	..	96	..	91	..	94	96	..	..
1995	99	..	67	62	..	70	..	63	91	80	..	..	98	..	..	..	96	95	..	..
1996	98	93	67	62	76	69	87	61	91	78	55	81	99	..	..	..	96	..	..	..
1997	96	..	..	67	91	67	87	60	91	79	..	..	98	..	..	..	..	..	..	..
1998	94	91	90	88	88	76	97	57	93	78	57	81	..	..	..	..	..	96	..	..
1999	91	90	90	84	89	76	97	58	94	78	60	82	..	84	95	..	..	96	..	..
2000	91	90	90	83	90	75	95	59	96	79	67	82	92	82	95	..	92	98	88	..
2001	91	90	91	85	90	75	94	59	98	81	67	83	..	..	94	..	..	..	..	..
Percentage improvement (1975-2001) ^{b/}	29.9	7.1	16.1	23.2	15.1	175.2	16.6	41.2	13.3	9.9	28.8	9.2	-5.2	..	10.6	..	-3.2	3.2	..	..

Source: World Bank, World Development Indicators (WDI), available at <http://www.worldbank.org>.

a/ ESCWA regional averages are calculated as the population-weighted average of all available countries.

b/ If available.

ANNEX TABLE B.4. LITERACY RATE, ADULT TOTAL IN THE ESCWA REGION AND OTHER AREAS
(Percentage of people ages 15 and above)

	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Syrian Arab Republic	United Arab Emirates	Yemen	ESCWA ^{a/}	East Asia and Pacific	South Asia	Latin America and Caribbean	Sub-Saharan Africa	Middle Income	OECD	World
1975	62.9	35.4	62.3	61.8	..	27.6	63.4	41.7	47.7	59.6	14.9	37	63	35	77	33	69	..	59
1976	64.7	36.2	63.7	63.0	..	29.6	64.5	43.5	48.8	60.9	15.7	38	64	36	77	34	70	..	60
1977	66.6	37.0	65.0	64.2	..	31.3	65.7	45.3	50.0	62.0	16.6	39	66	37	78	35	71	..	61
1978	68.0	37.8	66.5	65.5	..	32.9	67.3	47.2	51.1	63.3	17.7	40	67	38	79	36	72	..	62
1979	69.5	38.5	67.8	66.6	..	34.6	68.4	49.0	52.2	64.3	18.9	41	68	39	79	37	73	..	63
1980	71.2	39.3	69.2	67.8	..	36.2	69.8	50.8	53.3	65.4	20.0	42	70	39	80	38	74	..	64
1981	72.7	40.1	70.4	68.7	..	38.0	70.9	52.6	54.6	66.2	21.2	43	71	40	80	39	75	..	64
1982	73.1	40.9	71.7	69.6	..	40.0	72.0	54.3	55.8	66.8	22.4	44	72	41	81	41	75	..	65
1983	74.0	41.7	73.0	70.3	..	41.8	72.9	56.0	57.0	67.5	23.6	46	73	42	81	42	76	..	66
1984	75.4	42.5	74.3	71.2	..	43.7	74.0	57.6	58.3	68.1	24.7	47	74	42	82	43	77	..	67
1985	76.7	43.2	75.6	72.1	..	45.5	74.4	59.2	59.4	68.8	25.9	48	75	43	83	44	78	..	67
1986	77.4	44.0	76.7	73.1	..	47.5	74.7	60.7	60.6	69.3	27.2	49	76	44	83	45	79	..	68
1987	78.5	44.8	77.9	74.1	..	49.4	75.5	62.2	61.6	69.7	28.6	50	77	45	84	46	79	..	69
1988	79.8	45.6	79.1	75.0	..	51.2	76.0	63.6	62.7	70.2	29.9	51	78	45	84	47	80	..	69
1989	81.1	46.3	80.3	75.9	..	53.0	76.5	64.9	63.8	70.6	31.2	52	79	46	85	49	81	..	70
1990	82.1	47.1	81.5	76.7	..	54.7	77.0	66.2	64.8	71.0	32.7	53	80	47	85	50	81	..	71
1991	82.7	47.9	82.5	77.3	..	56.5	77.5	67.3	65.9	71.4	34.2	54	80	48	85	51	82	..	71
1992	82.7	48.7	83.6	77.8	..	58.3	77.8	68.2	66.9	71.9	35.8	55	81	49	86	52	82	..	72
1993	83.6	49.5	84.6	78.3	..	60.1	78.3	69.2	67.9	72.4	37.3	56	82	49	86	53	83	..	73
1994	84.2	50.3	85.6	78.6	..	61.9	78.8	70.2	68.9	72.9	38.8	57	83	50	87	54	84	..	73
1995	85.2	51.1	86.5	79.0	..	63.7	79.2	71.3	69.9	73.4	40.1	58	83	51	87	56	84	..	74
1996	85.6	52.9	87.2	79.5	..	65.3	79.6	72.2	70.8	74.0	41.5	59	84	52	87	57	85	..	74
1997	86.3	53.4	87.9	80.0	..	66.8	80.0	73.2	71.7	74.5	42.7	60	84	52	88	59	86	..	75
1998	86.7	53.8	88.5	80.6	..	68.4	80.8	74.2	72.6	75.0	43.9	61	85	53	88	60	86	..	76
1999	86.9	54.3	89.2	81.2	..	70.1	81.7	75.2	73.5	75.6	45.1	61	86	55	88	61	87	..	77
2000	87.5	54.7	89.8	81.9	..	71.7	82.5	76.2	74.4	76.2	46.4	62	90	56	89	62	90	..	79
2001	87.9	55.2	90.3	82.4	..	73.0	83.4	77.1	75.3	76.7	47.7	63	..	59	..	64	..	..	..
2002	88.5	55.6	90.9	82.9	..	74.4	84.2	77.9	82.9	77.3	49.0	65	..	..	..	65	..	..	..
Percentage improvement (1975-2002)	40.8	57.2	45.9	34.2	..	169.5	32.7	86.7	73.9	29.5	228.3	75.6	42.9	68.6	15.6	97.0	30.4	..	33.9

Source: World Bank, World Development Indicators (WDI), available at <http://www.worldbank.org>.

a/ ESCWA regional averages are calculated as the population weighted average of all available countries.

ANNEX TABLE B.5. LITERACY RATE, YOUTH TOTAL IN THE ESCWA REGION AND OTHER AREAS
(Percentage of people ages 15-24)

	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Syrian Arab Republic	United Arab Emirates	Yemen	ESCWA ^a	East Asia and Pacific	South Asia	Latin America and Caribbean	Sub-Saharan Africa	Middle Income	OECD	World
1975	86	47	86	76	..	46	79	65	65	72	22	51	87	48	87	48	86	..	74
1976	87	48	87	77	..	49	80	67	66	73	23	52	88	48	88	50	87	..	74
1977	88	49	88	78	..	52	81	69	67	73	25	53	89	49	88	51	88	..	75
1978	88	50	89	79	..	54	81	70	68	74	27	54	89	50	88	52	88	..	76
1979	89	51	90	79	..	57	82	72	69	75	30	56	90	51	89	53	89	..	77
1980	90	52	91	80	..	60	83	74	71	75	31	57	91	52	89	55	90	..	77
1981	91	53	92	81	..	63	84	75	72	76	34	58	92	53	90	56	90	..	78
1982	91	54	93	82	..	66	85	76	73	77	35	59	92	54	90	57	91	..	78
1983	92	55	94	83	..	68	85	77	74	78	37	61	93	55	90	59	91	..	79
1984	93	56	94	83	..	71	86	79	75	79	39	62	93	55	91	60	92	..	80
1985	93	57	95	84	..	74	87	80	76	80	41	63	94	56	91	61	92	..	80
1986	94	58	95	85	..	76	87	81	76	81	43	64	94	57	91	62	93	..	81
1987	94	59	96	85	..	79	88	82	77	82	44	65	94	58	92	64	93	..	81
1988	95	60	96	86	..	81	89	83	78	83	46	66	95	59	92	65	93	..	82
1989	95	60	96	87	..	83	90	84	79	84	48	68	95	60	92	66	93	..	82
1990	96	61	97	88	..	86	90	85	80	85	50	69	95	60	93	67	94	..	83
1991	96	62	97	88	..	87	91	86	81	85	52	69	95	61	93	68	94	..	83
1992	96	63	97	89	..	89	91	87	81	86	53	70	96	62	93	69	94	..	83
1993	97	64	98	89	..	91	92	88	82	87	55	71	96	63	94	71	94	..	84
1994	97	65	98	90	..	92	93	89	83	87	57	72	96	64	94	72	95	..	84
1995	97	66	98	90	..	94	93	90	84	88	59	73	96	65	94	73	95	..	84
1996	98	67	98	91	..	95	93	90	84	88	60	74	96	65	94	73	95	..	85
1997	98	68	99	91	..	96	94	91	85	89	61	75	97	66	94	75	96	..	85
1998	98	69	99	92	..	96	94	91	86	90	62	76	97	67	95	76	96	..	85
1999	98	70	99	92	..	97	94	92	86	90	64	77	97	69	95	77	96	..	86
2000	98	71	99	92	..	98	94	93	87	91	65	78	98	70	95	77	97	..	87
2001	99	72	99	93	..	98	95	93	88	91	66	79	..	..	..	80	..	..	..
2002	99	73	99	93	..	99	95	94	95	91	68	81	..	..	..	80	..	..	..
Percentage improvement (1975-2002)	14.4	55.5	15.8	23.1	..	111.9	19.7	43.0	46.0	26.4	210.9	59.9	12.6	45.8	9.2	66.7	12.8	..	17.6

Source: World Bank, World Development Indicators (WDI), available at <http://www.worldbank.org>.

a/ ESCWA regional averages are calculated as the population weighted average of all available countries.

ANNEX TABLE B.6. AVERAGE YEARS OF SCHOOLING FOR POPULATION AGED 15 YEARS AND ABOVE

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2010
	Barro and Lee (2001)									
Bahrain	1.04	1.58	2.78	3.23	3.62	4.06	4.97	5.50	6.11	..
Egypt	..	..	.	1.55	2.34	3.56	4.26	4.98	5.51	..
Iraq	0.29	0.81	1.36	1.85	2.66	2.53	3.27	3.74	3.95	..
Jordan	2.33	2.74	3.25	3.77	4.28	5.23	5.95	6.47	6.91	..
Kuwait	2.89	2.88	3.13	3.37	4.53	5.43	5.75	5.96	6.22	..
Syrian Arab Republic	1.35	1.77	2.15	2.84	3.65	4.47	5.11	5.48	5.77	..
United Arab Emirates	..	..	.	2.87	..	..	..	..	..	..
ESCWA ^{a/}	..	..	.	1.89	2.69	3.58	4.27	4.88	5.30	..
East Asia	2.83	..	3.80	..	5.10	..	5.84	6.35	6.71	..
South Asia	1.51	.	2.05	.	2.97	.	3.85	4.16	4.57	.
Latin America	3.30	..	3.82	..	4.43	..	5.32	5.74	6.06	..
Sub-Saharan Africa	1.74	..	2.07	..	2.39	..	3.14	3.39	3.52	..
Middle East and North Africa	1.23	..	2.07	..	3.29	..	4.38	4.98	5.44	..
High-income countries	7.06	..	7.56	..	8.86	..	9.19	9.52	9.76	..
World	4.64	..	5.16	..	5.92	..	6.43	6.44	6.66	..
	Cohen and Soto (2001)									
Egypt	1.01	..	1.64	..	2.92	..	4.96	..	6.76	8.04
Iraq	0.37	..	1.25	..	2.66	..	4.87	..	6.11	6.6
Jordan	2.58	..	5.22	..	7.4	..	9.36	..	10.28	10.18
Syrian Arab Republic	2.09	..	2.99	..	4.17	..	5.67	..	7.09	7.59
East Asia	2.3	..	3.2	..	4.3	..	5.4	..	6.4	7.3
South Asia	1.2	..	1.9	..	2.6	..	3.1	..	4.3	5.3
Latin America	3.8	..	4.5	..	5.3	..	6.7	..	7.6	8.2
Sub-Saharan Africa	1.4	..	1.7	..	2.1	..	3	..	3.9	4.3
Middle East and North Africa	0.9	..	1.6	..	2.7	..	4.3	..	5.9	6.9
High-Income countries	8.7	..	9.8	..	10.9	..	11.6	..	12.1	12.5

Source: Cohen and Soto, "Growth and Human Capital: Good Data, Good Results" (2001), Barro and Lee, "International Data on Educational Attainment: Updates and Implications" (2001).

a/ ESCWA regional averages are the population weighted average of individual national values available.

ANNEX TABLE B.7. MORTALITY RATE, UNDER-FIVE IN THE ESCWA REGION AND OTHER AREAS
(Per 1,000)

	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Syrian Arab Republic	United Arab Emirates	Yemen	ESCWA	East Asia and Pacific	South Asia	Latin America and Caribbean	Sub-Saharan Africa	Middle income	OECD	World
1975	53	204	87	47	49	148	49	135	101	55	254	174	102	191	103	218	105	22	135
1980	30	173	67	35	44	95	32	85	73	27	205	140	79	176	82	197	81	15	119
1990	19	104	43	16	37	30	25	44	44	14	142	83	59	130	53	187	55	9	95
1995	18	71	37	14	34	18	18	34	36	11	126	62	52	112	44	185	48	8	90
2000	16	45	34	10	32	14	16	29	29	9	117	47	45	99	36	175	40	7	83
2002	16	39	33	10	32	13	16	28	28	9	114	43	42	95	34	174	38	7	81
Percentage improvement (1975-2002)	69.5	80.9	62.1	78.7	34.7	91.2	67.0	79.3	72.3	83.6	55.1	75.1	58.6	50.1	66.8	20.2	63.6	67.4	39.8

Source: World Bank, World Development Indicators (WDI), available at <http://www.worldbank.org>.

a/ ESCWA regional averages are calculated as the population weighted average of all available countries.

ANNEX TABLE B.8. CORRELATIONS CROSS SECTION
HEALTH MEASURES OF 2002

	Health				Economic					
		Infant Mortality Rate	Under 5 Mortality Rate	Life Expectancy	GDP/Capita (PPP\$)	GDP/Capita Growth	Per Capita Total Health Spending (PPP\$)	Public Health Spending (% GDP)	Total Health Spending (% GDP)	Public Spending (% of Total Spending)
		2002	2002	2002	2002	1975-2002	2001	2001	2001	2001
Education										
Youth Literacy (ages 15-24) ^{d/}	1975	-0.75 ^{h/}	-0.75 ^{h/}	0.82 ^{h/}						
	2002	-0.80 ^{h/}	-0.79 ^{h/}	0.79 ^{h/}						
Adult Literacy (ages 15+) ^{d/}	1975	-0.72 ^{h/}	-0.71 ^{h/}	0.77 ^{h/}						
	2002	-0.76 ^{h/}	-0.75 ^{h/}	0.76 ^{h/}						
Net Primary School Enrollment	1975 ^{b/}	0.21	0.26	-0.16						
	2001	-0.36	-0.37	0.29						
Health										
Infant Mortality	1975	0.79 ^{h/}	0.78 ^{h/}	-0.80 ^{h/}						
	2002	..	1.00 ^{h/}	-0.98 ^{h/}						
Under 5 Mortality	1975	0.78 ^{h/}	0.78 ^{h/}	-0.76 ^{h/}						
	2002	1.00 ^{h/}	..	-0.98 ^{h/}						
Life Expectancy	1975 ^{c/}	-0.77 ^{h/}	-0.76 ^{h/}	0.79 ^{h/}						
	2002	-0.98 ^{h/}	-0.98 ^{h/}	..						
Economic										
GDP/Capita	1975 ^{d/}	-0.74 ^{h/}	-0.74 ^{h/}	0.75	0.91 ^{h/}	-0.94 ^{h/}	0.96 ^{h/}	0.06	-0.51	0.69 ^{h/}
	2002	-0.58 ^{h/}	-0.53 ^{h/}	0.58 ^{h/}		-0.86 ^{h/}	0.70 ^{h/}	-0.05	-0.25	0.67 ^{h/}
GDP/Capita growth	1975-2002 ^{d/}	0.69 ^{h/}	0.69	-0.77	-0.86 ^{h/}	..	-0.94 ^{h/}	-0.19	0.48	-0.71 ^{h/}
Per Capita Total Spending on Health (PPP\$)	2001	-0.69 ^{h/}	-0.67 ^{h/}	0.72 ^{h/}	0.78 ^{h/}	-0.94 ^{h/}	..	0.40	0.05	0.48
Public Health Spending (% GDP)	2001	-0.32 ^{h/}	-0.34 ^{h/}	0.44 ^{h/}	0.02 ^{h/}	-0.19	0.40	..	0.40	0.00
Total Health Spending (% GDP)	2001	0.26 ^{h/}	0.23 ^{h/}	-0.20 ^{h/}	-0.45 ^{h/}	0.48	0.05	0.40	..	-0.77 ^{h/}
Public Spending (% of Total Spending)	2001	-0.71 ^{h/}	-0.67 ^{h/}	0.71 ^{h/}	0.79 ^{h/}	-0.71 ^{h/}	0.48	0.00	-0.77 ^{h/}	..

Source: World Bank, World Development Indicators (WDI), available at www.worldbank.org, ESCWA calculations.

Note: Countries included: Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic and Yemen.

a/ Excludes Lebanon, due to lack of data availability for both literacy indicators; b/ Excludes Egypt, Lebanon, United Arab Emirates and Yemen, due to lack of data for Net Primary School Enrollment in 1975; c/ Excludes Jordan, due to lack of data for Life Expectancy in 1975; d/ Excludes Bahrain, Lebanon, Qatar and Yemen due to lack of data for GDP per Capita figures in 1975; e/ Health and economic indicators are for the year 2001, except for infant and under 5 mortality in which Egypt is 2002; f/ Significant at the 90th percentile; g/ Significant at the 95th percentile; h/ Significant at the 99th percentile.

ANNEX TABLE B.9. CORRELATIONS CROSS-SECTION
EDUCATION MEASURES OF 2002

	Education				Economic			
		Youth literacy (ages 15-24)	Adult literacy (ages 15+)	Net primary school enrolment	GDP/capita (PPP\$)	GDP/capita Growth	Per capita public education spending (PPP\$)	Public spending on education(% GDP)
		2002	2002	2001	2002	1975-2002	1997	1997
Education								
Youth literacy (ages 15-24)	1975	0.79 ^{ij}	0.93 ^{ij}	0.52				
	2002	..	0.95 ^{ij}	0.29				
Adult literacy (ages 15+)	1975	0.67	0.85 ^{ij}	0.59				
	2002	0.95 ^{ij}	..	0.44				
Net primary school enrolment	1975	-0.07	0.80 ^{ej}	0.85 ^{ij}				
	2001	0.29	0.44	..				
Health								
Infant mortality	1975	-0.81 ^{ij}	-0.90 ^{ij}	-0.51				
	2002	-0.80 ^{ij}	-0.76 ^{ij}	-0.36				
Under 5 mortality	1975	-0.81 ^{ij}	-0.90 ^{ij}	-0.52				
	2002	-0.79 ^{ij}	-0.75 ^{ij}	-0.37				
Life expectancy	1975	0.68 ^{ij}	0.84 ^{ij}	0.51				
	2002	0.79 ^{ij}	0.76 ^{ij}	0.29				
Economic								
GDP/Capita	1975	0.09	0.13	-0.40	0.91 ^{ij}	-0.94 ^{ij}	0.53	-0.26
	2002	0.43	0.40	0.15	..	-0.86 ^{ij}	0.21 ^{ej}	0.16 ^{ej}
GDP/capita growth	1975-2002	-0.27	0.12	0.50	-0.86	..	-0.69 ^{hj}	0.06
Per Capita public spending on education (PPP\$)	1997	0.37 ^{aj, ej}	0.34 ^{aj, ej}	-0.62 ^{aj, fj}	0.72 ^{ij, ej}	-0.69 ^{hj, ej}	..	0.38
Public spending on education (% GDP)	1997	0.05 ^{aj, ej}	0.17 ^{aj, ej}	-0.64 ^{aj, fj}	-0.29 ^{ej}	0.06 ^{ej}	0.38 ^{ej}	..

Source: World Bank, World Development Indicators (WDI), available at www.worldbank.org, ESCWA calculations.

Note: Countries included: Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic and Yemen.

a/ Excludes Lebanon, due to lack of data availability for both literacy indicators; b/ Excludes Egypt, Lebanon, United Arab Emirates and Yemen, due to lack of data for Net Primary School Enrolment in 1975; c/ Excludes Jordan, due to lack of data for Life Expectancy in 1975; d/ Excludes Bahrain, Lebanon, Qatar and Yemen due to lack of data for GDP per Capita figures in 1975; e/ Excludes Lebanon, Qatar and Yemen due to lack of data availability for Public Spending on Education; f/ Excludes Egypt, Jordan, Lebanon, Qatar and Yemen due to lack of data for Public Spending on Education and Net Primary School Enrollment in 1997; g/ Education and economic indicators are for the year 1997; h/ Significant at the 90th percentile; i/ Significant at the 95th percentile; j/ Significant at the 99th percentile.

ANNEX TABLE B.10. LIFE EXPECTANCY AT BIRTH, TOTAL YEARS

	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Syrian Arab Republic	United Arab Emirates	Yemen	ESCWA ^{a/}	East Asia and Pacific	South Asia	Latin America and Caribbean	Sub-Saharan Africa	Middle income	OECD	World
1975	65	53	..	69	65	53	64	57	59	65	45	54	62	51	63	46	63	73	61
1977	66	54	..	70	65	55	66	59	60	67	47	55	63	52	63	47	63	73	61
1980	68	56	..	71	65	60	67	61	62	68	49	57	64	54	65	48	65	74	63
1982	69	57	64	72	65	63	68	63	63	69	50	59	65	55	65	48	66	74	63
1985	70	59	66	73	66	66	70	66	64	71	51	61	66	56	66	49	67	75	64
1987	71	61	67	74	67	68	71	68	65	73	51	62	67	57	67	50	67	75	65
1990	71	63	68	75	68	69	72	69	66	74	52	64	67	58	68	50	68	76	65
1992	72	64	70	75	69	70	73	70	67	74	53	65	68	59	68	50	68	76	66
1995	72	65	70	76	69	72	74	71	68	75	54	66	68	61	69	49	68	77	66
1997	73	66	71	76	70	73	74	72	69	75	55	67	68	62	70	49	69	77	66
2000	73	68	72	77	70	74	75	73	70	75	56	68	69	62	70	47	69	78	66
2002	73	69	72	77	71	74	75	73	70	75	57	69	69	63	71	46	70	78	67
Percentage improvement (1975-2002)	12.3	30.2	12.5	11.6	9.2	39.6	17.2	28.1	18.6	15.4	26.7	26.7	11.3	23.5	12.7	0.0	11.1	6.8	9.8

Source: World Bank, World Development Indicators (WDI), available at <http://www.worldbank.org>.

^{a/} ESCWA regional averages are calculated as the population weighted average of all available countries.

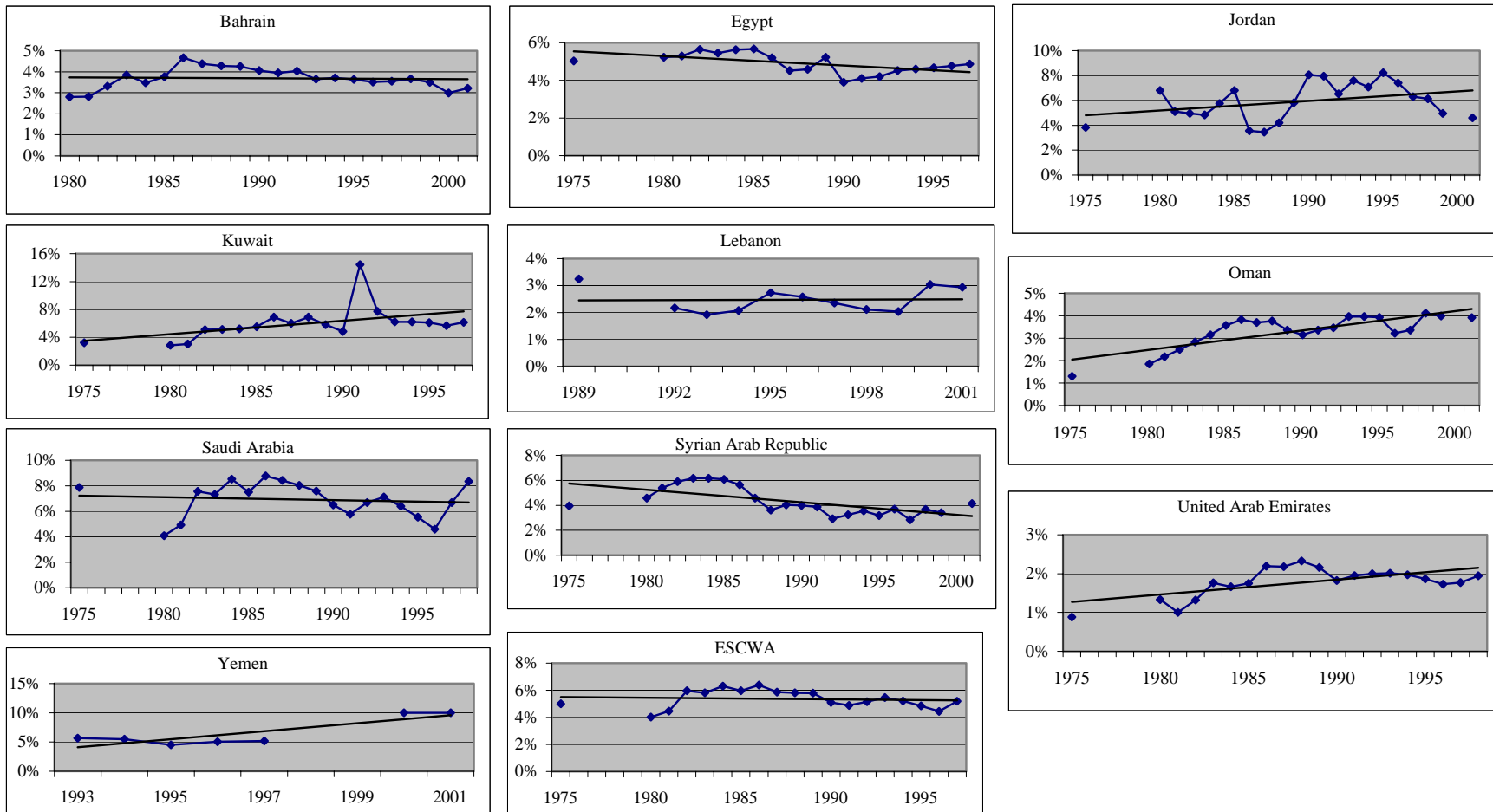
ANNEX TABLE B.11. GDP PER CAPITA IN THE ESCWA REGION AND OTHER AREAS
(PPP, constant 1995 international dollars)

	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Oman	Qatar	Saudi Arabia	Syrian Arab Republic	United Arab Emirates	Yemen	ESCWA 7 ^a	ESCWA 11 ^b	East Asia and Pacific	Latin America and Caribbean	South Asia	Sub-Saharan Africa	Middle income countries	OECD countries	World
1975	..	1 424	2 254	25 974	..	7 664	..	19 720	2 164	43 241	..	4 884	..	755	5 053	1 022	1 836	2 590	14 676	4 479
1976	..	1 604	2 680	25 387	..	8 264	..	21 282	2 333	41 672	..	5 341	..	760	5 217	1 021	1 826	2 699	15 285	4 620
1977	..	1 775	2 771	23 572	..	7 711	..	21 563	2 227	40 828	..	5 555	..	804	5 355	1 060	1 786	2 784	15 719	4 724
1978	..	1 863	3 298	22 891	..	6 904	..	20 273	2 343	33 396	..	5 471	..	871	5 431	1 097	1 746	2 853	16 264	4 838
1979	..	1 956	3 464	25 387	..	6 814	..	20 496	2 356	35 121	..	5 758	..	921	5 694	1 036	1 752	2 975	16 749	4 942
1980	14 830	2 109	3 965	18 319	..	6 866	..	21 120	2 559	41 937	..	6 056	..	973	5 952	1 078	1 806	3 093	16 807	4 979
1981	12 900	2 149	3 965	12 586	..	7 542	..	20 824	2 717	41 547	..	6 011	..	1 011	5 882	1 118	1 816	3 137	16 960	5 000
1982	11 443	2 298	4 091	10 761	..	7 878	..	16 756	2 696	35 792	..	5 443	..	1 062	5 810	1 138	1 751	3 169	16 802	4 947
1983	11 864	2 398	4 050	11 690	..	8 767	..	13 892	2 633	32 362	..	5 096	..	1 132	5 551	1 188	1 679	3 172	17 254	5 011
1984	11 885	2 480	4 325	11 948	..	9 804	..	12 899	2 432	32 334	..	5 049	..	1 229	5 635	1 216	1 675	3 302	17 907	5 157
1985	11 320	2 654	4 342	11 182	..	10 852	..	11 523	2 491	27 457	..	4 916	..	1 311	5 685	1 257	1 635	3 386	18 427	5 260
1986	11 294	2 691	4 509	9 935	..	10 462	..	11 298	2 319	21 853	..	4 781	..	1 385	5 789	1 290	1 630	3 471	18 940	5 361
1987	12 027	2 438	4 517	11 748	..	9 820	..	10 373	2 364	22 098	..	4 553	..	1 491	5 846	1 318	1 632	3 576	19 384	5 458
1988	13 039	2 488	4 358	9 413	..	10 429	..	10 729	2 599	20 117	..	4 626	..	1 612	5 774	1 407	1 645	3 674	20 064	5 605
1989	12 561	2 570	3 624	11 352	1 571	10 343	..	10 348	2 368	21 595	..	4 658	..	1 676	5 760	1 461	1 655	3 727	20 763	5 733
1990	13 166	2 689	3 551	7 206	2 004	10 710	..	11 028	2 441	23 788	592	4 840	..	1 734	5 582	1 514	1 629	3 708	21 206	5 778
1991	11 661	2 616	3 350	6 286	3 055	10 789	..	11 850	2 554	22 541	541	4 915	..	1 873	5 689	1 511	1 580	3 734	21 270	5 768
1992	12 597	2 669	3 695	12 874	3 251	10 874	..	12 143	2 793	21 887	600	5 163	..	2 053	5 757	1 557	1 519	3 771	21 547	5 810
1993	14 369	2 701	3 650	17 539	3 451	10 769	..	11 951	2 838	20 511	611	5 220	..	2 226	5 874	1 595	1 496	3 821	21 645	5 835
1994	13 908	2 725	3 667	18 237	3 721	11 032	..	11 936	2 841	18 997	645	5 242	..	2 431	6 057	1 670	1 502	3 892	22 189	5 948
1995	13 483	2 784	3 734	16 990	3 776	10 953	..	11 551	2 911	18 099	693	5 210	..	2 661	6 043	1 751	1 501	4 029	22 540	6 063
1996	13 441	2 854	3 705	15 959	3 908	11 047	..	11 682	3 011	19 211	697	5 312	..	2 857	6 157	1 836	1 515	4 184	23 014	6 206
1997	13 847	2 940	3 657	14 893	4 002	11 254	21 445	11 660	3 034	19 771	713	5 384	4 856	3 024	6 375	1 878	1 585	4 353	23 598	6 371
1998	13 832	3 009	3 612	14 722	3 996	11 429	22 565	11 660	3 214	18 461	694	5 436	4 901	3 101	6 428	1 946	1 533	4 421	24 032	6 451
1999	14 359	3 149	3 616	14 630	3 948	11 287	23 067	11 288	3 097	18 008	719	5 439	4 908	3 252	6 383	2 036	1 547	4 531	24 609	6 590
2000	14 608	3 253	3 597	14 545	3 866	11 498	25 577	11 716	3 067	18 875	760	5 624	5 075	3 455	6 525	2 084	1 557	4 753	25 226	6 783
2001	14 515	3 300	3 627	14 315	4 117	12 144	25 599	11 619	3 072	18 188	764	5 654	5 104	3 634	6 473	2 142	1 574	4 887	25 356	6 854
2002	15 196	3 377	3 741	14 455	4 212	11 813	26 303	11 377	3 124	17 218	771	5 661	5 116	3 844	6 382	2 196	1 593	5 068	25 696	6 981

Sources: World Bank, World Development Indicators (WDI), available at www.worldbank.org, World Health Organization, available at www.who.int, and ESCWA database.

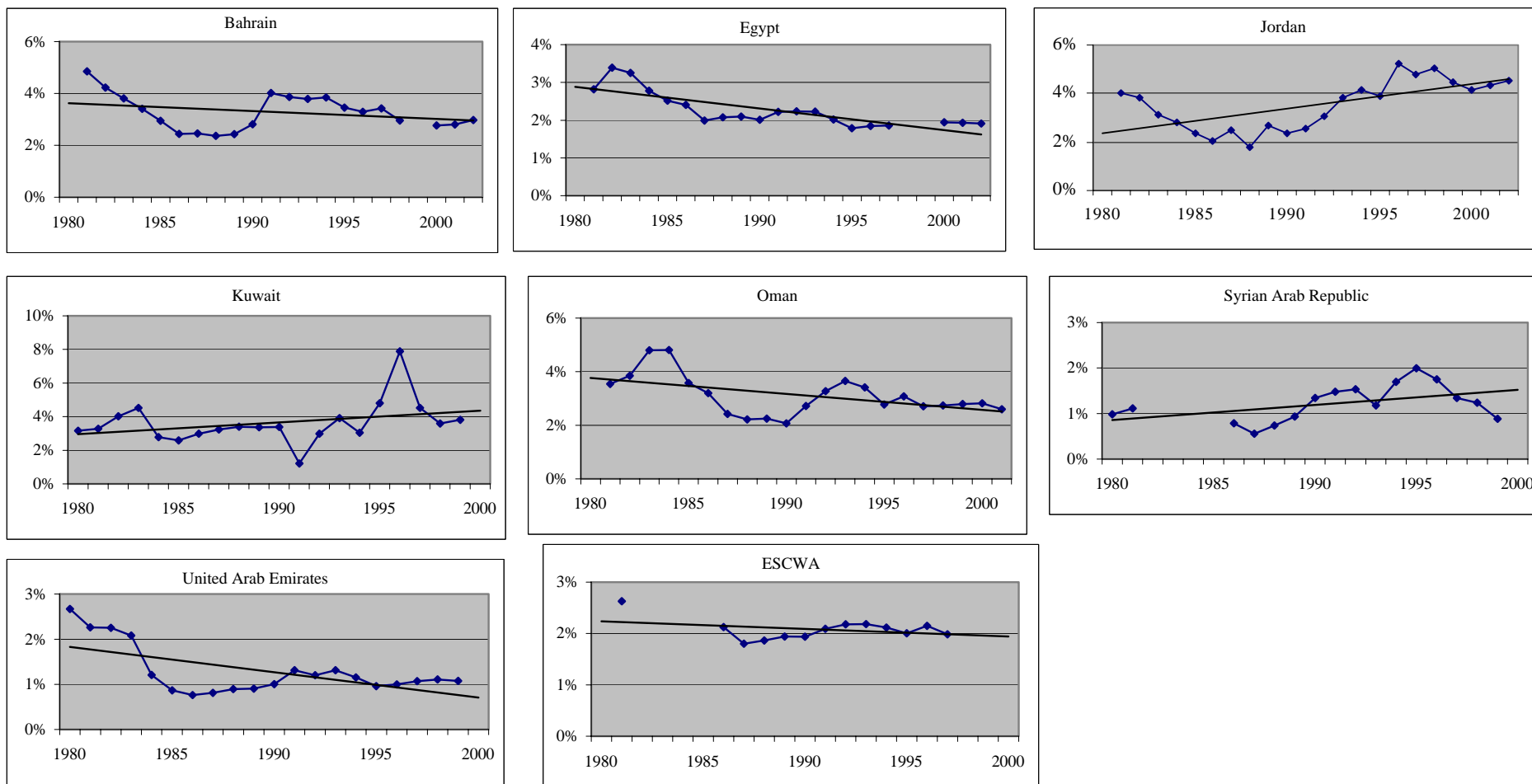
a/ ESCWA 7 is based on the seven countries for which complete time series are available: Egypt, Jordan, Kuwait, Oman, Saudi Arabia, Syrian Arab Republic, and United Arab Emirates; b/ ESCWA 11 includes the 11 countries of the sample.

Annex figure B.F.I. Public spending on education in the ESCWA region
(Percentage of GDP)



Source: World Bank, World Development Indicators (WDI), available at www.worldbank.org, ESCWA calculations.

Annex figure B.F.II. Public spending on health in the ESCWA region
(Percentage of GDP)



Source: IMF, Government Finance Statistics Yearbook 2004, ESCWA calculations.

ANNEX TABLE C.1. SCHOOL ENROLMENT, PRIMARY LEVEL IN THE ESCWA REGION
(Percentage net)

	Bahrain		Egypt		Jordan		Kuwait		Lebanon		Oman		Qatar		Saudi Arabia		Syrian Arab Republic		United Arab Emirates		Yemen	
	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S
1975	70.1	..	..	..	78.6	..	68.7	..	..	..	27.1	..	81.0	..	41.7	..	86.1	..	..	..	..	..
1980	79.9	..	..	..	73.0	..	84.5	..	..	..	42.6	..	84.6	..	48.6	..	89.5	..	73.6	..	..	..
1985	96.2	..	..	..	..	..	86.7	..	..	..	66.4	..	91.1	..	50.9	..	94.7	..	76.5	..	..	..
1990	99.0	99.0	84.0	..	66.3	..	45.0	45.0	78.0	..	70.3	..	86.6	87.0	59.2	59.0	95.3	95.4	94.3	..	52.0	63.0
1991	96.7	96.7	84.0	..	68.9	..	44.6	44.6	87.0	..	70.1	..	82.5	82.5	59.0	..	95.6	98.0	90.1	..	52.0	64.4
1992	99.2	99.2	..	..	69.5	..	..	..	..	..	72.1	..	78.9	78.9	61.1	..	95.0	95.0	85.9	..	..	58.4
1993	98.8	..	88.3	..	68.9	..	53.6	53.6	77.0	..	71.7	86.6	80.2	80.2	62.4	..	93.9	93.9	83.1	..	..	56.2
1994	98.4	..	..	..	..	..	..	79.5	..	..	70.9	..	..	..	..	..	92.4	92.4	82.8	..	..	60.9
1995	98.8	..	..	..	67.5	..	61.8	79.9	..	..	70.2	..	..	..	63.3	..	91.4	91.4	79.6	..	..	76.0
1996	98.2	..	93.0	..	67.0	..	61.6	77.8	76.1	..	68.7	..	87.0	96.0	61.4	..	91.2	91.0	78.2	..	55.0	70.8
1997	96.4	96.7	..	..	..	..	67.4	75.6	91.4	..	66.9	..	86.8	93.3	60.1	..	90.8	..	79.2	..	..	73.4
1998	93.9	101.1	90.9	..	89.6	..	88.2	73.7	87.5	91.2	75.9	..	97.1	93.9	56.8	..	93.0	92.4	78.2	..	57.4	74.3
1999	91.2	..	89.9	..	90.0	..	84.3	73.1	89.0	..	75.5	..	97.3	..	58.2	..	94.4	..	78.0	..	59.6	77.4
2000	91.3	100.7	89.9	..	90.0	..	82.8	75.0	89.7	..	75.4	..	95.2	..	58.6	96.1	95.9	98.7	79.2	..	67.1	74.8
2001	91.0	101.0	90.0	..	91.3	..	84.6	76.8	89.8	..	74.5	..	94.5	95.0	58.9	..	97.5	..	80.8	..	67.0	75.1
2002	..	99.2	..	..	..	..	..	76.8	..	..	..	92.1	..	96.6	..	..	..	..	..	..	..	75.4

Source: World Development Indicators (WDI), World Bank, available at <http://www.worldbank.org>.

National sources (N.S), Central Statistical Offices in ESCWA member countries; Responses to questionnaires sent by Social Statistics team of ESCWA.

ANNEX TABLE C.2. LITERACY RATE, YOUTH TOTAL, IN THE ESCWA REGION
(Percentage of people ages 15-24)

	Bahrain		Egypt		Jordan		Kuwait		Lebanon		Oman		Qatar		Saudi Arabia		Syrian Arab Republic		United Arab Emirates		Yemen	
	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S
1975	86	..	47	..	86	..	76	..	..	..	46	..	79	..	65	..	65	..	72	..	22	..
1976	87	..	48	..	87	..	77	..	..	..	49	..	80	..	67	..	66	..	73	..	23	..
1977	88	..	49	..	88	..	78	..	..	..	52	..	81	..	69	..	67	..	73	..	25	..
1978	88	..	50	..	89	..	79	..	..	..	54	..	81	..	70	..	68	..	74	..	27	..
1979	89	..	51	..	90	..	79	..	..	..	57	..	82	..	72	..	69	..	75	..	30	..
1980	90	..	52	..	91	..	80	..	..	..	60	..	83	..	74	..	71	..	75	..	31	..
1981	91	..	53	..	92	..	81	..	..	..	63	..	84	..	75	..	72	..	76	..	34	..
1982	91	..	54	..	93	..	82	..	..	..	66	..	85	..	76	..	73	..	77	..	35	..
1983	92	..	55	..	94	..	83	..	..	..	68	..	85	..	77	..	74	..	78	..	37	..
1984	93	..	56	..	94	..	83	..	..	..	71	..	86	..	79	..	75	..	79	..	39	..
1985	93	..	57	..	95	..	84	..	..	..	74	..	87	..	80	..	76	..	80	..	41	..
1986	94	..	58	..	95	..	85	..	..	..	76	..	87	..	81	..	76	..	81	..	43	..
1987	94	..	59	..	96	..	85	..	..	..	79	..	88	..	82	..	77	..	82	..	44	..
1988	95	..	60	..	96	..	86	..	..	..	81	..	89	..	83	..	78	..	83	..	46	..
1989	95	..	60	..	96	..	87	..	..	..	83	..	90	..	84	..	79	..	84	..	48	..
1990	96	95.7	61	..	97	..	88	88.0	..	..	86	85.6	90	92.2	85	85.6	80	80.0	85	..	50	50
1991	96	98.6	62	..	97	..	88	..	..	..	87	..	91	..	86	..	81	..	85	..	52	..
1992	96	98.7	63	..	97	..	89	..	..	..	89	..	91	..	87	..	81	..	86	..	53	..
1993	97	98.8	64	..	98	..	89	96.2	..	..	91	92.0	92	..	88	..	82	..	87	..	55	..
1994	97	99.0	65	..	98	..	90	96.6	..	..	92	..	93	..	89	..	83	..	87	..	57	..
1995	97	99.0	66	..	98	..	90	97.2	..	..	94	..	93	93.8	90	89.9	84	84.0	88	..	59	58.3
1996	98	99.1	67	..	98	..	91	97.5	..	..	95	96.1	93	..	90	..	84	..	88	..	60	..
1997	98	99.2	68	..	99	..	91	97.6	..	88.4	96	..	94	..	91	..	85	..	89	..	61	..
1998	98	..	69	..	99	..	92	97.7	..	..	96	..	94	..	91	..	86	..	90	..	62	..
1999	98	..	70	..	99	..	92	98.1	..	..	97	..	94	..	92	..	86	..	90	..	64	..
2000	98	98.4	71	..	99	..	92	98.6	..	..	98	97.6	94	98.3	93	92.7	87	94.8	91	..	65	64.4
2001	99	99.3	72	..	99	..	93	99.0	..	..	98	..	95	98.5	93	..	88	..	91	..	66	..
2002	99	..	73	..	99	..	93	99.3	..	..	99	..	95	98.7	94	..	95	..	91	..	68	..

Sources: World Development Indicators (WDI), World Bank, available at <http://www.worldbank.org>.

National Sources (N.S), Central Statistical Offices in ESCWA member countries; Responses to questionnaires sent by Social Statistics team of ESCWA.

ANNEX TABLE C.3. MORTALITY RATE, UNDER-FIVE, IN THE ESCWA REGION (PER 1,000)

	Bahrain		Egypt		Jordan		Kuwait		Lebanon		Oman		Qatar		Saudi Arabia		Syrian Arab Republic		United Arab Emirates		Yemen	
	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S
1975	53	..	204	..	87	..	47	..	49	..	148	..	49	..	135	..	101	..	55	..	254	..
1980	30	..	173	..	67	..	35	..	44	..	95	..	32	..	85	..	73	..	27	..	205	..
1990	19	5.2	104	..	43	..	16	19	37	..	30	35	25	36	44	44	44	44	14	..	142	122
1991	..	5.1	..	..	..	..	..	17	..	..	..	..	..	35	..	43	..	47	..	..	..	..
1992	..	5.3	..	..	..	..	..	14.9	..	..	..	..	..	33	..	40	..	..	..	..	..	..
1993	..	5.2	..	..	..	..	..	14.4	..	..	..	29	..	25	..	38	..	41.7	..	..	..	..
1994	..	4.9	..	..	..	..	..	14.7	..	..	..	29	..	24	..	36	..	38	..	..	..	112
1995	18	4.8	71	..	37	..	14	12.8	34	..	18	27	18	23	34	34	36	36	11	..	126	110
1996	..	2.4	..	..	..	..	..	13.5	..	32	..	29	..	21	..	29	..	34	..	..	..	105
1997	..	2.3	..	..	..	..	..	15.2	..	..	..	27.5	..	20	..	28	..	33	..	..	..	105
1998	..	2.4	..	..	..	..	..	13	..	..	..	24.5	..	18	..	26	..	32	..	..	..	..
1999	..	2.6	..	..	..	..	..	11.5	..	..	..	21.5	..	16	..	25	..	30	..	..	..	..
2000	16	2.6	45	..	34	..	10	11.8	32	..	14	21.7	16	16	29	22.4	29	29	9	..	117	94.1
2001	..	2.7	..	..	..	..	..	12.4	..	..	..	19.7	..	16	..	..	..	20.2	..	..	..	90.3
2002	16	1.9	39	..	33	..	10	11.4	32	..	13	19.3	16	10	28	..	28	..	9	..	114	..

Sources: World Development Indicators (WDI), World Bank, available at <http://www.worldbank.org>.

National sources (N.S), Central Statistical Offices in ESCWA member countries; Responses to questionnaires sent by Social Statistics team of ESCWA.

ANNEX TABLE C.4. INFANT MORTALITY RATE IN THE ESCWA REGION
(Per 1,000 live births)

	Bahrain		Egypt		Jordan		Kuwait		Lebanon		Oman		Qatar		Saudi Arabia		Syrian Arab Republic		United Arab Emirates		Yemen	
	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S	WDI	N.S
1975	39	..	138	..	65	..	39	..	42	..	100	..	35	..	92	..	72	..	42	..	169	..
1980	23	..	118	..	52	..	29	..	38	..	73	..	25	..	65	..	54	..	23	..	135	..
1990	15	20.3	76	..	35	..	14	17	32	..	25	29	19	29	34	34	37	44	12	..	98	130
1991	..	20.7	..	..	..	..	..	14	..	..	..	27	..	28	..	33	..	37	..	..	..	110
1992	..	20.5	..	..	..	..	..	12.1	..	..	..	25	..	27	..	35	..	34	..	..	..	107
1993	..	19.5	..	..	..	..	..	12.3	..	..	..	23	..	20	..	33	..	34.6	..	..	..	91
1994	..	19.4	..	..	..	..	..	12.7	..	..	..	23	..	19	..	31	..	32	..	..	..	78
1995	14	18.8	56	..	31	..	12	10.9	30	..	15	20	13	18	27	27	30	30	10	..	89	76
1996	..	9.3	..	..	..	..	..	11.5	..	28	..	18.3	..	17	..	21.4	..	28	..	..	..	78
1997	..	8.1	..	..	..	..	..	12.5	..	..	..	18	..	16	..	21	..	27	..	..	..	75.3
1998	..	8.3	..	..	..	..	..	10.9	..	..	..	18	..	10	..	21	..	26	..	..	..	87
1999	..	9.0	..	..	..	..	..	9.4	..	..	..	17.6	..	12	..	21	..	25	..	..	..	86
2000	13	8.4	38	..	28	..	9	9.1	28	..	12	16.7	12	12	24	19.1	24	24	8	..	84	69.4
2001	..	8.7	..	..	..	..	..	10.2	..	..	..	16.2	..	11	..	..	..	18.1	..	..	..	79
2002	13	6.9	33	..	27	..	9	9.6	28	..	11	16.2	11	8.8	23	..	23	..	8	..	83	..

Sources: World Development Indicators (WDI), World Bank, available at <http://www.worldbank.org>.

National sources (N.S), Central Statistical Offices in ESCWA member countries; Responses to questionnaires sent by Social Statistics team of ESCWA.