

**INTERNAL SUSTAINABILITY AND ECONOMIC
GROWTH IN THE ARAB STATES***

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Abstract

Understanding sustainability in a broader sense, as relating to the nature and quality of economic growth, and drawing on the recent literature on the fundamental determinants of growth, this paper looks at the achievements and prospects of the internal sustainability of Arab countries. The countries are classified in four broad categories depending on their production structure. The relevant indicators for sustainability used in the paper are: the level of pre capita income; inequality in the distribution of income and poverty; economic structure; investment; institutions; and, technological capacity.

The evidence shows that the Arab countries are relatively well positioned regarding the distribution of income, the incidence of poverty, human development and investment rates. However, given the definition of an ideal growth and development society, and given the scientific and technological nature of the twenty first century, it is shown that the Arab countries lack conspicuously in the areas of institutions and technological capacity. These, together with a currently distorted production structure, present Arab policy makers with major challenges for the future.

I. Introduction

The Arab states as a group are popularly referred to as the “Arab World”. The term “Arab World” is a political designation rather than an economic grouping, despite the fact that economic integration, and unity, has always been an inspiration of various political movements in the region. As a political grouping the term finds its expression in the League of Arab States (LAS) that was established in 1945. In the context of LAS, which is modelled on the UN organizational structure, a lot of perceived economic aspirations of ordinary Arabs are expressed and articulated, but not necessarily implemented. Due to various historical reasons the Arab countries have failed to use the LAS framework to forge an economic integration scheme that could have distinguished them as a distinct economic group.

Perhaps one of the reasons why the Arab economic group did not materialize is the fact that the Arab World is characterized by a lot of economic diversity. To highlight this economic diversity it may be useful to follow the Economic Research Forum (ERF: 1998) and group the Arab countries into four broad categories: mixed oil producers (MOP) including Algeria, Libya and Iraq; Gulf Cooperation Council (GCC) including Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE; diversified economies (DE) including Egypt, Jordan, Morocco, Lebanon, Syria, and Tunisia; and, primary producers (PP) including Comoros, Mauritania,

Sudan, Djibouti and Yemen¹. In 1998 the total population of the Arab World is estimated as 258 million (4.4% of the population of the world). It is with the sustainability and economic growth potential of this group of countries that this paper is concerned.

The question of sustainability has recently been associated with environmental management. According to the famous Brundtland Commission sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. As rightly pointed out by Haq (1995: 78) such a definition begs more questions than it answers. He argues, correctly, that what needs to be sustained is human life and that sustaining the physical environment is a means, not an end, to sustaining human life. Formulating an operational framework for sustainable human development he argues that if the basic “concept is sustainable human development, each generation must meet its needs without incurring debts it cannot repay. That means avoiding the accumulation of environmental debts (by polluting or exhausting natural resources) as well as financial debts (through unsustainable borrowing), social debts (by neglecting to invest in human development) and demographic debts (by permitting unchecked population growth and urbanization). All these debts rob our children”.

On the basis of the above broader view of sustainability, the concept of sustainable development “would immediately focus on the nature and quality of economic growth and avoid the sterile debate over zero growth. Growth is essential, but sustainable development requires that it be different. It must become more respectful of the physical environment. And it must translate into human lives”. On such an understanding, therefore, the issue of the sustainability and growth of Arab countries are closely linked and can be looked at by considering the major propositions of the theory of economic growth regarding the major factors explaining long-run economic performance of countries. In this respect we note that modern empirical growth theory (see, for example, Romer 1986; Lucas 1988; Barro 1997; Sala-i-Martin 1997) has identified at least sixty-two statistically significant explanatory variables influencing the growth performance of different economies. Of these sixty-two, three explanatory variables have consistently been reported as significant in all studies. These three variables are in the nature of initial conditions. They include initial real per capita income (reflecting the stage of development of the country and capturing the idea of convergence over long periods of time); initial life expectancy at birth (reflecting the health dimension of the human capital of the country); and initial primary school enrolment ratio (reflecting the education dimension of human capital).

A recent rigorous robustness analysis conducted on the remaining 59 variables, and taking account of the above three initial conditions, found only 22 variables to be robustly significant in explaining differences in growth performance between countries (Sala-i-Martin 1997). Seventeen of these are deemed relevant and can be grouped into six broad categories of regional, political, market distortions, investment, production structure, and openness

¹ The classification of Comoros, Libya and Djibouti is not that clean. Palastine is not included for obvious conceptual reasons; though in some documents the West Bank and Gaza Strip is included as an Arab economy.

(trade policy) variables. Another variable that has come out as an important explanatory variable is colonial experience.

The most important qualitative results of this literature can be summarized as follows. (a) There are three regional variables, two of which are regional dummies for Latin America and Sub-Saharan Africa, and both of which are negatively related to growth. The third is an “absolute latitude” variable, which shows that the farther away from the equator a country is, the better is its growth performance. (b) The political variables are six: the “rule of law”, “political rights” and “civil liberties” (positively related to growth); the “number of revolutions”, “military coups” and “war” (negatively related to growth). (c) The market distortions and economic organisation category include two market distortion variables, both of which are bad for growth. These are the “real exchange rate distortions” and “the standard deviation of the black market premium”. The third variable, “degree of capitalism”, is positively related to growth. (d) The investment variables include “equipment investment” and “non-equipment investment”, both of which are positively related to growth. It is reported, however, that the influence of non-equipment investment on growth is only about one-fourth that of equipment investment. (e) There are two production structure variables: the “fraction of primary products in total exports”, negatively related to growth, and “the fraction of GDP in mining”, positively related to growth. (f) An openness variable reflects trade policy and includes one variable, “the number of years an economy has been open between 1950 and 1990”, which is positively related to growth.

Given the established methodology of cross-country regressions of growth performance, it is perhaps important to note that out of these 17 robustly significant variables, the three variables of the “regional group” and colonial experience are exogenous in nature. Of the remaining 13 variables, ten are in the nature of initial conditions: the six variables of the “political group”, the two investment variables, and the two variables of the “production structure” group. The remaining variables are policy related. We hasten to note at this juncture that the above analysis has shown that a number of conventional variables perceived to be important did not survive the robustness test. These include such variables as “various measures of government spending”, “various measures of financial sophistication”, “the inflation rate or its variance”, “various measures of scale such as total area or total labour force”, “outward orientation”, “tariff restrictions”, “the black market premium” and “the ethno-linguistic fractionalisation”. Obviously, a large number of these are policy variables and some of them are formulated in such a way as to have a non-linear relationship to growth and as such were not adequately captured by the analysis.

Consistent with the above analysis it has recently been argued that the fundamentals for long-run growth are investment in physical capital and human resources. “These are, in turn, made possible by physical infrastructure, macroeconomic stability, the rule of law and solid institutions. The role of trade policy in economic growth is largely auxiliary and of an enabling nature: extremes of export taxation and import restrictions can surely suffocate nascent economic activity, but an open trade regime on its own will not set an economy on a sustained growth path” (Rodrik 1999:105).

Further, a recent set of theoretical literature argues that greater initial inequality in the distribution of income and wealth is likely to be detrimental to long-run growth. One theoretical explanation for this is couched in terms of the consequences of imperfect capital markets on agents' investment behaviour resulting in lower productivity and efficiency losses. Under this theoretical construct, the poor are seen as being credit constrained to pursue investment in education and hence in human capital formation. Similarly, political economy models have shown that initial inequality is likely to increase voter support for inefficient redistributive policies resulting in efficiency losses and lower growth. In this respect it is also important to note that from a long-run development and transformation perspective, determining the initial inequality levels would depend on which side of the inequality-development relation (the well known Kuznets curve) an economy finds itself (see Kuznets (1955)). As is well known, the Kuznets curve is a long-run relationship between the level of development and inequality, which shows that at initial stages of development, inequality will tend to rise before it declines. Despite a lot of controversy surrounding the existence of this relationship recent empirical work, using high quality data sets, has confirmed its existence (see, for example, Ali and Elbadawi 1999; Barro 1999).

From the above, rather brief and selective, review of the recent advances in the literature on the fundamental determinants of long-run growth, it is perhaps clear that there is a core set of initial conditions that is likely to determine the growth performance of Arab countries and hence their sustainability. Given the wide multiplicity of what constitutes initial conditions and the diversity of the region, we identify income and its growth (section 2), inequality and poverty (section 3), economic structure (section 4), investment (section 5), institutions (section 6), and technological capacity (section 7) as the most critical set of variables for the internal sustainability of the Arab states. The paper concludes by offering some final remarks (section 9).

II. Income Levels and Income Growth:

Initial income refers to the level of income, however measured, that obtains at some reference point in time. Due to data limitations we look at the level of income in 1998, the latest year for which reliable region-wide GDP data are available. We hasten to note that by looking at the level of income of the region the point of departure here is that such an investigation will enable us to appropriately appreciate the position of the region compared to the world. Table (1) below provides a summary of the distribution of population and income in the Arab world among the four sub-groups of the region.

Table (1): Income and Population of Arab Countries :1998

Country	Population (million)	GDP	Per Capita (US\$)
		Current Prices (billion US\$)	
MOP	52.3 (20.3)	124.8 (21.2)	2386
GCC	29.3 (11.4)	231.5 (39.4)	7901
DE	118.0 (45.8)	162.5 (27.7)	1377
PP	57.8 (22.5)	68.7 (11.7)	1189
Arab Countries (Total or Average)	257.4 (100.0)	587.5 (100.0)	2282
S. Deviation	15.4	33.5	5223.4

Source: Own compilation from ERF (2000).

Consider first the income of the region. In 1998 the Arab world produced goods and services worth US\$587.5 billion at current prices. This amounts to a per capita income of US\$ 2282 per annum or US\$190 per month. This average hides significant variations among countries and sub-groups. At the country level, per capita GDP varies between a high of US\$ 17222 (nearly US\$1435 per month) for United Arab Emirates to a low of US\$325 (or about US\$ 27 per month) for Yemen. At the sub-regional level, the highest GDP is recorded for GCC at US\$ 231.5 billion and a per capita income of US\$ 7901, followed by that of MOP with a GDP of US\$ 124.8 billion and a per capita income of US\$ 2386. DE ranks third with a GDP of US\$ 162.5 billion and a per capita income of US\$1377, while PP has the lowest GDP at US\$ 68.7 billion and a per capita income of US\$ 1189. Thus the table confirms the diversity of the Arab world in terms of both the level of total income and the level of per capita income, a diversity captured by international classification of the various countries of the region such as the classification adopted by the World Bank in terms of low-income, middle income and high income groups.

To properly appreciate the economic size of the Arab world in the world economy a comparison with a set of selected countries is undertaken. Available information shows that Spain, with a population of 39 million, has a GDP of US\$ 552 billion nearly equal to that of the Arab world, while Italy's 58 million people have a GDP of US\$ 1171, nearly twice that of the Arab region. The 9 million Swedes produce goods and services worth US\$227 billion nearly three times more than the 58 million people of the Arab primary producers. Finally, the 46 million South Koreans produce a GDP of US\$ 298 billion twice as much as the 52 million Arabs of the mixed oil producers..

Further comparisons are also worth noting. Thus, for example, the GDP of the Arab world contrasts very unflatteringly with the value of the goods and services produced by the largest multinational corporations in the world. Available information shows that the four largest multinationals in the world in terms of sales revenue (General Motors, Ford Motor Company, Mitsui & Company, Royal Dutch/Shell) had a total revenue of US\$ 593 billion in 1997 more than the GDP of the Arab world. The sixth ranked company (Itochu Corporation of Japan) had sales revenue of US\$118 billion in 1997, greater than the GDP of the eight primary producers of the Arab economies of US\$ 68.7 billion (UNCTAD, 1999). Thus, despite its oil wealth, and its population share of 4.4% in world population, the Arab world could be seen as a marginal grouping in the context of the world economy.

Having noted the above, we now turn to look at the growth performance of this group of countries. In this respect we note that it is now generally accepted that the post-war period up until 1973 was the golden era for economic growth in the world. The Arab economies shared in this growth, where some of the countries experienced unprecedented rates of economic expansion. In historical perspective, the year 1973 marks the first oil price shock, which unleashed an era of massive economic dislocation for non-oil exporting developing countries.

For a sample of 50 developing countries, for which data is available, it is shown that per capita incomes increased at annual rates in excess of 2.1 per cent over the period 1960-1973. There were no fewer than 42 developing countries whose economies grew at rates exceeding

2.5 per cent per capita per annum. For these countries per capita income could have doubled in about 28 years. The sample included 4 Arab countries, Oman, Mauritania, Egypt and Iraq. Oman topped the list of the fastest growing developing countries, with a per capita GDP growth of 10.5 over the period 1960-1973 (see Rodrik 1999: 68-71). Per capita growth rates for Mauritania (2.9%; with a doubling time of about 24 years), Egypt (2.7%; with a doubling time of about 26 years) and Iraq (2.6%; with a doubling time of about 27 years) were quite respectable.

Following Rodrik's 1973 periodization, we compiled the evidence for various samples of Arab countries for which data is available over the period 1960-1998. As table (2) shows, over the period 1960-1973 the sample included ten countries. Two Arab countries experienced fast growth where per capita income increased by an average rate in excess of 5 per cent per annum. This sub-sample of fast growers included Oman and Saudi Arabia with per capita income growth rates of 13.6 per cent and 7.65 respectively. In addition, three countries recorded growth rates in excess of 2.5 per cent but less than 5 per cent. These included Tunisia (4.26 per cent) and Syrian Arab Republic and Mauritania both recording per capita growth rates of 3.05 per cent. Two countries recorded negative per capita growth: Kuwait (-4.47 per cent) and Sudan (-1.18 per cent). The overall growth rate of the Arab countries averaged 2.60 per cent with a standard deviation of 4.83 percentage points.

Table (2): Distribution of Arab countries on the Basis of Real Per Capita Growth Rates (Number of Countries)

Range of Real Per Capita Growth Rate (per cent)	1960-1973	1974-1984	1985-1994	1995-1998
Above 5.0	2	3	1	1
2.5-5.0	3	3	1	3
1.5-2.5	3	1	2	2
0.5-1.5	0	1	3	3
0.0-0.5	0	0	2	0
Below 0.0	2	4	6	6
Total # of Countries	10	12	15	15
Average Growth Rate (Per cent)	2.6	-0.3	-0.09	0.59
Standard Deviation (Percentage Points)	4.83	4.30	2.63	3.07

Source: Computed from World Bank (2000)

World Bank (2000), World Development Indicators on CD-ROM

Following 1973, however, the dismal growth performance decades started. Despite the various attempts at explaining this dismal performance, it is generally accepted that the turbulence that beset the world economy following 1973 was the major dislocating factor.

According to Rodrik (1999) the turbulence included the abandonment of the Bretton Woods system of fixed exchange rates, two major oil shocks, other commodity boom and bust cycles and the interest shock of the 1980s. In the wake of these and other shocks, out of 12 Arab countries for which the data is available, the period 1974-1984 saw three Arab countries with per capita growth rate in excess of 5 per cent. Of the two fastest growing Arab economies during the period prior to 1973, it was only Oman with the real per capita income growth rate of 6.17 per cent that maintained its performance over the period 1974-1984. The other fast growers over this period were Jordan (7.25 per cent) and Egypt (5.45 per cent). The distribution of countries in table (2) shows that the number of Arab countries that grew in excess of 2.5 per cent but less than 5 per cent remained the same though only two countries maintained the same range of growth rate over this and the previous periods: Syria and Tunisia. However, the number of Arab countries that grew in excess of 1.5 per cent but less than 2.5 per cent declined from three to one. It was Morocco that registered real per capita growth rate of 2.32 per cent for the 1974-1984 period as compared to 1.93 per cent of the period prior to 1973. At the other extreme, the number of Arab countries that registered negative growth increased from 2 to 4. The overall growth of the region averaged only negative 0.30 per cent with a standard deviation of 4.30 percentage points.

For a sample of 15 Arab countries over the period 1985-1994, only Kuwait distinguished itself as a fast grower with an average growth rate of per capita income of 6.03 per cent per annum. The number of countries growing at negative rates during the 1985-94 decade increased to 6: United Arab Emirates (-3.96 per cent), Algeria (-2.22 per cent), Saudi Arabia (-1.52 per cent), Comoros (-1.48 per cent), Jordan (-1.39 per cent) and Mauritania (-1.15 per cent). The overall growth of the region was negative 0.09 per cent with a standard deviation of 2.63 percentage points.

As is now generally acknowledged, the second half of the 1990s witnessed a rather hesitant economic recovery in the region. Table (2) records that the number of countries growing in excess of 2.5 per cent but less than 5 per cent increased from one to three while the number of countries that registered positive growth rate but less than 0.5 per cent decreased from two to zero in the 1995-1998 period. It was only Sudan that distinguished itself as the fastest growing Arab country over this period as compared to 0.12 per cent growth rate it registered in the previous period. The number of countries that registered negative growth rate during this period also remained six of which four were carried forward from the previous period: Comoros, Saudi Arabia, United Arab Emirates and Jordan. The overall growth of the region rebounded to positive levels averaging 0.59 per cent with a standard deviation of 3.07 percentage points².

The cumulative effect of all the above growth patterns is that at the end of 1998 there were 3 Arab countries, out of a sample of 9 countries, with real per capita incomes less than that of 1973. The per capita income deficit varies between countries. The ratio of 1998 per capita income to that of 1973 is less than 50 per cent in the United Arab Emirates (38 per cent). A ratio greater than 50 per cent but less than 90 per cent is recorded for Saudi Arabia (67 per

² Similar results, using decadal averages, see Makdisi et al (2000). They also note the relatively high volatility of growth in the region.

cent) and Mauritania (88 per cent). The remaining countries have a ratio of 100 per cent or more: Algeria (111 per cent), Egypt (238 per cent), Morocco (157 per cent), Syria and Tunisia (185 per cent) and Sudan (151 per cent). At the end of 1998 the average real per capita income in the region (measured in 1995 constant prices) amounted to \$1981 (with a standard deviation of \$4247) compared to \$1710 in 1973 (with a standard deviation of \$14173).

An interesting question at this juncture is what would have happened to the level of income if the pre-1973 growth rates were maintained during the post 1973 period. If each country were able to maintain its 1960-1973 per capita growth rate over the past 25 years, the average per capita income of the region would have been \$3248. Countries, of course, would have performed differently given their initial growth rates, but averaging over countries it can be shown that the real cost to the region of low growth over the period 1973-1994 amounted to \$285.3 billion at the end of 1998.

III. Income Inequality and Poverty:

As is well known, the most widely used measure of inequality in the distribution of income is the Gini coefficient. This measure varies from zero (where every person in the society has the same income, indicating the absence of inequality and representing conditions of perfect equality) to unity (where one person gets all the income and the rest receive nothing, indicating the presence of complete inequality). The Gini coefficient is frequently expressed in percentages, for ease of understanding. Other measures of inequality are income shares, where, in the case of complete equality, population shares would earn equal income shares.

Using the Gini coefficient, and based on the most recent available high quality data, table (3) reports a comparison among world regions. The table shows that the Arab countries, as a group, rank second to Asia in terms of lower inequality. This is reflected in a Gini coefficient for the distribution of consumption expenditure of about 39% compared to one of 37% for Asia. Latin America, with a Gini coefficient for the distribution of income of 50% ranks as the highest inequality region in the world. We hasten to note that such comparison has to acknowledge the fact that for regions, except Latin America, the Gini coefficients are based on consumption expenditure rather than income. In this respect it is known that the distribution of expenditure is generally more equal than the distribution of income. Indeed Deininger and Squire (1996) advise researchers to adjust their expenditure based Gini coefficients by 6.6 percentage points to make them comparable to those based on income. Making such an adjustment only changes the ranking of Africa, to become the most unequal region, and Latin America, to become the second most unequal among world regions. Additionally, however, making the adjustment the Gini coefficient of the distribution of income in the Arab countries becomes 46%, which reflects a fairly high degree of inequality in the distribution of income.

As noted above, the state of distribution can be looked at in terms of expenditure or income shares accruing to various population groups. Detailed information shows that in Asia the richest 20 per cent of the population receive about 40 per cent of total expenditure while the

poorest 20 per cent of the population receive only 9 per cent of total expenditure. At the other extreme is Africa where the richest 20 per cent of the African population receive 51 per cent of total expenditure, while the poorest 20 per cent receive only 5 per cent. In the Arab region, with an expenditure Gini coefficient of 38 per cent, the richest 20 per cent of the Arab population receive 45 per cent of total income, while the poorest 20 per cent of the population receive only 6.7 per cent. Further, the share of the lowest 40 per cent of the population is only 17.69 per cent of total expenditure implying a shortfall of 22.31 per cent of total income, while the mean share of the top 20 per cent of the population is about 45 per cent, with 25 per cent of total expenditure accruing to this group as a bonus. The share of the top 20 per cent in total expenditure is about 7 times that of the poorest 20 per cent of the population.

Table (3): Income Distribution in Arab the Countries and World Regions in the 1990s (percentages)

Region	Number of Countries	Gini Coefficient
Arab Countries	6	38.95 (3.61)
Africa	18	48.00 (10.1)
Asia	8	37.03 (7.2)
Latin America	16	50.38 (6.7)
All Countries	48	45.83 (9.4)

Source: Ali and Elbadawi (2000: 12). Figures between brackets are standard deviations.

The above relatively high inequality levels are not changing over time. Thus, in line with recent results showing that, in general, income inequality does not display a time trend, few of the Arab countries have experienced insignificant changes in the distribution of income over fairly long periods of time. In this respect a quantitatively small time trend is defined as an annual change of less than 1 per cent of the country's reference Gini coefficient. A sample of four Arab countries, for which data is available shows quantitatively insignificant changes in the Gini coefficient over relatively long periods of time.

None of the four countries recorded a quantitatively important decline in expenditure inequality over a maximum period of thirty-one years. The largest decline of 10 percentage points in the Gini coefficient is recorded for Egypt over a period of 31 years at a low annual rate of decline of 0.85 per cent. Jordan and Tunisia recorded a quantitatively insignificant decline in expenditure inequality over a relatively long period of time. The increase of 0.01 percentage points in inequality over a seven years period is recorded for Morocco with an annual rate of increase of the Gini coefficient of 0.004 per cent.

Table (4): Quantitative Changes in the Distribution of Income for a Sample of Arab Countries

[Gini Coefficients are in Percentages]

Country	Gini (1st Year)	Gini (2nd Year)	Change in Gini (Percentage Points)	Annual Rate of Change in Gini (per cent)
Egypt	42.0 (1959)	32.0 (1991)	-10.00	-0.85
Jordan	40.8 (1980)	40.7 (1991)	-0.10	-0.02
Morocco	39.19 (1984)	39.2 (1991)	0.01	0.004
Tunisia	42.3 (1965)	40.24 (1990)	-2.06	-0.20

Source: Deninger and Squire (1998).

In summary, income inequality in the Arab countries is relatively high. This relatively high inequality, however, does not seem to be changing over fairly long periods of time. These are important features in the distribution of expenditure and income especially from the perspective of the dominant analytical framework for the analysis of poverty. As is well known the dominant framework for poverty analysis is the money metric approach. Given a distribution of income this approach relies on constructing a relevant poverty line to identify the poor in society. The two major methods of constructing poverty lines are the food energy intake method and the cost of basic needs method. Both are based on the food energy intake required to lead a healthy life in a social context.

The dominant approach uses three standard measures of poverty. These are the head-count ratio, which gives the number of the poor as a ratio of total population in society, and reflects the incidence and spread of poverty in society; the poverty-gap ratio, which is defined as the gap between the average income of the poor and the poverty line appropriately weighted by the head-count ratio, and reflects the depth of poverty; and, the squared poverty-gap ratio, which is a weighted poverty-gap with weights reflecting concern for the poor in society, and reflects the severity of poverty. The head-count ratio is the most widely used and understood measure of poverty.

Table (5) reports a summary of the state of poverty in the Arab countries based on a sample of countries for which high quality data is available. Once again the table gives a comparative picture with other regions of the world.

Table (5): Poverty Measures in the Arab Countries and World Regions:

Region	Number of Countries	Mean Expenditure (US\$)*	Poverty Line (US\$)*	Head-count Ratio (%)	Poverty-gap Ratio(%)	Squared Poverty-gap Ratio (%)
Arab Countries	6	115.3 (45.1)	50.8 (13.7)	21.52 (8.8)	6.51 (5.83)	3.38 (4.91)
Africa	18	75.0 (70.4)	41.9 (24.2)	52.10 (13.8)	23.4 (8.1)	13.2 (5.9)
Asia	8	97.7 (45.6)	45.8 (13.4)	24.72 (12.2)	6.99 (4.3)	2.95 (2.0)
Latin America	16	172.7 (82.0)	73.6 (32.7)	34.83 (8.6)	14.40 (5.0)	7.94 (3.6)
All Countries	48	109.1 (78.6)	52.0 (27.8)	37.96 (16.3)	15.42 (9.1)	8.51 (6.1)

Source: Ali and Elbadawi (2000: 12). * Per person per month.

According to the results reported in table (5), about 22 per cent of the Arab population were living below a real poverty line, measured in terms of purchasing power parity prices (PPP), of \$ 56 per person per month. That implies that almost a quarter of the Arab people cannot afford to spend this amount of money to provide themselves with bare necessities. The average actual expenditure of those who fall below the real poverty line is calculated as \$35.4 per person per month. Compared to other regions, however, the Arab countries boast the lowest incidence and depth of poverty. It is only in terms of severity that they rank second to Asia³.

The above results, on poverty in the Arab world, are confirmed by the results of UNDP's (2000) human development indicator (HDI) and the human poverty index (HPI). As is well known HDI is a composite indicator based on longevity (as measured by life expectancy at birth), educational attainment (as measured by a combination of the adult literacy rate and the combined gross primary, secondary and tertiary enrolment ratios), and the standard of living (as measured by GDP per capita in purchasing power parity). For each of these sub-indicators maximum and minimum values are determined and the sub-indicator is calculated accordingly. HDI ranges from unity (for highest human development achievement) to zero (for the lowest human development achievement). Countries are then classified into three broad groups of high human development (with an HDI in excess of 0.8), medium human development (with an HDI more than 0.5 but less than 0.8), and low human development (with an HDI less than 0.5). Similarly, the HPI is a composite index that concentrates on deprivations in the three aspects of human life already included in the HDI: longevity, knowledge, and a decent standard of living. "The first deprivation relates to survival-vulnerability to death at a relatively early age. The second relates to knowledge- being excluded from the world of reading and communication. The third relates to a decent living standard in terms of overall provisioning" (UNDP (2000: 272)). The higher the value of the index, the higher is the deprivation and hence the higher is the incidence of poverty.

³ It should be noted that the sample used for the Arab countries is rather limited. Including results pertaining to Sudan, and other estimates for Egypt, the incidence of poverty in the region could change substantially given the population weights of these two countries. The ranking of the region will also change. See, for example, Fergany (1998 and 2000).

According to UNDP (2000) four Arab countries belonged to the high human development category (Kuwait, with an HDI of 0.836; Bahrain, 0.82; Qatar, 0.819; and, the United Arab Emirates, 0.81). Another four Arab countries belonged to the low human development category (Sudan, with an HDI of 0.477; Mauritania, 0.451; Yemen, 0.448; and, Djibouti, 0.447). The remaining 12 Arab countries belonged to the medium human development category. For all the Arab countries the average HDI is 0.635 thus indicating that the region belongs to the medium human development category. The distribution of the Arab economic groups over the HDI is given in table (6) below.

Table (6): The Human Development Index in the Arab Countries: 1998

Country Group	Number of Countries	Average HDI
GCC	6	0.794
MOP	3	0.675
DE	6	0.672
PP	5	0.467

source: UNDP (2000).

HPI is reported for a sample of 85 developing countries including 17 Arab countries. The highest HPI value of 64.7% is reported for Niger that ranks 85th. For the Arab group of countries the highest value of 49.7% is recorded for Mauritania which ranks 77th, followed by Yemen (49.4%, ranking 76), Morocco (38.4%, ranking 65th), Sudan (35.5%, ranking 60), Comoros (33%, ranking 57), Iraq (32.9%, ranking 56th), and Egypt (32.3%, ranking 55th). Seven Arab countries recorded HPI less than 20%. These included Jordan (with an HPI of 8.8%, ranking 7th), Bahrain (9.6%, ranking 9th), Lebanon (10.8%, ranking 13th), Qatar (13.7%, ranking 17th), Libya (15.3%, ranking 19th), UAE (17.9%, ranking 28th), and, Syria (19.3%, ranking 32). The remaining countries have an HDI in the range 20-30%.

IV. Production Structure:

Economic structure refers to the relative contribution of the different sectors in the economy for production and factor use (see, for example, Robinson and Syrquin 1986). The structure of an economy could be looked at from different perspectives, such as the industrial origin of goods and services produced, the sources of income and the major occupational activities, the distribution of income among the different owners of factors of production, and the structure of demand, among others.

Structural transformation is both the process by which the composition of output and the contributions of the different sectors to GDP and employment change over time, and the forces that generate such a transformation. Studies in the patterns of economic and social development have revealed empirical regularities that are summarised as “stylised facts” of structural change over time. A recent summary of such “stylised facts” of structural change over long periods of time confirms that economies relying on the primary sectors

(agriculture/minerals) in production and employment graduate to ones where manufacturing and the service sectors dominate, and that such transformations follow a non-linear pattern (Kongsamut, Rebelo and Xie 1999). Initially, the employment and GDP shares of agriculture and services decline, while those of manufacturing increase. During the intermediate stages, the shares of manufacturing and agriculture continue to increase and decrease, respectively. In contrast, the shares of the services sector reach their turning points and start to increase. These trends continue into later stages of development, within which the shares of manufacturing attain their turning points and stabilise.

It is also observed that decreases in output and employment shares do not result from an absolute decline in their output. On the contrary, the output of the different sectors will continue to increase at an increasing rate and that the decline in their relative share in GDP is due to differential growth rates. During the early stages of development, the manufacturing industries grow at a much faster rate than agriculture and services as a result of which its share both in GDP and employment increases. As the economy advances to higher stages, the growth rate of the service sector dominates over the other two.

Over the last four decades, there has been a significant structural shift in the Arab economies, broadly consistent with the historically observed development experience of the declining share of the agricultural sector. However, the nature and composition of structural transformation in the region depict important departures from the general trend, with significant implications and repercussions on the internal sustainability and future development of the region. The first and most significant deviation relates to the nature of the transformation observed in the Arab economies. The share of agriculture in GDP declined from 26 per cent during the decade of the 1960s to 18 per cent at the end of the century. However, the decrease in the share of agriculture in GDP by 31 per cent was not due to significant growth of the industrial sector in general, and those of the manufacturing industries in particular. The share of industry increased marginally from 26 per cent to 30 per cent of GDP during the intervening decades, while the share of the manufacturing industries grew from 9 per cent in the 1960s to 15 per cent at the end of the century.

**Table (7): Structure and Structural Transformation of the Arab Economies:1960-1998
(per cent of GDP)**

Category	Agriculture, value added (% of GDP)		Industry, value added (% of GDP)		Services, etc., value added (% of GDP)	
	1960-1969	1990-1998	1960-1969	1990-1998	1960-1969	1990-1998
MOP	12.07	12.33	37.24	47.63	50.69	40.04
GCC	18.98	2.63	55.27	50.31	25.75	47.06
DE	21.42	16.55	23.60	28.62	54.98	54.83
PP	39.04	30.04	28.23	23.44	32.73	46.52
Average	25.56	17.70	33.38	34.29	41.06	48.02
S. Deviation	20.01	17.21	18.47	13.75	15.19	11.05

Source: Calculated from World Bank (2000), World Development Indicators on CD-ROM

The major beneficiary of the decline in agriculture was the service sector, whose share in GDP increased from 41 per cent to 48 per cent. This pattern of structural transformation is not consistent with the historical observation of moving from agriculture to industry and finally to services. The predominance of the service sector in the economies of Arab countries at this stage of their development is indicative of a structural problem, which is further confirmed by the pattern of sectoral employment.

Table (8): Employment By Sector in 1980 and 1990 (Per cent of total labour force)

Country	Agriculture		Industry		Services	
	1980	1990	1980	1990	1980	1990
MOP	32.2	21.1	24.3	24.4	43.6	54.5
GCC	17.8	12.7	28.0	30.4	54.2	56.7
DE	46.0	33.4	23.0	25.3	42.5	47.5
PP	59.2	50.9	13.5	15.3	27.4	33.8
Average (Unweighted)	40.2	32.0	21.2	23.3	40.7	46.1
S. Deviation	27.7	25.9	9.4	10.8	20.9	19.9

Source: ILO (1999), Key Indicators of Labour Markets

At the end of the century, 32 per cent of the region's labour force was engaged in agriculture while the agriculturally dependent population remains very high. The agriculturally dependent labour force rises to 42 per cent if the GCC and MOP sub-regions are excluded (table (8)). Services are, admittedly, important inputs in the production of commodities and their increase in quantity, quality and diversity facilitates resource use and efficiency. But the issue of its appropriate size at different levels of development remains unsettled.

Using data from the World Bank and the OECD, Easterly et al (1994) attempt to develop an international norm for the appropriate size of services at different levels of development. They suggest that service sector shares of 50 per cent and above in GDP are appropriate for countries in the middle and upper income countries. This implies that for low-income developing countries the size of the service sector should be lower than this level.

Similarly, the regression results of Kongsamut, Rebelo and Xie (1999) imply that the current employment and output shares of the services sector (28 percent and 50 percent, respectively) correspond to the real per capita income levels of US\$2441 and US\$4024, respectively.⁴ Both are significantly higher than the region's average real per capita of US\$1841 in 1998. In short, it is safe to conclude that the significant contribution of services to output, the relatively high employment share of agriculture, and the limited role of manufacturing in the Arab world are not consistent with the stage of development of the region. Rather, they reflect to a large measure the distortion in the productive structure of Arab economies as they enter the 21st century.

⁴ All the regression results in this section refer to those obtained by Kongsamut, Rebelo and Xie (1997).

Finally, it is also instructive to examine the potential speed of productive structural change in the Arab region on the basis of the regression results and alternative and actual growth rates. The estimated parameters locate the turning point for the employment share of manufacturing at the real per capita GDP of US\$5224. This level of income can thus be used as criterion to determine whether an economy has achieved a relatively mature productive structure.

How quickly will Arab economies achieve this status? Table (9) reports the relevant results using the level of per capita GDP of 1998 and the maximum annual average growth rate during the 1960-98 period. It is rather disappointing to note that the target income level can be achieved in the Arab world after a decade of growth at the rate of 11.25 percent per annum – the maximum rate at which real per capita GDP grew during 1961-98 period. The outcome is even more troubling if the growth rate is lowered to the average growth rate that prevailed during the 1961-98 period. The same dismal picture emerges in relation to the performance at the sub-regional and country levels. However, the fact that Saudi Arabia, United Arab Emirates, Bahrain, and Oman have achieved the required level of income in 1965, 1973, 1980 and 1985 respectively show that there is a major role to be played by a wealth effect where the discovery, and utilization, of natural resources helps countries to jump over various income thresholds .

Table (9): Maximum Growth Performance and Required Number of Years to Achieve Manufacturing Sector Maturity

Country/ Region	GDP per capita (1998)	Maximum Growth rate of GDP per capita (1960-1998)	Number of Years required to achieve target level of per capita GDP of US\$5224
Algeria	1521	0.3162	4
Egypt	1146	0.1218	13
Jordan	1491	0.1992	7
Morocco	1388	0.1029	14
Syria	1209	0.207	8
Tunisia	2283	0.1583	6
Djibouti	742	0.0348	57
Lebanon	2999	0.3549	2
Yemen	254	0.025	122
Mauritania	478	0.2511	11
Comoros	403	0.0572	46
Sudan	296	0.2274	14
Arab	1841	0.1115	10

Source: Computed from World Bank (2000)

Note: Real per capita GDP figures are at 1995 constant US\$. The message derived from the above is that if Arab countries are to achieve a modern and diversified productive structure, they have to grow at rates much higher than those recorded in recent years. The extent of the task can be gauged via the same procedure used to obtain the length of time required to achieve the target level of real per capita GDP. Two scenarios are built in this manner (table (10)). The first envisages the attainment of the target income level within 25 years and determines the growth rates required. According to the results, per capita GDP in the Arab economy needs to grow by 4.26 per cent annually to realise the desired objective. Except for the GCC group, the three other sub-regions need to grow at higher rates. At the country level, the required growth rates are much more varied and range from a low of 2.24 percent for Lebanon to a high of 12.9 per cent for Yemen.

The second scenario uses the 3.72% growth rate of per capita real GDP required to reduce poverty by half by 2015. If all Arab countries manage to grow at that rate the region will reach the target income level in 29 years. Again sub-regional and country performances vary.

Table (10): Growth Scenarios and Required Number of Years to Achieve Manufacturing Sector Maturity

Country	GDP per capita (1998)	Average Annual Growth Rates of Real Per Capita GDP Required to Achieve Manufacturing Maturity in 25 Years* (%)	Required Number of Years**
Algeria	1521	5.06	34
Egypt	1146	6.26	42
Jordan	1491	5.14	34
Morocco	1388	5.44	36
Syria	1209	6.03	40
Tunisia	2283	3.37	23
Djibouti	742	8.12	53
Lebanon	2999	2.24	15
Yemen	254	12.86	83
Mauritania	478	10.04	65
Comoros	403	10.79	70
Sudan	296	12.17	79
Arab Countries	1841	4.26	29

Source: Own Calculation

* The average annual growth rates of real per capita GDP required to achieve the target level of realer capita GDP of US\$5224 within twenty-five years;

** Number of years required to achieve the target level of real per capita GDP of US\$5224 with the annual growth rate of 3.72 percent – the growth rates of per capita real GDP required to reduce poverty by half by 2015

Obviously the circumstances of Arab countries are unlikely to remain unchanged. In fact, these countries experienced significant changes in their recent past, some of which, including political and economic reforms, have been in part initiated by the countries themselves and are for the better. Others resulted from the dynamics of the international economy. Particularly important, in this respect, are the deepening globalisation and the information revolution.

V. Investment:

As noted in the introduction, one of the fundamental determinants of long-run growth, and hence internal sustainability, is investment. In this respect it is important to note that a number of Arab countries are known to have engineered an investment transition prior to the early 1980s. An investment transition is defined as a sustained increase in the investment rate (investment/GDP ratio) of five percentage points or more. To capture the concept of sustained increase “a country is said to undergo an investment transition in year T if the three-year moving average of its investment rate over an eight year period starting at T+1 exceeds the five-year average of its investment rate prior to T by five percentage points or more”(Rodrik 1999: 58).

Applying the above definition for a sample of developing countries, excluding major oil exporting countries as well as cases in which the post-transition investment rate remains below 10 percent, yielded 47 episodes of investment transitions. About 17 per cent of these transition episodes are for Arab countries. Table (10) reports the relevant results for the 8 Arab countries involved. It should be noted that three of these transitions occurred prior to 1973 period (Morocco, Somalia and Syria), two in 1973 (Egypt and Jordan), two in 1974 (Mauritania and Tunisia) and one in 1975 (Yemen).

Table (10): Arab Countries with Investment Transitions

Country	Transition Year	Average Investment/GDP Ratio	
		5 years prior	5 years after
Egypt	1973	0.130	0.290
Jordan	1973	0.183	0.324
Mauritania	1974	0.213	0.345
Morocco	1969	0.113	0.178
Somalia	1972	0.120	0.230
Syria	1972	0.136	0.259
Tunisia	1974	0.217	0.299
Yemen	1975	0.176	0.355

Source: Dani Rodrik (1999)

Investment transitions are known to be associated with significant increases in economic growth. In particular, it was shown that countries that experience an investment transition go from a growth rate which is 0.8 percentage points less than world average to one that is 1.4 percentage points more than that average. The growth difference is a significant 2.2 percentage points. As is well known, only a few Arab countries were able to preserve these growth gains in the wake of the external shocks of the early 1970s, and that in most Arab countries, the gains were eventually reversed while the investment rate remained high. Lower growth rates and high investment rates translate into relatively high incremental capital output ratios (or lower rates of return to capital) indicating inefficient use of capital. One possible explanation of the inability of Arab countries to preserve the growth gains contingent upon experiencing an investment transition is the absence of social institutions to resolve conflicts arising from external shocks. However, it is also a well documented, and robust, result in the literature evaluating first generation economic reforms that these policy packages have led to a decline in investment rates (see, for example, Elbadawi (1992)).

To further probe the issue of the current state of the capitalisation of the region, and the behaviour of the investment rate following the external shocks of the early 1970s, we compiled the available information on investment rates over the period 1974-1998. For all sub-regions the investment rate has declined over the period (table (11)). In what follows we shall take the average investment rate for the period 1990-1998 as representing the initial conditions of the region.

Table (11): Investment Rates in Arab Countries: 1974-1998: (percentages)

Region	1974-1980	1981-1990	1990-1998
MOP*	44.0	33.3	28.8
GCC	29.3	25.5	19.6
DE	29.7	26.2	25.2
PP*	20.3	24.3	18.5
Simple Average	28.7	26.0	22.2
S. Deviation	8.88	4.56	4.75

Source: World Bank (2000)

*The corresponding figures stand only for one country

The behaviour of the investment rate varied between groups and countries. While almost all of the country groups in the sample recorded a decline between the first period and the end period, the primary producers recorded an increase in the second period before recording a decline. At the country level, it was only Kuwait, out of the 12 countries in the sample, that recorded an increase in the investment rate. The other 11 countries registered a decline in the end period as compared to the first period. These include Algeria, for which the average investment rate declined from 44.0 per cent of GDP for the period 1974-1980 to 28.8 per cent for the period 1990-1998; Bahrain (from 46.1 per cent to 18.1 per cent); Oman (from 30.0 per cent to 16.6 per cent); Saudi Arabia (from 23.2 per cent to 20.7 per cent); United Arab

Emirates (from 31.6 per cent to 23.1 per cent); Egypt (from 29.3 per cent to 19.4 per cent); Jordan (from 35.7 per cent to 31.2 per cent); Morocco (from 26.0 per cent to 22.1); Syria (from 28.3 per cent to 24.9 per cent); Tunisia (from 29.2 per cent to 28.5); and Mauritania (from 20.3 per cent to 18.5 per cent).

Given the above declining trends in investment rates, it may be important to note the required investment rates to achieve the international development goal of reducing poverty by half by the year 2015. Table (12) reports the required investment rates and compares them with the initial investment rates as the region enters the 21st century.

Table (12): Initial Investment Conditions and Required Investment Rates to Reduce Poverty by Half by 2015

Country	Required GDP Growth Rate (%)	ICOR*	Required Investment Rate	Initial Investment Rate**
Algeria	5.18	3.28	17.00	28.8
Egypt	6.02	5.34	32.14	19.4
Jordan	6.45	2.53	16.30	31.2
Mauritania	8.35	9.06	75.57	18.5
Morocco	5.83	2.27	13.20	22.1
Tunisia	5.88	2.66	15.64	28.5
Yemen	8.33	4.41	36.76	20.5
Arab Countries	5.70	3.64	20.78	23.7

Source: Own Computation

*Incremental capital output ratio

**Average of the period 1990-1998.

Different sub-regions have different investment requirements. According to the results reported in table (12) the required investment to enable a GDP growth rate of 6 percent per annum for the whole region would be about 21 per cent of GDP. This needs to be compared with the reported initial investment rate of 23.7 per cent of GDP as the region enters the 21st century. Although the region as a whole is in the fortunate position of having an initial investment rate (23.7%) in excess of that required rate of investment (20.8%) to achieve a GDP growth rate of 5.7 per cent, three countries out of seven: Egypt, Mauritania and Yemen have initial investment rates that fall short of the investment rates required to reduce poverty by half by the year 2015.

VI. Institutions:

It is generally acceptable that development is brought about in the context of developmentally oriented societies. A recent consensus seems to have emerged on the major features of an ideal growth and development society. Such a society is seen as one which: (a) would know how to operate, manage, and build the instruments of production and to create, adapt and master new techniques on the technological frontier; (b) would be able to impart this know-how to the youth by formal education or by apprenticeship; (c) would employ, promote and demote workers on the basis of competence and relative merit; (d) would afford opportunity to individuals or collective enterprise and encourage initiative, competition and emulation (see Landes (1998)). Such ideal societies are said to have social and political institutions that would secure rights of private property and personal liberty; enforce contracts; provide stable, responsive, honest, transparent and accountable governments; allow for social and geographic mobility; and evolve a more equal distribution of income supporting a large middle class. Thus the above definition makes it very clear that institutions are central to the ideal growth and development societies.

According to North (1990: 3-5) institutions “are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic. Institutional change shapes the way societies evolve through time and hence is the key to understanding historical change”. According to this understanding institutions include any form of constraint that human beings devise to shape human interaction. These constraints could be formal (such as the rules devised by human beings) or informal (such as conventions or codes or customs). Institutions affect the performance of the economy by their effect on the costs of exchange and production. In addition to North’s institutional and historical approach, a recent strand of empirical growth literature has found strong, and robust, support for the centrality of institutions in explaining differences in performance between countries (see, for example, Hall and Jones (1999) and Acemoglu, Johnson and Robinson (2000)).

In the recent empirical literature “institutions” are looked at in terms of a number of measures reported by the Political Risk Services Group (PRS) which constructs the famous International Country Risk Guide (ICRG). The ICRG risk rating system assigns a numerical value (called risk points) to a predetermined range of risk components according to a preset weighted scale for each country. Each scale is designed to award the highest value to the lowest risk and the lowest value to the highest risk.

The most important measures of the quality of institutions, frequently used in the empirical literature, are the “government repudiation of contracts” (scored from zero to ten, it is a measure of the risk of a government modifying a contract by repudiating, postponing, or scaling it down due to budget cuts, domestic pressures, change in government, or a change in domestic circumstances and priorities); “expropriation” (scored from zero to ten, it is a measure of the risk of outright confiscation or forced nationalization); “corruption” (scored from zero to six, it is a measure of the degree of corruption by high government officials in terms of demanding special payments for discharging their official duties and in terms of illegal payments at lower levels of government); the “rule of law” (scored from zero to six, it

is a measure of the extent to which there are sound political institutions, strong court systems and orderly succession of power); and the “quality of the bureaucracy” (scored from zero to six, it is a measure of the degree of autonomy of the civil service from political pressures, government policy continuity and the fairness of the recruitment process to civil service positions). ERF (1998) reported the relevant country scores for a sample of 15 Arab countries covered by PRS. Table (13) reports these scores for 1985 and 1997. In the table an increase in the score indicates an improvement in the institutional structure.

Table (13): Indicators of Institutions in a Sample of Arab Countries: 1985 and 1997

Country	Government Repudiation (out of 10 points):		Expropriation (out of 10 points):		Corruption (out of 6 points):		Rule of Law (out of 6 points):		Quality of Bureaucracy (out of 6 points):	
	1985	1997	1985	1997	1985	1997	1985	1997	1985	1997
Algeria	5.5	9	5	10	4	3	2	3	2	2
Bahrain	6	9	7	10	3	3	4	5	4	3
Egypt	5	9	5	10	2	2	3	4	3	3
Iraq	2	8	2	6	1	5	3	5	4	5
Jordan	4	8	5	10	3	4	2	4	3	4
Kuwait	5	8	6	10	3	3	3	6	3	3
Lebanon	3	9	4	10	3	1	1	4	2	2
Libya	3	9	3	9	3	4	5	3	3	3
Morocco	4	9	6	9	2	3	2	6	4	3
Oman	6	9	6	9	3	3	3	5	3	4
Qatar	2	8	7	9	2	2	3	6	2	3
S. Arabia	3	8	6	10	3	2	4	5	4	3
Syria	4	8	4	9	2	4	2	5	2	3
UAE	3	8	6	9	2	2	3	4	3	3
Yemen	5	9	5	10	2	3	1	4	1	3
Maximum*	6(2)	9(8)	7(2)	10(8)	4(1)	5(1)	5(1)	6(3)	4(4)	5(1)
Minimum*	2(2)	8(7)	2(1)	6(1)	1(1)	1(1)	1(2)	3(2)	1(1)	2(2)

Source: ERF (1998:54; table 12.2). * Figures between brackets are number of countries.

A general remark on the above results is that for all indicators of institutional quality the Arab countries have recorded impressive progress over the period under consideration. Indeed by 1997 the “expropriation” category seems to be fast disappearing as a concern in this sample of countries. Except for Iraq where such a risk continues to be relatively high, all other countries reached the stage of minimal risk where 8 countries reached the maximum score while another 6 scored 9 points out of the maximum of 10 points for a minimum risk.

Similarly, the risk of governments repudiating their contracts in the Arab countries seems to be disappointing where 8 countries recorded a score of 9, one point short of the minimum risk score, and another 7 countries scoring 8, only two points short of the minimum risk status.

Corruption, the rule of law and the quality of the bureaucracy remain the major institutional problems for the Arab countries. As can be seen from the table by 1997 only four countries scored above the average corruption score of 3 (Iraq, Jordan, Libya and Syria). A slight improvement is recorded for the rule of law where three countries have scored the minimum risk, or the maximum score of 6 points, (Kuwait, Morocco and Qatar). Similarly, the quality of the Arab bureaucracy leaves a lot to be desired. Only Iraq is reported to have a fairly high quality of administration.

Similar to the above rather mixed picture of the state of institutional structure, the Arab world enters the 21st century with a mixed political mould. A summary of the governance situation is detailed in table (14) using the indicators of political freedom constructed by Freedom House (1999). The table shows the country scores on measures of political rights, civil liberties and the average score of the two, and the classification of the country as to its freedom status (free, partly free and not free). These measures are derived from the Freedom of the World survey produced by Freedom House. Scores between 1 (for free) and 7 (not free) are assigned to the categories of political rights and civil liberties.

The political rights category measures the extent to which the government is chosen by means of free and fair elections of candidates. A checklist of 8 questions relating to standard norms of political freedom informs the scoring of this category. In addition, two questions are added to account for special circumstances of traditional monarchies and to account for safeguards for ethnic minorities. Thus, for example, for countries with a score of 7, “political rights are absent or virtually non-existent due to the extremely oppressive nature of the regime or severe oppression in combination with civil war”.

The civil liberties score essentially measures freedom from government oppression, encompassing the strength and objectivity of the rule of law as well as personal freedoms, such as those of expression and religion. A checklist of 14 questions relating to standard norms of civil liberties informs the scoring of this category. These questions are classified into four broad categories of “freedom of expression and belief”, “association and organisation rights”, “rule of law and human rights”, and “personal autonomy and economic rights”. In rating countries on the basis of the checklist on civil liberties, it is those rights enjoyed in practice that are used instead of the constitutional guarantees of such rights. Thus, countries rated 7 have virtually no freedom and an overwhelming and justified fear of repression characterises them as societies. Averaging the two scores for political rights and civil liberties gives the score for freedom. Countries are given the status of “free” if the average score lies in the range 1-2.5; the status of “partly free” is given to scores falling in the range 2.5-5.5 while the status “not free” is given to scores in the range 5.5-7.

This methodology has been applied for a long period of time (since the 1970s) and Freedom House indices are used quite frequently in rigorous analysis. However, individual countries may have reservations about the status assigned to them and as such can contest the methodology adopted. While not necessarily subscribing to the methodology or the way it is applied, we believe that it enables a fairly objective way of assessing the initial political conditions in the region as it enters the 21st century.

Given the above understanding, the picture painted by the results reported by Freedom House is one that calls for cautious optimism. On a global scale Arab countries tend to be the least free in the world, with authoritarian regimes still common and democracy still nascent. In this respect it is worth noting that it was only Djibouti that classified as “free” only in the 1970s. In the 1980s and 1990s none of the Arab countries was “free”. Furthermore, in the 1970s and 1990s the Arab region as a whole was “not free” though it was “partially free” in the 1980s with a freedom status index of 5.44 and a standard deviation of 0.75.

On a sub-regional basis, the results show the Diversified Economies (DE) as the most free through out 1972-2000 period. In fact this sub-region was “not free” only in the 1990s otherwise “partially free” for the rest period of the three decades. In contrast the rest of the sub-regions: MOP, GCC and PP were classified as “not free” for the three decades of the 1970s, 1980s and 1990s.

Table (14): Political Rights and Civil Liberties in Arab Countries:1972-2000

Status	1972-1979	1980-1989	1990-2000	1999/2000
Free	1	0	0	0
Partially Free	9	12	7	11
Not Free	11	9	14	10
Number of Countries	21	21	21	21
Arab Countries (Weighted Average)	Not Free [5.58]	Partially Free [5.44]	Not Free [6.01]	Not Free [5.94]
S. Deviation	1.13	0.75	0.91	0.94

Source: Freedom House (1999)

From the above we note that the Arab world enters the 21st century with a freedom score of 5.94. Ten countries, with 55.6 per cent of the population of the region, are classified as “not free”, while the remainder with 44.4 per cent of the Arab population are classified as “partly free”. Thus, developing political institutions that conform to international standards of freedom will remain a challenge for the internal sustainability of the Arab world.

VII. Technological Capacity:

As noted in the introduction the long-run sustainability of nations as defined in the context of ideal growth and development societies is contingent on their abilities to be in the frontier of science and technology. According to a recent survey of opinion among active scientists Kaku (1998) shows that the 21st century will be shaped by science and technology. Three interrelated scientific revolutions are identified as having informed the technological advances of the 20th century: these are the quantum revolution, the computing revolution and the bio-molecular revolution. The recently celebrated genome project success is but one example of what to come in the 21st century. Such advances are expected to dramatically change the nature of societies and economies of the new century.

The scientific and technological capacity of nations is currently measured by a number of indicators. According to the latest World Science Report produced by UNESCO (1998a: 22-30), such indicators include total expenditure on research and development (R&D), science and technology personnel, scientific publications and registered patents.

According to the latest available information, gross domestic expenditure on R&D in the world amounted to US\$470 billion in 1994. R&D expenditure by the Arab countries is estimated as US\$ 1.9 billion, only 0.4% of total world expenditure. Not surprisingly, 84% R&D expenditure is contributed by advanced countries: North America (37.9 per cent), Western Europe (28 per cent) and Japan and the newly industrialised countries (18.6 per cent).

**Table (15): Scientific and Technological Capacities in World Regions
(1995: percentages of total)**

Region	Expenditure on R&D*	Scientific Publications	European Patents	US Patents
Western Europe	28.0	35.8	47.4	19.9
North America	37.9	38.4	33.4	51.1
Latin America	1.9	1.6	0.2	0.2
Arab States	0.4	0.7	0.0	0.0
Sub-Saharan Africa	0.5	0.8	0.2	0.1
Japan and NICS	18.6	10.1	16.6	27.3
China	4.9	1.6	0.1	0.2
India and Central Asia	2.2	2.1	0.0	0.0
Others	2.2	2.9	1.3	0.6
World	100.0	100.0	100.0	100.0

Source: UNESCO (1998a: 23-26). * Figures are for 1994.

The number of articles published in scientific journals conventionally measures scientific output and activity. Data from the Science Citation Index, which provides systematic coverage of the articles published in 2500 of the most cited and influential journals, is used for this purpose. According to the latest information, the maximum share of Africa in this output was only 1.5 per cent of total scientific publications in 1995, inclusive of the share of all Arab states. Sub-Saharan Africa contributed 0.8 per cent of the total scientific output in the world. As with gross domestic expenditure on R&D, the world scientific output is concentrated in North America (38.4 per cent), Western Europe (35.8 per cent), and Japan and newly industrialized countries (10.1 per cent).

The number of patents published by patent offices is used as a measure of the technological capability at the frontier of knowledge. Despite recognising the limitation of using patents published by the two biggest and most recognized patent systems in the world, UNESCO reports such indicators by world region. The latest available information on this indicator shows that Africa's share in 1995 was only 0.2 per cent in European patents and only 0.1 per cent in US patents. As would be expected, Western Europe dominates the European patent system with a share of 47.4 per cent, followed by the USA (a share of 33.4 per cent) and Japan and newly industrialized countries (16.6 per cent). Similarly, the USA dominates the US patent system with a share of 51.5 per cent, followed by Japan and newly industrialized countries (with a share of 27.3 per cent) and Western Europe (19.9 per cent).

Thus, based on the above it is fair to conclude that the Arab world faces a major sustainability constraint relating to technological capacity. Possible ways of going about relaxing this constraint have recently been addressed by, among others, Fergany (2000).

VIII. Concluding Remarks:

Taking its cue from modern empirical growth literature this paper has identified a number of variables as of crucial importance for the internal sustainability and growth potential of the Arab countries. At the outset it acknowledges the diversity of this group of countries cautioning against making sweeping generalizations. To conduct the analysis four sub-groups are identified following the classification adopted by the Economic Research Forum.

To situate the analysis in its proper context it is noted that despite its oil wealth, and its share in the total population of the world, the Arab countries can be considered as a marginal economic grouping in the global context. It produces about x% of the world's output. Indeed it is shown that the largest five multinational companies in the world produce goods and services more than that produced by all the Arab countries combined. This, we suggest, is an important observation for a sober realization of the overall context.

Of the various factors determining long-run performance of countries, it is argued that the Arab countries are relatively well positioned regarding the distribution of income, the incidence of poverty, and human development. Perhaps political commitment, cultural values

and a wealth effect are behind this favourable initial condition for future sustainability and growth. Similarly, it is shown that the Arab countries are well positioned regarding investment rates. A number of them have been able to effect an investment transition in the past and there is no reason why all of them should do so in the future.

Given the definition of an ideal growth and development society, and given the scientific and technological nature of the twenty first century, however, it is shown that the Arab countries lack conspicuously in the areas of institutions and technological capacity. These, together with a currently distorted production structure, present Arab policy makers with major challenges for the future.

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