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World Development Vol. 31, No. 12, pp. 2027–2048, 2003

Printed in Great Britain
0305-750X/$ - see front matter

doi:10.1016/j.worlddev.2003.04.004

Poverty, Inequality and Growth in Selected Middle East and North Africa Countries, 1980–2000

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Summary. — This paper uses crosscountry data and country-case studies to analyze trends in poverty, inequality and economic growth in the Middle East and North Africa (MENA) region. Compared to other regions, the MENA region has a low incidence of poverty and income inequality. Two factors account for this situation: international migration/remittances and public sector (government) employment. Since the early 1980s international migration to the Persian Gulf and Europe has helped boost the incomes of the poor in the Middle East. At the same time, many MENA countries have used government employment as a means of keeping people employed and out of poverty. Regression analysis of crosscountry data shows that both of these factors have a statistically significant impact on reducing the level and depth of poverty in the MENA region.

Key words — Middle East, poverty, income distribution, migration, remittances, government employment

1. INTRODUCTION

By international standards, the low and middle-income countries of the Middle East and North Africa (MENA) entered the 21st century with levels of income poverty that were strikingly low. [1] Table 1 presents estimates of poverty using international purchasing power standards of $1.00 per person per day for six developing regions during 1987–98. MENA stands out as the developing region with the lowest incidence of poverty using the International Development Goal definition of $1.00 per person per day throughout the 1990s. [2] While the transitional economies of Eastern Europe and Central Asia began the decade with a lower poverty incidence, the extreme contraction in incomes following the fall of communism more than doubled the proportion of the poor living in that region by 1998.

The purpose of this paper is to examine what lies behind MENA's success at poverty reduction. To address this question we combine two approaches: analysis of aggregate, crosscountry data and detailed, country case studies. First, we develop a new, crosscountry data set on poverty and inequality in order to place MENAs poverty record in a larger, international context. In this analysis we use international poverty lines—set at $1.00 per person per day—to evaluate MENAs poverty record *vis-à-vis* other regions of the developing world. Second, we use the results of recent household surveys to examine trends in poverty and inequality in five MENA countries: Egypt, Jordan, Morocco, Tunisia and Iran. In this work we use national poverty lines—which are set on the basis of the cost of country-specific, food and nonfood requirements—to evaluate trends in poverty reduction over time.

We should emphasize that each of these approaches—international and national poverty lines—has their strengths and limitations. For poverty analysis, international poverty lines are useful because they permit comparisons between countries and over time (Chen & Ravallion, 2000). But, these international poverty lines—set at $1.00 per person per day—are inevitably arbitrary; it is not clear why poverty

* The authors are grateful to two anonymous reviewers for very useful comments on an earlier draft and to Aliya Husain and Kalpana Mehra for fine research assistance. The views and findings of the paper are those of the authors, and do not represent those of the World Bank, its member governments, its Executive Directors, or the countries they represent. Final revision accepted: 17 April 2003.

Table 1. *Poverty, inequality and growth data by region*

Region	Poverty headcount ($1.08/person/day)			Gini coefficient			Income share to lowest quintile group			GDP per capita (PPP, 1999 dollars)		
	Average		Percentage change	Average		Percentage change	Average		Percentage change	Average		Percentage change
	1980s	1990s		1980s	1990s		1980s	1990s		1980s	1990s	
East Asia	23.7	14.9	−37.2	0.396	0.397	+0.2	6.9	6.4	−7.3	2,328	3,439	+47.7
Europe and Central Asia	0.2	4.4	+2199.9	0.257	0.343	+33.4	9.9	7.4	−25.3	6,209	5,300	−14.7
Latin America and the Caribbean	21.2	14.9	−29.7	0.497	0.484	−2.7	3.7	4.3	+16.2	3,209	4,335	+35.1
Middle East and North Africa	1.7	2.0	+17.6	0.397	0.357	−10.1	6.5	7.5	+15.4	3,371	3,515	+4.3
South Asia	36.0	32.9	−8.7	0.311	0.336	+8.0	8.7	8.4	−3.5	966	1,578	+63.4
Sub-Saharan Africa	24.6	42.2	+71.5	0.412	0.448	+8.7	5.8	5.3	−8.7	975	1,083	+11.1
Total	18.1	19.1	+5.5	0.370	0.401	+8.4	7.1	6.3	−11.3	2,769	3,333	+20.3

Source: World Bank (2002a), *Global Poverty Monitoring* database.

should be defined in *all* developing countries on the basis of $1.00 per day. To understand poverty dynamics at the national level, country-specific poverty lines may be more useful. Such poverty lines are, after all, more closely tailored to the actual costs of specific food and nonfood items in individual countries. But, even these national poverty lines have their limitations. In many developing countries (including MENA), nutritional data are so sparse that it is difficult to set "nutritional requirements" accurately, and in all countries it is even more difficult to specify the cost of "nonfood needs" precisely. For the sake of robustness, the best strategy is to use each of these approaches to complement the other.

We should also stress at the outset that it is not easy to analyze trends in poverty reduction in the MENA region. Of the 20 countries included in the MENA region, only seven—Algeria, Egypt, Iran, Jordan, Morocco, Tunisia and Yemen—appear in the new, crosscountry data set developed in this paper. The reason for this is simple: these seven countries are the only ones which have conducted nationally representative household surveys since 1980. Of these seven countries we will focus on five—Egypt, Jordan, Morocco, Tunisia and Iran—in our country-case studies. [3] While these five countries have conducted a total of 18 household budget surveys, only two of these surveys—the 1997 surveys in Egypt and Jordan—are accessible to the public. [4] With such limited access to household survey data, we are forced to rely upon poverty figures produced by government statistical offices and international agencies, and this makes it difficult to explain the reasons for different poverty outcomes over time. [5]

The balance of this paper proceeds in five parts. Section 2 begins by comparing the MENA region with international evidence on poverty, inequality and growth. This part identifies two key factors—international migration/remittances and public sector (government) employment—which have helped to produce and maintain MENA's low level of poverty. Section 3 develops a new crosscountry data set to examine the impact of these two factors on poverty and inequality in MENA. Section 4 presents econometric results based on this new cross-country data set. Section 5 turns to the national level data and uses these national data to discuss recent trends in poverty, inequality and growth in five countries: Egypt, Jordan, Morocco, Tunisia and Iran. Section 6 concludes.

2. POVERTY, INEQUALITY AND GROWTH IN INTERNATIONAL CONTEXT

Using available World Bank data, Table 1 compares the MENA record on poverty, inequality and growth with that of other developing regions over 1980–2000. To facilitate comparison over time, the data are presented as decade averages (1980 or 1990) for each region. To ensure comparability across countries, the poverty lines in the table are international poverty lines, set at estimates of $1.08 per person per day in 1993 purchasing power parity (PPP) exchange rates. [6] The PPP exchange rates are used so that $1.08 is worth roughly the same in all countries. PPP values are calculated by pricing a representative bundle of goods in each country and comparing the local cost of that bundle with the US dollar cost of the same bundle. [7]

Table 1 reveals four key findings, which serve to structure the rest of the paper. First, poverty, as measured by the $1.00 per person per day standard, is lower in MENA than in any other region of the developing world. While poverty in MENA has increased by about 17% over the past two decades, it is still less than half that of any other region. Second, MENA is a low inequality region with Gini coefficients similar to those of Europe and Central Asia, and South Asia. MENA is also the only low inequality region to have reduced income inequality between the 1980s and 1990s. Because of these improvements, the MENA region now has one of the most equal income distributions in the world (Gini = 0.357). Third, much of this reduction in inequality was driven by a substantial increase in the income share accruing to the poorest quintile of the population, which grew by more than 15% between the 1980s and the 1990s. Finally, the MENA region has achieved all of this—low poverty with fairly equal income distribution—with very low rates of gross domestic product (GDP) growth. Between the 1980s and the 1990s, per capita GDP in the MENA region rose by only 4.3%. During the last 20 years, only one region of the world (Europe and Central Asia) recorded a lower rate of per capita GDP growth. This pattern of slow growth, reductions in inequality, increases in the income share of the poorest quintile, and a low and relatively stable poverty headcount index is unique to the MENA region.

The more general relationship between economic growth, poverty and inequality found in the literature is that faster rates of economic

growth reduce poverty, and have little impact on income inequality. In a recent econometric study based on 50 developing countries, Adams (2003) found that the elasticity of poverty with respect to growth was −2.59. In other words, on average, a 10% increase in growth (mean per capita income) can be expected to produce a 25.9% decrease in the proportion of people living in poverty ($1.00 per person per day). In the same study Adams also found that economic growth had no statistical effect on income distribution: inequality may rise or fall with economic growth. [8]

How then did the MENA region achieve such low rates of poverty by the 1980s and maintain them into the 1990s, despite very slow economic growth? In a previous paper (Adams & Page, 2001) we show that most of the economic growth that helped to reduce poverty in MENA occurred before the intervals shown in Table 1. In fact, most of the economic growth in MENA took place during the region's oil-fired economic boom of 1975–85. During that decade per capita GDP for the region as a whole increased at an average annual rate of 4.5% per year, and the average growth rate of mean income for the MENA countries in our sample was 4.0%. Given MENAs relatively equal income distribution, this very rapid economic growth had a powerful impact on reducing poverty in the region. Between 1975–79 and 1985–89, we estimate that $1.00 per day poverty in the region fell by nearly two-thirds.

In this paper we use crosscountry evidence to show that the reason for MENA's continued success at maintaining low rates of poverty in the face of stagnant economic growth can be attributed to two key factors: international migration/remittances and public sector employment. Since the late 1970s international migration to the Persian Gulf and Europe has helped boost the incomes of the poor throughout the MENA region. At the same time, many MENA governments have used public sector employment (including government work and working for public sector enterprises) as a means of keeping people employed and out of poverty. Since each of these factors have had a critical impact on poverty in MENA, it is useful to describe how they operate at some length.

While few studies have been conducted on the impact of international remittances on poverty in MENA, over the past two decades international migration has had a large impact on the region. [9] As oil prices increased in the late 1970s, and the economies of the Persian Gulf boomed, poor people from Egypt and Jordan began seeking high-paying jobs in a variety of labor-intensive fields in Iraq, Kuwait and Saudi Arabia. At the same time, poor people from Algeria, Morocco and Tunisia began seeking labor-intensive jobs in Western Europe. While no comprehensive figures have ever been collected on the number of migrants involved, the amount of money sent home by migrants from these countries was substantial. Figure 1 shows international remittances as a

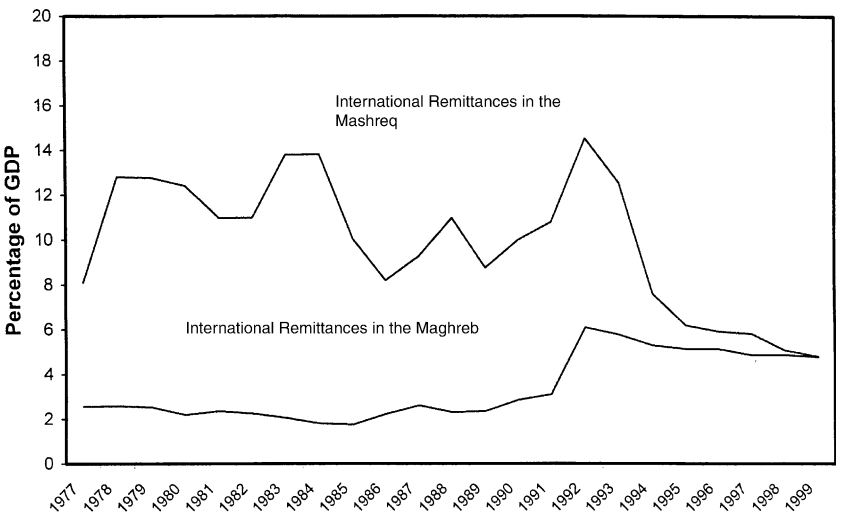

Figure 1. *International remittances in the Maghreb and Mashreq 1977–99. Source: World Bank (2003), Sima database.*

share of GDP for the Maghreb and the Mashreq during 1977–99. Between 1981–83 and 1998–2000—the period covered by our data—international worker remittances increased in annual real terms by 2.0% in Morocco, 1.5% in Tunisia and were essentially flat in Jordan (see Table 11). In all likelihood these figures actually underestimate the levels of remittance monies flowing back to these countries, because they only include those remittances which come back through official, banking channels. Many migrants, who do not trust banks, remit their money back home through informal and unofficial means.

The second factor explaining the low level of poverty in the MENA region is government employment. Since the early 1970s a number of MENA countries—for example, Egypt, Jordan and Morocco—have used public sector employment (including government work) as a kind of blunt policy instrument for providing welfare employment to an ever-increasing proportion of the labor force. For example, the public sector currently employs about 33% and 38% of the total employed labor force in Egypt and Jordan, respectively. [10] These percentage figures are high by international standards, and have led to substantial surplus labor throughout the public sector. The MENA region has also lagged behind most other parts of the developing world in privatizing public enterprises (Page, 2003), and governments have frequently cited the potential negative impact on employment as a major constraint to accelerating privatization. These trends apparently reflect a government desire to use public work rolls as a means to keep people employed and out of poverty.

3. A NEW CROSSCOUNTRY DATA SET ON POVERTY, REMITTANCES AND GOVERNMENT EMPLOYMENT

In order to evaluate the impact of international remittances and government employment on poverty and inequality in MENA, we have constructed a new, cross-section data set for 50 developing countries utilizing the results of household budget surveys, since these surveys represent the best source of poverty information in developing countries. [11] The data set includes observations on income, poverty, remittances and government employment for the 50 countries for the year 1990. 1990 was chosen as the reference year both because it is the mid-point of the period in which we are interested (i.e., halfway between 1980 and 2000) and because most of the countries in the sample had conducted a household budget survey in or around that year. [12]

Initially our goal was to include all 157 countries which are classified as either ''low-income'' or ''middle-income'' countries by the World Bank in the World Development Report, 2000/01. [13] It proved impossible however, to find poverty, remittance and government employment data for all of these 157 countries. For example, with respect to poverty, many developing countries—especially the smaller population countries—have not conducted the type of national household budget surveys that are needed to estimate poverty. Of the 157 countries classified as low or middle income by the World Bank, 76 countries (48%) have not published the results of any household budget survey. Similarly, with respect to remittances, while the International Monetary Fund (IMF) keeps annual records of the amount of international worker remittances received by labor-exporting countries, these records are often incomplete for many African countries. Moreover, the IMF only reports data on *official* worker remittance flows, that is, remittance monies that are transmitted through official banking channels. Since a large (and unknown) proportion of remittance monies is transmitted through private, unofficial channels, remittances recorded by the IMF are neither comprehensive in breadth nor in terms of volume. [14]

Initially, an attempt was made to develop a panel data set by adding observations on income, poverty, remittances and government employment for those countries where such data were available for more than one year. But, while a few countries (such as India) had five or six years of observations on income and poverty, most countries had only one year of data. Moreover, the collected data showed little variation in remittances and government employment over time. The panel approach therefore led to an unbalanced panel that gave excessive weight to a subset of the range of observations on the remittance and employment variables. For this reason, we decided to abandon the panel approach in favor of a cross-sectional approach. Here each country—and its income, poverty, remittances and government employment data—is treated as a single observation.

The table in Appendix A gives the countries, income, poverty, inequality, remittance and government employment indicators included in

the new data set. The data set is notable because it includes eight countries from Sub-Saharan Africa, a region for which poverty and remittances data are relatively rare. It also includes countries from all other regions of the developing world, including five countries from East Asia, nine from Europe and Central Asia, 16 from Latin America, five from South Asia and seven from the MENA.

The table in Appendix A reports two poverty measures. The first, the headcount index, measures the percentage of the population living beneath the standard of $1.00 per person per day. [15] The headcount index however, ignores the amounts by which the expenditures (income) of the poor fall short of the poverty line. For this reason, table in the Appendix A also reports the poverty gap index, which measures in percentage terms how far the average expenditures (income) of the poor fall short of the poverty line. For instance, a poverty gap of 10% means that the average poor person's expenditure (income) is 90% of the poverty line.

To measure inequality, the table in the Appendix A uses the Gini coefficient. In the table this measure is normalized by household size and the distributions are weighted by household size so that a given quintile (such as the lowest quintile) has the same share of population as other quintiles across the sample.

4. MIGRATION, PUBLIC EMPLOYMENT AND POVERTY: ECONOMETRIC RESULTS

In this section we use the crosscountry data to analyze how international remittances and government employment affect poverty in MENA and the developing world. The relationship that we estimate can be expressed as:

$$\text{Log}P = \alpha + \beta_1 \log \mu + \beta_2 \log(x) + \varepsilon, \qquad (1)$$

where P is the measure of poverty, β_1 is the "growth elasticity of poverty" with respect to mean income per capita given by μ, β_2 is the elasticity of poverty with respect to variable x (such as remittances or government employment) and ε is an error term that includes errors in the poverty measure.

Eqn. (1) is the basic equation to be estimated here. Recent work has also suggested that the level of initial income inequality should be added as a control variable. [16] Since all the variables are expressed in log terms, the results can be interpreted as elasticities of poverty with respect to the relevant variable, e.g., remittances or government employment.

Ordinary least squares (OLS) estimates of Eqn. (1) are presented in Table 2. We first present the results using the basic specification (Eqns. 2(1) and 2(6)), and then test for variation from the crosscountry pattern specific to the MENA region (Eqns. 2(2) and 2(7)). The coefficient estimates for the elasticity of poverty with respect to per capita GDP (income) and the Gini coefficient are of the expected sign and their magnitudes are similar to other estimates reported in the literature. Both of these coefficients are statistically significant in all 10 cases. Eqns. 2(2) and 2(7) are of particular interest. When a shift dummy is introduced for the MENA observations it is negative and highly significant, the precision of the coefficient estimates on per capita GDP and the Gini coefficient increases, and the overall explanatory power of the regression also rises. This means that, controlling for the level of income and income inequality, poverty in the MENA region is significantly below the level that would be expected from the cross-country relationship.

Tests for the impact of remittances on poverty are also presented in Table 2. For the full sample of 50 developing countries, the variable remittances as a share of GDP has a negative and statistically significant impact on poverty (Eqns. 2(3) and 2(8)). In other words, controlling for the level of per capita GDP (income) and income distribution, a higher share of remittances in GDP can be statistically expected to reduce both the poverty headcount ($1.00 person/day) and the poverty gap. But the really interesting results in Table 2 relate to the interactive dummy variable for the MENA region. For both poverty measures the interactive variable (MENA dummy times remittances) is negative and highly significant, while the coefficient on the remittance variable is no longer significant (Eqns. 2(5) and 2(10)). These results suggest that while international remittances may reduce poverty in the developing world as a whole, for the countries represented in our sample remittances definitely reduce poverty in the MENA region. The results for the MENA interactive variable suggest that, on average, a 10% increase in the share of remittances in GDP will reduce the poverty headcount by 5.7% and the poverty gap measure by 6.8% in the MENA region.

Results of estimating Eqn. (1) using government employment data are shown in Table 3.

Table 2. *Elasticity of poverty with respect to international remittances*[a]

Variable	Dependent variable = poverty headcount ($1.08/person/day)					Dependent variable = poverty gap				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Per capita GDP (constant 1995 dollars) of country, 1990	−0.841 (−4.71)**	−0.838 (−5.54)**	−0.960 (−5.64)**	−0.898 (−5.79)**	−0.936 (−5.70)**	−0.655 (−2.83)**	−0.652 (−3.07)**	−0.808 (−3.66)**	−0.753 (−3.51)**	−0.779 (−3.63)**
Gini coefficient of country	2.357 (4.35)**	2.306 (5.02)**	2.262 (4.50)**	2.268 (4.98)**	2.259 (4.66)**	1.930 (2.75)**	1.880 (2.92)**	1.809 (2.77)**	1.814 (2.88)**	1.805 (2.85)**
Remittances as share of country GDP, 1990			−0.454 (−2.97)**	−0.225 (−1.46)	−0.228 (−1.26)			−0.584 (−2.94)**	−0.385 (−1.80)*	−0.315 (−1.32)
MENA dummy (1 if MENA country)		−1.961 (−4.40)**		−1.643 (−3.34)**			−1.967 (−3.15)**		−1.422 (−2.09)**	
(MENA dummy)×(Remittances as share of GDP)					−0.573 (−2.14)**					−0.683 (−1.94)*
Constant	9.914 (7.56)**	10.123 (9.09)**	10.888 (8.66)**	10.571 (9.25)**	10.743 (8.85)**	7.172 (4.22)**	7.382 (4.73)**	8.422 (5.16)**	8.149 (5.15)**	8.251 (5.20)**
N	50	50	50	50	50	50	50	50	50	50
Adj R^2	0.468	0.618	0.544	0.626	0.577	0.236	0.358	0.343	0.437	0.380
F-statistic	22.60	27.40	20.53	21.58	17.73	8.57	10.10	9.53	8.76	8.52

[a] Estimates obtained using OLS. All variables expressed in logs. *T*-ratios shown in parenthesis. See Table in Appendix A for countries and survey dates.

*Significant at the 0.10 level.

**Significant at the 0.05 level.

Table 3. *Elasticity of poverty with respect to government employment*[a]

Variable	Dependent variable = poverty headcount ($1.08/person/day)				Dependent variable = poverty gap			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Per capita GDP (constant 1995 dollars) of country, 1990	−0.748	−0.821	−0.751	−0.767	−0.610	−0.709	−0.608	−0.626
	(−3.22)**	(−3.09)**	(−3.20)**	(−3.11)**	(−2.04)*	(−1.99)*	(−2.00)*	(−1.97)*
Gini coefficient of country	2.298	1.490	1.984	1.936	2.135	1.609	2.324	2.295
	(3.33)**	(1.57)	(2.34)**	(2.17)**	(2.40)**	(1.27)	(2.12)**	(1.99)*
Government employment as share of total employment in country		−0.785	−0.246	−0.297		−0.632	−0.148	−0.118
		(−2.08)**	(−0.66)	(−0.74)		(−1.25)	(−0.30)	(−0.23)
MENA dummy (1 if MENA country)	−2.117		−1.920		−2.662		−2.781	
	(−3.82)**		(−3.02)**		(−3.73)**		(−3.37)**	
(MENA dummy)×(Government employment as share of total employment)				−0.624				−0.961
				(−2.39)**				(−2.85)**
Constant	9.617	10.526	9.787	9.902	7.444	8.412	7.342	7.451
	(5.54)**	(5.25)**	(5.52)**	(5.31)**	(3.33)**	(3.14)**	(3.19)**	(3.09)**
N	32	32	32	32	32	32	32	32
Adj R^2	0.568	0.426	0.559	0.512	0.454	0.219	0.435	0.382
F-statistic	14.18	8.45	10.52	8.87	9.33	3.81	6.79	5.65

[a] Estimates obtained using OLS. All variables expressed in logs; *T*-ratios shown in parenthesis. Number of observations reduced in table because of missing values for government employment. See Table in Appendix A for countries and survey dates.

*Significant at the 0.10 level.

**Significant at the 0.05 level.

For the full sample, the government employment variable—expressed as a share of total employment in a country—is always negative but only statistically significant in only one out of six cases. This means that government employment does not have a strong statistical effect on reducing poverty in the sample as a whole.

The picture changes dramatically however, when we consider the results for the MENA dummy variables. For both poverty measures, the interactive variable (MENA dummy times government employment) is negative and highly significant (Eqns. 3(4) and 3(8)). These results show that while government employment may not have a strong statistical effect on poverty in the developing world as a whole, government employment does statistically reduce both the level and the depth of poverty in the MENA region. In Table 3 the results for the MENA interactive variable suggest that, on average, a 10% increase in the share of government employment will reduce the poverty headcount by 6.2% and the poverty gap measure by 9.6% in the MENA region.

In order to examine the impact of remittances and government employment on income inequality in the MENA region, we also estimated Eqn. (1) using the Gini coefficient as the dependent variable. But, neither the remittances nor the government employment variable—or any of the MENA dummy or interactive variables—were found to have a statistical impact on the Gini coefficient. On the basis of these results, we conclude that neither remittances nor government employment have a statistical effect on income inequality in the MENA region. [17] One possible reason is that remittances and government employment may benefit all income classes of people—poor as well as nonpoor—in the MENA region. In other words, remittances from abroad and government employment at home may "pull" a large number of poor people out of poverty in MENA, but they may also benefit large numbers of not-so-poor people as well.

5. TRENDS IN POVERTY AND INEQUALITY FOR SELECTED MENA COUNTRIES

The previous sections have provided a number of insights into trends in poverty and inequality in the MENA region, as compared to other regions of the developing world. The remainder of the paper will attempt to validate these insights by examining trends in poverty and inequality in specific MENA countries.

As mentioned above, since 1980 only a handful of Middle Eastern countries have conducted nationally representative household budget surveys. Of these countries this section will focus on five: Egypt, Jordan, Morocco, Tunisia and Iran. While these five countries have conducted a total of 18 household budget surveys, only two of these surveys—the 1997 surveys in Egypt and Jordan—are accessible to the public. Lacking data from the remaining household surveys, the analysis will rely on the calculations of poverty lines and published "group means" figures reported by the various statistical offices and the World Bank. [18]

This paper uses expenditure data from these household budget surveys to measure changes in poverty over time by establishing national poverty lines for different countries, defined as the break-even level of expenditures needed to meet minimum food and nonfood requirements. [19] To illustrate, Table 4 summarizes how the poverty line was established in selected survey years in three of the five countries. The amount of annual per capita expenditures needed to meet the cost of certain minimum food requirements is first calculated. [20] To these minimum food costs, minimum nonfood expenditures are added. [21] The result is a national poverty line—that includes the cost of minimum food and nonfood requirements—for each survey year for each country.

These national, country-specific poverty lines are not strictly comparable with the international poverty lines used in Section 1. The minimum food and nonfood requirements are based on national standards, and the monetary value of the food and nonfood basket is constructed in national currency terms. Thus, while it is possible to use national poverty lines to examine changes in poverty over time within individual countries, they are not strictly comparable across countries or with the poverty indices based on international standards of $1.00 per person per day. [22]

Table 5 shows trends in the incidence of poverty for the five countries during the period of analysis. For each country, poverty measures are reported for urban areas, rural areas and overall. With respect to overall poverty, the outcomes in Table 5 are generally positive: between the mid-1980s and the late 1990s while the overall headcount index of poverty increased in Jordan, it declined in all the other

Table 4. *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	1,888	176
Nonfood poverty line (per capita expenditures/year)	266	1,449	76
Food and nonfood poverty line (per capita expenditure/year)	968	3,337	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 Survey in Institute of National Planning, Egypt Human Development Report, 1996 (Cairo: 1996), Table 2.1; *Morocco*: Calculations from 1998–99 Survey in World Bank, Kingdom of Morocco: Poverty Update (World Bank, 2001), Vol. II, Table 4; *Tunisia*: Calculations from 1995 Survey in World Bank, Republic of Tunisia:Social Conditions Update (World Bank (2000)), Vol. II, Tables 3, 6.

countries. Results for the poverty gap index show that the overall depth of poverty increased in Jordan and Morocco, but remained stable or fell in the other three countries.

With respect to the sectoral distribution of poverty, Table 5 shows that both the incidence and depth of poverty are higher in rural as opposed to urban areas. Using the most recent data for each country, the ratio of rural to urban poverty for the headcount index ranges from a low of 1.8 (Jordan) to a high of 3.9 (Tunisia). Ratios of rural to urban poverty for the poverty gap measure are similar, ranging from 2.3 (Egypt) to 4.4 (Tunisia). On the basis of these numbers, poverty in the MENA region appears to be primarily a rural phenomenon.

Table 6 shows how real mean per capita survey expenditures changed in the five study countries. Despite a number of missing values, the results are generally consistent with the poverty trends reported above. For instance, during the period when the overall headcount index of poverty rose in Jordan, the level of real mean per capita expenditures fell by a large 32%. These findings suggest that rising poverty in Jordan was at least partly caused by falling household expenditures. By contrast, real mean per capita expenditures rose by 21% in Morocco, and by 10% in Tunisia and Iran. In these three countries, rising household expenditures apparently led to declining rates of poverty.

The figures in Table 6 for Egypt are puzzling. Between 1980–81 and 1999–2000 real mean per capita expenditures as measured by the household surveys fell by 14% and 31% in urban and rural Egypt, respectively. In most cases, such large declines in mean household expenditures would lead to increases in poverty. [23] While Table 6 shows that the incidence of poverty did rise in rural Egypt, poverty actually fell in urban Egypt and overall.

Table 7 presents average annual rates of real GDP growth in the five countries, as well as changes in real GDP per capita between survey years. In general, the results confirm the general trends in survey expenditure and poverty. In Jordan, for example, the 32% decline in real mean survey expenditures between 1986–87 and 1997 is validated by a decline in real GDP per capita of 19%. [24] In Morocco, real GDP per capita rose nearly 20% between 1984–85 and 1998–99, closely tracking the increase in real mean survey expenditures of 19%. Tunisia experienced a 11% increase in real per capita GDP during 1985–95, which was quite consistent with its 10% increase in real mean survey expenditures, and in Iran GDP per capita grew at an average rate of 2.7% between 1990 and 1998 while mean survey expenditures grew at an average annual rate of 1.9%.

The results for Egypt in Table 7 are again puzzling. During the same interval (1981–82 to 1999–2000) in which real mean expenditures for rural and urban households declined by 14% and 31%, respectively, real GDP per capita for the country as a whole reportedly increased by 54%! Thus the trends in GDP per capita are more consistent with the recorded poverty trends than with trends in mean household expenditure. While there is no need for growth in real mean per capita expenditures—as measured by the various household surveys—to perfectly track real per capita GDP growth at the national level, in general such large discrepancies are not to be expected (Dollar & Kray, 2001). In the case of Egypt, the reasons

Table 5. *Incidence of poverty in Egypt, Jordan, Morocco, Tunisia and Iran 1981–82 to 1999–2000*[a]

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	26.5	6.7
1999–2000	9.2	1.7	22.1	3.9	16.7	3.0
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
Iran						
1986	20.9	6.9	34.9	12.0	27.3	9.2
1990	22.5	6.2	30.6	10.5	26.0	8.0
1994	17.0	4.3	27.7	8.2	21.3	5.9
1998	14.2	3.7	31.7	10.3	20.9	6.2

Sources: *Egypt*: Calculations from 1981–82 to 1995–96 Surveys in Institute of National Planning (1996), Table 2.7; Calculations from 1997 Survey in Adams (2000), Table 4, p. 263. 1999–2000 data from World Bank (2002b), Table A2.1; *Jordan*: Calculations from 1986 to 87 Survey in World Bank (1994a), Table 3.9. Calculations from 1992 and 1997 Surveys in Shaban, Abu-Ghaida, and al-Naimat (2001), Table A111.1a; *Morocco*: Calculations from 1984–85 and 1990–91 Surveys in World Bank (1994b), Vol. II, Table 6. Calculations from 1998–99 Survey in World Bank (2001), Vol. II, Tables 5, 6; *Tunisia*: Calculations from 1985 and 1990 Surveys in World Bank (1995b), Vol. I, Tables II.1 and II.3. Calculations from 1995 Survey in World Bank (2000), Vol. I, Table 1; *Iran*: Calculations from all surveys in World Bank (2002c), Tables 1.1 and 1.2.

[a] NA is not available.

for this large discrepancy between household survey expenditures and GDP growth figures merit further examination.

Table 8 shows how income distribution changed over time in the five countries. Despite several missing values, the table underscores the point that income inequality in the MENA region is relatively low. While overall Gini coefficients of inequality in the table range from 0.345 to 0.470, Gini coefficients for a sample of 12 Latin American countries varied from 0.440 to 0.610 during the same period (Wodon, 2000, Table 2.2). Moreover, changes in the overall Gini coefficients in Table 8 are consistent with the poverty trends reported above. For example, in Morocco the lack of change in the overall Gini coefficient means that falling poverty is mainly the result of the 21% increase in real mean per capita expenditures. In Iran, however, falling poverty seems to have been caused by both a large, 7.1% decrease in the overall Gini and a 10% rise in real mean per capita expenditures. In Egypt (especially urban Egypt) there is a confounding set of numbers. In urban Egypt there is falling poverty with decreasing real mean per capita expenditures and a 8.3% increase in the Gini. [25]

Table 1 of the paper showed that one important characteristic of the MENA region was the rising share of income accruing to the

Table 6. *Levels of real mean per capita survey expenditures in Egypt, Jordan, Morocco, Tunisia and Iran, 1981–82 to 1999–2000*[a]

Country and survey year	Urban	Rural	Overall
Egypt (constant 1990–91 LE/capita/year)			
1981–82	1,106	733	NA
1990–91	1,088	724	NA
1995–96	1,001	638	NA
1997	NA	NA	NA
1999–2000	958	507	NA
Percentage change	(−14.4)	(−30.8)	–
Jordan (constant 1997 JD/capita/year)			
1986–87	NA	NA	1,115
1992	NA	NA	821
1997	NA	NA	762
Percentage change	–	–	(−31.7)
Morocco (constant 1991 DH/capita/year)			
1984–85	NA	NA	4,863
1990–91	9,224	4,623	6,780
1998–99	7,543	3,942	5,890
Percentage 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
Iran (constant 2000 RL/capita/day)			
1986	13,434	7,848	10,875
1990	11,408	8,954	10,365
1994	12,609	8,844	11,346
1998	13,847	8,615	11,984
Percent change	+3.1	+9.8	+10.2

Sources: *Egypt*: Data from Institute of National Planning (1996), Table 2.7. 1999–2000 data from Heba El-Laithy (private correspondence, January 2003); *Jordan*: Data from World Bank (1994a), Table 3.6, and converted into real 1997 JD, and Shaban *et al*. (2001), Table 3; *Morocco*: Data from World Bank (1994b), Vol. II, Table 2 and converted into real 1991 DH, and World Bank (2001), Vol. 1, Table 3; *Tunisia*: Data from World Bank (2000), Vol. I, Table 2 and converted into real 1995 JD; *Iran*: All data from Claus Astrup (private correspondence, January 2003).

[a] 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; In 1999, 1 Iranian rial (RL) = US$0.00012.

poorest segment of the population. To elaborate upon this point, Table 9 shows the evolution of the income share accruing to the bottom quintile group in the five countries. The household survey data are broadly consistent with the aggregate trends reported in Table 1. [26] Egypt and Jordan show a decline in the share of survey expenditures going to the bottom quintile, consistent with an observed increase in income inequality. Morocco, Tunisia, and Iran show an increase in the share of survey expenditures going to the bottom quintile.

It is possible to extend this analysis of the effect of economic growth and income

Table 7. *Average annual growth rates of real GDP in Egypt, Jordan, Morocco, Tunisia and Iran, 1980–99*

Country	Average annual growth rates (percentage)					Annual growth rate of real GDP per capita between survey years	
	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 to 1990–91	2.99
Real per capita GDP	4.87	1.48	0.97	3.59	2.73	1990–91 to 1995–96	2.70
						1995–96 to 1999–2000	3.50
Jordan						Jordan	
Real GDP	5.67	(−1.22)	5.28	2.24	2.99	1986–87 to 1992	(−3.07)
Real per capita GDP	1.75	(−4.83)	(−0.41)	(−0.86)	(−1.09)	1992–97	(−0.49)
Morocco						Morocco	
Real GDP	1.84	3.82	3.06	1.94	2.66	1984–85 to 1990–91	2.73
Real per capita GDP	(−0.37)	1.69	1.14	0.21	0.67	1990–91 to 1998–99	0.37
Tunisia						Tunisia	
Real GDP	4.57	2.54	5.03	5.17	4.33	1985–90	0.10
Real per capita GDP	2.06	0.09	2.97	3.78	2.22	1990–95	2.06
Iran						Iran	
Real GDP	2.52	(−1.44)	6.18	3.26	2.63	1986–90	(−2.36)
Real per capita GDP	(−1.12)	(−4.56)	4.38	1.64	0.09	1990–94	4.38
						1994–98	1.30

Sources: GDP growth rates from International Monetary Fund, International financial statistics yearbook (various issues). Population growth rates from World Bank (2003), *Sima* database.

distribution on poverty by decomposing changes in poverty into three components: a growth component (that is, changes in expenditures), a redistribution component (that is, changes in the distribution of expenditures) and a residual. Following Ravallion and Datt (1991), the change in poverty (P_a) in year t can be expressed as

$$P_{a,t} = P_a(z/M_t, D_t), \tag{2}$$

where z is the poverty line, M_t is mean per capita expenditure and D_t is the distribution of per capita expenditure. For Egypt, for example, the overall change in poverty (P_a) between 1981–82 and 1995–96 can be written as

$$P_{\alpha,96} - P_{a,81} = \underbrace{G(81,96;r)}_{\text{(Growth Component)}} + \underbrace{D(81,96;r)}_{\text{(Redistribution Component)}} + \underbrace{R(81,96;r)}_{\text{(Residual)}}. \tag{3}$$

Table 10 shows the results of such a decomposition for the four countries for which data exist: Egypt (until 1995/96), Jordan, Morocco and Iran. For all of the countries except Iran, 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 the observations made above. While in Iran the Gini coefficient of inequality declined by a large 7.1% during the survey period, in both Jordan and Morocco the Gini coefficient was fairly constant. Thus, in both Jordan and Morocco changes in poverty were caused more by changes in the growth component, that is, changes in mean per capita expenditures. In Egypt, changes in mean per capita expenditure also explain most of the increase in poverty during 1981–82 to 1995–96, [27] but the redistribution component for rural Egypt is larger than in other cases. This means that both reductions in mean per capita expenditure and increases in income inequality contributed to the rise in rural poverty in Egypt.

The country studies also provide some support for our econometric findings regarding the

Table 8. *Distribution of per capita expenditures in Egypt, Jordan, Morocco, Tunisia and Iran, 1981–82 to 1999–2000*[a]

Country and survey year	Gini coefficient of per capita expenditure		
	Urban	Rural	Overall
Egypt			
1981–82	0.322	0.275	NA
1990–91	0.340	0.360	NA
1995–96	0.331	0.235	0.345
1997	0.385	0.321	0.350
1999–2000	0.349	0.233	0.378
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
Iran			
1986	0.451	0.403	0.470
1990	0.415	0.423	0.434
1994	0.410	0.393	0.430
1998	0.413	0.413	0.437

Sources: *Egypt*: Calculations from 1981–82 to 1995–1996 Surveys in Institute of National Planning (1996), Table 4.5. Calculations from 1997 Survey in Adams (2000), Table 7. 1999–2000 data from Heba El-Laithy (private correspondence, January 2003); *Jordan*: Calculations from 1986–87 Survey in World Bank (1994a), Table 3.8. Calculations from 1992 and 19977 Surveys provided by Shaban *et al*. (2001, private correspondence); *Morocco*: Calculations from 1984–85 Survey in World Bank (1994a), 1990–91 and 1998–99 Surveys in World Bank (2001), Vol. 1, Table 3; *Tunisia*: Calculations from 1985 and 1990 Surveys in World Bank (1995b), Vol. 1, 8; *Iran*: Calculations from all surveys in World Bank (2002c), Table 1.3.

[a] NA is not available.

role of international migration and remittances in poverty reduction. Official remittance data expressed in real terms for Egypt, Jordan, Morocco and Tunisia are presented in Table 11. In general, these data reflect the patterns of migration and the volatility of remittance income described in Section 1. While Morocco and Tunisia have experienced steady real growth in remittances deriving mainly from migration to Europe, Jordan and Egypt have experienced a "boom and bust" cycle, deriving from volatility in the price of oil and changing migratory opportunities in the Persian Gulf. Comparing the level of official international remittances from the two years immediately preceding the end of the oil price bubble (1984–85) with those of 1999–2000 we find that the level of real remittances to Morocco and Tunisia increased at an average annual rate of 2.2% and 2.9%, respectively, while the level of real remittances has fallen in Egypt and Jordan at an average annual rate of −4.2% and −0.3%, respectively.

Comparing the international remittance data in Table 11 with the poverty trends in Table 5 shows that the rapid increase in remittance income coincided with substantial reductions in the poverty headcount in both Morocco and Tunisia. Moreover, the rates of growth of remittance income substantially exceeded those

Table 9. *Distribution of survey expenditures going to lowest quintile group in Egypt, Jordan, Morocco, Tunisia and Iran*

	Percentage of total per capita expenditures going to lowest quintile group in															
	1981–82	1995–96	1997	1999–2000	1986–87	1992	1997	1984–85	1990–91	1998–99	1985	1990	1995	1986	1990	1994	1998
Egypt																	
Urban	8.4	8.4	5.4	NA													
Rural	10.2	11.3	6.6	NA													
Jordan																	
Overall					7.3	6.0	NA										
Morocco																	
Overall								8.3	9.3	9.1							
Tunisia																	
Overall											6.7	7.2	7.8				
Iran																	
Urban														4.7	5.8	6.1	5.8
Rural														5.8	5.3	6.3	5.8
Overall														4.5	5.2	5.5	5.2

Sources: *Egypt*: Calculations from 1981–82 to 1997 Surveys in Adams (2000), Table 7; *Jordan*: Calculations from 1986–87 and 1992 Surveys in World Bank (1994a), Vol. 1, Table 3.7; *Morocco*: Calculations from 1984–85 to 1998–99 Surveys in World Bank (2001), Vol. 1, Table 3; *Tunisia*: Calculations from 1985 to 1995 Surveys in World Bank (2000), Vol. 1, Table 2; *Iran*: Calculations from data supplied by Claus Astrup (private correspondence, January 2003).

Table 10. *Decomposition of changes in poverty into growth and redistribution components for Egypt, Jordan, Morocco and Iran*

Country and years	Growth component (%)	Redistribution component (%)	Residual (%)	Total change in headcount index of poverty (%)
Egypt, 1981–82 to 1995–96				
Urban	+5.8	−1.9	+0.4	+4.3
Rural	+5.0	+3.9	−0.7	+8.2
Jordan, 1986–87 to 1997				
Overall	+9.1	−1.4	+1.0	+8.7
Morocco, 1984–85 to 1998–99				
Overall	−7.7	+0.9	−0.2	−7.0
Iran, 1986–1998				
Overall	−3.8	−2.3	−0.3	−6.4

Source: Calculated by authors.

Table 11. *Official International remittances received, in Egypt, Jordan, Morocco and Tunisia, 1981–2000 (in millions of US dollars; real terms)*

Year	Egypt	Jordan	Morocco	Tunisia
1981	3,101	1,466	1,440	507
1982	3,885	1,708	1,214	532
1983	5,608	1,696	1,311	514
1984	5,812	1,812	1,278	465
1985	4,548	1,447	1,369	383
1986	3,484	1,644	1,943	502
1987	4,830	1,257	2,127	651
1988	4,857	1,153	1,678	701
1989	5,229	770	1,642	600
1990	6,446	659	2,339	642
1991	4,536	501	2,226	587
1992	6,629	916	2,356	576
1993	5,974	1,097	2,006	470
1994	3,775	1,123	1,878	646
1995	3,226	1,244	1,970	680
1996	3,018	1,500	2,103	715
1997	3,509	1,571	1,797	650
1998	3,150	1,442	1,879	671
1999	2,959	1,522	1,772	696
2000	2,523	1,601	1,912	619
Average annual percentage change, 1981–83 to 1998–2000	(−2.2)	(−0.4)	+2.0	+1.5

Notes: Real figures calculated by deflating nominal figures by US Consumer Price Index (1995 = 100). Data record only those international remittances which enter the official banking system.
Sources: International Monetary Fund, Balance of Payements Statistics Yearbook (various issues).

of mean household expenditure and per capita GDP in both countries. The rapid increase in remittances also coincided with an increase in the share of total income accruing to the poorest quintile of the income distribution.

In the case of Jordan the impact of the 1991 Gulf War on remittances and poverty reduction is particularly notable. Between 1986–87 and 1992 the overall poverty headcount in Jordan increased by 477%; remittances in real terms

fell by 37% and mean per capita survey expenditures declined by 26%. During 1992–97 the poverty headcount in Jordan declined by 19% and mean survey expenditures fell by 8%; on the other hand, remittances in real terms increased by a large 71%.

While the volatility of remittance income has been less dramatic in Egypt than in Jordan, it still shows the effect of the post-1985 decline in oil prices and the shift in migration policy in many Gulf states away from traditional Arab sources (such as Egypt, Jordan) toward South Asian countries (like Sri Lanka, Bangladesh). In Egypt international remittances in real terms peaked during 1990–92 (Table 11). Between 1992–93 and 1999–2000, however, real remittances declined by 56%. This pattern of declining real remittances is roughly consistent with the data on falling mean per capita expenditures in Egypt as well as increasing rates of overall poverty in that country between 1990–91 and 1997. But, the large decline in overall poverty recorded in the 1999–2000 Egyptian survey clearly cannot be attributed to an increase in real remittance income. In the case of Egypt, we are again left puzzled by a set of apparently contradictory trends.

6. CONCLUSION

This paper has used aggregate, crosscountry data and the results of household budget surveys to analyze trends in poverty, inequality and economic growth in a selection of MENA countries. It has four broad findings.

First, compared to other regions of the developing world, the MENA region has an unusually low rate of poverty. At present, MENA has the lowest incidence of poverty of any region in the developing world. Only 2% of the people in MENA live below the international poverty standard of $1.00 per person per day. This success at poverty reduction can be credited primarily to the rapid growth of income in the region prior to 1985, but MENA has been able to avoid a large increase in poverty despite 15 years of low economic growth.

Second, compared to other developing areas, during the last 20 years 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. Crosscountry work on other developing countries has found that low-inequality countries are more effective at reducing poverty than high-inequality countries (Ravallion, 1997). This helps to explain how the MENA region can have low poverty despite very low rates of GDP growth over the last two decades. Because they have low initial levels of income inequality, countries in the MENA region do not need high rates of economic growth to keep poverty in check.

Third, this paper has examined two reasons—international migration/remittances and government employment—for MENAs unique pattern of low poverty and low inequality. The crosscountry regressions estimated here have shown that both international remittances and government employment have a negative and statistically significant impact upon both the level and the depth of poverty in the MENA region. With respect to remittances, on average, a 10-percentage point increase in the share of remittances in GDP will reduce the poverty headcount ($1.00 per person per day) by 5.7% in the MENA region. With respect to government employment, on average, a 10-percentage point increase in the share of government employment in total employment will reduce the poverty headcount by 6.2%. Despite a record of low economic growth since the 1980s, the twin forces of international remittances and government employment have helped the MENA region preserve its enviable record of low-poverty and low-income inequality.

Fourth, 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 1990s led to a substantial increase in poverty that has not yet been reversed. In Egypt rising GDP growth has been associated with declining mean survey expenditures, increasing rural (but not urban) poverty and a declining share of income accruing to the poorest quintile of the rural and urban population. In Morocco and Tunisia rising mean survey expenditures and relatively steady rates of income inequality have led to reductions in poverty, but more strongly in Morocco than in Tunisia. Changes in the pattern of international remittances—declining in Egypt and Jordan and growing in the Maghreb (Morocco and Tunisia)—may be partly responsible for these different poverty outcomes. But more work is needed to clarify these issues.

NOTES

1. In this paper we define the low- and middle-income countries of the MENA region as those for which we have poverty, inequality and economic growth data. That set of MENA countries includes seven: Algeria, Egypt, Iran, Jordan, Morocco, Tunisia and Yemen. Due to their fundamentally different level of development, we omit the Gulf Cooperation Council Countries—Saudi Arabia, Kuwait, Oman, Bahrain, Qatar and the United Arab Emirates—from this analysis.

2. If we shift our attention to an international standard of $2.00 per person per day, which may be more appropriate for MENA's average level of per capita income, MENA still remains a low poverty region (see World Bank, 2001, Table 1.1).

3. In the country-case studies in Section 4, the focus is on examining changes in poverty and inequality over time. Since there are no detailed poverty and inequality data for Algeria and Yemen in the 1980s, we were forced to exclude these countries in the case studies.

4. 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. The 1997 Jordan household survey was conducted by the Jordan Department of Statistics.

5. Among economists in the MENA region, there is considerable debate about the quality of poverty data produced in the MENA. This concern is certainly not limited to MENA; in all other regions of the developing world there is an on-going debate about the accuracy of poverty figures produced by government offices and international agencies. Despite these concerns, we believe that the poverty and inequality data used in this paper are the best that are currently available for the MENA region. For earlier reviews of poverty and inequality in a broad range of MENA countries, see El-Ghonemy (1998), and United Nations Development Program (2002).

6. The poverty line used in this paper is set at $1.08 per person per day, measured in 1993 PPP rates. This line is equivalent to the $1.00 per person per day poverty line, measured in 1985 PPP rates, used by Squire (1993) and Ravallion and Chen (1997). For the purposes of simplicity, we will call this $1.08 person/day poverty line the $1.00 person/day poverty line.

7. In calculating PPP values, the comparison of local costs with US costs is done using conversion estimates produced by the World Bank.

8. For more on this point, see Ravallion (1995) and Bruno, Ravallion, and Squire (1998).

9. Despite the growing importance of international migration, there has been relatively little work on the impact of remittances on poverty in developing countries. For an early study of the impact of international remittances on poverty in one MENA country (rural Egypt), see Adams (1991).

10. These percentage figures are calculated from the 1997 household surveys conducted in Egypt and Jordan.

11. In the past, other researchers have built such data sets to examine the relationship between growth, poverty and inequality see, for example, Deininger and Squire (1996) and Ravallion and Chen (1997).

12. Unfortunately, it proved impossible to find government employment figures for all 50 countries. The data set therefore includes figures on government employment in only 32 of the 50 countries.

13. The full list of these 157 countries appears in World Bank (2001, p. 334).

14. A recent IMF study (El-Qorchi, Maimbo, & Wilson, 2002) estimated that informal transfers of remittance monies in the developing world in the year 2000 could amount to $10 billion per annum.

15. As in Table 1, all of the poverty lines in the table in the Appendix A are international poverty lines, set at estimates of $1.08 per person per day in 1993 PPP exchange rates.

16. See, for example, Birdsall and Londono (1997) and Ravallion (1997).

17. According to Deininger and Squire (1996, p. 587), GDP per capita increased by 26% in the developing world during 1985–95, while Gini coefficients in the world changed by only 0.28 percentage points per year over the same period. Dollar and Kray (2001) also found no statistically significant relationship between the Gini coefficient and measures of structural reform such as trade openness. These results are consistent with other

findings that Gini coefficients (and levels of income inequality) tend to be relatively stable over time and invariant to measures of growth or structural reform.

18. Since in most cases we do not have access to the household survey data, it is impossible to report the usual diagnostic statistics for most of the results in this section of the paper.

19. There are at least three reasons for using expenditure—rather than income—data for analyzing these household surveys. First, many analysts believe that people are more 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.

20. 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.

21. For each survey year, minimum nonfood 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, α and β are real parameters, and ε is the error term.

22. 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.

23. In theory, poverty could fall even with a declining level of mean household expenditures, provided that there was a significant (positive) change in the level of income distribution.

24. This decline of 19% in real per capita GDP for Jordan is calculated by using the figures on the right side of Table 7 to multiply the rates of annual GDP growth between the survey years times the number of years in each survey interval.

25. The poverty trends in rural Egypt are more explicable. Increasing rural poverty in Egypt seems to be caused by the large, 31% decline in real mean per capita expenditures.

26. Unfortunately, quintile data are unavailable for either Jordan in 1997 or for Egypt in 1999–2000.

27. Table 6 shows that the incidence of poverty increased in both urban and rural Egypt from 1981–82 to 1995–96, only to decline in urban Egypt after that time.

REFERENCES

Adams, R. (1991). *The effects of international remittances on poverty, inequality and development in rural Egypt.* Research Report 86. Washington, DC: International Food Policy Research Institute.

Adams, R. (2000). Evaluating the process of development in Egypt. *International Journal of Middle Eastern Studies, 32*, 260–275.

Adams, R. (2003). *Economic growth, inequality and poverty: Findings from a new data set.* World Bank Policy Research Working Paper 2972. World Bank, Washington, DC.

Adams, R., & Page, J. (2001). *Holding the line: poverty reduction in the Middle East and North Africa, 1970–2000.* Paper Presented at the Annual Conference of the Economic Research Form for the Arab Countries, Iran and Turkey. Manama, Bahrain, 25–27 October.

Birdsall, N., & Londono, J. (1997). Asset inequality matters: An assessment of the World Bank's approach to poverty reduction. *American Economic Review, 87*(2), 32–37.

Bruno, M., Ravallion, M., & Squire, L. (1998). Equity and growth in developing countries: Old and new perspectives on the policy issues. In V. Tanzi, & K. Chu (Eds.), *Income distribution and high-quality growth.* Cambridge, MA: MIT Press.

Chen, S., & Ravallion, M. (2000). *How did the world's poorest fare in the 1990s?* World Bank Policy Research Working Paper 2409. World Bank, Washington, DC.

Deininger, K., & Squire, L. (1996). A new data set measuring income inequality. *World Bank Economic Review, 10*(3), 565–591.

Dollar, D., & Kray, A. (2001). *Growth is good for the poor.* World Bank Research Working Paper 2587. Washington, DC.

El-Ghonemy, R. (1998). *Affluence and poverty in the Middle East*. New York: Routledge.

El-Qorchi, M., Maimbo, S., & Wilson, J. (2002). *The Hawala informal funds transfer system: An economic and regulatory analysis.* Unpublished paper, International Monetary Fund, Washington, DC.

Institute of National Planning (Egypt) (1996). *Egypt, human development report.* Cairo, Nasr City, Egypt.

International Monetary Fund (various). *Balance of Payments Statistics Yearbook.* Washington, DC: IMF.

International Monetary Fund (various). *International financial statistics yearbook.* Washington, DC: IMF.

Page, J. (2003). Structural reforms in the Middle East and North Africa. In P. Cornelius, & K. Schwab (Eds.), *The Arab competitiveness report, 2002–2003*. New York: Oxford Press.

Ravallion, M. (1995). Growth and poverty: Evidence for developing countries in the 1990s. *Economics Letters, 48*, 411–417.

Ravallion, M. (1997). Can high-inequality developing countries escape absolute poverty? *Economics Letters, 56*, 51–57.

Ravallion, M., & Chen, S. (1997). What can new survey data tell us about recent changes in distribution and poverty? *World Bank Economic Review, 11*(2), 357–382.

Ravallion, M., & Datt, G. (1991). Growth and redistribution components of changes in poverty measures: A decomposition with applications to Brazil and India. *Journal of Development Economics, 38*, 273–295.

Schiavo-Campo, S., Tommaso, G., & Mukherjee, A. (1997). *An international statistical survey of government employment and wages.* World Bank Policy Research Working Paper 1806, World Bank, Washington, DC.

Shaban, R., Abu-Ghaida, D., & al-Naimat, A. (2001). *Poverty alleviation in Jordan: Lessons for the future.* World Bank, Washington, DC.

Squire, L. (1993). Fighting poverty. *American Economic Review, 83*(2), 377–382.

United Nations Development Program (2002). *Arab human development report 2002.* New York: UNDP.

Wodon, Q. (2000). *Poverty and policy in Latin America and the Caribbean.* World Bank Technical Paper 467, World Bank, Washington, DC.

World Bank (1994a). *Hashemite Kingdom of Jordan: Poverty update.* Report No. 12675. World Bank, Washington, DC.

World Bank (1994b). *Kingdom of Morocco: Poverty, adjustment and growth.* Report No. 11918. World Bank, Washington, DC.

World Bank (1995a). *Bureaucrats in business: The economics and politics of government ownership.* World Bank, Washington, DC.

World Bank (1995b). *Republic of Tunisia: Poverty alleviation.* Report No. 13993. World Bank, Washington, DC.

World Bank (2000). *Republic of Tunisia: Social conditions update.* Report No. 21503. World Bank, Washington, DC.

World Bank (2001). *Kingdom of Morocco: Poverty update.* Report No. 21506. World Bank, Washington, DC.

World Bank (2002a). *Global poverty monitoring database.* World Bank, Washington, DC.

World Bank (2002b). *Arab Republic of Egypt: Poverty Reduction in Egypt.* Report No. 24234-EGT. World Bank, Washington, DC.

World Bank (2002c). *Poverty in Iran: Trends and Structure 1986–1998.* World Bank, Washington, DC, 24 June.

World Bank (2003). *Sima database.* World Bank, Washington, DC.

APPENDIX A

Summary of data on poverty, remittances and government employment

(*see overleaf*)

Country	Survey year	Region	Poverty headcount ($1/person/day)	Poverty gap (%)	Gini coeffi-cient	Official remittances (million $), 1990	Official remittances as share of country GDP, 1990	Government employment as share of total employment
Algeria	1988	Middle East, North Africa	1.75	0.64	0.401	352	0.56	17.4
Bangladesh	1988–89	South Asia	33.75	7.72	0.288	761	2.52	NA
Brazil	1989	Latin America	20.8	7.32	0.624	527	0.11	1.2
Bulgaria	1989	Europe, Central Asia	0	0	0.233	0	0	14.9
Cambodia	1997	East Asia	9.96	1.55	0.404	0	0	NA
Chile	1990	Latin America	8.26	2.04	0.561	0	0	2.8
China, PR	1990	East Asia	0.95	0.04	0.335	124	1.03	4.9
Colombia	1988	Latin America	4.47	1.31	0.531	488	1.21	4.6
Costa Rica	1990	Latin America	11.08	4.19	0.456	192	3.36	NA
Czech Republic	1988	Europe, Central Asia	0	0	0.194	277	0.79	NA
Dom. Republic	1989	Latin America	7.73	1.51	0.504	315	4.45	NA
Ecuador	1988	Latin America	24.85	10.21	0.439	107	0.03	11.1
Egypt	1991	Middle East, North Africa	3.97	0.53	0.34	4,284	9.93	22.3
El Salvador	1989	Latin America	25.49	13.72	0.489	357	7.42	4.5
Ethiopia	1995	Sub-Saharan Africa	31.25	7.95	0.399	0	0	NA
Ghana	1989	Sub-Saharan Africa	50.44	17.71	0.359	0	0	3.6
Guatemala	1989	Latin America	39.81	19.79	0.596	107	1.39	NA
Honduras	1989	Latin America	44.67	20.65	0.595	50	1.64	5.9
Hungary	1989	Europe, Central Asia	0	0	0.233	787	2.38	NA
India	1990	South Asia	45.95	12.63	0.312	2,584	0.81	3.2
Indonesia	1987	East Asia	28.08	6.08	0.33	418	0.36	4.6
Iran	1990	Middle East, North Africa	0.9	8	0.434	2,500	2.07	NA
Jamaica	1990	Latin America	0.62	0.03	0.418	315	7.4	NA
Jordan	1992	Middle East, North Africa	0.55	0.12	0.434	499	12.43	12.9
Kenya	1992	Sub-Saharan Africa	33.54	12.82	0.575	0	0	6.8
Latvia	1988	Europe, Central Asia	0	0	0.225	0	0	NA
Lithuania	1988	Europe, Central Asia	0	0	0.225	0	0	17.6
Mexico	1989	Latin America	16.2	5.63	0.551	2,492	0.94	3.5
Morocco	1990	Middle East, North Africa	0.14	0.02	0.392	2,006	7.76	7
Nepal	1985	South Asia	35.76	8.68	0.334	67	1.68	NA
Nicaragua	1993	Latin America	47.94	20.4	0.503	202	20.01	NA
Pakistan	1990–91	South Asia	47.76	14.57	0.332	1,997	4.99	4.2
Panama	1989	Latin America	16.57	7.84	0.565	18	0.33	3

Country	Survey year	Region	Poverty headcount ($1-person/day)	Poverty gap (%)	Gini coeffi-cient	Official remittances (million $), 1990	Official remittances as share of country GDP, 1990	Government employment as share of total employment
Peru	1985	Latin America	1.14	0.29	0.457	247	0.94	4.9
Philippines	1988	East Asia	18.28	3.59	0.407	262	0.59	5.8
Poland	1990	Europe, Central Asia	0.08	0.03	0.282	2,511	4.25	NA
Romania	1989	Europe, Central Asia	0	0	0.233	106	0.27	NA
Russian Fed	1988	Europe, Central Asia	0	0	0.23	0	0	18.6
Senegal	1991	Sub-Saharan Africa	45.38	19.95	0.541	91	1.59	2
Sierra Leone	1989	Sub-Saharan Africa	56.81	40.45	0.628	7	1.07	17.1
Sri Lanka	1990	South Asia	3.82	0.67	0.301	574	7.14	15.9
Tanzania	1991	Sub-Saharan Africa	48.54	24.42	0.59	184	4.32	2.7
Thailand	1988	East Asia	25.91	7.36	0.438	278	0.32	5.4
Trinidad, Tobago	1992	Latin America	12.36	3.48	NA	25	0.49	6.4
Tunisia	1990	Middle East, North Africa	1.26	0.33	0.402	599	4.87	11.8
Turkey	1987	Europe, Central Asia	1.49	0.36	0.435	3,246	2.15	7
Uganda	1989	Sub-Saharan Africa	39.17	14.99	0.443	0	0	NA
Venezuela	1989	Latin America	8.49	1.77	0.557	432	0.88	3.1
Yemen	1992	Middle East, North Africa	5.07	0.93	0.394	1,498	31.02	NA
Zimbabwe	1990–91	Sub-Saharan Africa	35.95	11.39	0.568	204	2.32	NA

All poverty data from household budget surveys conducted in individual countries, and reported in World Bank, Global Poverty Monitoring database. Government employment data from World Bank (2003), Sigma database. Remittance figures from IMF, Balance of Payments Yearbook (1993), and GDP data from World Bank (2003), Sima database. Government employment figures from Schiavo-Campo, Tommaso, and Mukherjee (1997) and World Bank (1995a). NA is not available.