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"Growth, inequality and poverty alleviation policies in the MENA region"

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Growth, Inequality and Poverty Alleviation Policies in the MENA Region

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Introduction

Putting the combat against poverty as the main objective of the development process has raised the issue of the linkage between economic growth, inequality and poverty. Many research in the last few years dealt with the link between economic growth, income disparity and pro-poorness of growth, with a rising attention to policy reforms that can change the distribution of income in different countries.

The importance of policies oriented to improve social justice and poverty alleviation has become evident. Poverty reduction has become a fundamental objective of development, and therefore crucial for measuring the effectiveness of various interventions.

During the last decade, a lot of work was done on the pro poorness of growth in different regions of the world but it has seldom looked at both the nature and rate of growth in the Middle East and North Africa (MENA) region.

1. Aim of the paper, data and methods

The present contribution aims at presenting first results of a project¹ on “Poverty reduction, growth and inequality in the MENA Region”.

The target of the project is:

- a) to analyze trends and current situation in the spread of disparities among countries and across population groups;
- b) to measure the pro-poorness of growth in 5 countries in the MENA region: Algeria, The Arab Republic of Egypt, Morocco, Syria and Tunisia using primary data from household surveys; and,
- c) to extend the current research on the pro-poorness of growth in the 5 countries by looking at the poor as a non homogeneous group in order to capture within group changes in well being.

This paper includes:

1- A preliminary analysis of the links between growth, inequality and poverty in the MENA region and in the five countries to build a profile of poverty and inequality for each country and to compare the conditions of the poor relying on international evidence. The dynamics in inequality by country can allow us to identify sub groups - or regions of the countries - that show evidence of poverty rates above the average for the country. However, both the poor and the dimensions of poverty are not automatically homogeneous between countries. The conditions for

¹ We thank the Haut Commissariat au Plan for providing us with the data for Morocco. This research has benefited from the financial contribution of ERF as part of the ERF-GDN Regional Research Competition. The content of this publication is the sole responsibility of the authors and can in no way be taken to reflect the views of ERF or GDN.

pro-poor growth are closely tied to reducing the disparities in access to human and physical capital, and then we consider also non-income measures of poverty.

2- First empirical findings on pro-poorness and poverty profile estimated using primary data from Household Surveys carried out in the 5 countries.

Data

We will use descriptive data as well as econometric specifications. Demographic and health behaviors will be considered in association with socio-economic variables. Sources of data are census, Demographic and Health Surveys, Labor Force Survey, legislation... We will also use a number of household surveys for each country.

The availability of three or four household surveys for each country, and the fact that the surveys were conducted at dates that are not too far from the other - between 1985 and 2008 - suggest that it is worthwhile to conduct analysis in this direction. As suggested by many researchers (for example Ravallion, 2001), the results until now reached in the literature reveal the need for deeper micro empirical research on the link between growth and distributional change.

Such approach could facilitate both the identification of specific strategies to harmonize growth oriented policies, and the evaluation of the diversity of impacts on different social sub-groups.

For this project, we have already surveyed the main contributions to the literature linked to the issue of pro-poorness (Bibi, 2008). This survey also offers partial dominance tests of pro-poorness using grouped data from Algeria (1988 and 1995), Egypt (1990, 1995, 1999, and 2004), Jordan (1992, 1997, 2002, and 2006), Mauritania (1995 and 2000), Morocco (1985, 1991, 1998, 1999, 2001 and 2007), Tunisia (1990, 1995, and 2000), and Yemen (1992, 1998, and 2005).

We will also use the household surveys when available. One interesting feature is that the surveys were conducted at dates that were close in time. In the 1980's it was between 1985 and 1988, in the early 1990's between 1990 and 1992, in the mid 1990's between 1995 and 1997 and in the late 1990's between 1998 and 2002.

For Algeria, three survey years are conducted in 1988, 1995 and 2000. For the Arab Republic of Egypt, the survey years are 1990-91, 1995-96, 1999-2000 and 2008. For Morocco the survey years are 1984-85, 1990-91, 1998-99, 2000-01 and 2006-07. For Tunisia the survey years are 1980, 1985, 1990, 1995, 2000, and 2005. For Syria, the survey years are 1997 and 2004.

Further, these surveys are nationally representative which is important to evaluate the pro-poorness of growth.

In the whole project, a particular attention will then be devoted to the set of policies implemented in the countries to fight poverty. Empirical results suggest that the outcomes of policy measures are heterogeneous in their impacts.

Methods and hypothesis

A common methodological ground will facilitate comparability of results among the five countries while at the same time permitting extensions to account for each country's specifics. As

usually for developing countries, the methods used for analyzing well-being must always be adapted to country circumstances and the availability of data.

In the first step, logistic regression and cluster analysis methods will be useful to better identify the most vulnerable subgroups.

In the second step, the conceptual framework is concerned with measuring the pro-poorness of growth in the 5 countries, taking into account both the *rate* of growth, that is, the scale of poverty reduction in absolute terms, and the *nature* of growth, that is, its distributional impact. This approach was already conducted for Tunisia for the country as a whole (Bibi, 2009). The econometric method used allows the determination of the extent to which growth is poverty and inequality reducing, for different poverty indices and poverty lines.

We will attempt to verify whether there are common situations in these MENA countries. In case of significant differences, we will attempt to explain their determinants.

In this paper, we start with the hypothesis of non homogeneity of the poor and subsequently we assume that the growth poverty effects vary across social groups. For instance, the pro-poorness of growth would differ not only between urban and rural areas, but also between men and women and between different age groups: children, working population and the elderly. The responsiveness of various measures of poverty to growth and to changes in distribution in the different groups will have important policy implications as to the weight that has to be given to different forms of social safety nets and regarding the distribution of shrinking budget resources. It has already been demonstrated that in the region most poor live in rural areas and we expect the urban poor and the rural poor to be affected differently by the *nature* and *rate* of growth.

We want to check the importance of pro-poorness for women. This question is certainly linked to subjects largely discussed in gender economics on the relationship between women's access to education, labor, land and credit and poverty reduction. The lack of access of women to these elements of empowerment will probably imply that growth leads to a smaller reduction of women's poverty. This will also have implications for children's well being if we take into account the finding that women's increased role in decision making and wealth imply that more household resources are directed to the health and education of children.

2. Growth, inequality and poverty

Overall, the relation between growth and poverty is complex to explain, and is also determined by the level and changes in inequality. Even if growth is achieved, its benefits may not be shared equally. Some may gain more or less than others, and a fraction of the population may actually be disadvantaged by the improved growth performance of the economy. The relationship between inequality and growth is especially relevant since the most recent economic literature reports both positive and negative relationships between growth and inequality across nations (Eicher and Turnovsky 2007).

Pro-poor growth is concerned with the interrelation between these three elements: growth, poverty, and inequality. While there remains no consensus on how to define or measure pro-poor growth, the issue has attracted a fair amount of attention within academia as well as among development practitioners.

Over time, the definition of pro-poorness was not stationary. The pro-poor growth debate has its roots in the pro-distribution arguments in the 1970s. Chenery and Ahluwalia's (1974) model of 'redistribution with growth' could be regarded as the inception of the whole debate on pro-poor growth, as well as a culmination of the critique of the trickle-down hypothesis.

More recently, pro-poor growth was also implicit in the term 'broad-based growth' used in the 1990 *World Development Report*. While the concept was never defined at that time, it then shifted to become referred to as pro-poor growth during the course of the 1990s (Kakwani and Son, 2006).

The link between growth and inequality has received both theoretically and empirically more attention in recent years in light of the Millennium Development Goals of halving the incidence of poverty between 1995 and 2015. Furthermore, recent economic developments have given new impetus to an old debate on whether the poor benefit from economic growth. It has been argued that growth will be more likely to reduce poverty if it is accompanied with some redistribution (Kakwani and Son, 2006; Bourguignon, 2003; Ravallion, 2001, 2004; Bibi, 2006).

As often cited by international agencies (UN, 2000; OECD, 2001) pro-poor growth may therefore be referred as growth that benefits the poor and provides them with opportunities to improve their economic situation.

For each country, we will for example compute the extent to which growth is pro-poor. In the recent existing literature, Ravallion and Chen (2003) and Kraay (2004) describe growth as pro-poor whenever it decreases the poverty index of interest. Kakwani and Pernia (2000), Son (2004), and Kakwani and Son (2006, 2008), believe that poverty-reducing growth cannot be a sufficient condition for pro-poorness. The growth process should also benefit the poor proportionately more than the non-poor. Thus, measuring the pro-poorness of growth should ideally include, in addition to the distributional pattern of growth, the level of poverty reduction enabled by the growth process.

This is the approach advocated for each of the countries studied in this project. In fact, relying on the Bibi's (2006) framework, we suggest judging the extent of pro-poorness against a benchmark growth pattern which leaves the income distribution unchanged. The factual growth process is then deemed to be pro-poor if it has enabled more poverty reduction than the reference growth pattern would have yielded, for a selected poverty line and poverty index. This let our approach general enough to encompass Ravallion and Chen's definition and the Kakwani and Son's conceptions as a special case for our general appreciation of pro-poorness. For instance, setting the benchmark growth rate at 0 yields the poverty decreasing growth approach advocated by Ravallion and Chen (2003). Kakwani and Son's (2006, 2008) equitable growth is obtained by setting the reference growth at the growth rate in the mean income. Finally, if our concern is to reach the Millennium Development Goals (MDGs), the benchmark should be obtained from the growth rate which enables to halve the incidence of poverty during a period of 10 years.

When possible, the country studies use first complete poverty orderings to develop new measures that capture the pro-poorness of economic growth related to a specific poverty line and a specific poverty measure. As these choices are somewhat arbitrary, robustness tests are also developed, using partial poverty orderings, to suggest indices of pro-poor growth according to different ethical principles. Evidence would allow us to show whether or not economic growth periods were equitable and pro-poor during the last two decades.

3. Economic and non economic poverty in the MENA Region

3.1 Absolute poverty and inequality

In order to understand the threat that the problem of poverty poses, it is necessary to know its dimension and the process through which it seems to be deepened. A natural question that arises here is how to quantify the extent of poverty. As first suggested by Sen (1976), the poverty measurement problem is involving through:

- the identification of the poor, and
- the aggregation of the characteristics of the poor into a general indicator.

In the literature, the first problem has been solved mostly by the income (or consumption) method, which requires the specification of a subsistence income level, referred to as the poverty line. A person is said to be poor if his/her income falls below the poverty line (Bourguignon and Chakravarty, 2003).

Reports on poverty and inequality include several statistics: the more frequent are poverty rates², poverty income gap, and Gini coefficient.

By international standards, the low and middle-income countries of MENA³ entered the 21st century with levels of income poverty that were remarkably low.

Reports on MENA include poverty rates, that are higher in rural areas than in urban areas and that are inversely correlated with education levels and directly correlated with family size.

The poverty rate in MENA has been declining over the period 1990-2005, although at a slower rate than in Latin America and the Caribbean or Europe and Central Asia. If we consider the lower limit of the international poverty line of \$ 1.25 per person a day, we see the lowest incidence of extreme poverty among all the regions of the world and compares favorably with East Asia and the Latin America regions, where there also are a significant number of middle income countries (Table 1).

Using the upper limit of the international poverty line however, that is, a \$ 2 per person a day⁴, the relative position of MENA falls to second lowest, and data confirm the worse performance of the Region with respect to East Asia, Latin America and South Asia. By this measure, poverty in the MENA region is calculated at 16.8 percent of the total population in 2005; the number of people in poverty is around 50 millions.

During the last decade however, due to the combination of (i) a fast growing population, (ii) a weak growth performance of the region, and (iii) a lack of improvement in equalities, the number of the poor has increased. While it was 44 million by 1990, it reached the level of 52 millions in 1999 (World Bank, 2008).

In the most recent period, the rise in food prices between 2005 and the beginning of 2008 is estimated to have increased both the incidence and (above all) the severity of poverty in the MENA region.

The severity of poverty (synthesized by income gap ratio in table 1) presented a lower level in MENA with respect to other Regions by 2005, but the highest increase between 2005 and 2007.

² See table1 footnotes.

³ The following data refer to MENA-13 (Algeria, Bahrain, Djibouti, Egypt, Iran, Jordan, Kuwait, Lebanon, Morocco, Syrian Arab Republic, Tunisia, United Arab Emirates, Yemen).

⁴ An income poverty measure based on \$2 per person a day may be more appropriate for a region at MENAs level of average per capita income (Adams and Page, 2002).

In general, as in the other world regions, the urban poor would have been affected more strongly than the rural poor, because they would benefit only indirectly from farmers' higher revenues and associated long-term gains to the agricultural sector (World Bank 2008). The share of the urban population living in extreme poverty is estimated to have increased in this period by 2.4 percentage points in the Middle East, such as in East Asia (6.3%) and South Asia (2.0%). Change in income gap ratio reaches 5.7% in urban MENA, the highest value among world regions.

Table 1 - Percentages of population living with less than \$1.25 or \$2.00 a day by world Regions. 1990 and 2005

| | Poverty headcount ratio at \$1.25* | | | Poverty headcount ratio at \$2** | | | Income gap ratio ° | | | |
|--|------------------------------------|------------|--------------|----------------------------------|-------------|--------------|--------------------|-------------|----------------------|------------|
| | 1990 | 2005 | % change | 1990 | 2005 | % change | 2005 value | | % change 2005-2007°° | |
| | | | | | | | Urban | Rural | Urban | Rural |
| Middle East & North Africa§ | 4.3 | 3.6 | -16.3 | 19.7 | 16.8 | -14.7 | 17.8 | 22.9 | 5.7 | 0.9 |
| Latin America and the Caribbean | 11.3 | 8.2 | -27.4 | 21.9 | 17.1 | -21.9 | 37.6 | 43.9 | 0.7 | 0.1 |
| East Asia & Pacific | 54.7 | 16.8 | -69.3 | 79.8 | 38.6 | -51.6 | 20.3 | 23.2 | 2.7 | 0.7 |
| South Asia | 51.7 | 40.3 | -22.1 | 82.6 | 73.9 | -10.5 | 25.0 | 24.0 | 0.5 | 0.3 |
| Sub-Saharan Africa | 57.6 | 50.9 | -11.6 | 76.0 | 72.8 | -4.2 | 38.1 | 41.5 | 0.3 | 0.0 |
| Europe & Central Asia | 2.0 | 3.8 | 90.0 | 7.1 | 9.2 | 29.6 | 8.7 | 6.6 | 0.2 | 0.0 |

Percentage of the population living on less than \$1.25 or \$2.00** a day (PPP) at 2005 international prices; °The income gap ratio expresses, as a percent of the poverty line, how much the income of the average poor person is lower than the poverty line⁵; °° January 2005–December 2007; § MENA-13 (see note 3). Source: WDI online; World Bank 2008.

High levels of inequality contribute to high levels of poverty in several ways. For any given level of economic development or mean income, higher inequality involves higher poverty, since a smaller share of resources is obtained by those at the bottom of the distribution of income or consumption.

Higher initial inequality may result in lower subsequent growth and, therefore, in less poverty reduction. To quote Christian J. Poortman (2006) “economic, political and social inequalities tend to trap disadvantaged people at the bottom of society generation after generation. This is not only unfortunate for those at the bottom; it is also an impediment to higher economic growth in the long run”. The negative impact of inequality on growth may result from various factors. For example, access to credit and other resources may be concentrated in the hands of advantaged groups, in this manner preventing the poor from investing.

High levels of inequality may reduce the benefits of growth for the poor because a higher initial inequality may reduce the share of the poor's benefits from growth.

Trends in the MENA regions are often complex: for example the region presented in the 1990s one of the most equal income distributions in the world, with a Gini coefficient = 0.357 (decade average) but it has had, since the 1990s, one of the highest wage inequality levels of all developing regions for the manufacturing sector (World Bank 2004).

Changes in the distribution of income *within countries* are then no less important. Worsening inequality can mute the positive effects of growth on poverty reduction in both the short and long run, increase the risk of social alienation of people at the bottom of the income distribution, and perhaps produce counterproductive backlashes against further integration with the global

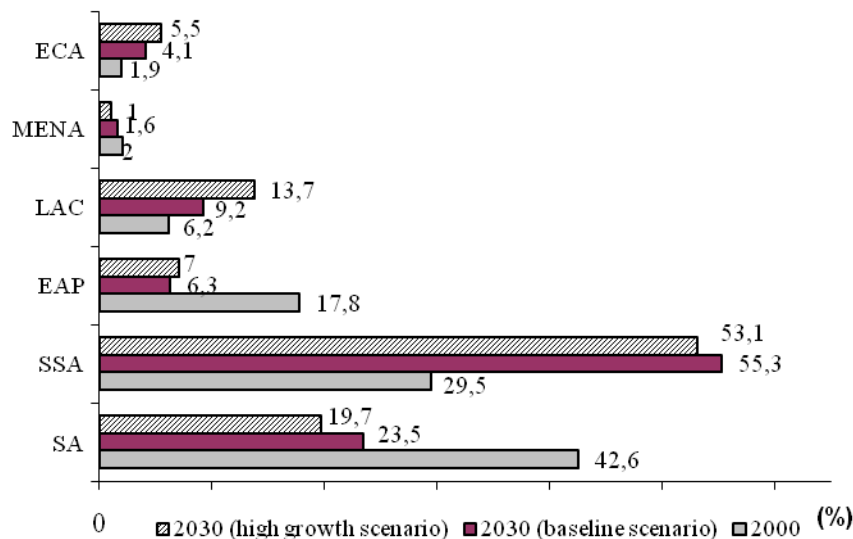
⁵ For instance, a poverty gap of 10% means that the average poor person's expenditure (income) is 90% of the poverty line.

economy. The relationship between economic growth and poverty reduction is thus of direct relevance to the challenge of fighting poverty in all its aspects. There is growing evidence that achieving both high and equitable growth is strengthening the linkage between growth and poverty reduction (Bibi, 2006).

3.2 Poverty and inequality between and within countries

By 2000, the Middle East and North Africa countries include only 2 percent of the population in the poorest decile of the world income distribution (Figure 1). Data on within-country inequality in 2030 - obtained assuming both the baseline and the high-growth scenario⁶ - show that MENA performs better, in particular when high-growth scenario is believed. Even among countries in the same region, there is heterogeneity. As estimated by World Bank (2007; 2009a) for example, as many as 17 percent of Egyptians, 15 percent of Yemenis and 10 percent of Moroccans have consumption levels which are no more than 50 cents per day above the international line of \$2 a day, implying high vulnerability to economic shocks.

Figure 1 - Population share of each region in the bottom decile of global income distribution



East Asia & the Pacific (EAP); Europe & Central Asia (ECA); Latin America & Car. (LAC); Middle East & North Africa (MENA); South Asia (SA); Sub-Saharan Africa (SSA). Source: World Bank 2007.

In each country, income distribution is affected by two sets of factors: shifts in the demographic structure of the population, in terms of aging and education attainment, and changes in rewards for individuals' characteristics, such as their education level, experience, sector of employment, and so on.

⁶ Changes in demographic structure, occupational choices, and factor rewards determine the authors' hypothetical 2030 world income distribution (For details on the methods used to project the world income distribution in 2030 see: www.worldbank.org/prospects/gep2007).

Completing primary education reduces the probability of being in the lowest income decile in every developing country in the forecast. As is true today, in 2030 most people in the lowest income decile will be without primary school education, will work in agricultural sectors, and will live in rural areas.

Lack of education appears to be the single most important characteristic common to people at the bottom of the distribution. There is a strong negative correlation within all regions between the returns to education and the marginal effect of primary school education on the probability of being in the lowest decile: where the return to education is high, the probability of remaining poor is low. However, the magnitude of this effect varies considerably across countries, in MENA region too. According to World Bank (2007), a Yemeni who obtains a primary education is only slightly less likely to end up in the lowest income decile (a difference in probability of less than 1 percentage point), whereas Egyptians with a primary education improve their chances of escaping the bottom decile by more than 10 percentage points.

Additional variables affect in most cases the likelihood of being poor: among others the number of elders in the household and the gender and the sector of employment of its head. Everything else being equal, households headed by a woman are more likely to be in the lowest income decile than are households headed by a man⁷. A similar difference is observed between workers in agricultural sectors and those in non-agricultural sectors.

Countries' evidence on poverty trends, such as incidence based on national and international poverty lines allow us to deepen the features of the Region. For poverty analysis, international poverty lines are useful because they permit comparisons between countries and over time (Chen and Ravallion, 2000).

To understand poverty dynamics at the national level, country-specific poverty lines may be more useful. Such poverty lines are more directly adapted to the actual costs of specific food and non-food items in individual countries. But, as cited by Adams and Page (2003), even these national poverty lines have their limitations. In many developing countries (including most of the MENA countries), 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 "non-food needs" precisely. A strategy is to use each of these measures (national and international) to complement the other.

Table 2⁸ shows that the five MENA countries here considered choose their poverty lines close to \$2 a day in PPP. Data referring to national poverty lines show good improvements in Egypt and Tunisia; Algeria shows deterioration or stagnation.

More recent data reveal a large difference between the poverty rate of Egypt and that of the other countries here considered. Within countries, national poverty data show patterns that are consistent with those found in other developing countries. Data confirm that poverty in the single MENA countries is primarily a rural phenomenon; urban areas also exhibit faster rates of poverty reduction, despite urbanization. Farmers (and their families) account for about 60 percent of all poor in Egypt and Morocco (World Bank, 2009a).

⁷ Not necessarily this result (or the opposite result) indicates gendered poverty. It can depend on the diffusion of male/female headed households, and on their age profile.

⁸ Whenever possible, data come from World Bank (WDI online) to assure homogeneity of definitions.

A common trend in the long period is associated with divergences in the single countries. For example, the decline in poverty incidence in Egypt was mostly due to a considerable reduction in urban poverty.

The poverty rate was almost halved in Tunisia between 1990 and 2000. Poverty in Morocco rose substantially in the first 1990s in both urban and rural areas, in part due to slow growth and recurring droughts. Since then, as growth has revitalized, poverty has reportedly fallen again to between 12-15 percent. Algeria also shows deterioration in the early 1990s, from 8 percent in 1988 to 14 percent in 1995, followed by a recovery to 12 percent in 2000 and finally 6.8 in 2004, according to Government estimates. In addition, income gap was rising between 1998 and 2000. Poverty is more evident in the rural context, even if poor individuals are about equally distributed in rural and urban areas (Gouvernement Algérien, 2005).

Table 2- Poverty in selected MENA countries with national and international lines, 1995-2007

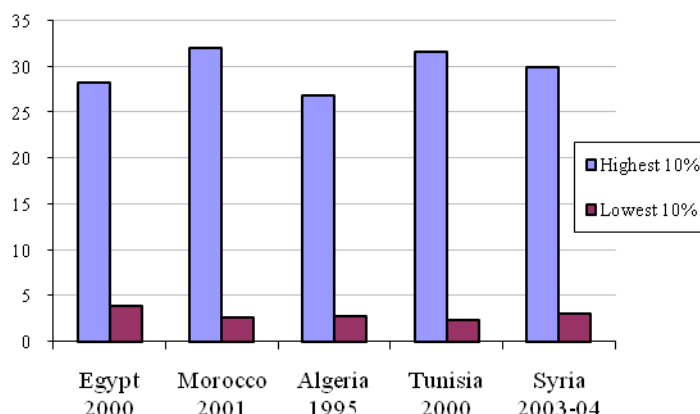
| | National lines: % of the population below the national poverty line* | | | International lines: poverty headcount ratio | | Gini Index |
|----------------|--|-------|-------|--|-------------|------------|
| | Total | Urban | Rural | \$1.25 /day | \$2.00 /day | |
| Algeria | | | | | | |
| 1988 | 8.0 | 5.0 | 11.0 | -- | -- | 0.388 |
| 1995 | 14.1 | 9.0 | 19.0 | 6.61 | 23.82 | 0.353 |
| 2000 | 12.1 | 10.3 | 14.7 | 6.79 | 23.59 | |
| 2003/04 | 6.8 | | | | 10.36 | |
| Egypt | | | | | | |
| 1990/91 | 25.0 | 20.3 | 28.6 | -- | 31.2 | 0.32 |
| 1995/96 | 22.9 | 22.5 | 23.3 | 2.46 | 26.27 | 0.326 |
| 1999/2000 | 16.7 | 9.2 | 22.1 | 1.81 | 19.33 | 0.38 |
| 2004/05 | 19.6 | 10.1 | 26.8 | 1.99 | 18.42 | 0.321 |
| 2008 | | | | | | |
| Morocco | | | | | | |
| 1990/91 | 13.1 | 7.6 | 18.0 | -- | -- | 0.393 |
| 1998/99 | 16.3 | 9.5 | 24.2 | 6.76 | 24.4 | 0.395 |
| 2000/01 | 15.3 | 7.6 | 25.1 | 6.25 | 24.31 | 0.406 |
| 2006/07 | 9.0 | 4.8 | 15.3 | 2.5 | 13.95 | 0.407 |
| Syria | | | | | | |
| 1997 | | | | | | 0.337 |
| 2003/04 | 30 ¹ | -- | -- | | 10.4 | 0.374 |
| Tunisia | | | | | | |
| 1990 | 7.4 | 3.5 | 13.1 | -- | 8.8 | 0.401 |
| 1995 | 7.6 | 3.6 | 13.9 | 6.48 | 9.3 | 0.417 |
| 2000 | 4.2 | 1.6 | 8.3 | 2.55 | 5.7 | 0.406 |
| 2005 | 3.8 | | | | 4.2 | 0.413 |

*) Poverty headcount at national poverty line. 1) Population (%) living below poverty line: the Poverty line in Syria is SP2.052 or US\$41 per month.

Source: World Bank (2006; 2008); Ferreira and Ravallion (2008); El Laithy and Abu-Ismaïl (2005); Gouvernement Algérien (2005); Laabas (2001); Bibi and Nabli (2009).

Figure 2 shows that inequality, concerned with the uneven distribution of goods or services across units in the population, persists. In recent years the bottom 10% of the population handled only a very low share of income (or consumption).

Figure 2 - Share of income or consumption, poorest 10% and richest 10%.



Egypt, Morocco, Algeria, Tunisia: income; Syria: consumption.

Source: WDI online; El-Laithy & Abu-Ismaïl 2005.

Several countries also present geographic concentrations of poverty, with so-called lagging regions where poverty rates stay persistently above the average for the country.

Some examples:

In Tunisia, the Center West region is the poorest: in 2000 the poverty rate in the region was 11 percent as compared to only 1 percent in metropolitan Tunis.

In Egypt, rural Upper Egypt is the poorest: in 2000 the poverty rate in rural Upper Egypt was 34 percent as compared to only 5 percent in metropolitan areas (Iqbal, 2006).

In Morocco, North-East and central regions show weakest poverty ratios.

In Syria poverty is again more prevalent in rural than in urban areas but the greatest differences found are geographic. The North-Eastern region (Idleb, Aleppo, Al Raqqa, Deir Ezzor and Hassakeh) both rural and urban, have the greatest incidence of poverty. Overall poverty masks differences in welfare among regions and among governorates in regions (El-Laithy and Abu-Ismaïl, 2005).

In Algeria, Southern regions show the highest poverty ratios.

Country poverty updates in Egypt and Morocco show that - with the acceleration of economic growth - poverty has been declining between 2003 and 2005. The main channels of impact are several: among them the labor market and new jobs generated by the private sector firms (World Bank 2008). In addition, in Egypt and Morocco the success at maintaining low rates of poverty in the face of stagnant economic growth can be related to further key factors: international migration/remittances and public sector employment (Adams and Page, 2003). In Morocco, the moderate growth was not sufficient anyhow to absorb the unemployed and new flows of job seekers (Radwan and El Oraby, 2005).

In recent years, the food crisis (former mentioned) is likely to have had an adverse impact on poverty in most of the countries, with differences between the rural and urban location.

3.3 Poverty, human development and demographic behaviour

The well-being of a population and, hence its poverty, which is a manifestation of insufficient well-being, depend on both monetary and non-monetary variables. In other words, a valid measure of poverty should depend on income indicators as well as non-income indicators that may help in identifying aspects of welfare not captured by incomes.

As argued by Bourguignon and Chakravarty (2003), it is certainly true that with a higher income or consumption budget, a person may be able to improve the position of some of his/her monetary and non-monetary attributes.

Wellbeing is intrinsically multidimensional from the view point of ‘capabilities’ and ‘functioning’s, where functioning’s deal with what a person can ultimately do and capabilities indicate the freedom that a person enjoys in terms of functioning (Sen, 1985). In the capability approach functioning’s are closely approximated by attributes such as literacy, life expectancy, etc. and not by income per se.

Economic growth generally leads to lower poverty in terms of control over commodities. The association between growth and “non-income” dimensions of welfare generally is just as strong. High correlations are observed in cross-country data between average incomes and human development indicators, and between their rates of change over time (Ravallion, 1997). The strong correlations observed can be attributed to a number of structural factors linking growth and human development, including the effects of growth on poverty and on access to basic health and education.

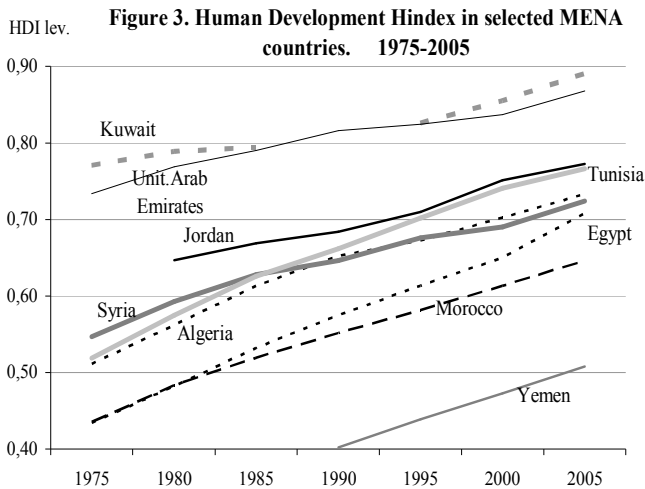
Social or human development indicators for MENA show marked improvement during the last decades - especially during the 1990s - continuing a trend established over earlier decades.

In the last quarter of a century, many countries have made remarkable advances in their human development.

In figure 3 the evolution of Human Development Index between 1975 and 2005 in the five countries is compared with trends in other MENA countries. Trends in HDI⁹ show both a positive development for all the countries and disparities in human development across countries. The level reached by 2005 varies according both to the country’s initial value and HDI growth performance.

Remarkably, MENA region improved its human indicators faster than did middle income comparators over this period, and it did so despite a considerably slower rate of output growth and a decline in levels of public spending (Iqbal, 2006). Between 1985 and 2000, literacy spread to 69 percent of the population, average years of schooling (for those above age 15) rose to 5.2, child mortality rates plunged to approximately 46 deaths per thousand children in the first five years of life, and life expectancy climbed to 68 years.

⁹ The Human Development Index is a composite scale that has three dimensions: life expectancy at birth, adult literacy rate and mean years of schooling, and income as measured by real gross domestic product per capita.



Source: United Nations (2007).

4. Key correlates of poverty: Algeria, Egypt, Morocco, Syria, Tunisia.

Figure 4 includes a summary outline of changes in selected socio-demographic indicators between 1980 and 2005 in the five countries we consider. All the indicators show a positive trend, both those denoting a trend in demographic behavior (Total Fertility Rate, adolescent fertility) or in health improving (e_0 , child mortality) and those reflecting social or public dimensions of welfare (enrolment and female participation to primary enrolment). Indicators show that the countries have made considerable progress in the past few decades in improving health and wellbeing. Some countries have better social indicators than the average for developing countries. This is true, for example, for life expectancy and infant or child mortality. In the MENA countries, as in other parts of the world, children under five years of age have been the chief beneficiaries of the health transition. Child mortality rates, starting from extremely different values, show a sharp decrease from 1980 to the present, with a convergence trend. Life expectancy also shows a convergence tendency, explained by an impressive raise in some countries, in particular Morocco and Egypt.

The timing and magnitude of the fertility decline in the five countries have varied between 1980 and 2005, and in 2005 the number of children per woman diverges between 2 (Tunisia) and 3,2 (Syria). Differences in adolescent fertility rates are important, and reveal differences in female status and behavior.

A central sector is represented by education. Past investment in education in most countries of MENA region was remarkable, and it was able to make remarkable progress.

Population is increasingly young and educated, but the contribution of past investments in education to economic growth, poverty reduction and income distribution were estimated as modest (Galal, 2008). Moreover, the education systems are not fully prepared to deal with the increasing role of knowledge in economic development, an emerging youth bulge and the growing financial constraints on expending education. Nor are most economies of the region prepared to absorb an increasingly educated labor force in dynamic and productive sectors.

Note that data on gross school enrolment reveal high dropout and repetition rates, in particular for Algeria, Syria, and Tunisia (fig. 4).

Despite progress in most of the indicators, or perhaps because of it, disparities within and across countries remained and may have even increased over time.

Many analyzes of the characteristics of poor households in the MENA countries suggest that - as other regions of the world - the main correlates of poverty are both rural location and lack of education. Poverty is strongly associated with lack of education, being highest among individuals with little or no education and declining sharply as higher levels of education are achieved.

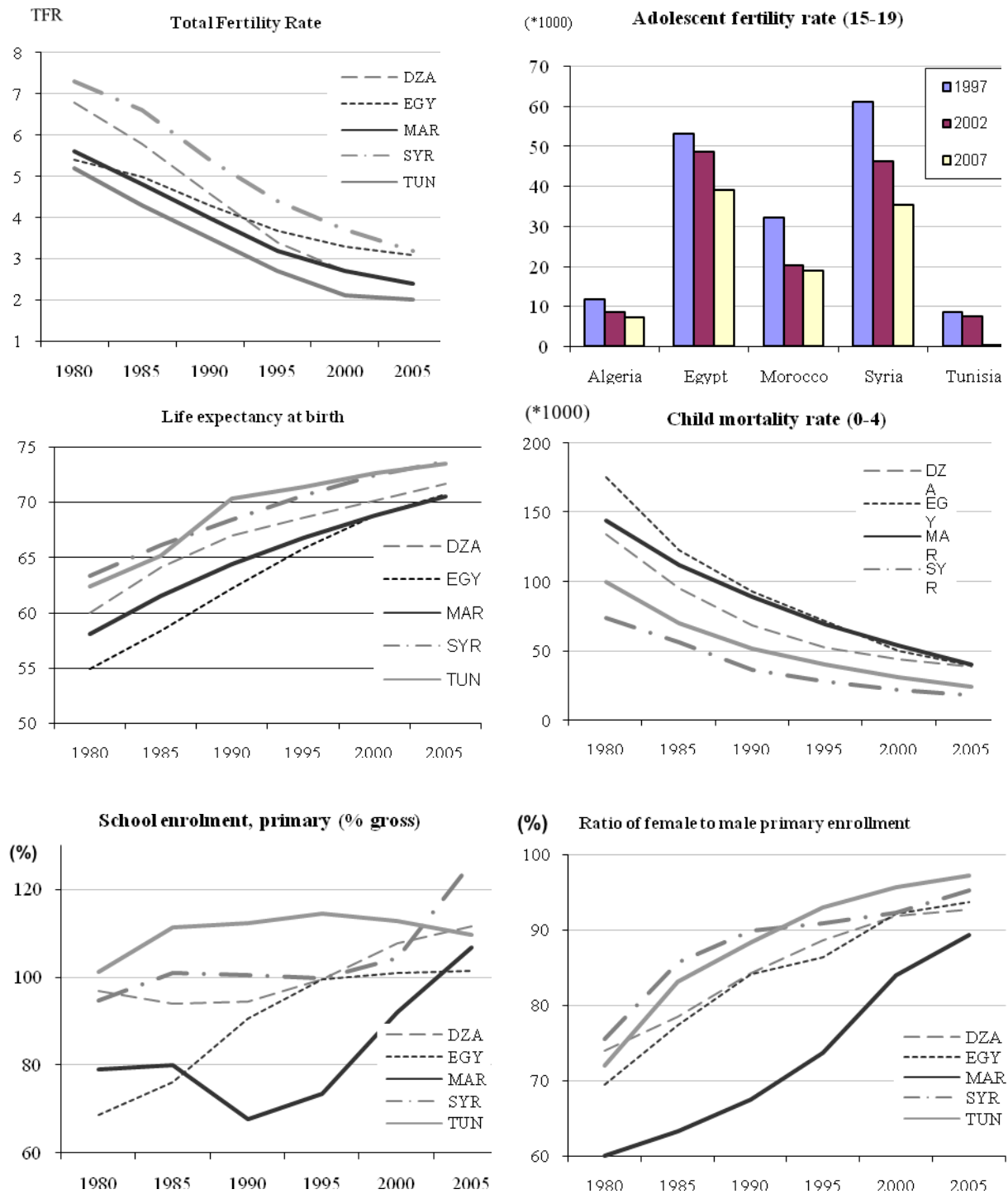
In Syria, poverty is highest among the illiterate and very low among university graduates. A gender aspect is noticeable: widows, as heads of households, with children, were reported to be very likely to be poor.

Everything else being equal, Algerian individuals is more likely to be poor when they belong to large households - where age dependency ratio is high - with an inadequate access to social facilities (drinking water, electricity). The head of a poor family is often male, weakly educated, unemployed (Gouvernement Algérien, 2005).

In the same way most of the poor have not reached any scholar education level in Morocco; there are large male-female disparities but no 'feminization of poverty' in the sense of increases in women's relative weight in poor population (Radwan and El Oraby, 2005).

However, data show that high human development does not necessarily translate into an equal share of benefits for men and women. For example, trends in the ratio of female to male primary enrolment (figure 4) show a persistent female gap, stronger in Morocco.

Figure 4 – Trends in main socio-demographic indicators 1980-2005. Algeria, Egypt, Morocco, Syria, Tunisia.



The same progress in employment: Middle East and North Africa experienced increases in employment to population ratios since 1990. The increases were stimulated by raises in the labor force participation of women. But despite this, the employment to population ratio in the Middle East and North Africa remained the lowest in the world. Globally, employment to population ratios is lower for women than for men, resulting in a large unexploited potential of female labor (World Bank, 2009b). The Middle East and North Africa has now the largest gender gap, attributable to low participation of women in the workforce.

In a common way in all the countries, poverty interacts with gender to produce great gaps in educational enrolment among the poor. As a consequence, there is an alarmingly low rate of enrolment for poor girls. Female children in poor households living in rural areas had the highest probability of being illiterate - regardless of the sex of the head of the household – and then of perpetuating the poverty cycle.

5. Preliminary results¹⁰ of the project

5.1 Preliminary Results for Tunisia

In his paper, Sami Bibi (2009) is concerned with the pro-poorness of economic growth (or contraction), that is to say, with both the level of growth rate in the mean income and how growth is distributed amongst the less well-off. For this, complete poverty orderings are first used to decompose poverty changes into pure growth component and redistributive growth components. Second, partial poverty orderings are used to extend the poverty-reducing growth framework of Ravallion and Chen (2003) and the inequality-decreasing framework of Son (2004) to any degree of ethical order dominance. The method can then be used to describe the extent to which growth is poverty-reducing, equitable, and pro-poor for large classes of poverty indices and for ranges of possible poverty lines.

The empirical illustration was achieved by using three Tunisian household surveys conducted by the National Institute of Statistics (Institut National de la Statistique, INS) in 1980, 1990, and 2000. Specific urban and rural poverty lines, estimated following the Ravallion's (1998) approach, are used to neutralize the effects of spatial and temporal variation of prices. The estimated indices of pro-poorness are reported in Table 3 below.

There are two panels of results in this table. Considering the *nature* of growth process, the left panel of Table 3 shows that the growth pattern was *highly* equitable during the two considered decades. The less-so-poor have experienced growth rates which were always higher than those in the mean income. The index of pro-poor growth, which collapses in this case to an index of *equitable* growth, is thus always greater than 1.

The results exposed in the right panel of Table 3 are linked to the aim of halving the incidence of poverty during each decade. Interestingly enough, even with a much higher benchmark growth rate, the pro-poorness feature of the 1980s growth process is still present in the 1990's.

¹⁰ In Annex 1 the definition of pro-poor growth indices.

Indeed, during the period from 1980 to 1990 period, oil export earnings were high, leading to rapid increases in public sector wages and generous subsidies on many foodstuffs. The right panel of Table 3 shows that these policies were *highly* pro-poor. Unfortunately, such a pattern of growth was not sustainable since it led to a macroeconomic crisis in 1986. To offset this crisis, the government of Tunisia with the collaboration of the World Bank initiated in the mid-1986 a stabilization program together with structural adjustment reforms. As the stabilization program required the reduction of macroeconomic disequilibria to ensure a sustainable growth, the government adopted more targeted social expenditures, privatized some public firms, froze public wages, and devaluated exchange rate. Structural reforms were applied throughout 1987–1991, but gained increasing importance after 1990.

Many macroeconomic indices showed that these reforms were largely successful. While the growth rate in the mean expenditure per capita was less important during the 1990s than the 1980s, the left panel of Table 3 reveals that the Tunisian ability to maintain the equitable feature of the growth process has not dramatically decreased. For instance, if a 1 percent growth rate led to a 1.35 percent growth rate in the mean income of the poor during the 1980s, this measure of equitable growth reached 1.25 percent during the 1990s. However, the Tunisian ability to halve poverty each decade is lost.

Table 3 - *Pro Poor Growth Indicators for Tunisia*

| Year | Equitable growth | | Pro-poorness | |
|---------------------------|------------------|-----------|--------------|-----------|
| | 1980-1990 | 1990-2000 | 1980-1990 | 1990-2000 |
| μ_t^* | 2.75 | 1.17 | 3.44 | 2.77 |
| $\Delta(y_t(P_{0,t}(z)))$ | 0.95 | 0.2 | 0.26 | -1.4 |
| $\psi(y_t(F(p)))$ | 1.34 | 1.17 | 1.07 | 0.5 |
| $\Delta(y_{1,t}(z))$ | 0.15 | 0.03 | 0.07 | -0.07 |
| $\psi(y_{1,t}(z))$ | 1,35 | 1,25 | 1.15 | 0.64 |
| $\psi(y_{2,t}(z))$ | 1.56 | 1.33 | 1.3 | 0.63 |

The calculations show that broadly, economic growth has led to a two-edge impact on poverty: increasing mean income of the poor and reducing income inequality; thus reducing both distributional-insensitive and distributional-sensitive poverty indices. For policy makers concerned with poverty reduction, the aim should certainly be to sustain high growth, but with the poorest capturing a proportionately larger share of the increment to growth.

5.2 Preliminary Results for Egypt

Heba El Laithy (2009) applied Bibi's Methodology for measuring whether growth was equitable for Egypt during two periods of time; 2000-2005 and 2005-2008. Previous studies indicate that poverty, growth and inequality performance are completely different in these two periods of time.

Distribution and poverty measures are calculated from successive Household Income, Expenditure and Consumption Surveys (HIECS) for the years 1999/2000, 2004/05 and 2008 implemented by the Central Agency for Public Mobilization and Statistics (CAPMAS). Three levels of poverty lines were estimated to reflect different levels of deprivations.

Table 4 shows that over the period 2000-2005 the growth rate of welfare index of the poor declined by -0.8 while the growth rate if there were no change in income distribution declined by -1.7%. Thus, change in welfare measure was inequality-reducing. The less-so-poor have experienced a relative fall in their welfare index which was always lower than those in the mean income.

The direction of change in the welfare indicator of the poor compared to their welfare indicator if income distribution was unchanged, took the opposite direction over the period 2005-2008, indicating that although the poor experienced increase in their welfare, their welfare level would have been better (by 0.71%), if there were no change in distribution, i.e. the poorer experienced lower growth rate compared to neutral growth, therefore, growth was not equitable.

Table 4 - *Equitable Growth Indicators for Egypt*

| Indices | Equitable growth | |
|---------------------------|------------------|-----------|
| | 2000-2005 | 2005-2008 |
| μ_t^* | -1.695 | 2.900 |
| $\Delta(y_t(P_{0,t}(z)))$ | 0.831 | -0.705 |
| $\psi(y(P_{0,t}(z)))$ | 1.963 | 0.757 |
| $\mu(y_{1,t}^*(z))$ | -0.285 | 0.484 |
| $\Delta(y_{1,t}(z))$ | 0.156 | -0.291 |
| $\psi(y_{1,t}(z))$ | 2.213 | 0.398 |
| $\mu(E_{2,t}^*(z))$ | -0.217 | 0.315 |
| $\Delta(E_{2,t}(z))$ | 0.104 | -0.370 |
| $\psi(y_{2,t}(z))$ | 2.072 | 0.173 |

The growth process in 2000-2005 has led to a two- opposite effects on poverty: decreasing the absolute welfare of the poor but at a lower rate than the proportional change in the mean income;

reducing then welfare disparity within the poor. The growth process in 2005-08 takes the opposite direction; increasing the absolute welfare level of the poor but at a lower rate than the proportional change in the mean income. As a consequence, the index of equitable growth was lower than 1 in the 2000-2005 period and higher than 1 in the 2005-2008 period.

5.3 Preliminary Results for Morocco

Cherkaoui, Abdelkhalek and Doudich (2009) used Sami Bibi's (2009) approach to evaluate whether Morocco's growth was pro-poor in the two different periods: 1985-2001 and 2001-2007 and extended the analysis of the Moroccan case by using an approach developed by Lachaud in terms of elasticity's to evaluate based on an ex-post evaluation if the changes in the inequality of resources per capita, associated to the growth process contributed to the reduction of poverty. The preliminary results are given in tables 5, 6 and 7 below.

For the evaluation of whether growth was equitable in the two periods considered the reference value μ_t^* is the growth of the mean revenue. For the pro poorness of growth the value of μ_t^* used is different for the two sub period studied. It corresponds to the halving of poverty for the period 1985-2001 and to the maintenance of a given poverty rate for the urban sector and a reduction of disparities between the urban and rural sector for the 2001-2007 period. This of course makes comparing pro-poor growth indices difficult between the two periods but appeared appropriate because the objective of halving poverty between 2001 and 2007 was already achieved.

Table 5 - Pro Poor Growth Indicators for Morocco 1985-2001

| Indices | Equitable growth | | | Pro-poorness | | |
|---------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 1985-2001 Total | 1985-2001 Urban | 1985-2001 Rural | 1985-2001 Total | 1985-2001 Urban | 1985-2001 Rural |
| μ_t^* | 0.252 | -0.255 | 0.105 | 0.964 | 0.496 | 1.386 |
| $\Delta(y_t(P_{0,t}(z)))$ | -0.248 | 0.258 | -0.101 | -0.961 | -0.493 | -1.382 |
| $\psi(y(P_{0,t}(z)))$ | 0.014 | -0.014 | 0.036 | 0.004 | 0.007 | 0.003 |
| $\mu(y_{1,t}^*(z))$ | 0.146 | 0.074 | 0.050 | 0.236 | 0.143 | 0.300 |
| $\Delta(y_{1,t}(z))$ | -0.011 | 0.066 | 0.012 | -0.101 | -0.003 | -0.237 |
| $\psi(y_{1,t}(z))$ | 0.926 | 1.897 | 1.247 | 0.572 | 0.981 | 0.208 |
| $\mu(E_{2,t}^*(z))$ | 0.087 | 0.070 | 0.020 | 0.165 | 0.151 | 0.163 |
| $\Delta(E_{2,t}(z))$ | 0.0330 | 0.168 | 0.030 | -0.044 | 0.087 | -0.113 |
| $\psi(y_{2,t}(z))$ | 1.095 | 2.634 | 1.611 | 0.637 | 1.285 | 0.243 |

Over the period 1985-2001, the appreciation of the *nature* of the growth process in Morocco depend on whether poverty is measured by the headcount ratio or distributive-sensitive indices. Using the headcount ratio, the growth process appears to be inequitable as it is not poverty decreasing; that is to say, it does not enable as much poor to escape poverty as the hypothetical growth pattern which lives overall inequality unchanged. However, for a distributive-sensitive poverty measure such as the severity of poverty ($\alpha=2$), the index of equitable growth is equal to 1.095, meaning that the poorest of the poor have benefited more from the factual growth than from a counterfactual equally distributed growth.

Turning now to the pro-poorness issue, the left panel of Table 5 shows that the pro-poorness indices are always lower than 1, no matter the poverty index chosen. The reached poverty reduction is then lower than that poverty reduction which would be observed under a targeted equally distributed growth rate that enable to halve the incidence of poverty. The notable exception is in the urban area for $\alpha=2$, Indeed, the bottom urban poor have experienced a growth rate which is even higher than the targeted growth.

Table 6 - Pro Poor Growth Indicators for Morocco 2001-2007

| Indices | Equitable growth | | | Pro-poorness | | |
|---------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 2001-2007 Total | 2001-2007 Urban | 2001-2007 Rural | 2001-2007 Total | 2001-2007 Urban | 2001-2007 Rural |
| μ_t^* | 0.401 | 0.365 | 1.127 | 0.981 | 0.971 | 1.046 |
| $\Delta(y_t(P_{0,t}(z)))$ | -0.387 | -0.265 | -1.042 | -0.967 | -0.871 | -0.962 |
| $\psi(y(P_{0,t}(z)))$ | 0.035 | 0.275 | 0.075 | 0.014 | 0.103 | 0.081 |
| $\mu(y_{1,t}^*(z))$ | 0.372 | 0.163 | 0.690 | 0.405 | 0.184 | 0.664 |
| $\Delta(y_{1,t}(z))$ | -0.013 | 0.002 | -0.115 | -0.046 | -0.020 | -0.088 |
| $\psi(y_{1,t}(z))$ | 0.965 | 1.011 | 0.834 | 0.886 | 0.894 | 0.868 |
| $\mu(E_{2,t}^*(z))$ | 0.329 | 0.274 | 0.404 | 0.371 | 0.323 | 0.379 |
| $\Delta(E_{2,t}(z))$ | 0.0379 | 0.049 | -0.044 | -0.005 | 0.0007 | -0.018 |
| $\psi(y_{2,t}(z))$ | 1.036 | 1.117 | 0.855 | 0.935 | 0.963 | 0.899 |

Over the period 2001-2007, the appreciation of the *nature* of the growth process in Morocco depends also on whether poverty is measured by the headcount ratio or distributive-sensitive indices. Using the headcount ratio, the growth process appears to be inequitable as it is not poverty decreasing; that is to say, it does not enable as much poor to escape poverty as the hypothetical growth pattern which lives overall inequality unchanged. However, for a distributive-sensitive poverty measure such as the severity of poverty ($\alpha=2$), the index of

equitable growth is equal to 1.036, meaning that the poorest of the poor have benefited more from the factual growth than from a counterfactual equally distributed growth. This is true for the country as a whole but the urban households have fared better than the rural households with the index of equitable growth equal to 1.117 for urban area and 0.855 for rural areas.

Turning now to the pro-poor issue, the left panel of Table 6 shows that the pro-poor indices are always lower than 1, no matter the poverty index chosen. The reached poverty reduction is then lower than that poverty reduction which would be observed under a targeted equally distributed growth rate that aims at maintaining urban reduced poverty rates and reducing the inequalities between the urban and rural households. However the poorest of the poor have experienced a growth rate which is almost similar to the targeted growth with the index of propoor growth almost equal to 1.

We then use Lachaud methodology to undertake an ex-post evaluation of poverty elasticity's to evaluate first if the changes in the inequality of resources per capita, associated to the growth process contributed to the reduction of poverty and second to compare the two periods. The results of this analysis are presented in tables 7a, 7b and 7c.

Here the results are similar to those obtained above. In the 1985-2001 period growth was not pro-poor in terms of the two first measures of poverty with both indices below one. However for the poorest of the poor the indices is greater than one indicating pro-poor growth for that segment of the population. In the 2001-2007 periods it appears that the indices are equal or almost equal to one for all measures of poverty indicating an improvement compared to the first period but only indicating that the poor benefited from the growth process just as much as other groups in society.

When we distinguish the urban and rural sectors for both periods the indices are always higher in urban areas when compared to rural areas. The indices in the urban areas are clearly pro-poor from 1985 to 2001 and neither pro-poor, nor pro-riche from 2001 to 2007. The period 1985 to 2001 indicates that growth was not pro-poor when the first measure of poverty is used but shows that growth was pro-poor when the depth or severity of poverty measure is used. The period 2001 to 2007 always has indices lower than one indicating that growth was not pro-poor.

Table 7a - *Growth and inequality impact on poverty and indicators of pro poor growth for the country as whole*

| Poverty Measures | Poverty Indices in Percent | | Annual change in Indices | Poverty Elasticity | Explanatory Factors | | Indices of pro-poor growth | Poverty Equivalent Growth | Observed Growth |
|------------------|----------------------------|-------------|--------------------------|--------------------|---------------------|-------------------|----------------------------|---------------------------|-----------------|
| | 1985 | 2001 | | | Growth Effect | Inequality Effect | | | |
| Ratio | 21 | 15,3 | -0,051 | -5,7 | -7,1 | 1,4 | 0,803 | 0,181 | 0,225 |
| Depth | 5,5 | 3,5 | -0,073 | -2,09 | -2,1 | 0,01 | 0,995 | 0,224 | 0,225 |
| Severity | 2,2 | 1,2 | -0,096 | -1,01 | -0,84 | -0,17 | 1,202 | 0,271 | 0,225 |
| | 2001 | 2007 | | | | | | | |
| Ratio | 15,3 | 8,9 | -0,086 | -6,4 | -6,4 | 0 | 1,000 | 0,208 | 0,208 |
| Depth | 3,5 | 1,9 | -0,097 | -1,6 | -1,7 | 0,1 | 0,941 | 0,196 | 0,208 |
| Severity | 1,2 | 0,6 | -0,109 | -0,6 | -0,6 | 0 | 1,000 | 0,208 | 0,208 |

Table 7b - *Growth and inequality impact on poverty and indicators of pro poor growth for the urban sector*

| Poverty Measures | Poverty Indices in Percent | | Annual Change in Indices | Poverty Elasticity | Explanatory Factors | | Indices of pro-poor growth | Poverty Equivalent Growth | Observed Growth |
|------------------|----------------------------|-------------|--------------------------|--------------------|---------------------|-------------------|----------------------------|---------------------------|-----------------|
| | 1985 | 2001 | | | Growth Effect | Inequality Effect | | | |
| Ratio | 13,3 | 7,6 | -0,089 | -5,8 | -3,5 | -2,3 | 1,657 | 0,264 | 0,159 |
| Depth | 3,5 | 1,5 | -0,132 | -2,1 | -0,9 | -1,2 | 2,333 | 0,371 | 0,159 |
| Severity | 1,5 | 0,46 | -0,179 | -1,03 | -0,33 | -0,7 | 3,121 | 0,497 | 0,159 |
| | 2001 | 2007 | | | | | | | |
| Ratio | 7,6 | 4,8 | -0,074 | -2,8 | -3,1 | 0,3 | 0,903 | 0,147 | 0,163 |
| Depth | 1,5 | 0,8 | -0,099 | -0,7 | -0,7 | 0 | 1,000 | 0,162 | 0,163 |
| Severity | 0,46 | 0,2 | -0,130 | -0,24 | -0,24 | 0 | 1,000 | 0,162 | 0,163 |

Table 7c - *Growth and inequality impact on poverty and indicators of pro poor growth for the rural sector*

| Poverty Measures | Poverty Indices in Percent | | Annual Change in Indices | Poverty Elasticity | Explanatory Factors | | Indices of pro-poor growth | Poverty Equivalent Growth | Observed Growth |
|------------------|----------------------------|-------------|--------------------------|--------------------|---------------------|-------------------|----------------------------|---------------------------|-----------------|
| | 1985 | 2001 | | | Growth Effect | Inequality Effect | | | |
| Ratio | 26,8 | 25,1 | -0,011 | -1,7 | -2,2 | 0,5 | 0,773 | 0,058 | 0,075 |
| Depth | 7 | 6 | -0,025 | -1,1 | -0,7 | -0,4 | 1,571 | 0,118 | 0,075 |
| Severity | 2,8 | 2,2 | -0,039 | -0,62 | -0,3 | -0,32 | 2,067 | 0,155 | 0,075 |
| | 2001 | 2007 | | | | | | | |
| Ratio | 25,1 | 14,4 | -0,088 | -10,7 | -13,2 | 2,5 | 0,811 | 0,251 | 0,309 |
| Depth | 6 | 3,3 | -0,095 | -2,4 | -3,5 | 1,1 | 0,686 | 0,212 | 0,309 |
| Severity | 2,2 | 1,2 | -0,096 | -1 | -1,4 | 0,4 | 0,714 | 0,221 | 0,309 |

5.4. Preliminary results for Syria

According to El Laithy and Abu-Ismael (2005), growth was not pro-poor in Syria between 1997 and 2004 because, in relative terms, poor individuals benefited less from growth than the non-poor (above third deciles). This is due to the increase of inequality in the same period (Gini rose from 0.33 to 0.37).

The aim of our investigation is to apply Bibi's methodology (2009) to check whether growth was really not pro-poor in Syria between 1997 and 2004, when using a broader approach of pro-poorness combining absolute and relative dimensions.

We relied on the Household Income and Expenditure Surveys (HIES) conducted by the Central Bureau of Statistics (CBS) in 1996-1997 and 2003-2004 and the national and regional poverty lines computed by El Laithy and Abu-Ismael (2005). The preliminary results are given in tables 8 for the national level and 9.1 and 9.2 for the regional level (including the rural/urban distinction). The main finding is that growth has not been equitable between 1997 and 2004 ($\Psi < 1$ for $\alpha=0$), which means that the income of the poor has grown less than the average income. Moreover, we

find that the poorest have benefited less than from a hypothetical equitable growth ($\Psi < 1$ for $\alpha=1, 2$) which confirms that growth was highly inequitable in Syria during that period. Furthermore, when we introduce the objective of halving poverty as a benchmark, our results confirm that growth has not been pro-poor and the bias against the poor is higher.

Table 8 - Pro-Poor Growth Indicators for Syria

| Indices | Equitable growth | Pro-poor growth |
|------------------------------------|------------------|-----------------|
| | 1997-2004 | 1997-2004 |
| μ_t^* | 2.26 | 3.13 |
| $\Delta(y_t(\mathbf{P}_{0,t}(z)))$ | -0.83 | -1.70 |
| $\Psi(y_t(\mathbf{P}_{0,t}(z)))$ | 0.63 | 0.46 |
| $\mu(y_{1,t}(z))$ | 0.27 | 0.35 |
| $\Delta(y_{1,t}(z))$ | -0.10 | -0.17 |
| $\Psi(y_{1,t}(z))$ | 0.64 | 0.50 |
| $\mu(E_{2,t}^*(z))$ | 0.26 | 0.36 |
| $\Delta(E_{2,t}(z))$ | -0.11 | -0.21 |
| $\Psi(E_{2,t}(z))$ | 0.61 | 0.46 |

At the regional level, table 9.1 shows that the mean income growth is always higher in the urban areas, the difference reaching almost 6% in the North-Eastern region where the real mean income has decreased by around 2% between 1997 and 2004.

The main finding is that growth has been equitable in terms of poverty headcount for the Southern region ($\Psi > 1$ for urban and $\Psi < 1$ for rural areas¹¹) and the Coastal-rural region. The results are equivalent for the P1 and P2 indices, except for the Southern-urban where growth is not equitable for the poorest and for the Middle-rural region where the poorest have benefited more than the average poor, even though the poor benefited less from growth than the non-poor.

The growth rate in the mean income to achieve the objective of halving poverty is higher in rural areas and lower in urban ones compared to the equitable growth benchmark. In terms of incidence of poverty, Table 9.2 shows two changes: in the Middle-urban region growth becomes pro-poor ($\Psi > 1$), while we observe the opposite phenomenon in the Coastal-rural region ($\Psi < 1$). Regarding the depth and severity of poverty, in the Southern-urban and Middle-urban regions the poorest of the poor benefit more than in the benchmark scenario and they benefit less in the Middle-rural and Coastal-rural regions.

¹¹ When $\mu < 0$ the formula of Ψ is inverted, which means that growth is highly equitable when $\Psi < 1$.

Table 9.1 - *Equitable Growth Indicators for Syria (regional level)*

| Indices | Equitable growth | | | | | | | | |
|------------------------------------|------------------|-------|---------------|-------|--------|-------|---------|-------|-------|
| | Southern | | North-Eastern | | Middle | | Coastal | | Total |
| | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural | |
| μ_t^* | 4.49 | -0.01 | 4.04 | -1.87 | 5.69 | 2.17 | 2.50 | 0.87 | 2.26 |
| $\Delta(y_t(\mathbf{P}_{0,t}(z)))$ | 0.65 | 2.30 | -1.63 | 0.39 | -1.25 | -0.18 | -0.43 | 1.10 | -0.83 |
| $\Psi(y_t(\mathbf{P}_{0,t}(z)))$ | 1.14 | 0.00 | 0.60 | 1.26 | 0.78 | 0.92 | 0.83 | 2.26 | 0.63 |
| $\mu(y_{1,t}^*(z))$ | 0.44 | 0.00 | 0.45 | -0.27 | 0.71 | 0.24 | 0.24 | 0.09 | 0.27 |
| $\Delta(y_{1,t}(z))$ | -0.01 | 0.24 | -0.09 | 0.12 | -0.15 | 0.03 | -0.09 | 0.07 | -0.10 |
| $\Psi(y_{1,t}(z))$ | 0.97 | -0.01 | 0.81 | 1.83 | 0.79 | 1.14 | 0.65 | 1.72 | 0.64 |
| $\mu(E_{2,t}^*(z))$ | 0.51 | 0.00 | 0.46 | -0.21 | 0.73 | 0.24 | 0.30 | 0.10 | 0.26 |
| $\Delta(E_{2,t}(z))$ | -0.17 | 0.13 | -0.04 | 0.20 | -0.34 | 0.11 | -0.18 | 0.01 | -0.11 |
| $\Psi(E_{2,t}(z))$ | 0.81 | -0.01 | 0.86 | 3.07 | 0.66 | 1.29 | 0.51 | 1.39 | 0.61 |

Table 9.2 - *Pro-Poor Growth Indicators for Syria (regional level)*

| Indices | Pro-poor growth | | | | | | | | |
|----------------------------------|-----------------|-------|---------------|-------|--------|-------|---------|-------|-------|
| | Southern | | North-Eastern | | Middle | | Coastal | | Total |
| | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural | |
| μ_t^* | 3.07 | 2.99 | 3.10 | 2.68 | 3.32 | 3.23 | 3.39 | 2.84 | 3.13 |
| $\Delta(y_t(\mathbf{P}_0,t(z)))$ | 2.06 | -0.70 | -0.69 | -4.16 | 1.12 | -1.25 | -1.32 | -0.87 | -1.70 |
| $\Psi(y_t(\mathbf{P}_0,t(z)))$ | 1.67 | 0.77 | 0.78 | -0.55 | 1.34 | 0.61 | 0.61 | 0.69 | 0.46 |
| $\mu(y^*1,t(z))$ | 0.35 | 0.33 | 0.38 | 0.22 | 0.51 | 0.32 | 0.30 | 0.25 | 0.35 |
| $\Delta(y_{1,t}(z))$ | 0.08 | -0.09 | -0.02 | -0.37 | 0.05 | -0.05 | -0.14 | -0.09 | -0.17 |
| $\Psi(y_{1,t}(z))$ | 1.24 | 0.73 | 0.96 | -0.66 | 1.09 | 0.86 | 0.53 | 0.64 | 0.50 |
| $\mu(E^*2,t(z))$ | 13.03 | 9.12 | 15.55 | 5.16 | 27.85 | 10.60 | 8.56 | 5.25 | 0.36 |
| $\Delta(E_{2,t}(z))$ | 0.68 | -3.11 | 0.51 | -7.75 | -0.04 | -0.44 | -4.08 | -2.34 | -0.21 |
| $\Psi(E_{2,t}(z))$ | 1.06 | 0.66 | 1.03 | -0.51 | 1.00 | 0.96 | 0.52 | 0.56 | 0.46 |

6. Policy implications

One of the finding that prevails in the three MENA countries for which preliminary results are available is that the growth process of the recent years is less equitable or pro-poor than in earlier years. Although the growth process is equitable in both periods in Tunisia, the objective to halve poverty was lost in the 1990-2000 period compared to the 1980-1990 period. For Egypt in the 2005-2008 periods the poor experienced lower growth rate compared to the neutral growth and therefore growth was not equitable. In Morocco in the 2001-2008 period the growth process does not enable as much poor to escape poverty as the hypothetical growth pattern which lives overall inequality unchanged however the poorest of the poor have benefited more from the factual growth than from a counterfactual equally distributed growth. In Syria growth has not been equitable between 1997 and 2004 which means that the income of the poor has grown less than the average income. Moreover, the poorest have benefited less than from a hypothetical equitable growth. These results have several policies implications that will be highlighted and discussed as the full outcome of the project is developed in an attempt to point to whether or not specific policies have to be directed to the alleviation of poverty in the different subgroups. The idea here is that if growth is less likely to reduce poverty at different growth periods and if given groups are affected differently this might require more attention from policy makers.

Annex 1: Pro-poor growth indices

| Indices | Definition |
|---------------------------|--|
| μ_t^* | <p>Is the reference growth rate in the income of the individuals which is used to evaluate if growth is pro-poor. This rate is assumed to be uniformly distributed in the population. If the revenue of each household grows by the same amount as μ_t^* then inequality remains the same. When μ_t^* correspond to the growth of the mean ($\frac{\bar{y}_t}{\bar{y}_{t-1}} - 1$), our indices allow us to evaluate if growth is an « Equitable growth ».</p> <p>μ_t^* Can also be an objective or desired growth set by the policy makers. In the column of pro-poorness, it could be set at the growth rate that allows halving poverty. Pro-poor growth can therefore be defined as a growth process which decreases poverty more than it does in the benchmark. Briefly speaking, what matters is that the mean income of the poor does not grow at a lower rate than μ_t^*. More details are below.</p> |
| $\Delta(y_t(P_{0,t}(z)))$ | <p>It is the difference between the observed growth rate achieved by households that have a per capita revenue at period t-1 close to the poverty line (z) and the reference growth rate μ_t^* :</p> <p>$\Delta(y_t(P_{0,t}(z))) = \gamma(y_t(P_{0,t}(z))) - \mu(y_t(P_{0,t}(z)))$ where.</p> <p>$\mu(y_t(p)) = \mu_t^*, \forall p \in [0,1]$</p> <p>If μ_t^* is the average annual growth rate necessary to halve poverty over a given period, 10 years say, having $\Delta(y_t(P_{0,t}(z))) > 0$ during a given sub-period ensures that the contry under concern is on the right way. If $\Delta(y_t(P_{0,t}(z))) > 0$ is observed over the whole period of 10 years, no less than the targeted headcount poverty reduction should be realized.</p> |
| $\psi(y_t(P_{0,t}(z)))$ | <p>$\psi(y_t(P_{0,t}(z))) = \frac{\gamma(y_t(P_{0,t}(z)))}{\mu_t^*} = \frac{\mu_t^* + \Delta(y_t(P_{0,t}(z)))}{\mu_t^*} = 1 + \frac{\Delta(y_t(P_{0,t}(z)))}{\mu_t^*}$ Is a Pro-poorness index when poverty is measured by the headcount. It is greater than 1 if the households close to z obtain a</p> |

| | |
|----------------------|--|
| | <p>growth rate above μ_t^* that is if $\Delta(y_t(P_{0,t}(z))) > 0$.</p> <p>If the growth rate of the targeted population is above the growth rate necessary to achieve the objective set by the policy maker μ_t^* (as an example to halve poverty) then the growth is pro-poor.</p> |
| $\mu(y_{1,t}^*(z))$ | <p>This is the growth rate that corresponds to the censored distribution given a growth objective μ_t^* uniformly distributed. For a given growth objective of non censored revenues μ_t^* there is a corresponding growth objective for censored revenues $\mu(y_{1,t}^*(z))$.</p> |
| $\Delta(y_{1,t}(z))$ | <p>$\Delta(y_{1,t}(z)) = \gamma(y_{1,t}(z)) - \mu(y_{1,t}^*(z))$</p> <p>The growth gap of the censored distribution between what is achieved ($\gamma(y_{1,t}(z))$) and what was set as an objective ($\mu(y_{1,t}^*(z))$).</p> |
| $\psi(y_{1,t}(z))$ | <p>$\psi(y_{1,t}(z)) = \frac{\gamma(y_{1,t}(z))}{\mu(y_{1,t}^*(z))} = \frac{\mu(y_{1,t}^*(z)) + \Delta(y_{1,t}(z))}{\mu(y_{1,t}^*(z))} = 1 + \frac{\Delta(y_{1,t}(z))}{\mu(y_{1,t}^*(z))}$</p> <p>This is the pro-poorness indice for $\alpha = 1$</p> <p>If the growth rate of the revenues of the poor is greater than the growth rate of the mean revenue, then growth is pro-poor.</p> |
| $\mu(E_{2,t}^*(z))$ | <p>This is a growth rate of an equality index $E_{\alpha,t}^*(z)$ under the benchmark growth process.</p> <p>It is the growth rate of the equality of the censored distribution. If all revenues increase by a given percentage, the inequality does not change in the non censored distribution. However the inequality in the censored distribution decreases. The inequality within the poor group and within the non poor group remains the same. However the gap in the mean revenue of the poor and the mean revenue of the non poor decreases. This means that the intergroup inequality decreases which leads to an increase in the equality index even under μ_t^*.</p> |
| $\Delta(E_{2,t}(z))$ | <p>An index that will be as high as the poorest of the poor benefit more from the increment to growth. Whenever it is positive, this means that the factual growth process reduces inequality within the poor.</p> |
| $\psi(y_{2,t}(z))$ | <p>This is the pro-poorness index for $\alpha = 2$. If it is greater than 1, the observed growth pattern is pro-poor as it enables more reduction of the severity of poverty ($P_2(z)$) than the $P_2(z)$ reduction that would be achieved under the benchmark growth process.</p> |

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