

**HOLDING THE LINE: POVERTY REDUCTION IN  
THE MIDDLE EAST AND NORTH AFRICA, 1970-2000**

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**Draft: September 5, 2001**

**This paper was prepared for the Annual Conference of the Economic Research Forum for the Arab Countries, Iran and Turkey, Manama, Bahrain, October 25-27, 2001. The views and findings are those of the authors and do not represent those of the World Bank, its member governments or its Executive Directors.**

## **HOLDING THE LINE: POVERTY REDUCTION IN THE MIDDLE EAST AND NORTH AFRICA, 1970-2000.**

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Reducing global poverty has been identified as the single greatest development challenge facing the international community. The International Development Goals (IDGs), recently reaffirmed in the Millennium Declaration of the United Nations, set out the ambitious target of halving the global incidence of poverty – measured as an income per person below US\$ 1.00 per day in internationally comparable purchasing power -- by 2015.<sup>2</sup> But progress in the 1990s toward achieving this goal has been disappointing. Even under the most optimistic growth scenarios many developing economies will remain far from the Millennium Declaration goal (World Bank, 2001a).

The low and middle income countries of the Middle East and North Africa (MENA) region offer a sharp contrast to much of the developing world in terms of both the overall incidence of poverty and recent trends in poverty reduction.<sup>3</sup> Table 1 presents estimates of poverty using international purchasing power standards of \$1.00 or \$2.00 per day for six developing regions between 1987 and 1998. MENA stands out as the developing region with the lowest incidence of IDG poverty (\$1.00 per day) throughout the 1990s at less than 2.5 percent of the population. While the transitional economies of Eastern Europe and Central Asia began the decade with a lower headcount index, the extreme contraction in incomes following the fall of Communism more than doubled the proportion of the population living in poverty by 1998 to 3.7 percent. The region's low poverty

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<sup>1</sup> We are grateful to Aliya Husain for research assistance. The views and findings are those of the authors and do not represent those of the World Bank, its member governments or its Executive Directors.

<sup>2</sup> We shall refer to the US\$ 1.00 per day (at constant, internationally comparable purchasing power) measure of poverty as "IDG poverty" throughout the paper. This is the measure conventionally used by international development organizations in making cross country comparisons. The World Bank has also introduced a second measure of income poverty based on a poverty line of US\$ 2.00 per day (using the same concept of purchasing power parity). These poverty lines have many limitations but permit international comparisons both across countries and over time (Chen and Ravallion, 2000). We shall also use individual, country-specific poverty lines in the case studies. These have the advantage of being more closely tailored to country circumstances and allow us to describe poverty trends over time for each country, but do not permit us to make cross-country comparisons of poverty incidence.

<sup>3</sup> In this paper we define the low and middle income countries of the region as those for which we have both aggregate economic data and data on income distribution for at least one point in time. That set of countries consists of Algeria, Egypt, Iran, Iraq, Jordan, Morocco, Tunisia and Yemen. Due to lack of information on income distribution and to their fundamentally different level of development we omit the GCC countries from our discussion.

headcount is particularly striking in contrast with that of Latin America – a region at roughly twice the level of per capita income – which was 12.1 percent of the population in 1998.

Yet, despite these enviable statistics, widespread concern emerged in the region during the 1990s over the durability of MENAs success in reducing poverty. This concern derives from at least three sources:

- The slowdown in economic growth since the mid-1980s has meant that per capita incomes remained virtually stagnant in a number of countries, and several experienced major macroeconomic shocks.
- The fiscal retrenchments required of the public sector in many of MENAs developing economies have limited public employment and public sector wage growth, as well as direct transfers to households, traditional mechanisms of support to the poor.
- And, the shift from a state-led, inward-oriented model of economic development to one more dependent on external markets and the private sector has produced anecdotal evidence of and substantial public debate over perceived increasing inequality of incomes.

Can MENA sustain its record of poverty reduction in the face of economic change? To address this question we combine two approaches, analysis of cross country aggregate data and country case studies. First, we examine data from a large cross-country data set to place MENAs record with respect to growth, inequality and poverty reduction in international context. Second, we use the results of recent household surveys to examine trends in income poverty in four countries – Egypt, Jordan, Morocco and Tunisia – between the mid-1980s and the late-1990s and attempt to explain the reasons for their differing poverty outcomes.

We should emphasize at the outset that neither of these approaches is easy to implement in MENA. The lack of accessible and comparable household budget surveys makes it difficult to even identify the extent of poverty reduction in most Middle Eastern countries. For example, of the 15 Middle Eastern countries included in the MENA (Middle East and North Africa) Region of the World Bank, only nine appear in the largest international data set reporting on poverty and income inequality (Dollar and Kraay, 2001).<sup>4</sup> Only four countries have nationally-representative household budget surveys that are openly accessible to the public, and of these none has an openly accessible data set for more than one year.<sup>5</sup>

Without access to household survey data, it is difficult to explain why Middle Eastern countries have different poverty outcomes. For instance, in most developing countries labor-intensive economic growth represents a powerful means for reducing income poverty by increasing jobs and incomes for the poor. However, without survey data on either employment

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<sup>4</sup> These are the countries are listed in footnote 3 plus Djibouti.

<sup>5</sup> The four economies which have openly accessible household surveys are: Morocco (1990/91), Egypt (1997), West Bank and Gaza (1997), and Yemen (1998).

or wages for the poor, it is impossible to identify how much labor-intensive growth has contributed to poverty reduction in the Middle East. Similarly, in many developing countries public institutions – in such areas as health and education – have a powerful impact on increasing the human capital assets of the poor, and transfers to households via commodity subsidies or social safety nets have served to cushion the impact of economic contractions. In the absence of information on the poor’s access to such public interventions, it is difficult to pinpoint the contribution of state institutions to income poverty reduction in the Middle East.

The balance of the paper proceeds as follows. Part I reviews the cross country evidence on growth, distribution and income poverty with a view to explaining MENAs relatively low incidence of absolute poverty and to projecting its likely pattern of change over time. Part II discusses how household budget survey data can be used to identify “the income poor” and to construct a poverty data set for the four Middle Eastern countries – Egypt, Jordan, Morocco and Tunisia – which have reasonably consistent household budget survey data since the mid-1980s. Part III analyzes recent trends in poverty reduction in the four countries. Part IV then examines possible reasons for the different poverty outcomes we find among these MENA economies. Part V concludes.

## **I. Growth, Inequality and Poverty Reduction in International Context**

The Middle East and North Africa began the last decade of the twentieth century with levels of income poverty that were strikingly low by international standards. Only the non-market, socialist economies of the Eastern Bloc had succeeded in reducing the share of the income poor in their populations below that of the MENA economies. In 1987 – the first year for which comparable international data exist – the IDG poverty headcount (\$1.00 per day) in MENA stood at 4.3 percent of the population; by 1990 it had declined to 2.4 percent. The decade of the 1990’s, however, saw little additional progress in poverty reduction. Although the headcount index declined to a low of 1.8 percent of the population in 1996, by 1998 it had risen to 2.1 percent (Table 1).

If we shift our attention to an income poverty measure based on \$2.00 per day, which may be more appropriate for a region at MENAs level of average per capita income, the trends in poverty reduction are similar but more pronounced. In 1987 about 30 percent of the region’s population lived below the poverty line. The headcount index declined to a low of 22.2 percent in 1996 – roughly similar to that of Eastern Europe and Central Asia – but rose dramatically between 1996 and 1998 to 29.9 percent, virtually eliminating the gains of the previous decade. Relative to other regions, however, the Middle East remains a low poverty region – even at \$2.00 per day – trailing only the transitional economies of Europe and Central Asia and equal to Latin America, despite the latter region’s much higher level of per capita income.

Economic growth generally helps to reduce poverty. For example, in an analysis of twenty developing countries, Bruno, Ravallion and Squire (1998) found that a 10 percent

increase in mean survey income led to a 20 percent drop in the proportion of people living on less than one dollar a day. On a different data set of 26 developing countries, Roemer and Gugerty (1997) found that a GDP growth rate of 10 percent a year is associated with a 9.2 percent increase in mean income for the poorest 20 percent of the population. Provided that there are no major changes in income distribution, faster rates of per capita GDP growth should lead to higher rates of poverty reduction.

While there is a robust relationship between per capita income growth and poverty reduction, there is also substantial variation across countries and regions in the elasticity of poverty reduction with respect to a given rate of income growth (Ravallion, 2000). Figure 1 shows average per capita income growth and changes in the incidence of IDG poverty (\$1.00 per day) for six developing regions and the fitted regression based on individual country observations for the period 1980-1999. MENA clearly emerges as an outlier. Its rate of poverty reduction exceeded that of all other developing regions, despite low average levels of per capita income growth over the two decades. This result stands in sharp contrast to the performance of East Asia where poverty reduction was clearly driven by rapid income growth and to the transition economies in which substantial increases in poverty were the consequence of major economic contractions.

What accounts for MENAs apparent success in reducing IDG poverty? In brief, the thirty year average growth rate for the region conceals a cycle of rapid growth (1970-1985) followed by a period of stagnant income growth (1985-2000). Both of these cycles were linked to changes in the price of oil. During the first period of rapid growth, the poor benefited from both income growth as well as an increasing share of income accruing to the bottom quintile group. On average, these income and redistribution gains for the poor do not appear to have been reversed during the region's economic downturn after 1985. When we shift our attention to those living on less than \$2.00 per day, the pattern is the same. Substantial, although less dramatic gains, were recorded between 1975 and 1985 while low overall growth during the past two decades limited the scope of poverty reduction

### **Poverty reduction in the rapid growth period, 1970-1985.**

Table 2 presents estimates of the average rate of per capita income growth, the poverty headcount at \$1.00 or \$2.00 per day and the per capita income of the bottom quintile of the income distribution for the developing countries of the Middle East and North Africa during the period 1970 – 1999. The boom to bust cycle in income growth is apparent. The average per capita income growth for the region as a whole between 1975 and 1979 was over 3.8 percent . This was sustained into the period 1980-1984 and followed by a sharp slowdown in growth in the period following 1985. The IDG poverty headcount shows a similar trend, falling rapidly between 1975-79 and 1990-94, and then stabilizing at about 2 percent of the population.

The speed with which a given rate of economic growth reduces income poverty is largely a function of the distribution of income. For example, based on a large sample of developing countries, the poverty headcount for an economy with a Gini coefficient of 0.2 falls nearly 3.0

percent for each percentage point of growth while that for an economy with a Gini coefficient of 0.6 falls only 1.5 percent (World Bank, 2000).

Middle Eastern economies entered their rapid growth period with income distributions that were becoming more egalitarian, reflecting the political ideology of post-colonial governments. These regimes used both redistribution of assets – including agricultural land – and public employment to promote more equal income distribution, with varying degrees of success (Richards and Waterbury, 1990). Table 3 presents estimates of the Gini coefficient for some MENA economies, beginning in the mid-1950's. Units, income measures, definitions and coverage are not strictly comparable but the data tell an interesting story, nonetheless. For all of the six countries covered in the sample, the income distribution became more equal between the first and last observations.

Figure 2(a) shows trends in average Gini coefficients by region for the period 1970 to 1999.<sup>6</sup> These trends, like other international comparisons are fraught with comparability problems, but they do provide a broad comparison of changes in income inequality over time. Two things are striking in the data. First, although the MENA region began 1970 with one of the highest rates of income inequality in the world (Gini = 0.440), since that time it has also recorded one of the largest rates of improvement in income distribution. In fact, MENA is only one of two regions – South Asia (SAR) being the other – to record improvements in income inequality over time. Second, because of these improvements, the MENA region now has one of the most equal income distributions in the world (Gini = 0.360). Overall, MENA's very enviable success in improving income inequality may provide an important explanation for the regions unusual success in reducing poverty.

Changes in the IDG headcount index are closely related to changes in incomes at the bottom of the income distribution.<sup>7</sup> We therefore also examine the regional pattern of income shares accruing to the bottom quintile (Figure 2(b)). In general, the pattern of regional variation broadly conforms to that observed in the Gini coefficient, which is that MENA has a relatively high share of income accruing to the bottom quintile of its distribution, and this share has increased significantly over time. For example, the average income share going to the bottom quintile of the income distribution in MENA countries in 1985 (Gini = 0.410) is equal to 7.2 percent, which is roughly the same as that for OECD countries (Gini = 0.310) and East Asia and the Pacific (Gini = 0.360) (Table 4).

Table 4 extends the preceding analysis by showing average Gini coefficients and income shares for the lowest quintile over the period, 1960 – 1999. Consistent with the pattern of change of the whole income distribution, the average Gini coefficient for the MENA region is high, and the average share of income going to the bottom quintile is relatively low. However, as it is shown in Figure 2(b), the emphasis should be on the rate of change over time, and it is in

<sup>6</sup> The regional averages are calculated from Dollar and Kraay, 2001.

<sup>7</sup> The average income of the poorest quintile is equal to the share of income accruing to the poorest quintile times per capita income divided by 0.2. Thus, a higher quintile share translates directly into higher average incomes of the poor for any given level of income per capita.

this area that the MENA region is distinctive. Over the entire time period, 1970-1999, Latin America (LAC), East Asia (EAP) and Sub-Saharan Africa (SSA) all show rising Ginis and declining shares of income going to the lowest quintile of the population. In contrast, MENA shows a declining Gini and a sharply rising income share to the poorest quintile.

This “pro-poor” pattern of growth in the income share of the lowest quintile may reflect two important aspects of growth in MENA during the boom period. The first is the substantial role played by workers remittances. Figure 3 shows workers remittances as a share of GNP for the Maghreb and the Mashreq between 1970 and 1990. In the Maghreb remittances increased steadily between 1970 and 1990, from about 2 percent to nearly 4 percent of GDP. In the Mashreq the increase was more dramatic – from zero to a peak of nearly 10 percent of GDP between 1972 and 1984 – followed by a moderate decline to about 8 percent of GDP by 1990.

In the MENA region, international migration and remittances had a demonstrable impact on reducing rural poverty. For example, evidence from rural Egypt suggests that during the 1980s remittances went disproportionately to the poorest households. In addition, the migration of unskilled workers reduced the pool of local agricultural workers, and this in turn boosted real agricultural wages. Finally, a large share of remittance earnings was invested in private housing and construction, and this served to increase employment (and income-earning) opportunities for unskilled labor (Adams, 1991).

A second aspect of the rapid growth period which may have contributed to increasing incomes at the bottom of the income distribution was the rapid increase in aid flows associated with redistribution of oil rents and geopolitical concerns (Figure 3). These resources helped to finance both a public investment boom and a comprehensive set of commodity based consumer subsidies (Page, 1998). The public investment boom led to very substantial increases in real wages in construction (in those economies for which data exist) that peaked in the mid-1980s. While for the most part the commodity based subsidies were untargeted, they formed an important element of the social safety under poorer households.

Figure 4 presents the pattern of mean income growth of the poorest quintile of the population for the period 1970-1999 for MENA, Latin America (LAC) and East Asia (EAP). The pattern of income growth accruing to the poorest quintile in MENA closely parallels the region’s economic performance over the three decades. Mean income of the bottom quintile rises rapidly between 1975-79 and 1985-89. It then declines during the succeeding ten years and recovers at the end of the period. The contrast with East Asia and Latin America is notable. In East Asia the mean income of the lowest quintile rises continuously until the economic crisis of 1997/98 and then falls. While the increase in incomes of the poorest is less rapid than MENAs it is sustained longer. In Latin America the mean income of the poorest quintile declines continuously from the 1980s onward.

## **Poverty trends in the 1990's and beyond**

The 1990s were a lost decade of economic growth for the developing economies of the MENA region. Real per capita incomes increased on average by less than 1.5 percent for the developing economies of the region as a whole (Table 2). Despite this slow growth the IDG poverty headcount continued to decline modestly until 1996 when it reached a low of 1.8 percent of the population. Recent estimates for 1998 show an increase in the headcount index to 2.1 percent (World Bank, 2001). The impact of the abrupt slowdown in economic growth was attenuated to some extent by continuing improvements in the income distribution and in the share of income accruing to the poorest quintile of the population (Table 2).

Table 2 also presents estimates of the poverty headcount for 2010 based on the 1990 levels of income inequality in the region and two projected growth scenarios. In the first scenario growth is limited to the average for the period 1990-1999 of 1.4 percent. Under this low growth scenario the stable trend in the IDG poverty headcount will continue, reaching only 1.9 percent by 2010. Under modest but more optimistic growth scenarios the headcount falls to about 1.3 percent by the end of the decade. Similar trends are observed for the \$2.00 per day poverty index.

The contrast between the pattern of change of the IDG headcount and that of the headcount index based on \$ 2.00 per day may provide an insight into the widely perceived view that poverty increased in the MENA during the 1990s. By 1998 the headcount for those living below \$2.00 per day had returned to a level last seen in the late 1980s (Table 1). For those not living in extreme poverty, but likely perceived in the context of the region's lower middle income countries to be among the poor, there was no improvement in well being over the decade.

What helped those in extreme poverty (near \$1.00 per day) to remain above the IDG poverty line during the prolonged period of stagnation while those classified as poor under a broader definition (\$2.00 per day) were experiencing a deterioration in their living conditions? One important answer appears to be the continued increase in the share of income accruing to the bottom quintile of the income distribution. While the rate of growth of mean income slowed in response to the slowdown in the overall growth rate, the rising income share served to cushion the shock for those at the bottom of the income spectrum.

## **II. Poverty Trends in Egypt, Jordan, Morocco and Tunisia 1985-1999.**

The aggregate cross-country data provide us with few insights into the dynamics of poverty within individual countries, particularly in the slow growth period. It is for this reason that we now turn to case studies of four of the region's economies based on the only publicly available household survey data.

## Constructing a poverty data set for the Middle East

Because of their simplicity, household budget surveys remain the basic means for documenting and explaining trends in poverty. Household budget surveys collect detailed information on which households buy what kinds of food and non-food goods and services, and how much they spend on these items. Household budget surveys also collect detailed information on the internal characteristics of households: their size, age structure, and educational and occupational profile. From these pieces of collected survey information, households can be ranked on the basis of their spending on a common basket of food and non-food goods and services. When household surveys are carried out on a regular and consistent basis, they represent a very useful policy instrument for monitoring how the welfare of the poor changes over time. In order to have findings which are valid for the country as a whole, it is also desirable if such household budget surveys are nationally representative.

In most developing countries, the most regular and consistent set of household budget surveys are those done by government statistical offices. In the Middle East only a handful of government statistical offices have chosen to conduct regular household budget surveys. Since the early 1980s only five Middle Eastern economies – Egypt, Jordan, Morocco, Tunisia and the West Bank and Gaza – have conducted more than two household budget surveys. Fortunately, the surveys conducted have been large and nationally-representative, which is useful for monitoring changes in poverty over time.<sup>8</sup> Unfortunately, however, these same five statistical agencies have also offered limited (if any) public access to the collected, raw household data.

Of the five Middle Eastern economies which have more than two household budget surveys since the mid-1980s, we have chosen to focus on four: Egypt, Jordan, Morocco and Tunisia.<sup>9</sup> While these four countries have conducted a total of 13 household budget surveys since the mid-1980s, only two of these surveys – the 1990/91 survey in Morocco and the 1997 survey in Egypt – are accessible to the public.<sup>10</sup> Without individual-household data from the remaining household surveys, we are forced to rely on the calculations of poverty lines and published “group means” figures reported by the various statistical offices and the World Bank.

All of the reported household survey findings in this paper are based on expenditure rather than income data. This is a common approach used in household survey analysis in the developing world for at least three reasons. First, many analysts believe that people are more

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<sup>8</sup> For example, the 1995-96 Egypt household survey, which was done by the Egyptian Central Agency for Public Mobilization and Statistics, included a total of 14,805 households: 6,622 urban and 8,183 rural households.

<sup>9</sup> The reason for this decision was simple. Our interest was to examine trends in Middle Eastern poverty for as long a time as possible (i.e., mid-1980s to 1998/99), and, unfortunately, there are no household budget survey data available for the West Bank and Gaza in the 1980s.

<sup>10</sup> The 1997 Egypt household survey was not done by the Egyptian Central Agency for Public Mobilization and Statistics; rather it was conducted by the International Food Policy Research Institute, together with the Egyptian Ministry of Agriculture and the Egyptian Ministry of Trade and Supply.

willing to report their patterns of expenditures rather than their sources of income. Second, since people use savings to smooth fluctuations in income, it is generally believed that expenditures provide a more accurate measure of an individual's welfare over time. Third, expenditures are often easier to measure than income because of the difficulties of defining and measuring income for the self-employed in agriculture who form a large proportion of the labor force in developing economies.

The standard way of using expenditure data from household budget surveys to measure changes in poverty over time is to establish a national poverty line, defined as the break-even level of expenditures needed to meet minimum food and non-food requirements. To illustrate, Table 5 summarizes how the poverty line was established in selected survey years in three of the four countries. The amount of annual per capita expenditures needed to meet the cost of certain minimum food requirements is first calculated.<sup>11</sup> To these minimum food costs, minimum non-food expenditures are added.<sup>12</sup> The result is a poverty line – that includes the cost of minimum food and non-food requirements -- for each survey year for each country.

These individual, country-specific poverty lines are not strictly comparable with the purchasing power parity poverty lines used in Part 1. The minimum food and non-food requirements are, as noted above, based on national standards and the monetary value of the basket is constructed in national currency at constant prices. Thus, while we can use these national poverty lines to examine changes in the poverty headcount over time within individual countries, they are not strictly comparable across countries within MENA nor with the headcount indices based on the IDG definition.<sup>13</sup>

The procedure by which these national, country specific poverty lines are established is arbitrary, and has at least three limitations. First, in any developing country, nutritional data are relatively sparse. Since, as noted above, researchers do not typically have access to the raw data of household surveys in the Middle East, it is unclear how the various food poverty lines in Table 5 reflect the nutritional requirements of individuals with different ages, genders or occupations. Second, in most developing countries food and non-food prices vary by region. For example, the cost of adequate housing in urban areas is often two to three times that of rural areas. Unfortunately, it is unclear how these regional price variations were taken into account in the calculation of food and nonfood poverty lines in Table 5. Third, as noted above, all of the

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<sup>11</sup> In Egypt (1995/96) minimum food requirements equal the cost of the diet per adult equivalent unit to yield an energy intake of 2,200 calories per day; in Morocco (1998/99) minimum food requirements are costed to yield an energy intake of 2,000 calories per day; and in Tunisia (1995) minimum food requirements are costed to yield an energy intake of 2,250 calories per day.

<sup>12</sup> For each survey year, minimum non-food expenditures were calculated by estimating the following food-share demand system:  $w = \alpha + \beta \log(x / z_f) + \varepsilon$

where  $w$  denotes the budget shares for food,  $x$  is the total household per capita expenditure,  $z_f$  is the food poverty line,  $\alpha$  and  $\beta$  are real parameters, and  $\varepsilon$  is the error term

<sup>13</sup> Because the definitions of the minimum basket are roughly comparable across the MENA countries in the sample, rough comparisons of poverty incidence can be made between countries.

poverty lines in this paper are based on consumer expenditure rather than income data. Thus, no account is taken of the saving or dissaving behavior of the various income groups. This omission probably gives a slight downward bias to the poverty lines used in this paper, since the bulk of dissaving activity typically occurs at the lower end of the income distribution.

### **III. Trends in Poverty and Inequality: Egypt, Jordan, Morocco and Tunisia**

Table 6 shows trends in the incidence of poverty for the four countries during the period 1981/82 to 1998/99. For each country, poverty measures are reported for rural areas, urban areas and overall. Table 6 lists two different poverty indices. The first, the headcount index, measures the percent of the population living beneath the poverty line (food and non-food) in different survey years. The headcount index ignores the amounts by which the expenditures of the poor fall short of the poverty line. We therefore also report the poverty gap index, which measures in percentage terms how far the average expenditures of the poor fall short of the poverty line.<sup>14</sup> For instance, a poverty gap of 10 percent means that the average poor person's expenditures are 90 percent of the poverty line.

The overall headcount index shows that poverty increased in Egypt and Jordan and declined in Morocco and Tunisia. The results for the poverty gap index indicate that poverty has increased in depth in Jordan. In Morocco and Tunisia, where we have data limited only to the 1990s poverty depth appears to have increased in Morocco and remained stable in Tunisia. In Egypt overall poverty gap estimates are not available but both the rural and urban data series suggest increasing depth of poverty.

Table 6 also reveals two other important points. First, it confirms our findings based on the aggregate cross-country data that when compared to other developing regions, the incidence of poverty in the Middle East is low. For example, the overall headcount index of poverty ranges from a high of 26.0 percent (Morocco) to a low of 3.0 percent (Jordan). Based on country-specific poverty lines, the country-specific headcount index of poverty for a sample of 12 Latin American countries varied from 75.5 percent (Bolivia) to 12.9 percent (Argentina) during the same period (Wodin, 2000: Table 1.6).<sup>15</sup> Second, with only one exception the incidence of poverty in rural areas is higher than that in urban areas.

Using data from the household surveys, Table 7 shows how per capita expenditures changed over the period covered by successive surveys. Despite the large number of missing values, the results are consistent with the poverty trends reported above. For instance, during the

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<sup>14</sup> A third, and even more sophisticated, poverty measure is the squared poverty gap, which measures the severity of poverty. Unfortunately, few of the published reports reported this poverty measure.

<sup>15</sup> It is important to keep in mind that the national poverty lines reported in Table 6 are derived from country specific information, and are not therefore strictly comparable to the US\$1.00 per day poverty line used in Part 1 of the paper. It is of interest to note, however, that the poverty headcount indices in Table 6, which are based on national data, fall between the international poverty indices of \$1.00 and \$2.00 per day. This gives us some confidence that the poverty trends reported in Part 1 reflect the underlying poverty dynamics in the individual MENA countries discussed in this section.

period when the overall headcount index of poverty rose in Egypt and Jordan, the level of the survey mean per capita expenditures fell in both countries. In rural and urban Egypt the mean level of expenditures fell by 9 and 13 percent, respectively. In Jordan the overall mean level of expenditures fell by a large 32 percent. This finding suggests that rising poverty in Egypt and Jordan was at least partly the result of falling household expenditures in both countries. Table 6 also shows that the overall headcount index of poverty declined in Morocco and Tunisia. Survey mean per capita expenditures rose in both of these countries: by 21 percent in Morocco and 10 percent in Tunisia. In both Morocco and Tunisia declining poverty was at least partly caused by the rising level of household expenditures.

Table 8 shows how the distribution of per capita expenditures changed over time in the four countries. Despite the presence of missing values the table reveals two key points. First, as noted in Part I, measures of income inequality in the four MENA countries are relatively moderate. While overall Gini coefficients of inequality in Table 8 range from 0.350 to 0.430, Gini coefficients of inequality for a sample of 12 Latin American countries varied from 0.440 to 0.610 during the same period (Wodin, 2000: Table 2.2). Second, changes in the Gini coefficients are consistent with the poverty trends reported above. For example, rising inequality in rural and urban Egypt is quite consistent with increasing poverty in Egypt as a whole. In Jordan the lack of change in the Gini coefficient suggests that increasing poverty was driven more by the 32 percent decline in per capita expenditures than by changes in the distribution of income; although it is of interest to note the apparent increase in income inequality in Jordan leading up to the crisis of 1989/91 followed by its reversal. For Morocco the lack of change in the Gini coefficient over time means that falling poverty is mainly the result of the 21 percent increase in per capita expenditures. Finally, in Tunisia, the large number of missing values makes it difficult to conclude anything concrete about changes in inequality.

#### **IV. Explaining Changes in Poverty in Egypt, Jordan, Morocco, Tunisia**

It is possible to extend this analysis by decomposing the changes in poverty into two components: a growth component (that is, changes in expenditures) and a redistribution component (that is, changes in the distribution of expenditures). Following Ravallion and Datt (1991), the change in poverty ( $P_a$ ) can be written as the sum of a growth component, a redistribution component and a residual. Let

$$P_{a,t} = P_a(z/M_t, D_t)$$

where  $z$  is the poverty line,  $M_t$  is mean expenditure per capita and  $D_t$  is the distribution of expenditure per capita in year  $t$ . For Egypt, then, the overall change in poverty ( $P_a$ ) between 1981/82 and 1995/96 can be written as:

$$P_{\alpha,96} - P_{\alpha,81} = G(81,96; r) + D(81,96; r) + R(81,96; r)$$

Growth      +      Redistribution      +      Residual

Component                      Component

Table 9 shows the results of the decomposition exercise for the three countries for which data exist: Egypt, Jordan and Morocco. For all three countries, the change in the growth component was far more important than the change in the redistribution component in determining total changes in poverty. This confirms our observations above. In both Jordan and Morocco the Gini coefficient of inequality was fairly constant over the 1990's. Thus, in both countries changes in poverty were "caused" more by changes in mean per capita expenditures. In Jordan mean expenditures fell by 32 percent leading to an 8.7 percent increase in the headcount index of poverty, but it is noteworthy that the redistribution component offset to some extent the impact of the decline in income on the poor. In Morocco mean expenditures increased by 21 percent leading to a 7 percent decrease in the headcount index of poverty. The elasticity of change in poverty with respect to expenditure changes is quite similar in the two countries at about 0.3. In Egypt expenditure changes once again explain the bulk of the increase in poverty, but the redistribution component for rural poverty is larger than in other cases and of the same sign. That means that in contrast to urban areas both reductions in average expenditure and increases in income inequality contributed to the rise in rural poverty.

### **Growth, income distribution, real wages and poverty reduction**

Table 10 summarizes our main poverty findings. These findings are: (1) increasing poverty in Egypt was linked to both increasing inequality and declining mean expenditures; (2) increasing poverty in Jordan reflected mainly declining mean expenditures; (3) declining poverty in Morocco and Tunisia was "caused" by increasing mean expenditures. The key question now becomes: How is it possible to explain these differing poverty outcomes? This section addresses this question by using the data at our disposal to examine the contributions of economic growth, income distribution and real wages to poverty reduction in the four countries.

Table 11 presents average annual rates of real GDP growth in the four countries for the period 1980 to 1999, as well as the overall percentage change in per capita incomes between survey years. For the most part our results confirm the strong link between changes in national economic growth rates and changes in poverty observed in Part I. For Jordan the decline in mean expenditures between 1986/87 and 1997 of 32 per cent observed in the household surveys is validated by a decline in real GDP per capita of nearly 19 percent.

In Morocco, a country with one of the lowest rates of overall real per capita GDP growth, the agricultural cycle results in high volatility of incomes. Between the sample beginning and end points real GDP per capita rose nearly 20 percent, very closely tracking the increase in per capita expenditures of 21 percent, despite an overall lackluster growth rate over the two decades of less than one percent. The high volatility of income is clearly reflected in movements in the headcount index which show a dramatic decrease in poverty between 1984/85 and 1990/91, followed by a less dramatic, but nevertheless substantial increase in the poverty headcount between 1990/91 and 1998/99. Tunisia, a more steady grower, had an increase in per capita

income of 13.4 percent between 1985 and 1995, broadly consistent with its increase in mean expenditures of 9.6 percent.

The results for Egypt are a puzzle. During the same interval (1981/82 to 1995/96) over which the mean expenditures for both rural and urban households were reported to have declined by 13 and 9.5 percent, respectively, GDP per capita was reported to have increased by 37 percent. While there is no need for expenditure to track income perfectly, in general such large discrepancies are not expected (Dollar and Kraay, 2001).

In Part I we speculated that one possible explanation for the “pro-poor” character of MENAs growth was the rising share of income accruing to the poorest segment of the population. Table 12 uses data from the various household budget surveys to trace the evolution of the income share of the bottom quintile of the population in our four country sample. For three of the four countries the relationship between growth of the share of income at the bottom end of the distribution and poverty reduction appears to be robust.<sup>16</sup> In Egypt which shows a decline in the percentage of survey expenditures going to the bottom quintile of the population there is an increase in poverty over the time period mid-1980s to 1999. At the same time, those countries (Morocco, Tunisia) which show an increase in the share of survey expenditures going to the bottom quintile show a concomitant decrease in poverty over the period. In Morocco and Tunisia the share of expenditures going to the lowest quintile increased at an annual rates of 0.65 and 1.71 percent respectively from the first survey to the last. The higher rate of growth of the quintile share in Tunisia may help to explain why it has achieved a faster rate of reduction in poverty than Morocco, despite lower expenditure growth.

One possible way of explaining why the poorest 20 percent are faring better in Morocco and Tunisia, but worse in Egypt, is to examine changes in real wages. If, for example, real wage rates are rising in certain sectors of the economy (and declining in others), and we know how these wage increases (declines) are distributed across different income groups of the population, then it becomes possible to explain why poor people are working their way out of poverty.

Some real wage data – disaggregated by economic sector – exist for Egypt and Tunisia. In these two countries our interest is in how real wages are changing in those sectors of the economy – such as agriculture and construction – where the unskilled poor tend to work. Table 13 shows trends in real wages for six economic sectors in Tunisia over the period, 1989 to 1997. The results are instructive inasmuch as they show that real wages grew the fastest in agriculture: 8.1 percent per annum. Since the 1995 household budget survey in Tunisia found that the poor tend to work in agriculture, the size of this real wage increase for agriculturalists must have had a large, salutary impact on the poor. Poor people in Tunisian agriculture were able to work their way out of poverty in the 1990s, because their real wages grew at rate of eight times faster than the average

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<sup>16</sup> Unfortunately, distributional data are not available for Jordan in 1997, but the trend based on the two prior surveys is consistent with the other results.

Egypt, however, presents a very different story. Between 1980/81 and 1994/95 real wages fell dramatically in all sectors of the economy, including agriculture and construction (Table 14). Both the size and extent of these real wage declines are surprising, because they seem to have affected both the “free market” and the “public” sectors of the Egyptian economy with equal severity. For instance, agriculture in Egypt has always had a virtually free market wage system, with the laws of supply and demand setting daily wage levels. By contrast, government has had a very rigid wage system, with annual wage increases being pegged closely to increases in seniority. Yet the fall in real wages in Egypt seems to have affected both sectors of the economy – agriculture and government (in Table 14, “other services”) -- with equal vengeance.

The decline in real wages has probably been a major source of the recent rise in urban and rural poverty in Egypt. According to the 1997 IFPRI survey, the poor in Egypt are most likely to be employed in casual jobs in construction and agriculture (Datt, Joliffe and Sharma, 1998). In the late 1970s and early 1980s, as remittance monies earned by Egyptians working abroad flowed back into Egypt, the construction industry boomed. This in turn had an important indirect effect on the poor, as they were literally able to work their way out of poverty by helping to build new apartments and office buildings (Adams, 1986). However, as the pace of economic growth slowed, and the number of construction jobs declined, so did the level of real wages paid in this sector. Similarly, in the rural areas the large-scale migration of unskilled workers abroad in the late 1970s and early 1980s caused the real wages paid to casual agricultural workers to rise.<sup>18</sup> However, after 1985 when international migration opportunities for poor, unskilled workers narrowed, real wages paid to agricultural workers also fell by over 40 percent from 1985 to 1990 (Richards, 1994: 243). In all likelihood, this had a very negative impact on the rural poor in Egypt.

The preceding analysis suggests that international migration may have had different impacts on the poor in the MENA region depending on the origin and destination of the migrant. First, as oil prices increased in the late 1970s, and the economies of the Persian Gulf countries boomed, poor people from Egypt (in particular) and Jordan (to a lesser extent) were able to find high-paying jobs in a variety of labor-intensive fields in Iraq, Kuwait and Saudi Arabia.<sup>17</sup> The large-scale migration of these people abroad in turn put upward pressure on local wage rates for agricultural and other types of unskilled work. However, after 1985 when oil prices peaked and the Persian Gulf countries began to reduce their labor needs, the poor of Egypt and Jordan began to suffer both from the reduction in work opportunities abroad and also from the collapse in the wage rates paid to unskilled, uneducated workers. However, the poor of North Africa – in this study, Morocco and Tunisia – were more insulated from this “boom-bust” oil-cycle because the majority of them went to work in Europe. After oil prices began to fall in the mid-1980s, the poor of Morocco and Tunisia were still able to find jobs working abroad. In Tunisia, it is likely that the continued successful migration of rural people to Europe has sparked a labor shortage in agriculture, and this in turn has helped to fuel an increase in real wages in agriculture.

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<sup>17</sup> For more on the dynamics of this migration process in rural Egypt, see Adams (1991).

## Remittances, public institutions and poverty reduction

While we find that in the aggregate data and in three of our four country case studies economic growth is closely related to changes in the poverty headcount, we also have observed that the way in which the benefits of that growth are distributed – in particular changes in the share of income accruing to the poorest quintile of the population – have an important impact on poverty reduction in MENA. What accounts for MENAs relatively high and rising share of income accruing to the poorest segments of the population. In this section we use the case study data to explore two possible explanations: the role of remittances and of public institutions.

Table 15 shows levels of official worker remittances received in the four countries over the period 1980 to 1999. The data are incomplete in at least two ways: first, they show only those remittances which enter the official banking system, and thus underestimate the very large (and unknown) amount of remittance monies which are sent home by migrants in other ways; and second, the data do not show us how these international remittances are distributed among different income groups of the population.<sup>18</sup>

Despite these problems, the data in Table 15 suggest that remittances have played important roles in the four countries. For example, taking remittance figures from the two years immediately before the oil bubble burst (1984 to 1985), and comparing those figures with the last two years in the table (1998 to 1999) suggests the following: while in Egypt the level of official remittances has fallen by 0.60 percent per year, in Morocco and Tunisia they have increased by 5.61 and 6.80 percent, respectively. These patterns are reflected in the behavior of the income share of the lowest quintile of the population which appears to be stable or declining in Egypt, but rising in Morocco and Tunisia. In Jordan official remittances fell by 20 percent between 1986/87 and 1992 and then recovered by 1997 to a level 56 per cent above the 1986/87 level. The abrupt decline in remittance incomes is consistent with the observed fall in the share of income accruing to the lowest quintile of Jordan's population between 1986/87 and 1992.<sup>19</sup>

We do not, however, believe that remittances alone, fully explain the region's relatively high and rising share of income accruing to the bottom quintile of the income distribution. As we argued in Part I public sector employment also appears to play an important role. In MENA government employment has been a critical factor in cushioning the poor from adverse economic shocks. This can be seen by examining the sources of income for the rural poor in two of the study countries: Egypt and Jordan. In both countries the rural poor (those in the lowest quintile group) are heavily dependent on one particular source of nonfarm income: government employment. In Egypt, the rural poor receive 43 percent of their nonfarm income from government wages, while in Jordan the rural poor receive 60 percent of their nonfarm income from this source (Adams, 2001).

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<sup>18</sup> To conclusively demonstrate the importance of international migration and remittances to the poor, we would need data on the amount of remittances which are received by the bottom 20 or 30 percent of the income distribution. Unfortunately, such data are not available for any MENA (or other developing) country.

<sup>19</sup> Unfortunately we do not have data on the income share of the lowest quintile for 1997 for Jordan.

Why is government employment so important to the rural poor in Egypt and Jordan? The best answer to this question comes from Hansen, who observed 15 years ago that in Egypt:

. . . the government sector predominates everywhere (in urban and rural areas). The government is a realistic employment alternative in all walks of life, including unskilled, illiterate rural workers. 35 percent of government workers (in Egypt) . . . have no education whatsoever (Hansen, 1985: 9).

Hansen's observation about the ability of the government sector to absorb all types of workers is apparently as true today as it was 15 years ago. According to the 1997 IFPRI Survey in Egypt, of rural males in the sample over age 15 who work for the government, 16 percent have no education and 39 percent have an elementary school degree or less. According to the 1997 Household Budget Survey in Jordan, of the rural males over 15 who work for the government, 5 percent have no education and 30 percent have an elementary degree or less.

Recent cross country research on poverty reduction has also focused on a second aspect of public sector interventions, the role of the institutional capacity of the public sector (Dollar and Kraay, 2001; World Bank, 2001b) These studies argue that countries with transparent, well-functioning public institutions should be able to reduce poverty at faster rates than countries that lack these institutions. For instance, countries with public institutions in the areas of public health and primary education that can effectively identify the poor and efficiently channel benefits to these people should be more capable of reducing poverty than countries which lack these kind of institutions.

It is difficult, however, to measure the contribution of institutional capacity to poverty reduction. In the absence of objective measures for comparing the quality of institutions across countries, resort must be made to more subjective measures. A private, international risk advisor service -- the International Country Risk Guide (ICRG) -- uses surveys of experts to rate the effectiveness of institutions in 130 different countries.<sup>20</sup> The ICRG provides monthly ratings of the effectiveness of public institutions in 12 different categories, including government stability, corruption in government, law and order, and quality of the bureaucracy. For each month, ICRG calculates a summary measure (ICRG index) for each country, which is the simple average of ratings from each of the 12 categories.

Table 16 shows the ICRG index for Egypt, Jordan, Morocco and Jordan in 1984 and 1998. While the ICRG index measures factors other than the ability of public institutions to reach and benefit the poor, the index provides a broad gauge view of the quality of public institutions across countries.<sup>21</sup> In Table 16 higher values indicate better institutional quality.

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<sup>20</sup> The International Country Risk Guide (ICRG) data are commonly used by researchers who study institutional effectiveness in developing countries. See, for example, Keefer and Knack (1997) and Chong and Calderon (2000). These researchers point out that the ICRG data must be reliable, because business and other clients pay high fees every year to use this information.

<sup>21</sup> For example, the ICRG index measures such factors as: investment profile, internal conflict, external conflict and democratic accountability. For a fuller discussion of the factors included in the index, see Knack and Keefer (1995).

The results of the table may help partly to explain the anomaly of relatively faster growth in Egypt than in the Maghreb being associated with relatively less success in poverty reduction. Morocco and Tunisia recorded the highest rates of improvement in the quality of institutions; by contrast, Egypt recorded much slower rates of improvement in institutional quality. Between the Maghreb countries Tunisia's faster rate of improvement in institutions and its higher overall rating may help to explain its apparently higher elasticity of the poverty headcount with respect to income growth.

### **Non-Income dimensions of poverty: health and education**

The International Development Goals also set out targets for non-income measures of well being. Central to these other measures of poverty are education and health status. Table 17 shows changes in two key health indicators for Egypt, Jordan, Morocco and Tunisia over the period mid-1980s to 1998. Part (a) of Table 17 suggests that there is no clear-cut relationship between changes in life expectancy on the one hand, and poverty reduction on the other. Egypt, for example, has a relatively high rate of improvement in life expectancy at birth, yet it also has a increasing rate of poverty. Similar findings appear in part (b) of Table 17 for the infant mortality rate. Countries with a high rate of improvement in the under-five mortality rate (like Jordan) also have increasing poverty. The only notable exception here is Tunisia, which has both the highest rate of improvement in the under-five mortality rate and also has a declining rate of poverty.

The adult literacy rate is a commonly used measure of educational achievement. The United Nations Development Program (UNDP) uses this variable as part of its much-cited Human Development Index (HDI) to compare rates of "human development" between countries. Table 18 presents changes in the adult literacy rate – disaggregated by gender – for the four countries. The results are suggestive, especially those for changes in the male literacy rate. The two countries with the highest rates of improvement in the male literacy rate from 1985 to 1998 (Morocco and Tunisia) also recorded decreasing rates of poverty. In fact, the annual rates of improvement in male literacy in Morocco and Tunisia (2.28 and 1.20 percent, respectively) appear to be significantly higher than those recorded for Egypt and Jordan (0.81 and 0.61, respectively).

From the data in Table 18 it appears that higher rates of male literacy in the Middle East are associated with income poverty reduction. Unfortunately, the data say nothing about the direction of causality, that is, does increasing male literacy lead to less poverty or does less poverty lead to more male literacy? However, the data do suggest the working hypothesis that teaching males to read and write increases their ability to work themselves out of poverty. It is possible that teaching males to be literate increases their labor productivity, and this in turn increases their ability to find better paying jobs.

## V. Concluding Comments

This paper has used recent cross country data and the results of household budget surveys to review and analyze trends in poverty reduction in developing Middle Eastern and North African countries. It has five broad findings:

First, compared to other developing areas, the Middle East has been unusual both in its low incidence of poverty and in the extent to which poverty reduction has proceeded at a relatively fast pace despite slow rates of economic growth during the last 15 years.

Second, this performance is due in large measure to the boom to bust cycle of output growth in the MENA region, which is driven by fluctuating oil prices. As defined by the IDG goal of \$1.00 per day, there were very substantial reductions in poverty between 1970 and 1985, followed by stagnation in the overall rate of poverty reduction from 1985 to 1999. The region had a high and increasing elasticity of GDP growth with respect to poverty reduction during the oil boom, but the relationship between income growth and poverty outcomes appears to have become less robust in the low growth period.

Third, compared to other developing areas, during the 1990s the Middle East region has become one of the most equal in terms of income distribution. At the same time, the region has had an increasing share of income going to the poorest quintile of the population. This “pro-poor” bias to income growth was at least partly responsible for the strong impact of growth on poverty reduction during the rapid growth period and also may have cushioned the impact of stagnant or declining incomes on the poor in the last fifteen years.

Fourth, one important contributor to the increase in the share of income accruing to the poorest quintile of the population is international migration and remittances. Both the regional aggregate data and the case study data suggest that migration and remittances have disproportionately benefited those at the bottom of the income ladder, either directly through transfers to poorer households or indirectly through their impact on the labor market. During the rapid growth period, an investment boom and rapid growth of the public sector—funded largely by the transfer of oil and geopolitical rents via aid—may also have contributed to increasing real wages for unskilled labor.

Fifth, the mixed results of the country case studies emphasize the diversity of contemporary experiences with poverty reduction in MENA. In Jordan a major macroeconomic adjustment in the early 1990’s was associated with a substantial rise in poverty that has not been fully reversed. In Egypt rising per capita incomes have been associated with declining mean survey expenditures, increasing poverty and a declining share of income accruing to the poorest fifth of the population. In Morocco and Tunisia rising incomes have been associated with reductions in poverty, but more strongly in Tunisia than in Morocco. Changes in the pattern of remittances – declining in Egypt and growing in the Maghreb – may be partly responsible for these different poverty outcomes. But improvements in the quality of public institutions are also perhaps a part of the story.

Sixth, the data available in the case studies do not confirm the widely held view that the economic changes of the 1990's were harmful to the poor in MENA. Poverty increased in Egypt and Jordan but fell in Morocco and Tunisia. The lack of timely, nationally representative survey data for the second half of the decade makes generalizations about the relationship between economic reform and poverty reduction impossible.

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Table 1. Incidence of Poverty in Developing World  
Using International Standards of \$1.00 or \$2.00 Per Day, 1987-1998

Region and Income Per Capita, 2000	1987		1990		1993		1996		1998	
	\$1.00	\$2.00	\$1.00	\$2.00	\$1.00	\$2.00	\$1.00	\$2.00	\$1.00	\$2.00
East Asia and Pacific (\$1030)	26.6	67.0	27.6	66.1	25.2	60.5	14.9	48.6	14.7	48.7
Europe and Central Asia (\$2300)	0.2	3.6	1.6	9.6	4.0	17.2	5.1	19.9	3.7	20.7
Latin America and the Caribbean (\$4035)	15.3	35.5	16.8	38.1	15.3	35.1	15.6	37.0	12.1	31.7
Middle East and North Africa (\$1975)	4.3	30.0	2.4	24.8	1.9	24.1	1.8	22.2	2.1	29.9
South Asia (\$450)	44.9	86.3	44.0	86.8	42.4	85.4	42.3	85.0	40.0	83.9
Sub-Saharan Africa (\$515)	46.6	76.5	47.7	76.4	49.7	77.8	48.5	76.9	48.1	78.0
World	28.3	61.0	29.0	61.7	28.1	60.1	24.5	56.1	23.4	56.1

Sources:

World Bank, 2000; World Bank, 2001.

Table 2. Growth, Distribution and Poverty Reduction in Developing MENA, 1975 – 2010

	1975 – 79	1980 – 84	1985 – 89	1990 – 94	1995 – 99	2000 – 10 (projected)	2000 – 10 (projected)
Average Growth Of Income Per Capita	3.83	2.68	1.37	1.39	2.23	1.38	1.70
Average Gini Coefficient	0.425	0.409	0.394	0.379	0.364	--	--
Average Share Of Bottom Quintile	7.33	7.71	8.10	8.48	8.87	--	--
Poverty Headcount at \$1/Day	12.4	10.1	4.3	2.2	2.0	1.9	1.3
Poverty Headcount at \$2/Day	57.3	44.1	30.0	24.5	26.0	27.2	14.7
Per Capita Income of Lowest Quintiles (1970 – 74 = 100)	75	164	208	155	202		

Sources:

Dollar and Kraay, 2001; World Bank, 2000; World Bank, 2001, World Bank World Development Indicators Database; Author's Calculations.

Table 3. Gini Coefficients for Selected MENA Economies, 1950s to 1990s

	1950's – 1960's	mid – 1980's	mid – 1990's
Algeria		.401	.367
Egypt	.429 (1958)	.394	.350
Iran	.470 (1969)	.443	
Iraq	.568 (1956)	.560	
Jordan		.375	.378
Morocco	.500 (1965)	.446	.395
Tunisia	.516 (1965)	.406	.400
Yemen		.444	.232

## Sources:

Richards and Waterbury, 1990

Ravallion, 2000

Dollar and Kraay, 2001.

Table 4. Average Gini Coefficients and Income Shares of Lowest Quintile by Region, 1960 – 1999

	Gini Coefficient	Income Share of Bottom Quintile
OECD	0.312	7.2
East Asia	0.359	7.2
Eastern Europe And Central Asia	0.286	9.4
Middle East and North Africa	0.403	7.2
Latin America	0.468	4.9
South Asia	0.347	8.1
Africa	0.477	5.4

Sources: World Bank Data, Author's Calculations.

Table 5. Poverty Lines in Egypt, Morocco and Tunisia,  
Selected Survey Years

	Egypt, Urban, 1995/96 (current LE)	Morocco, Overall, 1998/99 (current DH)	Tunisia, Overall, 1995 (current TD)
Food poverty line (per capita expenditures /year)	702	1888	176
Non-food poverty line (per capita expenditures /year)	266	1449	76
Food and non-food poverty line (per capita expenditure /year)	968	3337	252

Notes: In 1999, 1 Egyptian pound (LE) = US\$ 0.295.  
 In 1999, 1 Moroccan dirham (DH) = US\$ 0.102.  
 In 1999, 1 Tunisian dinar (TD) = US\$ 0.84.

Sources:

- Egypt: Calculations from 1995/96 CAPMAS (Central Agency for Public Mobilization and Statistics) survey as recorded in Institute of National Planning (1996: Table 2.1).
- Morocco: Calculations from 1998/99 LSMS (Living Standards Measurements Survey) as recorded in World Bank (2001: Vol. II, Table 4).
- Tunisia: Calculations from 1995 INS (Institut National de la Statistique) survey as recorded in World Bank (2000: Vol. II, Tables 3, 6).

Table 6. Incidence of Poverty in Egypt, Jordan, Morocco and Tunisia,  
1981/82 to 1998/99

Country And Survey Year	Urban		Rural		Overall	
	Headcount Index (%)	Poverty Gap Index (%)	Headcount Index (%)	Poverty Gap Index (%)	Headcount Index (%)	Poverty Gap Index (%)
Egypt						
1981/82	18.2	3.5	16.1	3.1	17.2	NA
1990/91	20.3	4.3	28.6	4.5	25.0	NA
1995/96	22.5	4.9	23.3	4.3	22.9	NA
1997	22.5	5.6	24.3	6.4	23.5	6.7
Jordan						
1986/87	2.6	NA	4.4	NA	3.0	0.3
1992	12.4	3.1	21.1	5.1	14.4	3.6
1997	10.0	2.1	18.2	4.0	11.7	2.5
Morocco						
1984/85	17.3	NA	32.6	NA	26.0	NA
1990/91	7.6	1.5	18.0	3.8	13.1	2.7
1998/99	12.0	2.5	27.2	6.7	19.0	4.4
Tunisia						
1985	4.6	NA	19.1	NA	11.2	NA
1990	3.5	0.7	13.1	3.2	7.4	1.7
1995	3.6	0.7	13.9	3.1	7.6	1.6

Notes: NA is not available.

Sources:

Egypt: Calculations from 1981/82 to 1995/96 Egypt CAPMAS (Central Agency for Public Mobilization and Statistics) surveys reported in Institute of National Planning (1996: Table 2.7). Calculations from 1997 IFPRI (International Food Policy Research Institute) survey in Adams (2000: Table 4, Page 263).

Jordan: Calculations from 1986/87 Jordan DOS (Department of Statistics) survey reported in World Bank (1994: Table 3.9). Calculations from 1992 and 1997 DOS surveys in Shaban et. al. (2001: Table A111.1a).

Morocco: Calculations from 1984/85 and 1990/91 Morocco Direction de la Statistique surveys reported in World Bank (1994: Vol. II, Table 6). Calculations from 1998/99 survey in World Bank (2001: Vol. 1, Table 5, 6).

Tunisia: Calculations from 1985 and 1990 from Tunisia INS (Institut National de la Statistique) surveys reported in World Bank (1995: Vol. I, Tables II.1 and II.3). Calculations from 1995 INS survey in World Bank (2000: Vol. I, Table 1).

Table 7. Levels of Survey Mean Per Capita Expenditures in Egypt, Jordan, Morocco and Tunisia, 1981/82 to 1998/99

Country and Survey Year	Urban	Rural	Overall
Egypt (constant 1990/91 LE/capita/year)			
1981/82	1106	733	NA
1990/91	1088	724	NA
1995/96	1001	638	NA
1997	NA	NA	NA
Percent change	(-9.5)	(-13.0)	-
Jordan (constant 1997 JD/capita/year)			
1986/87	NA	NA	1115
1992	NA	NA	821
1997	NA	NA	762
Percent change	-	-	(-31.7)
Morocco (constant 1991 DH/capita/year)			
1984/85	NA	NA	4863
1990/91	9224	4623	6780
1998/99	7543	3942	5890
Percent change	(-18.3)	(-14.8)	+21.1
Tunisia (constant 1995 TD/capita/year)			
1985	NA	NA	881
1990	NA	NA	947
1995	NA	NA	966
Percent change	NA	NA	+9.6

Notes: NA is not available.

In 1999, 1 Egyptian pound (LE) = US\$ 0.295.

In 1999, 1 Jordanian dinar (JD) = US\$ 1.410.

In 1999, 1 Moroccan dirham (DH) = US\$ 0.102.

In 1999, 1 Tunisian dinar (TD) = US\$ 0.84.

Sources:

Egypt: Data from Egypt CAPMAS (Central Agency for Public Mobilization and Statistics) surveys as recorded in Institute of National Planning (1996: Table 2.7).

Jordan: Data from Jordan DOS (Department of Statistics) surveys as recorded in World Bank (1994: Table 3.6) and converted into real 1997 JD, and Shaban et. al. (2001: Table 3).

Morocco: Data from LSMS (Living Standards Measurement Surveys) and Morocco Direction de la Statistique surveys as recorded in World Bank (1994: Vol. II, Table 2) and converted into real 1991 DH, and World Bank (2001: Vol. 1, Table 3).

Tunisia: Data from Tunisia INS (Institut National de la Statistique) surveys as recorded in World Bank (2000 : Vol. I, Table 2) and converted into real 1995 TD.

Table 8. Distribution of Expenditures in Egypt, Jordan, Morocco and Tunisia, 1981/82 to 1998/99

Country and Survey Year	Gini Coefficient of Expenditure <sup>1</sup>		
	Urban	Rural	Overall
Egypt			
1981/82	0.322	0.275	NA
1990/91	0.340	0.360	NA
1995/96	0.331	0.235	NA
1997	0.385	0.321	0.350
Jordan			
1986/87	0.362	0.319	0.361
1992	0.406	0.330	0.400
1997	0.371	0.305	0.364
Morocco			
1984/85	0.405	0.317	0.397
1990/91	0.377	0.312	0.393
1998/99	0.377	0.316	0.395
Tunisia			
1985	NA	NA	0.430
1990	NA	NA	0.400
1995	NA	NA	NA

Notes: NA is not available.

<sup>1</sup> The Gini coefficient is an index commonly used to measure the inequality of a distribution of expenditure. It can be represented as:

$$G = \frac{2}{n\mu} \text{cov}(y, r)$$

where  $n$  is the number of observations,  $\mu$  is mean expenditure,  $y$  is the series of total expenditures, and  $r$  is the series of corresponding ranks of expenditure.

Sources:

Egypt: Calculations from 1981/82 to 1995/1996 Egypt CAPMAS (Central Agency for Public Mobilization and Statistics) surveys reported in Institute of National Planning (1996: Table 4.5). Calculations from 1997 IFPRI (International Food Policy Research Institute) survey from Adams (2000: Table 7).

Jordan: Calculations from 1986/87 and 1992 Jordan DOS (Department of Statistics) surveys reported in World Bank (1994: Table 3.8). Calculations from 1997 DOS survey in Shaban et. al. (2001: Table 6).

Morocco: Calculations from 1984/85 Direction de la Statistique survey reported in World Bank (1994: Vol. I, Table 1.3). Calculations from 1990/91 and 1998/99 LSMS (Living Standards Monitoring Surveys) reported in World Bank (2001: Vol. I, Table 3).

Tunisia: Calculations from 1985 and 1990 from Tunisia INS (Institut National de la Statistique) surveys reported in World Bank (1995: Vol. I, Page 8).

Table 9. Decomposition of Changes in Poverty Into Growth and Redistribution Components

Country And Years	Growth Component (%)	Redistribution Component (%)	Residual (%)	Total Change in Headcount Index of Poverty (%)
Egypt, 1981/82-1995/96				
Urban	+5.8	-1.9	+0.4	+4.3
Rural	+5.0	+3.9	-0.7	+8.2
Jordan, 1986/87-1997				
Overall	+9.1	-1.4	+1.0	+8.7
Morocco, 1984/85-1998/99				
Overall	-7.7	+0.9	-0.2	-7.0
Tunisia, 1985-1995				
Overall	NA	NA	NA	-3.6

Note: NA is not available.

Table 10. Summary of Findings on Poverty and Inequality in Egypt, Jordan, Morocco and Tunisia, 1981/82 to 1998/99

Country	<u>Poverty</u> (measured by Headcount Index)	<u>Inequality</u> (measured by Gini Coefficient)	<u>Mean Expenditures</u> (measured by survey mean per capita expenditures)
Egypt	Increasing (urban, rural and overall)	Increasing (urban, rural) <sup>(1)</sup>	Declining (urban, rural) <sup>(1)</sup>
Jordan	Increasing (urban, rural and overall)	Stable (overall) <sup>(2)</sup>	Declining (overall) <sup>(2)</sup>
Morocco	Declining (urban, rural and overall)	Stable (urban, rural and overall)	Increasing (overall) <sup>(2)</sup>
Tunisia	Declining (urban, rural and overall)	NA	Increasing (overall) <sup>(2)</sup>

Notes: NA is not available.

(1) Data for “overall” not available.

(2) Data for “urban” and “rural” not available.

Table 11. Average Annual Growth Rates of Real GDP in Egypt, Jordan, Morocco and Tunisia, 1980 to 1999

Country	Average Annual Growth Rates (percent)					Annual Growth Rate of GDP per Capita Within Period	
	1980-84	1985-89	1990-94	1995-99	Overall	Country/Period	Rate
Egypt						Egypt	
Real GDP	7.46	3.94	3.12	5.48	5.00	1981/82-1990/91	2.99
Real per capita GDP	4.87	1.48	0.97	3.59	2.73	1990/91-1995/96	2.70
						1995/96-1997	2.24
						1981-1996	2.76
Jordan						Jordan	
Real GDP	5.67	(-1.22)	5.28	2.24	2.99	1986/87-1992	(-3.07)
Real per capita GDP	1.75	(-4.83)	(-0.41)	(-0.86)	(-1.09)	1992-1997	0.49
Morocco						Morocco	
Real GDP	1.84	3.82	3.06	1.94	2.66	1984/85-1990/91	2.73
Real per capita GDP	(-0.37)	1.69	1.14	0.21	0.67	1990/91-1998/99	0.37
Tunisia						Tunisia	
Real GDP	4.57	2.54	5.03	5.17	4.33	1985-1990	0.49
Real per capita GDP	2.06	0.09	2.97	3.78	2.22	1990-1995	1.69

Sources: GDP growth rates from International Monetary Fund, International Financial Statistics Yearbook (various issues). Population growth rates from World Bank, Live Database.

Table 12. Distribution of Survey Expenditures Going to Lowest Quintile Group in Egypt, Jordan, Morocco and Tunisia

	Percent of Total Expenditures Going to Lowest Quintile Group in:											
	1981/82	1995/96	1997	1986/87	1992	1997	1984/85	1990/91	1998/99	1985	1990	1995
Egypt												
Urban	8.4	8.4	5.4									
Rural	10.2	11.3	6.6									
Jordan												
Overall				7.3	6.0	NA						
Morocco												
Overall							8.3	9.3	9.1			
Tunisia												
Overall										6.7	7.2	7.8

## Sources:

Egypt: Calculations from 1981/82 and 1995/96 Egypt CAPMAS (Central Agency for Public Mobilization and Statistics) surveys and 1997 IFPRI (International Food Policy Research Institute) survey reported in Adams (2000: Table 7).

Jordan: Calculations from 1986/87 and 1992 Jordan DOS (Department of Statistics) surveys reported in World Bank (1994: Table 3.7).

Morocco: Calculations from 1984/85 to 1998/99 Morocco Direction de la Statistique surveys reported in World Bank (2001: Vol. I, Table 3).

Tunisia: Calculations from 1985 to 1995 Tunisia INS (Institut National de la Statistique) surveys reported in World Bank (2000: Vol. I, Table 2).

Table 13. Trends in Real Wages in Tunisia, 1989 to 1997

Sector	Average Annual Growth in Real Wages (percent)		
	1989-94	1994-97	1989-97
Agriculture and Fisheries	+5.7	+12.3	+8.1
Manufacturing	-2.0	+0.0	-1.3
Non-Manufacturing	+3.0	+0.9	+2.2
Construction	+5.2	+0.1	+3.2
Tradeable Services	-3.1	-5.0	-3.8
Non-Tradeable Services	+0.2	+6.3	+2.4
Total	+0.2	+2.7	+1.1

Source: World Bank (2000: Vol. 1, Table 5).

Table 14. Index of Real Wages<sup>1</sup> in Egypt, 1980/81 to 1994/95 (1985=100)

Sector	80/81	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95
Agriculture	60.2	57.7	130.8	119.3	107.0	100.0	88.2	85.5	81.6	75.0	72.0	66.3	65.8	67.0	68.6
Industry	99.8	113.5	131.4	118.9	107.0	100.0	85.0	80.5	76.1	57.6	52.2	69.8	65.0	65.0	68.4
Petroleum	78.8	80.5	114.8	110.5	104.8	100.0	87.0	82.7	77.8	70.7	69.1	63.5	55.7	79.2	57.8
Electricity, and gas	69.2	69.3	97.6	98.9	100.1	100.0	84.2	79.4	75.9	69.8	68.8	67.9	66.0	66.2	67.6
Housing and construction	64.4	62.1	135.3	121.4	107.9	100.0	85.0	80.1	75.4	82.1	77.1	70.2	65.8	63.2	63.3
Transportation, and communications	60.2	84.4	122.7	113.9	104.5	100.0	86.5	81.5	77.8	89.2	85.8	77.7	58.4	55.9	55.2
Finance and trade	98.7	96.7	124.8	114.7	104.2	100.0	87.0	89.6	84.2	81.3	79.4	73.6	68.9	69.2	70.9
Other services	82.3	130.7	110.8	108.8	104.8	100.0	85.0	82.4	76.6	68.6	66.3	55.8	57.3	58.2	62.0
Total	80.4	87.4	120.0	113.0	104.9	100.0	86.4	84.3	79.7	73.6	70.9	66.4	64.4	65.3	67.8

Sources: CAPMAS data, as reported in International Labor Office (1997: Table 2.4)

Notes: <sup>1</sup> Real Wage Index = average annual wage per employee/consumer price index.

Table 15. Official Worker Remittances Received, in Egypt, Jordan, Morocco and Tunisia, 1980 to 1999 (in Millions of U.S. Dollars; Nominal Terms)

Year	Egypt	Jordan	Morocco	Tunisia
1980	2,071	610	810	245
1981	1,850	875	859	303
1982	2,461	1,082	769	372
1983	3,666	1,109	916	359
1984	3,963	1,236	872	317
1985	3,212	1,022	967	271
1986	2,506	1,183	1,398	361
1987	3,604	938	1,587	486
1988	3,770	895	1,303	544
1989	4,254	627	1,336	488
1990	5,527	565	2,006	599
1991	4,054	448	1,990	570
1992	6,104	844	2,170	531
1993	5,664	1,040	1,959	446
1994	3,672	1,093	1,827	629
1995	3,226	1,244	1,970	680
1996	3,107	1,544	2,165	736
1997	3,697	1,655	1,893	685
1998	3,370	1,543	2,011	718
1999	3,235	1,664	1,938	761
Annual percent change, 1980- 82 to 1997-99	+2.86	+3.83	+5.27	+5.16

Notes: Data record only those worker remittances which enter the official banking system, and therefore tend to underestimate the total level of official and unofficial remittances received in any given year.

Sources: International Monetary Fund, Balance of Payments Statistics Yearbook (various issues).

Table 16. Changes in International Country Risk Guide (ICRG) Index, 1984 to 1998

	1984	1998	Average Annual Change (Percent)
Egypt	52	65	
Jordan	51	72	+2.49
Morocco	46	71	+3.15
Tunisia	44	75	+3.88

Notes: The International Country Risk Guide (ICRG) Index is a summary measure of the effectiveness of institutions across 12 different categories, including: government stability, investment profile, internal conflict, corruption, law and order, democratic accountability and quality of the bureaucracy. For more on these measures, see Knack and Keefer (1995).

Source: International Country Risk Guide (computer file).

Table 17a. Changes in Life Expectancy at Birth, 1987 to 1998

	Life Expectancy at Birth (years)		Average Annual Change (Percent)
	1987	1998	
Egypt	62.0	66.7	+0.67
Jordan	67.0	70.4	+0.45
Morocco	62.0	67.0	+0.71
Tunisia	66.0	69.8	+0.51

Table 17b. Changes in Under-Five Mortality Rate, 1988 to 1998

	Under-Five Mortality Rate (per 1000 live births)		Average Annual Change (Percent)
	1988	1998	
Egypt	125	69	-5.77
Jordan	57	30	-6.22
Morocco	119	70	-5.17
Tunisia	83	32	-9.09

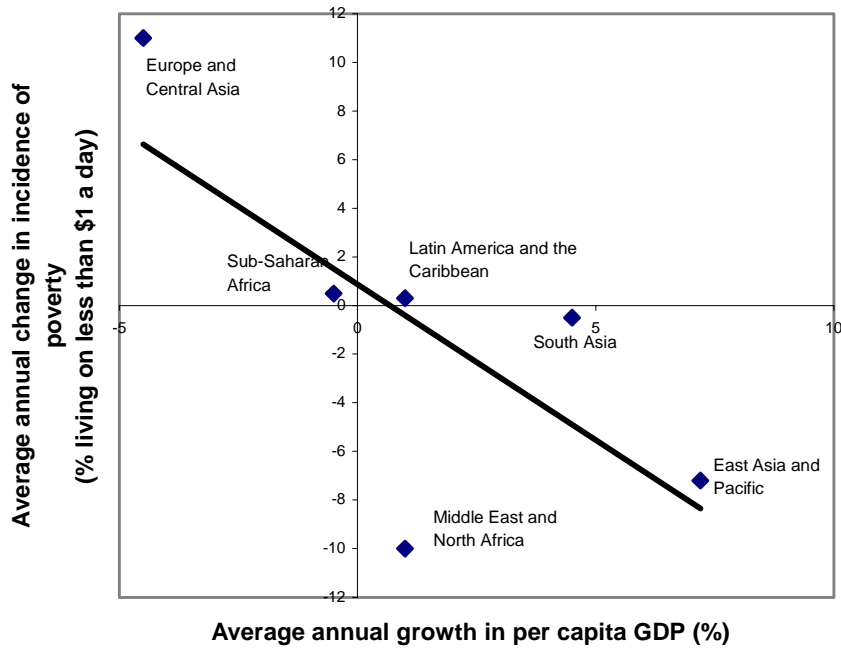
Source: United Nations Development Program, Human Development Report (various years).

Table 18. Changes in Adult Literacy, 1985 to 1998

	Literacy Rate (percent of those age 15 and above)		Average Annual Change (percent)
	1985	1998	
Adult			
Egypt	45.0	53.7	+1.37
Jordan	75.0	88.6	+1.29
Morocco	34.0	47.1	+2.54
Tunisia	55.0	68.7	+1.73
Female			
Egypt	30.0	41.8	+2.58
Jordan	63.0	82.6	+2.10
Morocco	22.0	34.0	+3.40
Tunisia	41.0	57.9	+2.70
Male			
Egypt	59.0	65.5	+0.81
Jordan	87.0	94.2	+0.61
Morocco	45.0	60.3	+2.28
Tunisia	68.0	79.4	+1.20

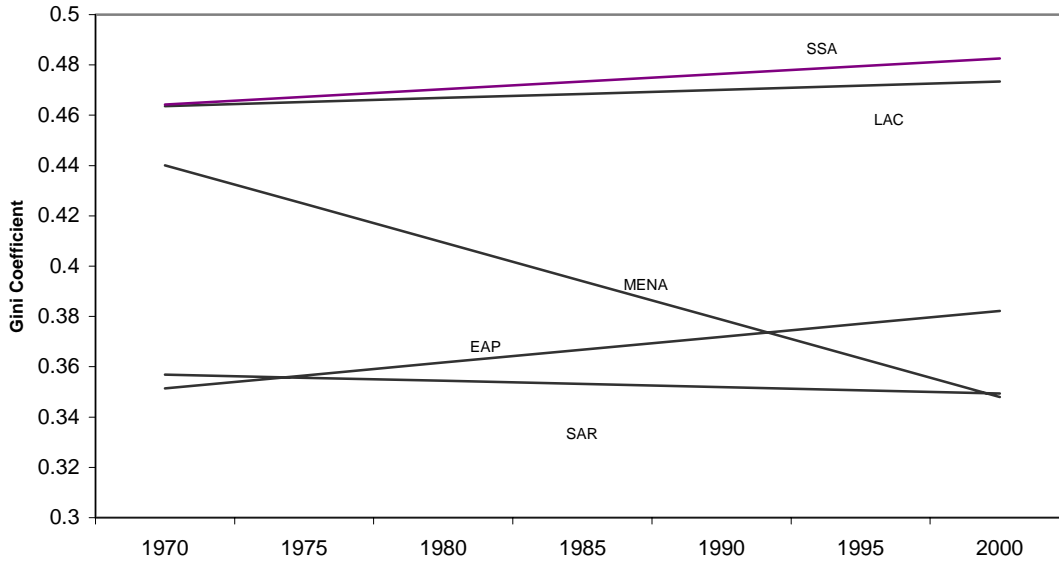
Source: United Nations Development Program, Human Development Report (various issues).

**Figure 1: Average annual growth in incidence of poverty in the 1980s and 1990s**



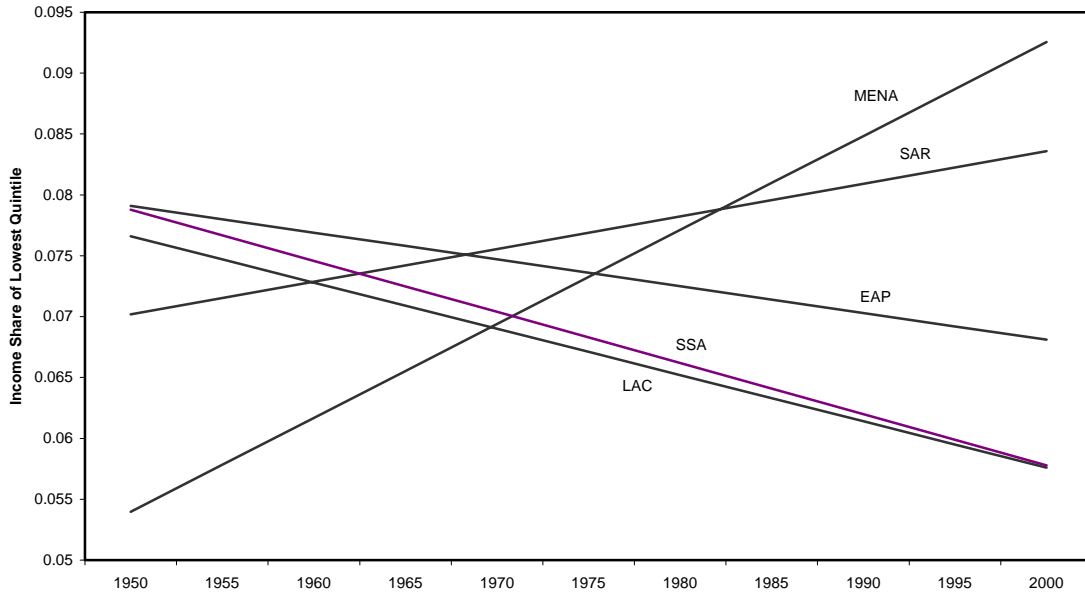
Source: World Development Report 2000/2001

**Figure 2a: Gini Coefficient by Region, 1970-1999**  
(Income Based Gini Coefficient)



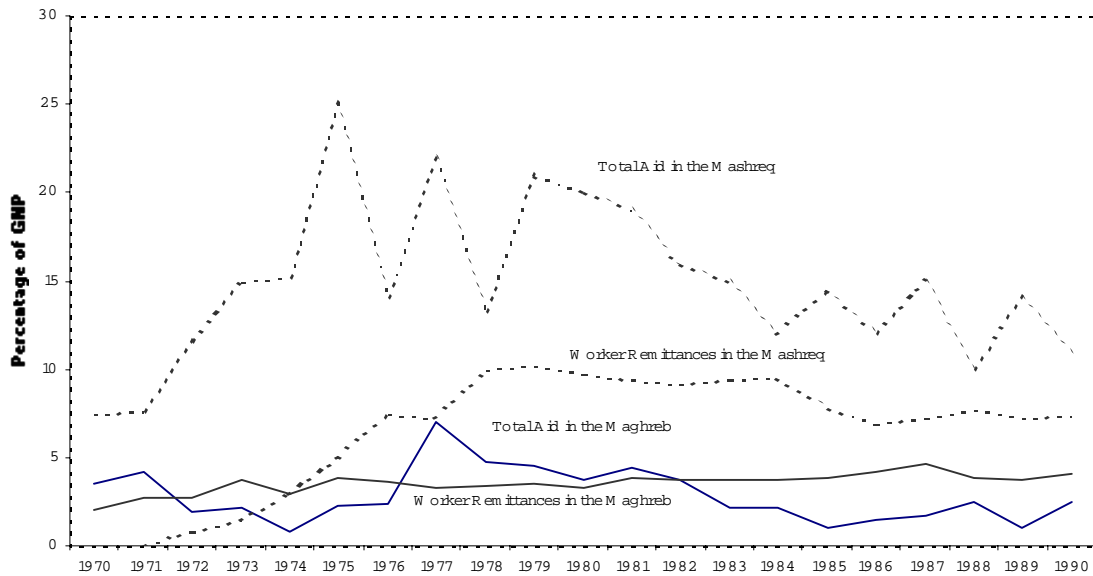
Source: Author's calculations based on David Dollar/Art Kraay dataset (2001).

**Income Share of Lowest Quintile by Region**

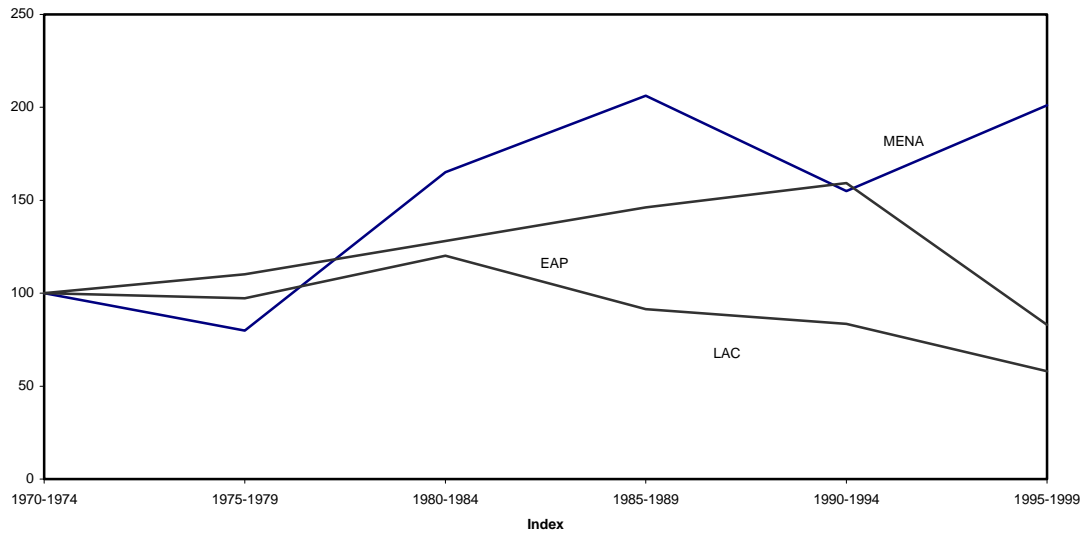


Source: Author's calculations based on David Dollar/Art Kraay dataset (2001).

**Figure 3: Total Aid and Worker Remittances in the Maghreb and Mashreq, 1970-1990**



Source: Page, 1998.

**Figure 4: Per Capita Income of Lowest Quintile, 1970-1999**

Note: Mean income per capita of lowest quintile of income distribution indexed to 1970=100  
Source: Author's calculations based on David Dollar/Art Kraay dataset