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## Inequality, Economic Growth, and Poverty in the Middle East and North Africa (MENA)

Mthuli Ncube, John Anyanwu and Kjell Hausken



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**AFRICAN DEVELOPMENT BANK GROUP**

**Inequality, Economic Growth, and Poverty in the Middle East and North Africa (MENA)**

**Mthuli Ncube, John C. Anyanwu and Kjell Hausken<sup>1</sup>**

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**Office of the Chief Economist**

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## **ABSTRACT**

**In this paper, we have presented the patterns of inequality, growth and income inequality in the MENA region. Using a cross-sectional time series data of MENA countries for the period 1985-2009, we have also investigated the effect of income inequality on key societal development, namely economic growth and poverty, in the region. Our empirical results show that income inequality reduces economic growth and increases poverty in the region. Other factors having significant negative effect on economic growth in the MENA region include previous growth rate, exchange rate, government consumption expenditure or government burden, initial per capita GDP, inflation, and**

**primary education. On the other hand, variables positively and significantly associated with MENA's economic growth are domestic investment rate, urbanization, infrastructure development, and mineral rent as a percentage of GDP. In addition, apart from income inequality, other factors increasing poverty in the region are foreign direct investment, population growth, inflation rate, and the attainment of only primary education. Poverty-reducing variables in the region include domestic investment, trade openness, exchange rate, income per capita, and oil rents as a percentage of GDP. The policy implications of these results are discussed.**

**Keywords: Inequality, economic growth, poverty**

**JEL Classification: C4, C5**

## 1. Introduction

The wave of protests and unrests that swept across the Middle East and North Africa (MENA) region since 2011 has continued in different forms. In addition to demands for more economic and political inclusion, the protests had been largely sparked by a refusal to any longer tolerate the gross socio-economic inequality perpetuated by long-entrenched “elite” in power. Thus, in many countries today, the issue of inequality has come to the front burner of international and national discourse with a view to finding solutions. Therefore, in addition to equity reasons, there are good economic and political reasons to be concerned about inequality, its various dimensions, and societal development impacts.

Indeed, many authors and commentators argue that income inequality is among the most pressing current problems of our era (see Rohác, 2012). Wilkinson and Pickett (2010) provide abundance of evidence to show that that income inequality dramatically has an impact on people’s everyday lives. For example, greater inequality seems to lead to general social dysfunction; homicide rates are lower and children experience less violence in more equal societies; people trust each other less in more unequal societies; and less equal societies tend to do worse when it comes to health, education and general well-being (Wilkinson and Pickett, 2012).

It is argued that the pursuit of equality is not just a moral imperative, not just vital for the poor and for the social cohesion and wellbeing of society, it is also necessary for a stable economy. For example, the scourge of inequality has had a real role in the current intractable economic and financial crisis. Many leading economists regard growing inequality as one of the main causes of financial crashes: the International Monetary Fund has published evidence that inequality led to the huge debts behind the 2008 bank crisis; and Rajan (2010) argues that the growing income inequality was a key factor leading to the financial crisis and to the current economic downturn. It is no accident therefore that both major modern crises – the first beginning in 1929, the second in 2008 – coincided with historic levels of inequality. van Treeck and Sturn (2012) survey the evidence that income inequality is a cause of the recent Great Recession. In addition, Greenspan (2007), former Chairman of the US Federal Reserve, says that increasing inequality is bad for business while the UK Prime Minister, David Cameron (2009), notes that more unequal countries do worse according to every quality of life indicator. While income inequality matters in its own right, it is also key to reducing poverty.

Thus, the key objectives of the study are to: (a) analyze the patterns of inequality in the MENA region; and (b) investigate the effect of income inequality on key societal development, namely economic growth and poverty, in the region. Indeed, as Wilkinson and Pickett (2010) have noted, understanding the effects of inequality means that we have a policy handle on the wellbeing of whole societies.

The next section presents a brief review the literature while in Section III we present the econometric models. In Section IV we present some data and stylized facts on the overview of the patterns of inequality, growth and poverty in the MENA region. Section V presents and discusses the empirical results. Section VI concludes with some policy implications.

## 2. Brief Literature Review

On the relationship between income inequality and poverty, Cheema and Sial (2012), in the case of Pakistan for the period between 1992/93 and 2007/08, show that inequality plays significant roles in affecting poverty. Similar positive and significant effects have been found by Ali and Tahir (1999) and Saboor (2004) for Pakistan; Ravallion and Chen (1997), Adams (2004), and Ram (2007) in cross-country studies; Wodon (1999) for Bangladesh; Lombardo (2008) for Italy; Deolalikar (2002) for Thailand; Fosu (2009) for Sub-Saharan African (SSA) countries compared to non-SSA ones; Fosu (2010) for the major regions of the world and for a select global sample of 80 countries; and Anyanwu and Erhijakpor (2010) for a cross-section of African countries.

Small changes in income distribution can have a large effect on national income poverty headcount (White and Anderson, 2001). Also, changes in income distribution have even larger effects on measures of the depth and severity of poverty, as confirmed by evidence from Cote d'Ivoire and Bangladesh (Wodon, 1999).

Kakwani (2001) and Son (2007) show that the elasticity of inequality should always be positive since a decrease in inequality should decrease poverty. As argued by Ravallion (1997) and Son and Kakwani (2004), high initial inequality matters, since at a high level of inequality, poverty will be more insensitive to growth.

Deininger and Squire (1998) and Bruno *et al.* (1996), using cross-country studies, have argued that, on average, within country inequality is stable over time, or changes too slowly to make a significant difference in poverty reduction. However, country and regional studies such as those of Kanbur and Lustig (1999), have looked beyond the 'average' and refuted the initial cross-country evidence, arguing that large increases in income inequality in countries in Sub-Saharan Africa, Latin America, Eastern Europe and Central Asia over the 1990s, increased by between greatly exacerbating the effects of negative growth on poverty (Kanbur and Lustig, 1999).

The results of empirical studies on the effect of income inequality on economic growth have yielded remarkable disparities, resulting in three main positions. Among the first group of studies or the dominant view today, it is believed that inequality is not a final outcome of growth but plays a central role in determining the rate and pattern of growth (Bourguignon, 2004). Thus, according to the results of Galor and Zeira (1993), Perotti (1993), Persson and Tabellini (1994), Alesina and Rodrik (1994), Clarke (1995), Birdsall *et al.* (1995), Alesina and Perotti (1996), De la Croix and Doepke (2003), Josten (2003, 2004), Ahituv and Moav (2003), Viaene and Zilcha (2003), Castelló-Climent (2004), Knowles (2001, 2005), Davis (2007), and Pede *et al.* (2009), initial inequality seems to be empirically associated with lower growth rates.

As Bourguignon (2004a, b) has stated, several hypotheses could explain why progressive redistribution may be growth-enhancing. Three of those are presented here. The first is based on credit market imperfections. It opines that redistributing capital from capital-rich enterprises or individuals to capital-poor and credit constrained people increases efficiency, investment and growth. The second is a political economy argument based on redistribution in a democratic context. It is put forward that too much inequality in a redistributive democracy leads to more redistribution and less capital accumulation. The third relates to redistribution through social conflict: too much inequality

may lead to social tension expressed through collectively organized or individually-led violent redistribution. In addition, due to credit rationing, the poor often cannot afford the minimum initial investment in education or other investments, or cannot get insurance for their investments, even if they are profitable, since they lack collateral. Initial asset distribution has a negative effect on subsequent economic growth (see Naschold, 2002).

Among the second group, Kaldor (1956), Partridge (1997), Li and Zou (1998), Forbes (2000), and Nahum (2005) show that inequality does lead to growth. While finding a positive effect, Barro (2000), Banerjee and Duflo (2003), Pagano (2004), Voitchovsky (2005), Bengoa and Sanchez-Robles (2005), Barro (2008), and Castelló-Climent (2010) propose a sign changing nonlinear relationship.

However, Lee and Roemer (1998), Castelló and Domenech (2002) and Panizza (2002) find no correlation at all or find inconclusive evidence of any correlation between inequality and economic growth (see Charles-Coll, 2013).

### 3. Impact of Inequality: The Model and Data

As noted above, there are several reasons why policy makers are concerned with levels of high inequality, including that high inequality appears to lower growth and increase poverty. In this section we present some empirical evidence on the impact of income inequality on economic growth and poverty in the MENA region.

#### Economic Growth Equation

Based on the literature, we use the cross-country data to analyze the effect of income inequality on economic growth in the MENA region. The relationship that we want to estimate can be written as:

$$\log g_{it} = \alpha_i + \beta_1 \log(\text{ineq}_{it}) + \beta_2 \log(\text{irgdppc}_{it}) + \beta_3 \log(g_{it-1}) + \beta_4 \log(X_{it}) + \varepsilon_{it}$$

$(i = 1, \dots, N; t = 1, \dots, T), \dots \dots \dots (1)$

where  $g$  is the measure of real per capita GDP growth rate in country  $i$  at time  $t$ ;  $\alpha_i$  is a fixed effect reflecting time differences between countries;  $\beta_1$  is the elasticity of growth with respect to income inequality ( $\text{ineq}$ );  $\beta_2$  is the elasticity of growth with respect to initial real GDP per capita ( $\text{irgdppc}$ );  $\beta_3$  is the elasticity of growth with respect to persistence;  $X$  represents other control variables, including domestic investment rate, urban population ratio, exchange rate index with respect to the US Dollar, government consumption expenditure to GDP ratio, infrastructure proxy (telephone per 1000 population, inflation rate, level of education (gross primary school enrolment rate), and mineral rents to GDP ratio (a measure of natural resources endowment). We also include a time trend variable.

#### The Poverty Equation

Using the basic growth–poverty model suggested by Ravallion (1997; 2008) and Ravallion and Chen (1997) as well as the frameworks posited by Dollar and Kraay (2002), Ghura, Leite and Tsangarides (2002), Berg and Krueger (2003) and empirical works of Agénor (2004, 2005), Islam (2004), and Anyanwu and Erhijakpor (2009; 2010) the relationship that we want to estimate can be written as:

$$\log Pov_{it} = \alpha_i + \beta_1 \log(ineq_{it}) + \beta_2 \log(y_{it}) + \beta_3 \log(X_{it}) + \varepsilon_{it}$$

$(i = 1, \dots, N; t = 1, \dots, T), \dots \dots \dots (1)$

where Pov is the measure of poverty in country i at time t;  $\alpha_i$  is a fixed effect reflecting time differences between countries;  $\beta_1$  is the elasticity of poverty with respect to income inequality given by the Gini coefficient, g;  $\beta_2$  is the “growth elasticity of poverty” with respect to real per capita GDP given by y; X is the control variables, including inflation rate, trade openness (measured as the ratio between exports + imports as percentage of GDP), primary school gross enrolment ratio, domestic investment rate, FDI as a percentage of GDP, exchange rate index with respect to the US Dollar, population growth rate, real GDP growth rate, oil rents as percentage of GDP; and  $\varepsilon$  is an error term that includes errors in the poverty measure.

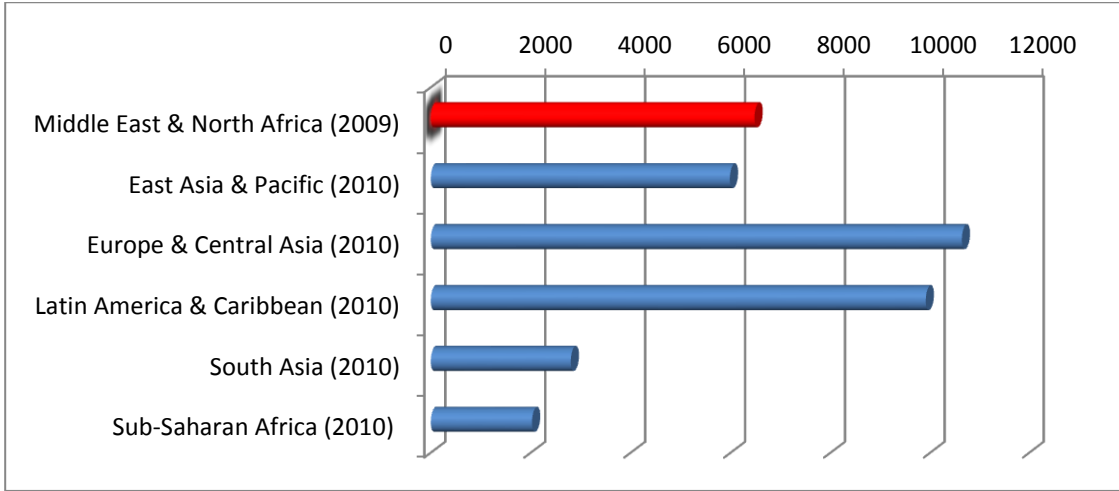
The dependent variable in Equation (1), which is poverty, is the headcount index of international poverty line at US\$1.25 per day. The headcount measure is considerably the most commonly calculated and used poverty measure. The measure of income inequality is the Gini coefficient. The Gini coefficient is the ratio of the area between the Lorenz curve and the diagonal (the line of perfect equality) to the area below the diagonal. As a measure of income inequality, the Gini coefficient ranges from 0 to 1. The larger the coefficient is, the greater the degree of inequality. Thus, the Gini coefficient limits 0 for perfect equality and 1 for perfect inequality. The model assumes that the level of income inequality affects poverty reduction. Since past work has shown that a given rate of economic growth reduces poverty more in low-inequality countries, as opposed to high-inequality countries, the income inequality variable is expected to be positive and significant. Our estimations are done with pooled OLS while the data sets are drawn from the World Bank’s WDI Online database.

**4. Data Issues - Inequality, Growth and Poverty Patterns in the Middle East and North Africa (MENA) Region**

**4.1. Income Inequality**

As Figure 1 shows, MENA’s average real GDP per capita is not low by international standards, averaging US\$6,478 in 2009 against just US\$2,025 for Sub-Saharan Africa.

**Figure 1: GDP per Capita, PPP (Constant 2005 International US\$) by Region**

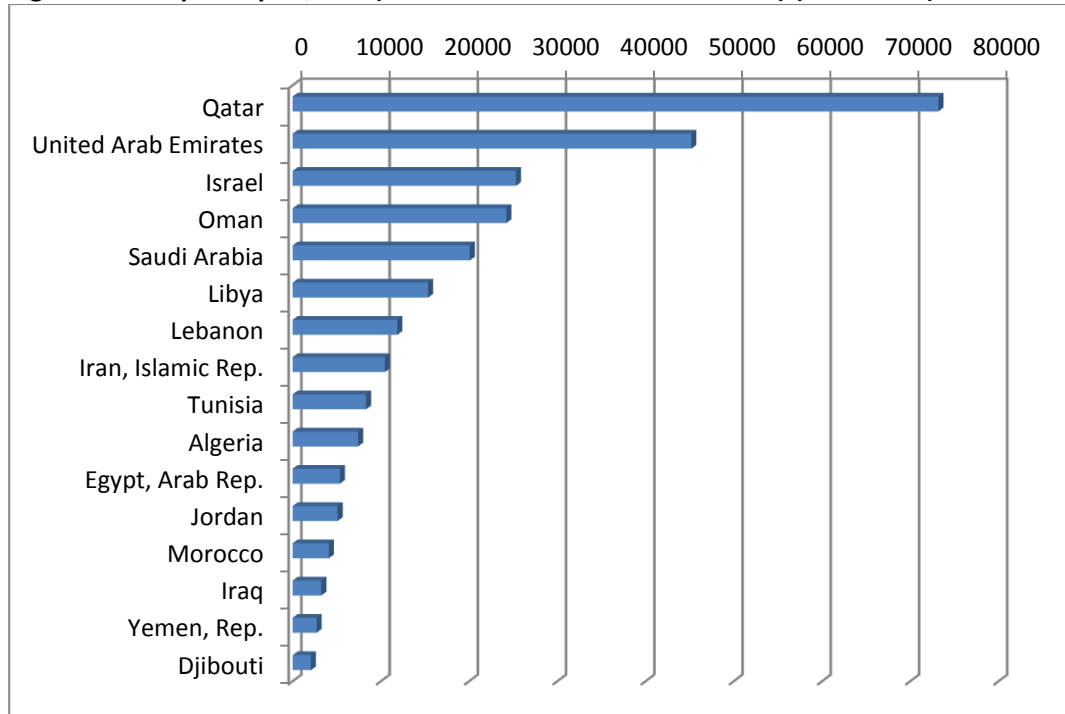


Source: Authors, using World Bank (2012) Data.



However, natural resource and demographic endowments as well as the rising middle class in the Gulf Cooperation Council (GCC) countries have largely shaped the huge differences in real per capita GDP among MENA countries (Figure 2).

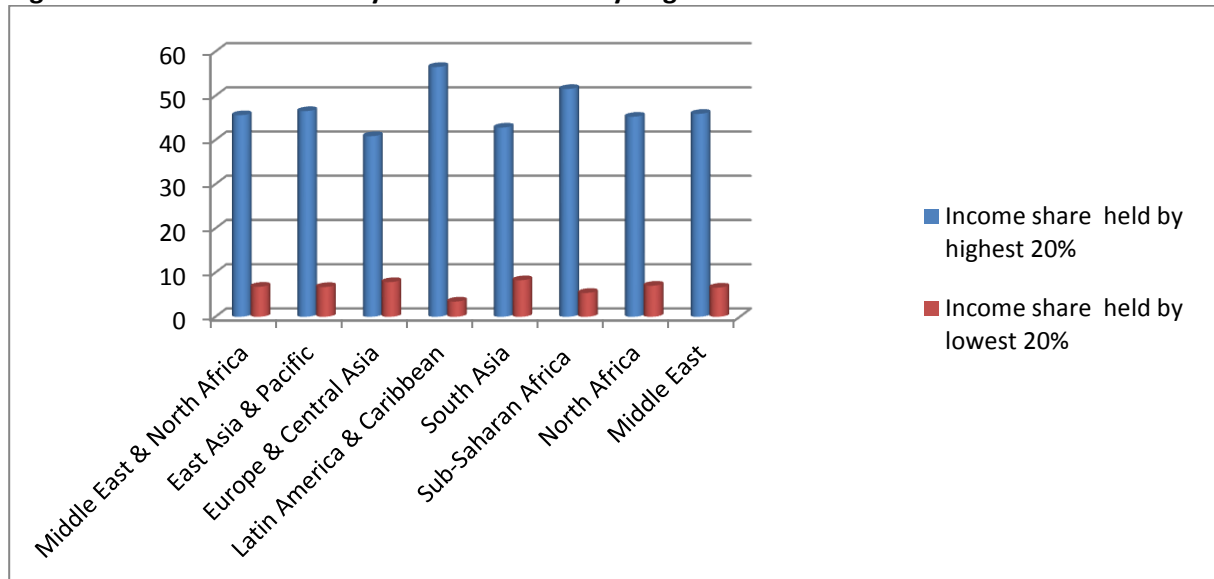
**Figure 2: GDP per Capita, PPP (Constant 2005 International US\$) (2009 Data)**



Source: Authors, using World Bank (2012) Data.

Unfortunately, income share held by the poorest 20% in the MENA region is negligible at 6.8% (Figure 3).

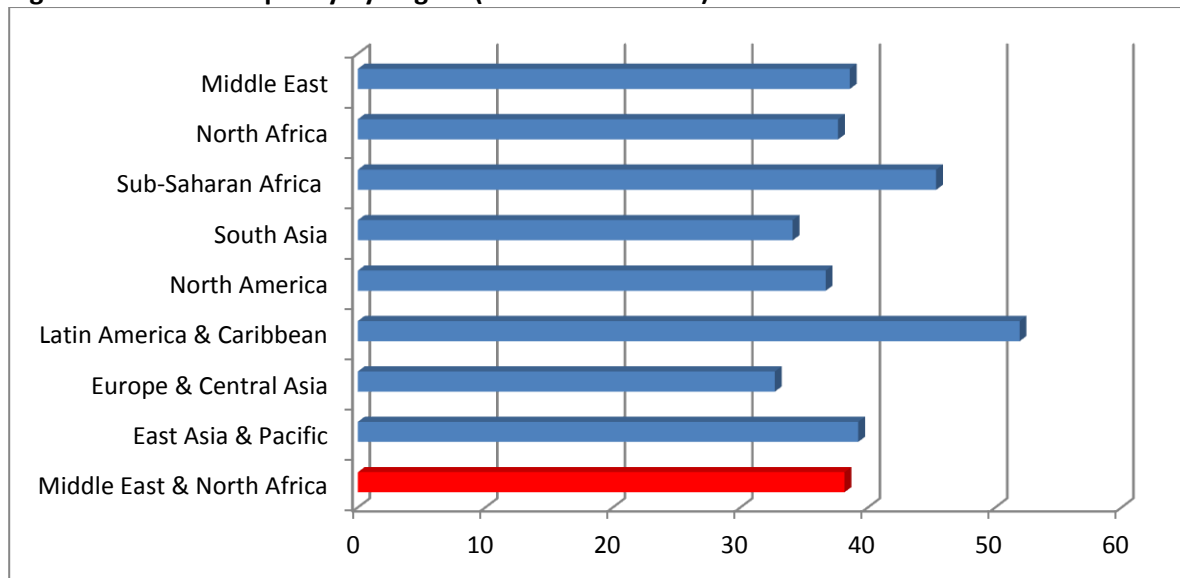
**Figure 3: Income Share held by the Poorest 20% by Region**



Source: Authors, using World Bank (2012) Data.

Most recent data show that though MENA has relatively high income inequality (38.2%), it is still slightly better than East Asia and the Pacific (39.2%) and much better than SSA (45.4%) and Latin America and the Caribbean (51.9%) (Figure 4).

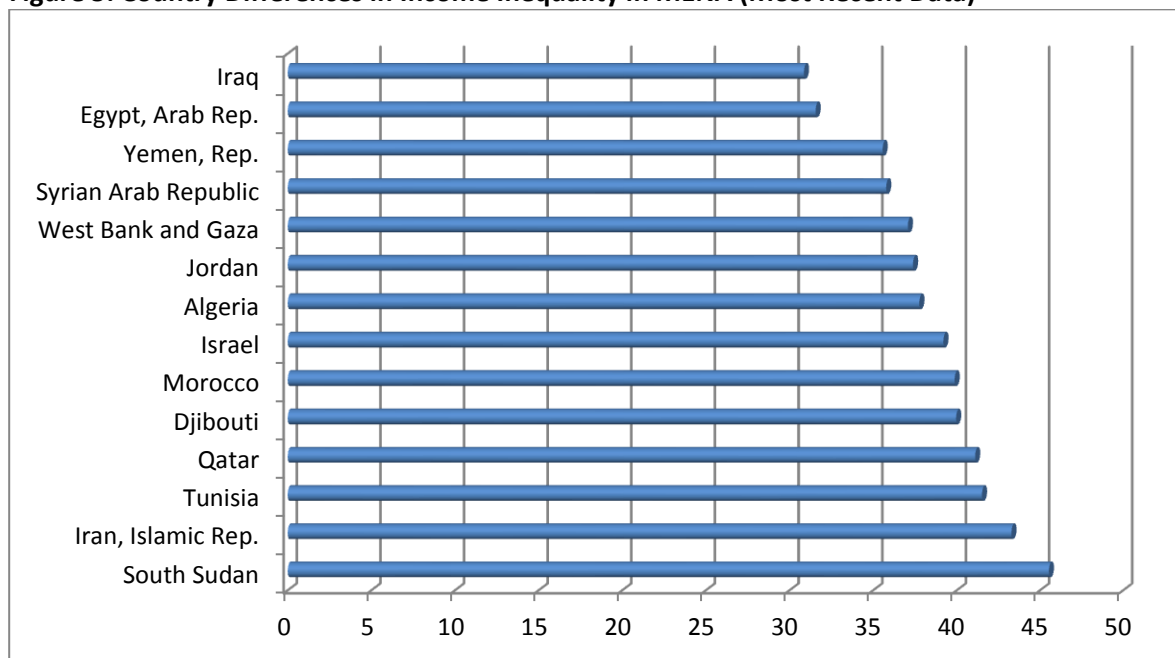
**Figure 4: Income Inequality by Region (Most Recent Data)**



Source: Authors, using World Bank (2012) Data.

However, the MENA average masks significant country variations in the region. For example, available data (Figure 5) show that South Sudan, Iran, Tunisia, Qatar, Djibouti and Morocco are the top-5 least egalitarian countries in the region.

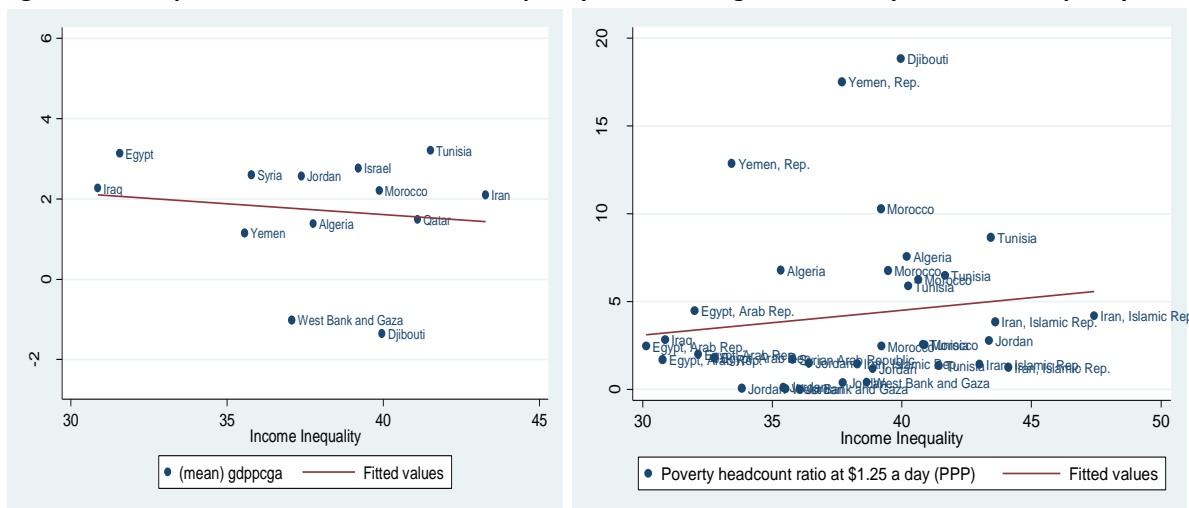
**Figure 5: Country Differences in Income Inequality in MENA (Most Recent Data)**



Source: Authors, using World Bank (2012) Data.

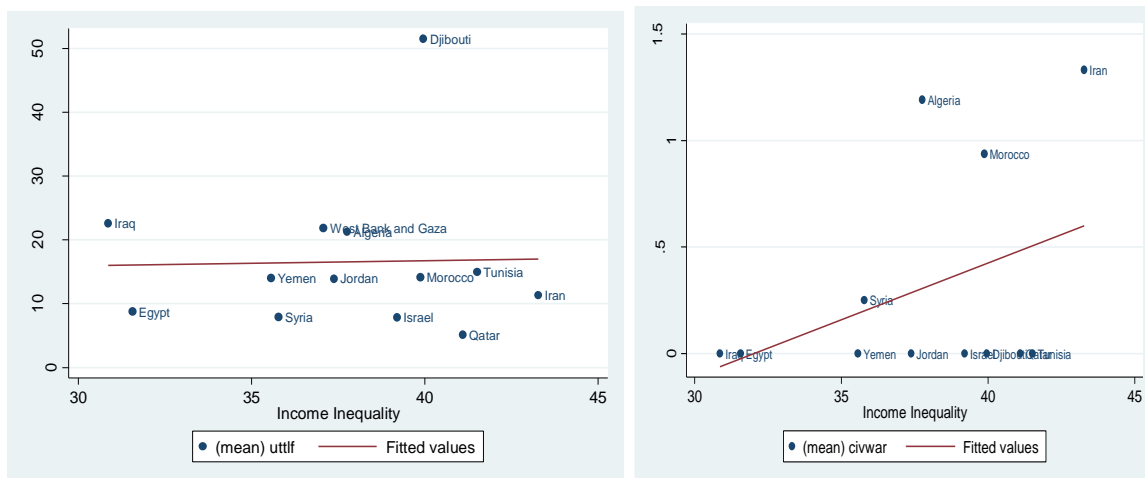
Therefore, tackling the problem of income inequality is important because inequality negatively affects progress toward the Millennium Development Goals (MDGs) and poverty reduction generally; it results in inefficient resource allocation, wasted productive potential, high dependency ratio, and impaired institutional development. In particular, inequality retards development generally: slowing economic growth (Figure 6); resulting in health and social problems, including worsened education outcomes; exacerbating poverty (Figure 7) and unemployment (Figure 8); leading to severer social inequalities, especially among children; and generating social and political instability and conflicts (Figure 9) as exemplified by the “Arab revolution” (see also Ortiz and Cummins, 2011; Marshall and Cole, 2011).

**Figure 6: Per Capita GDP Growth & Income Inequality in MENA; Figure 7: Poverty & Income Inequality in MENA**



Source: Authors, using World Bank (2012) Data.

**Figure 8: Unemployment Rate & Income Inequality in MENA; Figure 9: Civil Warfare and Income Inequality in MENA**



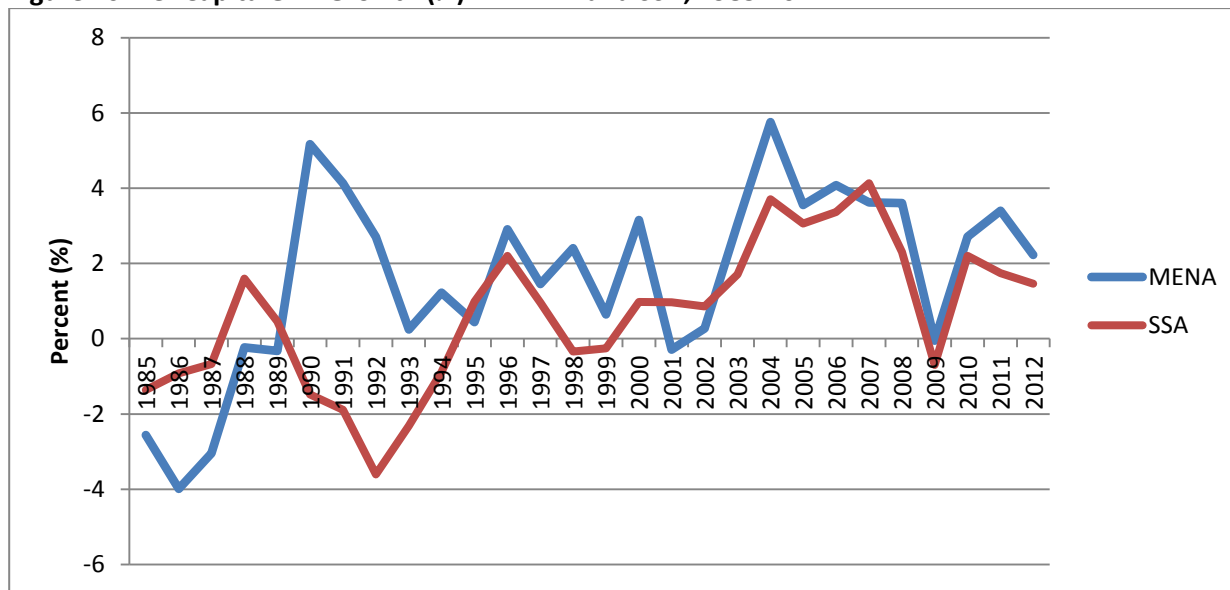
Source: Authors, using World Bank (2012) Data.

## 4.2. Economic Growth

As Figure 10 shows, per capita GDP growth in the MENA region trumps that in Sub-Saharan Africa (SSA). Average MENA per capita GDP growth between 1995 and 2012 stood at 1.65% against 0.65%

for SSA countries. However, MENA's performance pales in significance when compared with 4.1% in South Asia and 3.1% in East Asia and the Pacific during the same period. Nevertheless, it was slightly higher than 1.6% in Europe and Central Asia as well as 1.4% in Latin America and the Caribbean also during the same period.

**Figure 10: Per Capita GDP Growth (%) in MENA and SSA, 1985-2012**

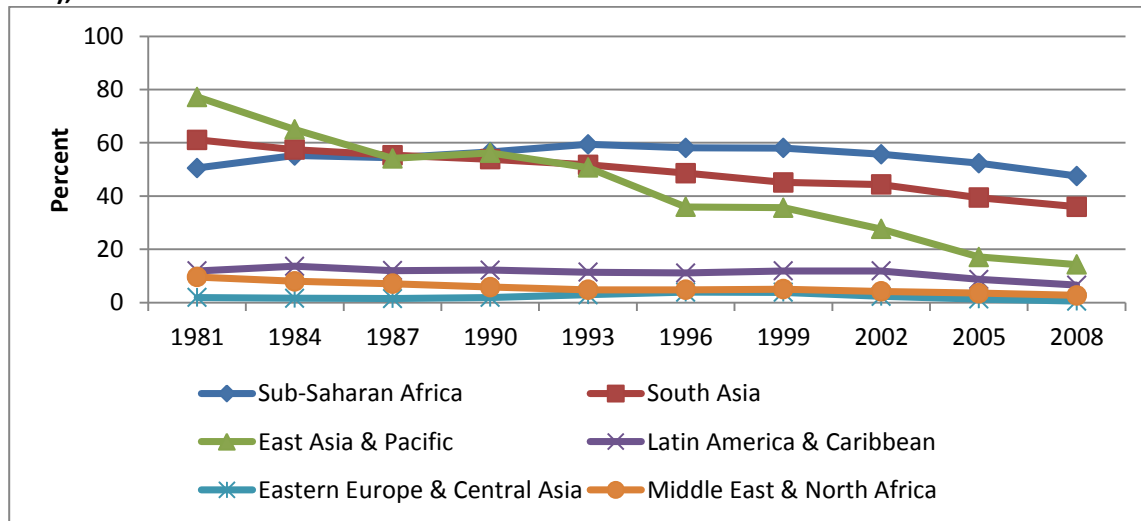


Source: Authors, using World Bank (2013) Data.

### 4.3. Income Poverty

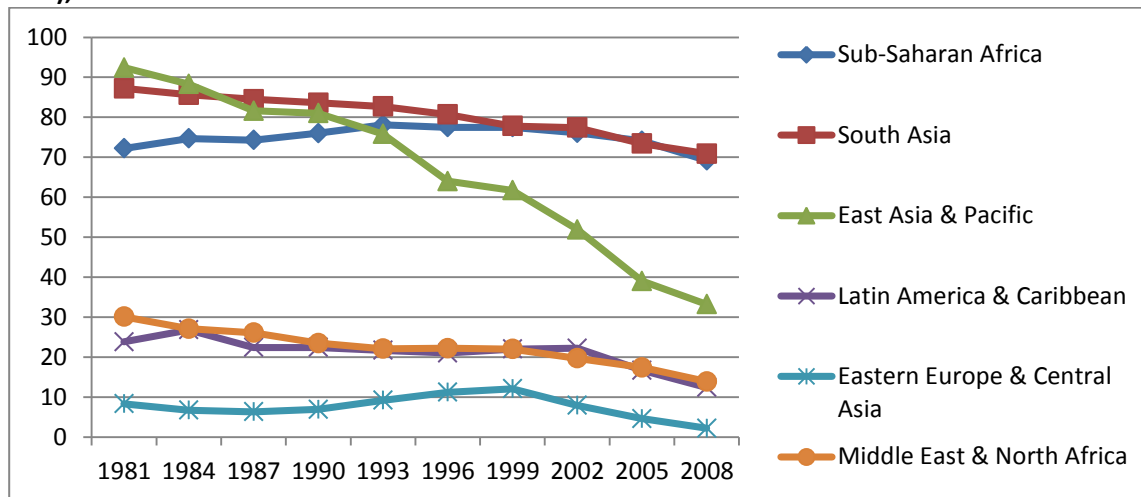
Income poverty in the MENA region is among the lowest in the world: it is low (and declining) compared to other regions of the world (Figure 11). For example, in 2008, the headcount index for international poverty line of US\$1.25 a day (2005 PPP) in MENA was just 2.7% as against 47.5% in Sub-Saharan Africa (SSA). At the US\$2.00 a day international poverty line, MENA's figures stood at 13.9% against 69.2% in SSA (Figure 12).

**Figure 11: Regional Breakdown of Headcount Index for International Poverty Lines of US\$1.25 a day (2005 PPP), 1981-2008**



Source: Authors, using World Bank (2012) Data

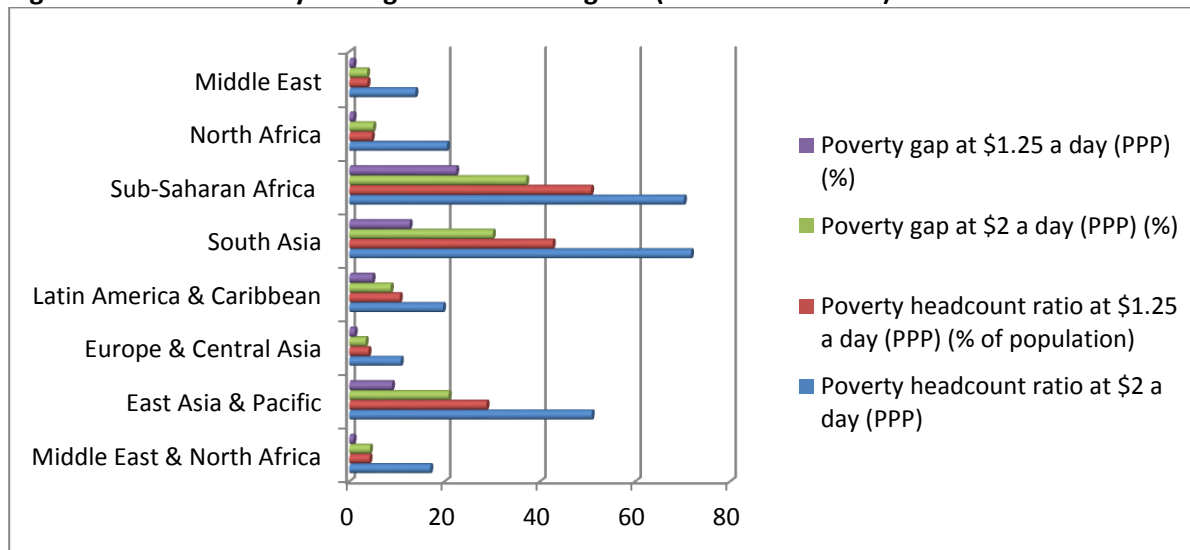
**Figures 12: Regional Breakdown of Headcount Index for International Poverty Lines of US\$2.00 a day (2005 PPP), 1981-2008**



Source: Authors, using World Bank (2012) Data.

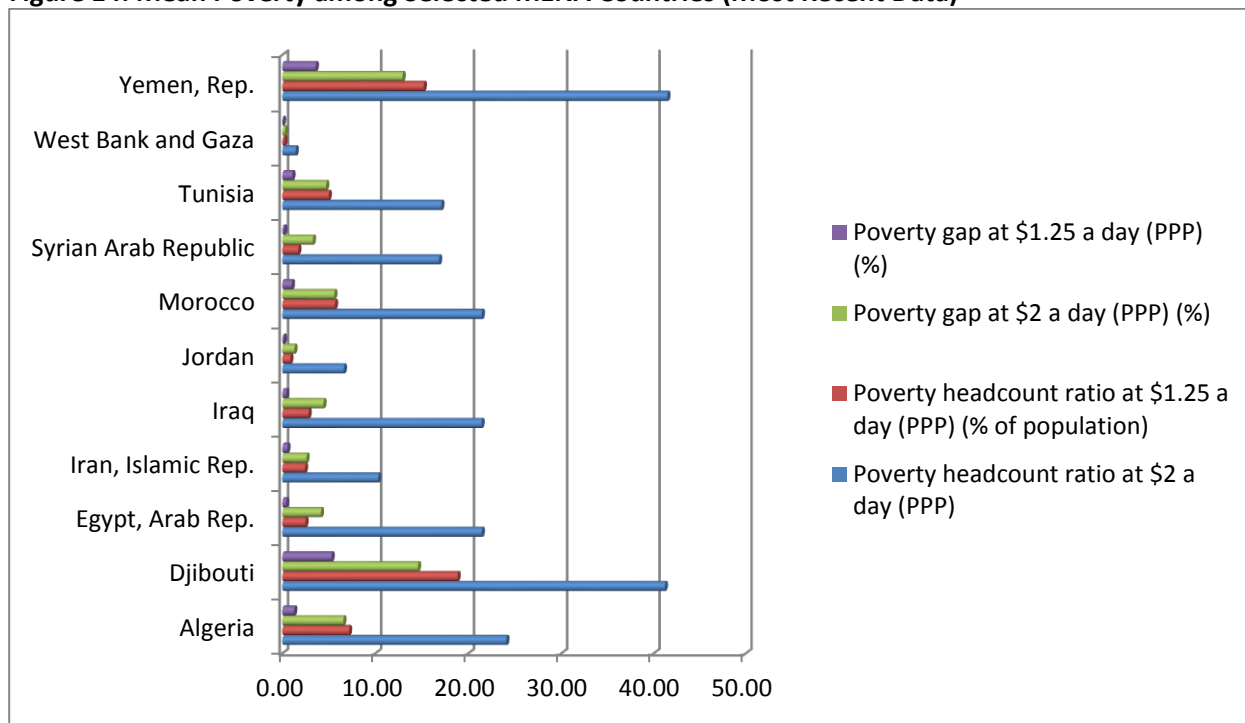
On average basis, income poverty in the MENA region is also relatively low compared to other regions of the world (Figure 13). However, significant differences exist among countries. For example, as Figure 14 shows, Yemen and Djibouti hold the unviable record of the highest income poverty in the MENA region.

**Figure 13: Mean Poverty among the World's Regions (Most Recent Data)**



Source: Authors, using World Bank (2012) Data.

**Figure 14: Mean Poverty among Selected MENA Countries (Most Recent Data)**



Source: Authors, using World Bank (2012) Data.

## 5. Estimation Results

### 5.1. Income Inequality and Economic Growth

Using a cross-sectional data of MENA countries for the period 1985-2009, as shown in Table 1, income inequality levels indeed significantly reduce economic growth. We find that a one percentage change in income inequality would translate into 0.57% reduction in economic growth. A negative and significant coefficient for the Gini index for economic growth indicates that greater inequality is associated with lower economic growth in the MENA region. Thus, income inequality is very bad for the goal of attaining higher and sustained economic growth in the MENA region.

We have included other variables as control variables. Other factors having significant negative effect on economic growth in the MENA region include previous growth rate, exchange rate, government consumption expenditure or government burden, initial per capita GDP, inflation, and primary education.

While the dependent variable shows negative persistence, exchange rate depreciations led to a decline in economic growth. Our results also show that government consumption expenditures negatively and significantly affect economic growth in these countries. Crowding out of resources for productive investment and acceleration of economic growth are therefore at play here. Initial per capita income is also good for increased economic growth in the region since initial real per capita income has a positive and significant coefficient. Another important dimension of our results relates to the negative and significant effect of inflation on economic growth in the MENA countries, presenting high level of uncertainty and general economic stability. Primary education is negatively

and significantly related to economic growth in the region. This means that primary education alone is insufficient to accelerate economic growth in the MENA region.

**Table 1: The Effect of Income Inequality on Economic Growth (Per capita GDP growth rate) in MENA region (1985-2009)**

Variable	Coefficient
Persistence (Lag dependent)	-0.563 (-3.71**)
Income inequality	-0.568 (-3.91***)
Trend	0.005 (2.33**)
Domestic investment-GDP	0.614 (5.96***)
Urban population ratio	0.327 (4.47***)
Exchange rate to US Dollar	-0.001 (-2.88**)
Government consumption-GDP	-0.823 (-3.96***)
Log of real per capita GDP	-5.172(-3.68**)
Infrastructure (telephone per 1000 population	0.268 (2.22**)
Inflation	-0.218 (-2.76**)
Gross primary school enrolment ratio	-0.082 (-2.20**)
Mineral Rents-GDP	0.614 (1.73*)
Constant	49.237 (4.98***)
R-Squared	0.8562
Adjusted R-Squared	0.7484
F-Statistic	7.94
Prob>0	0.0001
N	29

Note: t-values are in parentheses; \*\*\*= 1% significant level; \*\*=5% significant level; \*=10% significant level.

Source: Authors' Estimations.

On the other hand, variables positively and significantly associated with MENA's economic growth are domestic investment rate, urbanization, infrastructure development, and mineral rent as a percentage of GDP.

The trend growth is upwards. Our results show that higher domestic investment is significantly correlated with higher economic growth in the MENA region. This is because the higher the value of investment rate, the more resources a government ostensibly has at its disposal to spend on economic and social programs, including investments for employment creation, which through the multiplier effect increase national income and its growth.

Our results also indicate that increase in urban population share causes increase in the level of economic growth in the region. In this sense, urban population in the MENA region is a demographic gift but this cannot be said of the rural counterpart. Indeed, living in an urban area is associated with an increase in access to labor markets and formal employment opportunities and hence higher incomes. This is because urban labor markets offer a wide variety of occupations, from manufacturing and services to clerical activities.

Our results indicate that this ICT infrastructure has positive and statistically significant effect on economic growth in MENA countries. It has been shown that new and emerging technologies, when accessible, can help to people, by opening new economic opportunities, breaking down information barriers, enabling people to take collective action, and helping those in isolated communities engage in commerce and generate higher incomes (see Anyanwu, 2013a).

Our results also show that a country's dependence on mineral rents is robustly associated with higher economic growth in the MENA region. In other words, a higher share of mineral rents in GDP leads to significantly higher levels of economic growth in MENA countries.

## 5.2. Income Inequality and Poverty

Our results indicate that income inequality levels indeed significantly increase poverty (Table 2). We find that a one percentage change in income inequality would translate into 0.78% increase in poverty levels. Thus, income inequality is very bad for the poor in the MENA region.

**Table 2: The Effect of Income Inequality on Poverty**

Variable	Coefficient
Income inequality	0.777 (4.62***)
Foreign direct investment-GDP	0.298 (2.91**)
Domestic investment-GDP	-0.339 (-2.08*)
Openness	-.0108 (-3.89**)
Exchange rate to US Dollar	-0.011 (5.39***)
Population growth rate	1.439 (2.69**)
Log of real per capita GDP	-9.837 (-4.11**)
GDP growth rate	-0.189 (-1.57)
Inflation	0.529 (4.21**)
Gross primary school enrolment ratio	0.225 (3.43**)
Oil rent-GDP	-0.447 (-3.26**)
Constant	37.023 (2.49**)
R-Squared	0.8914
Adjusted R-Squared	0.7718
F-Statistic	7.46
Prob>0	0.0018
N	22

Note: t-values are in parentheses; \*\*\*= 1% significant level; \*\*=5% significant level; \*=10% significant level.

Source: Authors' Estimations.

In addition to income inequality, other factors fueling poverty in the MENA region are foreign direct investment, population growth, inflation rate, and the attainment of only primary education. Foreign direct investment as a percentage of GDP is negatively and significantly related to poverty in the MENA region. This supports the proposition that the inflow of foreign direct investment enhances economic growth through the provision of foreign exchange and foreign capital investment as well as local employment creation.

Our results suggest that rising population growth rates have strong, positive and statistically significant effect on poverty in the MENA region. Thus, while urban share of the population is growth-promoting, the overall population growth feeds poverty, indicating that MENA population growth and structure cannot be described as a pure demographic gift. MENA, like Africa, has been unique demographically because fertility rates have remained relatively high, even as significant progress has been made in decreasing the mortality rates. This has led to a continuing population explosion and has contributed to socio-economic problems in a number of countries, given the huge youth bulge. This means that MENA is still a long way to reaping the demographic dividend since the magnitude of the dividend depends on the ability of the economy to absorb and productively employ the extra workers, especially the burgeoning youth size. Indeed, without the unlikely quick development of



large labor-absorbing industries, the fast-growing youth population in MENA will not only worsen poverty but may also escalate conflicts (especially over natural resources), environmental degradation, diseases, food insecurity, and of course, political instability as the recent experience in North African and Middle Eastern countries since the Arab Spring has shown.

As in the case of economic growth, our empirical estimations show the hugely positive and significant effect of inflation on poverty in the MENA region, again presenting high level of uncertainty. Also, the attainment of primary education alone is positively and significantly related to poverty headcount in the MENA countries. A number of related studies have shown that secondary level education may serve as a threshold level for education to reduce poverty (see for example, Anyanwu, 2013b). Also Tilak (2007) argues that secondary and higher education are more relevant for poverty reduction than primary education as they strengthen and build upon knowledge begun in the primary levels, provide essential skills for the labor market, and have greater potential to bring people higher above the poverty line (with less danger of falling back into poverty). They also reflect higher wage premiums for the employed. Thus, for most MENA countries, education beyond primary level is good for economic growth and poverty reduction but this has to be based on the acquisition of relevant and world of work skills through technical and vocational educational and training (TVET) so as to avoid an “army” of unemployed graduates.

Poverty-reducing variables in the sub-region include domestic investment, trade openness, exchange rate, income per capita, and oil rents as a percentage of GDP. Higher domestic investment is significantly correlated with lower poverty in the MENA region. Indeed, as noted earlier, the higher the value of investment rate, the more resources a government and the private sector ostensibly have at their disposal to spend on economic and social programs, including investments for employment creation, all of which are poverty-reducing. There is a negative and significant effect of trade openness on poverty in the MENA countries. This indicates that the recent trade liberalization efforts in the region have benefitted poverty and the poor. Exchange rate depreciations lead to a decline in poverty, ostensibly due to higher exports. The level of economic development represented by per capita GDP is good for poverty reduction in the MENA countries. In our results, per capita income has a negative and significant coefficient. This indicates that any inclusive growth strategy in the region has to be one that ensures that countries “climb the ladder” of economic development. We also find that that oil rent as a percentage of GDP price has negative and significant effect on poverty headcount in the MENA countries. Our results therefore show that the huge oil exports and derived revenues by the MENA countries have been beneficial to the poor in that region.

## **6. Conclusion and Policy Implications**

The key objectives of the study have been to analyze the patterns of inequality in the MENA region and to investigate the effect of income inequality on key societal development, namely economic growth and poverty, in the region. Among other factors, our empirical results show that income inequality reduces economic growth and increases poverty in the region. These findings point to some key policy recommendations for higher economic growth and poverty reduction growth in the MENA region.

First, given the finding that inequality fuels poverty in African countries, policy makers need to tackle this challenge head-on. The literature has identified a number of possible policy instruments to deal

with inequality, including, conditional cash transfers, guaranteed employment schemes, labour market training, greater access to health, nutrition and education through increased social investments, affirmative action, and land and property rights reforms, especially to benefit rural dwellers (particularly women). Evidence has shown that conditional cash transfers and expenditures (for education, for example given our results that education is important in reducing poverty) are effective safety nets and levers of poverty reduction and redistribution (see Levy, 2006; Kanbur, 2008; Anyanwu and Erhijakpor, 2010). Using community-based approaches, some important development successes have been achieved under conditional cash transfers, including those that dealt with nutrition in Tamil Nadu, total sanitation in parts of Bangladesh and Indonesia, oral re-hydration in Bangladesh and Egypt, and the reduction of the burden of several neglected tropical diseases in sub-Saharan Africa. Successes occur when conditional cash transfers achieve the best outcome, at the lowest cost and in a sustainable manner (Skolnik, 2011). Indeed, recently, Rosenberg (2011a, b) had extensively discussed success stories in using cash transfers to reduce poverty in Brazil and Mexico. Improving access to education will reduce poverty both by increasing individual productivity and by facilitating the movement of poor people from low-paying jobs in agriculture to higher-paying jobs in industry and services. More importantly, public spending on education, when targeted toward the poor, can produce a double dividend, reducing poverty in the short run and increasing the chances for poor children to access formal jobs and thus break free from the intergenerational poverty trap. Increasing educational levels (and its quality) should be accompanied by a strong investment climate to ensure that productive jobs are created for the newly educated. Another recent successful example has come from Africa: Miller (2011) has shown that cash transfers in Malawi benefited both the recipients, non-recipients and local businesses given that the transfers strengthened local markets by providing a steady source of customers and cash.

Second, given our finding that domestic investment increases economic growth and reduces poverty in the MENA region, achieving higher domestic investment must remain an active goal of governments. A key challenge, therefore, for MENA countries is to mobilize increased resources for such high domestic investment. Successful promotion of investment will require actions and measures at the national and regional levels: First, at the national level, apart from continuing to deepen the reforms (macroeconomic and institutional) that they have embarked on in the last decade, MENA countries need to increase efforts at the mobilization of higher domestic savings, including through the implementation of tax reforms, cost sharing in the provision of public goods and services and enhancing public expenditure productivity. Tax reforms should focus on broadening the tax base, emphasizing indirect taxes/value added tax (VAT) (and hence keeping marginal and average income tax rates low), raising tax elasticity with respect to economic growth, reducing exemptions, simplifying and improving tax administration, especially developing more efficient and effective tax collection systems. Further efforts should also be made to improve the efficiency and effectiveness of public institutions, if these are to serve as genuine partners for the private sector. Sustainable domestic investment also needs increased human capital investment to enhance the health and welfare of populations and generate the skills required in a competitive global environment.

Third, MENA countries must increase their national incomes. To increase per capita income, these countries must deepen macroeconomic and structural reforms to increase their competitiveness, create increasing and more quality jobs and hence increase participation in economic activity, dismantle existing structural bottlenecks to private and public investment, scale-up investments in hard and soft infrastructure, check rapid population growth, and increase productivity, especially in

agriculture, through creating incentives and opportunities for the private sector and increasing government support to small farm holders in terms of finance, formalization of land ownership, and technical advice.

Fourth, given our finding that government consumption expenditure reduces economic growth, achieving government expenditure effectiveness must remain an active goal of governments in the MENA region. Adoption of high level best practice principles to inform the development of these processes will help MENA governments achieve this. Those broad principles should include the following key elements: a nationally coordinated approach to the development of significant strategic projects and programs; the promotion of competitive markets; decision-making based on rigorous cost-benefit analysis to ensure the highest economic and social benefits to the nations over the long term; a commitment to transparency at all stages of the decision-making and project implementation processes; and a public sector financial management regime with clear accountabilities and responsibilities. At the same time, efforts to reform the fiscal system for consolidation by both the executive and legislative arms of government are imperative to reduce government consumption expenditure to avoid wastes, corruption and crowding out resources for public sector investment and employment creation.

Fifth, Central banks should continue with tight monetary policies through aggressive policy rates cuts, supported by prudent fiscal management to ensure that the macroeconomic environment remains conducive to continuing growth and poverty reduction. Countries where inflation remains very high should embark on measures to tackle the huge binding structural constraints that affect efficient performance of markets. This will help to improve resource allocation and reduce costs and vulnerability. Such measures should include upgrading infrastructure facilities, including ports, to reduce on inefficiency and smooth the flow of goods and services within countries and across sub-regions.

Sixth, trade openness has significant effect in reducing poverty in Africa. Apart from adopting the value-chain approach to add value to their products, especially oil, there is a need for investment of all kinds of physical, human, social and institutional capital, and innovation and technological progress adapted to the conditions of the countries as engines of growth, with trade fuelling that engine. In addition, there is need for the promotion of developmental linkages or complementarities between growing export activities and the rest of the economy.

Seventh, given that poverty increases with the growth rate in population in MENA countries, there is urgent need to intensify family planning services efforts and activities in these countries so as to improve knowledge, acceptance and practice (KAP) of family planning. This will involve not only increased financial outlay but also research on fertility determinants as well as decentralized planning, delivery and supervision of family planning services.

Eight, this study suggests that, holding other factors constant, increasing levels of levels of FDI are associated with increasing levels of poverty in the MENA region. Thus, to promote poverty reduction, MENA countries should regulate the inflow of foreign capital to ensure labor-intensive industries are not displaced by globalization. Further, to protect against threats to individual basic rights, the government should mandate that MNCs adhere to core labor standards, as provided by the International Labor Organization (ILO). Since labor-intensive employment represents a viable channel

through which the poor are able to realize gains in real wages and social capital, the protection of these industries should be a policy priority for MENA countries.

Ninth, in this study, we have found that infrastructure is critical in promoting economic growth in the MENA region hence the need for intensified productive infrastructure development. Workers are all levels, for example, often face stark time trade-offs between school, household chores and market work, particularly in rural areas. Therefore, programs targeted at reducing the people's time on chores—for example, while maximizing school and work time through investment in infrastructure—are likely to increase their ability to engage in market-based income-earning opportunities and reduce poverty even further.

Tenth, our results show that while primary education alone is insufficient to increase economic growth, it is poverty-reducing. Thus, for those with low education (such as just primary education), policies that promote the up-skilling, better training and education for the low-skilled workforce are imperative. Both the up-skilling, labor market training, educational reforms that conform to industry needs will also help address the skills mismatches existing in many MENA countries. MENA governments also need to dialogue with large employers in creating employment for the youth through strategic skills planning, skills development, and skills matching. Labor market observatories that are based on labor market information systems are also needed to predict the needs of private sector employers, thereby strategically ensuring that the youth choose the relevant form of education and training for the world of work. Addressing the skills mismatch in the short-run will require improved training programs and closer links between tertiary and vocational educational institutions on the one hand, and the private sector on the other. Training programs should include on-the-job initiatives targeting those already working, as well as graduates with a general education who lack specific work skills. In addition, governments need to develop innovative public-private partnerships and the opportunities for collaboration among large employers, governments and other relevant stakeholders such as higher and vocational educational institutions to transform institutional structures and strengthen the region's economy (Ncube and Anyanwu, 2012).

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