Globalization and Inequality in the Arab Region

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Abstract:

The paper investigates the effect of globalization on the Arab region. Understanding the process of globalization as increased international economic integration three measures of globalization are used: the rate of increase of trade/GDP ratio; the ratio of the stock of foreign direct investment to GDP; and the number of immigrants to the US. Inequality in the distribution of income is looked at in terms of the average income of the poor and the Gini coefficient. It is shown that (a) the Arab region has been left out of the process of globalization; (b) despite the problems involved in getting high quality data on income, or expenditure, distribution, there is evidence to show that the Arab region boasts a fairly high degree of income inequality; (c) the time trend of the degree of inequality in Arab countries, however, remains problematic with official data showing that inequality has declined over the 1990s decade; (d) the Arab poor, appropriately defined, stand to benefit from trade induced economic growth by about 50 percent of the increase in per capita income; and (e) there exists preliminary evidence of a direct causal link between globalization as measured by FDI/GDP ratio and immigration to the USA in such a way that FDI increases inequality while immigration reduces it. Increased   trade participation does not seem to affect inequality.

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Ali Abdel Gadir Ali,

I. Introduction:

It has now become customary to assert that the term "globalization" means different things to different people. However, there seems to be general agreement that the term refers to the observed process of increased international economic integration driven largely by technological advances in transport and communications. Thus, for example, according to an active participant in the process the term means the "development of global financial markets, the growth of transnational corporations, and their increasing domination over national economies" (Soros (2002:1). In the succinct words of Stiglitz (2002: ix) globalization means "the removal of barriers to free trade and the closer integration of national economies"[2].

In a recent report the World Bank (2002: 23-51) provided a summary of the history, and economic effects, of "globalization". It is noted that "globalization" occurs through trade (measured relative to world income), migration (proxied by the number of immigrants to the United States), and capital flows (proxied by the stock of foreign capital in developing countries relative to their GDP). Three waves of globalization have been identified: 1870-1914, 1945-1980 and 1980 to the present. Central to all identified globalization waves was the reduction in transport costs. Strictly speaking, only the second and third waves of globalization are relevant for the developing countries including those of the Arab region[3].

According to the World Bank's analysis, during the second wave of globalization trade in manufacturing between advanced countries was substantially freed of restrictions and transport costs fell by a third between 1950 and 1970. The developing countries, however, did not participate in, or benefit from, this wave. For developing countries it is noted that despite the fact that "per capita income growth recovered from inter-war slowdown, it was substantially slower than in the rich economies. The number of poor people continued to rise, but non-income dimensions of poverty improved- notably rising life expectancy and rising school enrollments. In terms of equity, within developing countries in aggregate there was little change either between countries or within them. As a group, developing countries were left behind by developed countries" (World Bank (2002: 31)).

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[2] For a similar definition see Rodrik (1999: vii) who defines it as "the whirlwind of technological change and liberalized trade and investment that is bringing huge gains in communications and efficiency, and effecting huge shifts in production and wealth". From a political economy perspective Gray (2002: 55) notes that one possible definition of globalization is the "worldwide spread of modern technologies of industrial production and communication of all kinds across frontiers- in trade, capital, production and information".

[3] The World Bank's report draws on the recent work of Williamson (1997) and Lindert and Williamson (2001) on the history of globalization and inequality.

The third wave of globalization was judged to have been distinctive in that (a) a large group of developing countries broke into global markets; (b) other developing countries became increasingly marginalized in the world economy and suffered declining incomes and rising poverty; and, (c) international migration and capital movements became substantial. Among the developing countries a group of 24 countries were identified as having "globalized" during this third wave. The measure used to identify the countries that have "globalized" is the increase in the trade (exports+ imports) to GDP ratio over the period 1970-1997. Of these the only Arab country is Jordan. Thus, the countries of the region have been left out of the third wave of globalization[4].

To investigate the effect of globalization on inequality in the distribution of consumption expenditure or income, as appropriate proxies for the standard of living and hence the welfare of individuals, it is perhaps important to note that there exist a number of alternative measures of inequality in the specialized literature. As is well known the most widely used measure of inequality in the distribution of income is the Gini coefficient[5]. This measure varies from zero (where every person in the society has the same income, indicating the absence of inequality and representing conditions of perfect equality) to unity (where one person gets all the income and the rest receive nothing, indicating the presence of complete inequality). The Gini co-efficient is frequently expressed in percentages, for ease of understanding.[6]. Thus, higher values of the Gini coefficient indicate higher degrees of inequality in the distribution of the relevant attribute.

Five major results on the effect of globalization on inequality are noted (World Bank (2002: 46-51)): (i) that globalization has been equalizing in OECD countries "as inequality between countries has radically decreased", but there was increased inequality in some countries possibly due to domestic policies[7]; (ii) for the OECD countries and the new "globalizers" taken together, overall inequality has also declined; (iii) within-country inequality has increased in the "new globalizers", due to the increased inequality in China that accounts for one third of the population of this group of countries; (iv) for a sample of 137 countries it is found that there exists "no relationship between changes in openness and changes in

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[4] The other 23 globalized developing countries are: Argentina, Bangladesh, Brazil, China, Colombia, Costa Rica, Cote d'Ivoire, Dominican Republic, Haiti, Hungary, India, Jamaica, Malaysia, Mali, Mexico, Nepal, Nicaragua, Paraguay, Philippines, Rwanda, Thailand, Uruguay, and Zimbabwe.

[5] The Gini coefficient is a Lorenz curve based measure. The Lorenz curve is drawn on the basis of the cumulative percentage shares of the population (on the horizontal axis) against their corresponding cumulative percentage share of income (on the vertical axis), where the population groups are arrayed from poorest to richest. The curve joining the plotted points is the Lorenz curve. If income is equally distributed such that every gets the mean income then the Lorenz curve coincides with the diagonal joining the point zero on the horizontal axis to the point 100 percent on the vertical axis; otherwise, the curve traces points that lie below the diagonal. The ratio of the area between the diagonal and the Lorenz curve to the area of the unit triangle defines the Gini coefficient.

[6] For other measures of inequality see Sen (1997: 24-46) and Kakwani (1980: 63-95). In Sen's notation let n be the number of people in the population and y_i , and x_i be the income and the share of income of person i and let μ be the average level of income. The statistical measures of inequality include the following (a) the range: $E = [\max_i y_i - \min_i y_i] /\mu$; (b) the relative mean deviation: $M = \Sigma \mid \mu - y_i \mid/ n\mu$; (c) the variance: $V = \Sigma (\mu - y_i)^2/ n$; (d) the coefficient of variation: $C = V^{0.5}/\mu$; and, (e) the standard deviation of the logarithms of income: $SL = [\Sigma (\log\mu - \log y_i)^2/ n]0.5$. Another famous measure of inequality is known as Theil's measure based on the idea of entropy and is defined as $T = \Sigma x_i \log nx_i$. The most famous welfare based measure of inequality is Atkinson's measure which relies on the idea of the equally distributed equivalent income, y_e, defined as that level of per capita income which if enjoyed by everybody would make total welfare exactly equal to the total welfare generated by the actual distribution of income. Atkinson's measure is given by $A = 1 - (y_e/ \mu)$.

[7] For an alternative view of the time trend on inequality, and causal factors, in OECD countries see Atkinson (1999).

inequality, whether openness is measured by the share of trade in income, the Sachs-Warner measure of openness, average tariff rates, or capital controls"[8]; and (v) although on average openness does not affect inequality, in low income countries it is associated with greater inequality[9].

The objective of this paper is to contribute to the current debate on the possible effects of globalization on inequality by looking at these effects on the Arab region[10]. In section (2) a review of recent empirical findings relevant to the issue of the effect of globalization on inequality is presented. The most important result in this respect is that which attempted to establish an indirect link between globalization and the average income of the bottom 20 percent of the population. The indirect link is obtained by observing that increased trade volumes, under "globalization", increases the rate of growth of per capita income and that the average income of the poor increases one-for-one as per capita income. Section (3) looks at the current state of globalization of Arab countries. Three World Bank's globalization measures are used: the annual rate of increase of the trade/GDP ratio over the period 1980-2000; the stock of foreign direct investment (FDI) to GDP in 1999; and, the number of Arab immigrants to the US over the period 1990-2000. Section (4) presents the evidence on the state of inequality in the distribution of income in the Arab countries. The section notes the constraints imposed by the availability of data nonetheless but reports available results on the state and time trend of inequality in the region. Section (5) presents results on the effect of globalization on inequality in the region; both indirect and direct effects are reported. Section (6) offers a summary and few concluding remarks.

II. Globalization and Inequality: Recent Empirical Results:

Given the time structure of "globalization" noted above the investigation of its effect on inequality is likely to be associated with the time trend of inequality at the level of the world. Interesting in this respect is to note the results of Li, Squire and Zou (1998) who used a recent set of data to test two propositions regarding income inequality. The first is that income inequality does not display a time trend; and, the second is that it varies significantly across

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[8] This result is based on the work of Dollar and Kraay (2001-a). The investigation involved regressing the income share of the poorest 20 percent of the population on various measures of openness.

[9] This result is due to Ravallion (2001) who applied the concept of convergence used in the empirical growth literature which requires regressing the observed change in inequality between two dates on the initial level of inequality in a test equation of the form $\Delta G_i = a + b\, G_{i0} + e_i$; where G is the Gini coefficient or any other inequality measure and the subscript i denotes the country. There will be inequality convergence if b is negative and significantly different from zero. Using 86 inequality spells for 21 countries Ravallion (2001: 13) concludes that evidence is found of inequality convergence, with a tendency for within-country inequality to fall (rise) in countries with initially high (low) inequality. It seems that countries are tending to become more equally unequal, heading towards a Gini index of around 40%".

[10] According to GDN regional perspectives the coverage of this paper should have been the Middle East and North Africa (MENA) region, which includes Iran and Turkey. Confining the analysis to the Arab region is deliberate in view of the fact that in most of the analysis dealing with inequality and poverty issues the MENA region is usually represented by six Arab countries: Egypt, Jordan, Tunisia, Morocco, Algeria and Yemen (see, for example, Chen and Ravallion (2000)). The reason for this practice in the relevant literature is the unavailability of high quality distribution data for the other countries in the MENA region. On the other hand some of the countries that belong to the Arab region but do not belong to MENA are usually classified as Sub-Saharan Arab countries: Djibouti, Mauritania, Somalia and Sudan. For regional coverage similar to ours see Page and van Gelder (2002: 2 footnote 2) who confine MENA to the six Arab countries noted above in addition to Iraq.

countries. According to their interpretation the significance of the two propositions is that "barring any fundamental socio-political change, poverty reduction will depend crucially on the rate of economic growth. Given this, the significance of the second is that in inegalitarian economies the poor will enjoy a smaller share of any national increment in income than in more egalitarian ones"(Li, Squire and Zou (1998:26)). The test is performed on a sample of 49 developed and developing countries over the period 1947-1994. The sample is restricted to those countries for which high quality information is available for at least four years during the sample period[11]. The only Arab country included in the sample is Tunisia[12].

Both analysis of variance and regression were used to test the two propositions and the results seem to support the two propositions. Without getting involved in the details of the two methods we note the summary of the regression results. The first proposition is confirmed on the basis of an F-test at the 5% level of significance where it is found that the Gini coefficients differ significantly across countries. Similarly, for time trends the authors find statistical support for the second proposition in 32 of the 49 countries. Of the remaining countries they find significant negative trends for seven countries and significant positive trends for 10 countries.

The authors define "quantitatively small" time trends as "an annual change of less than 1% of the country's 1980 predicted Gini coefficient". On the basis of this they note that 10 of the 17 countries with a significant time trend experienced quantitatively small changes in inequality. For the remaining 7 countries the authors observe a statistically large and quantitatively important time trend. The seven countries in question included Australia (with an initial Gini coefficient of 34.18% and a positive and significant annual rate of increase of 0.35%), Chile (with a Gini of 48.65% and a positive and significant time trend of 0.51%); China (with a Gini of 24.72% and a positive and significant time trend of 0.8%); France (with a Gini of 34.22% and a negative and significant time trend of 0.58%); Italy (with a Gini of 31.48 and a negative and significant time trend of 0.37%); New Zealand (with Gini of 30.14% and a positive and significant time trend of 0.49%); and Poland (with a Gini of 21.12 and a positive and significant time trend of 0.31%)[13].

The results relating to the time trend are derived for countries for which relatively long time series observations on the inequality measure were available to permit the estimation of time trends. As such, therefore, they are difficult to generalize for the level of regions or the world. An alternative method for looking at trends in inequality has recently been proposed by Milanovic (2000) where, based on available representative household survey data, detailed calculations are made for regions as well as for the world for two points in time namely 1988 and 1993. The distribution of income, or expenditure, is then generated for various regions, and the world, on the basis of ranking representative individuals by per capita income or expenditure. For each country, starting with per capita income, or expenditure, in local currency relevant exchange rates are applied to get to incomes in international dollars (using purchasing power parity exchange rates, PPP) or in current dollars (using official exchange rates).

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[11] High quality data on income inequality are required to (a) be based on household surveys; (b) be based on comprehensive coverage of all sources of income or uses of expenditure; and, (c) be representative of the population at the national level i.e. not confined to sectors or groups of population (for details see Deininger and Squire (1996)).

[12] It is not clear, however, which reported Gini coefficients in the Deininger and Squire (1996) data base were used for Tunisia.

[13] For the details see Li, Squire and Zou (1998: 32 table 4).

The world is divided into five regions: Africa, Asia, Latin America and the Caribbean (LAC), Eastern Europe and the FSU (EEFSU), and Western Europe, North America and Oceania (WENACO). The number of countries for which data was available differed between 1988 and 1993, but the number of countries for which data was available for the two years is 91. This is called the common sample and the most important results are reported for this sample. The common sample covered 84.4% of the population of the world in 1988 and 84.2% in 1993; it also covered 93.7% of GDP in current dollars in 1988 and 93.1% in 1993. In the common sample five Arab countries are included: Jordan (classified in Asia), Algeria, Egypt, Morocco and Tunisia (classified in Africa). The results for the common sample, using PPP per capita income or expenditure, are summarized in table (1).

Table (1): Inequality in the World: 1988 and 1993

Regions	1988 Gini Coefficient (%)	1993 Gini Coefficient (%)	Change in the Gini (percentage points)	Annual Rate of Change of Gini (%)
Africa	42.7	47.2	4.5	2.02
Asia	55.9	61.8	5.9	2.02
LAC	57.1	55.6	-1.5	-0.53
EEFSU	25.6	46.4	20.8	12.63
WENACO	37.1	36.6	-0.5	-0.27
World	62.5	65.9	3.4	1.10

Source: Milanovic (2000: tables 11 and 17).

As is clear from the table in 1988 the regions characterized by the highest degree of inequality were LAC (with a Gini coefficient of 57.1%), Asia (55.9%) and Africa (42.7%) while the region with the lowest degree of inequality was EEFU, comprising the former socialist block, with a Gini coefficient of 25.6%. For the whole world a Gini coefficient of 62.5% is calculated indicating a very high degree of inequality in the distribution of real income. By 1993 the table shows that inequality has increased in all regions except LAC and WENACO. The largest increase in inequality is recorded for EEFSU where the Gini increased by 20.8 percentage points in five years. The lowest increase is recorded for Africa where the Gini coefficient increased by 4.5 percentage points. On the other hand, the largest decline is recorded for LAC where the Gini coefficient declined by 1.5 percentage points. At the level of the world income inequality increased where the Gini increased from 62.5% in 1988 to 65.9% in 1993 recording an increase of 3.4 percentage points in five years. This is a quantitatively significant increase in inequality with the annual rate of increase in the Gini coefficient being 1.1 per cent.

Calculating the annual rate of change in the Gini coefficient the table also shows that for the regions where inequality has increased the annual rate of increase was quantitatively significant in the sense that the rates were in excess of value of one percent. In contrast, for the regions for which inequality declined the annual rates of change were less, in absolute value, than the critical value for quantitative significance. At the level of the world the recorded trend in inequality is also one of significant quantitative increase.

Be the above as it may, perhaps the most celebrated empirical result on the effect of globalization on inequality is that of Dollar and Kraay (2000-a and b; hereinafter DK). DK (2000-b) purported to show that the "income of the poor rises one-for-one with overall growth", where they define the poor as the bottom fifth of the population, and they note that this "general relationship between income of the bottom fifth of the population and per capita GDP holds in a sample of 80 countries covering four decades". We hasten to note in this respect that the linear proportional relationship between the average income of any percentile group1 and overall average income is true by definition and as such does not require empirical testing. Thus our interest is in the DK results regarding the effect of "globalization" on the average income of the bottom 20 percent of the population as a measure of inequality.

DK (2000-b: 22-23 and table 6) estimate a simple model where the dependent variable is the logarithm of the per capita income of the bottom 20% with the logarithm of per capita income as the main explanatory variable. To this basic relationship alternative measures of openness, or "globalization", are added as explanatory variables. Three measures of "globalization" are used: the standard trade intensity measure (defined as exports plus imports as a percentage of GDP); Sachs and Warner measure of openness[14]; and an IMF dummy variable "that denotes presence of capital controls". The results show that there is a positive and insignificant coefficient for the trade intensity measure (with an estimated coefficient of 0.004 and a standard error of 0.055); a negative and insignificant coefficient for the Sachs and Warner measure (with an estimated coefficient of –0.071 and absolute standard error of 0.047); and a negative and insignificant coefficient on the capital account restrictions measure (with an estimated coefficient of –0.013 and an absolute standard error of 0.065). Thus for all three measures of "globalization" there does not seem to exist a statistically significant effect on the per capita income of the bottom 20 percent of the population. Despite this DK (2000-b: 22) are able to assert that the result for the trade intensity measure, combined with a result relating openness and growth, "indicates that trade openness is good for the poor: it increases mean income and the poor benefit one-for-one"[15]. Moreover, sing these results DK (2000-a: 33) also conclude "we have found little evidence of a systematic effect of trade volumes on income inequality. Combining this observation with the results on the growth benefits of greater trade, we conclude that the balance of the evidence suggests that, on average, greater globalization is a force for poverty reduction"[16].

Instead of looking at the effect of "globalization" on the share of the bottom 20 percent of the population Milanovic (2002) investigated such effect on the whole distribution of income by taking the dependent variable as the ratio of per capita income of the various deciles to the overall per capita income. The investigation is done for levels of, as well as for changes in, these ratios for two years falling in the middle of the third wave of "globalization", namely 1988 and 1993. Trade intensity (exports plus imports as a ratio of GDP), and the ratio of foreign direct investment to GDP are used as measures of globalization. Each of these

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[14] Sachs and Warner (1995) define a country as closed if it had any of the following: non-tariff barriers covering 40 percent or more of trade; average tariff rates of 40 percent or more; a black market premium of 20 percent or more; a socialist country; or a state monopoly on major exports.

[15] DK (2000-b) title their sub-section carrying these results "globalization is good for the poor"! Some of the empirical results on the growth benefits of trade have recently been summarized by Easterly (2001: 230): (a) closed economies are found to grow at 0.7 percent per capita per year compared to 4.5 percent per capita per year for open economies; (b) the growth rate of a previously closed economy will increase by one percentage point when it becomes open; (c) a one point rise in the share of trade to GDP raises per capita income by 2 percent.

[16] The Economist (2000-a and b; 2001) celebrated the result three times while Moore (2001) used the result to preach Arab delegates on the importance of working for the success of the Doha WTO meetings.

globalization measures is interacted with per capita income; in addition financial depth (the ratio of broad money to GDP) and an indicator of democracy are used as explanatory variables.

The results for the change in the ratio between the two years did not establish any statistical significance for any of the chosen explanatory variables. Interesting results for the regression in levels, however, are reported. The results are reported for the cases where the regressions are run independently for each income group as well as the case where the estimation is done simultaneously using seemingly unrelated regression technique. For this latter case the ratio for the fifth income group is excluded. For the two cases the foreign direct investment variable, its interaction with the level of income and the financial depth variable are reported as having no significant effect on the respective income ratios.

In addition to the above, and for the case of independent regressions, without regional dummies, the democracy variable has a negative and significant effect on the income ratios of the bottom seven deciles and a positive and significant effect on the income ratio of the top 10 percent of the population. When regional dummies are introduced negative (positive) and significant effects are reported for the first and third deciles (top decile) with negative (positive) but insignificant effects reported for the remaining lower deciles up to the eight (ninth decile). When the regressions are done simultaneously democracy had a negative and significant effect on all deciles up to the eighth and positive and significant effect on the top decile with the effect on the ninth being positive but not significant.

The trade intensity variable has a statistically significant effect on the income ratios but the effect is conditional on the level of development as reflected by per capita GDP. The relevant results for level estimation without regional dummies are summarized in (2), where the dependent variable is the ratio of the deciles average income to overall average income and where the other explanatory variables are not shown. The number of observations is 113 for all deciles representing pooled observations from 1988 and 1993 obtained from 88 countries for which relevant data are available. All reported coefficients are significant at the 1 or 5 percent levels of significance except for the coefficient of trade intensity of the eighth decile which is indicated with a star.

Table (2): The Effect of Globalization on Inequality: Milanovic Results

Deciles	Trade Intensity	Interaction of Trade with GDP per Capita	Constant	Adjusted R^2	GDP Turning Point (US$ in PPP)	Effect of Globalization for GDP below Turning Point
First	-0.108	0.00002	0.371	0.210	5400	Decreases
Second	-0.185	0.00003	0.519	0.345	6167	Decreases
Third	-0.203	0.00004	0.621	0.397	5075	Decreases
Fourth	-0.194	0.00004	0.761	0.391	4850	Decreases
Fifth	-0.177	0.00003	0.811	0.398	5900	Decreases
Sixth	-0.155	0.00003	0.921	0.381	5167	Decreases
Seventh	-0.116	0.00003	1.061	0.293	3867	Decreases
Eighth	-0.027*	0.00001	1.250	0.054	Na	Na
Ninth	0.127	-0.00002	1.550	0.097	6350	Increases
Tenth	1.037	-0.00021	2.180	0.368	4938	Increases

Source: Milanovic (2002: 15, table 1), and own calculation for the GDP turning point and the effect of globalization below the turning point. * Not statistically significant. NA: not applicable.

The effect of trade intensity on the income ratio of the various deciles can be obtained by differentiating the estimated equation with respect to trade intensity. The effect depends on the level of per capita GDP, which in the case of countries can be taken as a proxy for the level of development. The critical levels of per capita GDP are calculated in the table and the effect is indicated for GDP below that value. Obviously, for countries with per capita GDP higher than the indicated critical value the effect on the income ratio of the various deciles will be opposite to that indicated in the table. For the eighth decile an increase in trade intensity increases the share of income.

From the above observations it will be safe to conclude that for countries with per capita GDP less than US$3900 an increase in trade intensity, reflecting "globalization", is likely to result in increased inequality in the sense of reducing the income ratio of each of the lowest seven deciles and increasing the income ratio of the top three deciles. "Openness would therefore seem to have a particularly negative impact on the poor and middle income groups in poor countries- which is directly opposite to what we would have expected based on theory" (Milanovic (2002: 12).

From the above brief review it seems that we have two conflicting results on the effect of globalization on inequality: an indirect result purporting to show that "globalization is good for the poor", and a direct result that "openness has a negative effect on the poor and middle income groups".

III. <u>Globalization in the Arab Countries</u>:

To appreciate the status of the "globalization" of the Arab countries it is perhaps important to note that, despite their common cultural and historical heritage, these countries have very diverse characteristics in such key areas as the structures of the economies, level of development, geographic location, and type of governance and institutions. To highlight the economic diversity of the region, ERF (1998) grouped the countries of the region into four broad categories[17]: mixed oil economies (MOE: Algeria and Iraq); Oil Economies (OE), which include the countries of the Gulf Cooperation Council of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE; diversified economies (DE: Egypt, Jordan, Lebanon, Morocco, Syria and Tunisia); and, primary export economies (PEE: Djibouti, Mauritania, Sudan and Yemen). The 1996 distribution of population and GDP over these country groups was such that DE accounted for 48% of population and 28% of GDP; MOE accounted for 21% of population and 24% of GDP; PEE accounted for 20% of population and only 3% of GDP; while OE accounted for only 11% of population and 46% of GDP. Intra-Arab diversity is also captured by differences in per capita GDP. Not surprisingly, OE ranks top on this scale with a per capita GDP of about US$9000 in 1996, followed by MOE (US$2400). DE ranks third with a per capita GDP of US$1300 while PEE's per capita GDP amounted to only US$300. The production structures of the four groups differ as well. Thus, in 1996 the agricultural sector accounted for 24% and 23% of GDP in PEE and MOE, respectively, and for 16% in DE while it accounts for only 2.4% of GDP in OE. The manufacturing sector

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[17] For lack of adequate data at the time Libya, Palestinian territories, Somalia and Comoros were not included in the classification. We note in passing that such a classification scheme remains arbitrary but can be useful for the purposes of the analysis.

accounted for 14.4% of GDP in DE, 11% in MOE and OE, and 9% in PEE. Thus, none of the country groups of the region could be considered as industrialized (defining this stage in terms of a manufacturing sector contribution of 20% of GDP). Extractive industry, however, contributed fairly large shares in OE (35% of GDP) and MOE (27% of GDP)[18].

The above noted diversity, it should be appreciated, will affect, among other things, the speed with which countries can integrate in the world economy and the current status of "globalization" of each country[19]. To ascertain such a status we used the World Bank's (2002) indicator of "globalization" and calculated the rate of growth of the trade/GDP ratio over the period 1980-2000 for each country for which relevant information is available. The detailed data set is provided in annex table (A.1).

Judging Arab countries by the level of their trade intensity ratio in the year 2000 annex table (A.1) shows that three countries have such a ratio in excess of 100 percent (Bahrain 145%; Jordan 111%; and UAE 114%); another three countries have ratios in excess of 90% (Tunisia and Yemen 92%; and Mauritania 98%); and seven countries have ratios in excess of 60% (Algeria 64%; Kuwait 88%; Morocco 69%; Oman 81%; Qatar 78%; Saudi Arabia 75%; and, Syria 73%). The remaining five Arab countries have ratios less than 60% (Egypt 39%; Lebanon 51%; Libya 42%; Comoros 58%; and, Sudan 33%). The annex table shows that the trade intensity ratio fluctuated in most of the Arab countries during the period under consideration. The time trend, and its statistical significance, is captured in the results reported in table (3).

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[18] It is worth noting that most of the Arab countries (except the GCC and Syria) implemented structural adjustment programs since the 1980s with the objective of enhancing their production efficiency through various liberalization measures, including trade liberalization and privatization. Moreover, under the auspices of the League of Arab States an attempt has been made to liberalize trade between Arab countries within the context of WTO rules. The process to create an Arab Free Trade Area is still under way.

[19] Despite the fact that WTO membership is not used as a measure of globalization it should be noted that according to the WTO website information (as of December 19, 2000) WTO had a membership of 144 countries as of 1st January 2002. Eleven Arab countries were members at that date: Bahrain (1st January 1995); Djibouti (31st May 1999); Egypt (30th June 1995); Jordan (11th April 2000); Kuwait (1st January 1995); Mauritania (31st May 1995); Morocco (1st January 1995); Oman (9th November 1995); Qatar (1st January 1995); Tunisia (29 March 1995); and UAE (1st January 1995). Another five Arab countries were observers with a status of accession: Algeria, Lebanon, Saudi Arabia, Sudan and Yemen.

Table (3): Globalization in the Arab Countries: Annual Growth Rates of Trade/GDP Ratios for a Sample of Arab Countries 1980-2000

Country	Estimated Coefficient	Absolute t-value	Growth Rate (%)	Globalization Status
Algeria	-0.0004	0.0558	-0.04	Not Globalized
Bahrain	-0.0257	9.2969	-2.57	Not Globalized
Comoros	-0.0045	1.5574	-0.45	Not Globalized
Egypt	-0.02315	3.7271	-2.32	Not Globalized
Jordan	-0.0013	0.2559	-0.13	Not Globalized
Kuwait	-0.0083	2.2644	-0.83	Not Globalized
Lebanon	-0.0436	7.8787	-8.18	Not Globalized
Libya	-0.0265	2.3233	-2.65	Not Globalized
Mauritania	-0.0165	4.6795	-1.65	Not Globalized
Morocco	0.0109	4.7619	1.09	Globalized
Oman	-0.0103	3.9650	-1.03	Not Globalized
Qatar	-0.0040	0.7121	-0.40	Not Globalized
Saudi Arabia	-0.0176	5.9724	-1.76	Not Globalized
Sudan	-0.0078	0.4909	-0.78	Not Globalized
Syria	0.0314	5.3579	3.14	Globalized
Tunisia	0.0074	2.2993	0.74	Globalized
UAE	0.0190	5.0617	1.90	Globalized
Yemen	0.0293	3.1703	2.93	Globalized

Source: own estimation of a trend equation of the form [Ln x = α + β t] where x is the trade/GDP ratio and t is time.

The table shows that, using the World Bank's trade measure of globalization, of the eighteen Arab countries for which data is available five can be considered as having "globalized" during the current phase of globalization. These are Morocco, Syria, Tunisia, UAE and Yemen. Jordan, which was identified by the World Bank as the only "globalized" Arab country, does not make it to the list of "globalizers" if the period is extended to the year 2000. Of the list of Arab "globalizers" according to the above results two countries are perhaps surprising: Syria and Yemen. The other three are obvious candidates for their globalization status in view of a number of characteristics, important among which is their pursuit of trade liberalization policies during the past two decades.

A second World Bank's measure of globalization is the share of countries in foreign direct investment (FDI). This measure can be looked at in terms of the flow of FDI as a ratio of GDP or as the sock of the accumulated flows as a percentage of GDP. However, either way it is constructed it is not very clear as to what would be considered as a reasonable cut-off point for the relevant ratio beyond which a country would be considered as having "globalized". As has already been noted, according to Milanovic (2002) the ratio based of the flows of FDI does not seem to be a significant explanatory variable of inequality. In view of this we computed the weighted average ratio of the stock of FDI to GDP for the 24 countries identified as "globalizers" by the World Bank (2002) as the benchmark for identifying the status of Arab countries. The ratio of the stock of FDI to GDP in 1999 is provided in UNCTAD (2001) and the PPP gross national income for 2000 is used as weights. For the 24 "globalizers" the ratio varied from a high of 65.3% for Malaysia to a low of 1.5% for Bangladesh. The simple average ratio is 22.96% with a standard deviation of 16.23 percentage points while the weighted average is 21.7%.

Table (4): FDI Stocks/GDP Ratios in the Arab Countries: 1980-1999

Country	1980	1985	1990	1995	1999	Globalization Status
Algeria	3.1	2.2	2.1	3.3	3.0	Not Globalized
Bahrain	2.0	10.8	13.8	43.8	100.0	Globalized
Comoros						--
Djibouti	1.0	1.0	1.3	2.8	6.9	Not Globlaized
Egypt	9.9	16.4	25.6	23.9	19.1	Not Globlaized
Iraq	-	-	-	-	-	--
Jordan	4.0	9.6	15.3	9.5	19.3	Not Globalized
Kuwait	0.1	0.2	0.1	-	1.7	Not Globalized
Lebanon	0.5	0.9	1.9	1.2	5.5	Not Globalized
Libya	-	-	-	-	-	--
Mauritania	-	5.7	5.6	8.6	10.7	Not Globalized
Morocco	1.0	3.4	3.5	9.2	16.0	Not Globalized
Oman	8.1	12.0	16.3	16.1	15.7	Not Globalized
Qatar	1.1	1.3	0.8	5.7	16.9	Not Globalized
Saudi Arabia	-	25.2	21.5	17.8	20.0	Not Gloablized
Somalia	4.8	0.5	-	-	4.3	Not Globalized
Sudan	0.4	0.6	0.4	0.7	9.7	Not Globalized
Syria	-	0.2	1.6	1.8	6.5	Not Globalized
Tunisia	66.7	83.0	59.0	61.2	57	Globalized
UAE	1.4	1.8	2.2	4.4	5.3	Not Globalized
Yemen	3.7	4.5	3.8	51.0	16.1	Not Globalized

Source: UNCTAD (2001: 325, annex table B.6)

Using the weighted average ratio of the stock of FDI to GDP in the World Bank's "globalizers" as the benchmark for classifying countries it can easily be seen from the table that only Bahrain (with a ratio of FDI Stock to GDP of 100%) and Tunisia (with a ratio of 57%) can be considered as having "globalized" by the end of 1999. The ratio for the rest of the Arab countries is less than 21.7% of GDP, the benchmark ratio for the World Bank "globalizers". Saudi Arabia (with a ratio of 20%), Jordan (19.3%) and Egypt (19.1%) are border line cases.

The third World Bank's measure of globalization is the number of immigrants to the USA. The World Bank (2002: 23) looks at immigrants to the United States by decade from 1870 to 2000. The measure is defined in flow terms and it is not very clear as to what would be considered as reasonable numbers of immigrants beyond which a country would be considered as having "globalized". A possible comparative benchmark would be the average number of immigrants sent by the group of "globalizers".

Detailed information on immigration to the USA is provided in the US Immigration and Naturalization Service (USINS) annual reports. In its report for the fiscal year 2000 USNIS (2000: 11-14 table 3) relevant country information is reported for the period 1990-2000. According to USNIS immigrants admitted to the USA in 1990 and 1991 amounted to about 1.5 and 1.8 millions respectively. The number of immigrants up to the year 2000 fluctuated with an overall declining trend where by 2000 about 850 thousand immigrants were admitted to the USA. Using the detailed country information table (5) provides a comparison between Arab immigrants, those from the group of "globalizers" and those from other developing regions.

Table (5): Immigrants to the USA by Region of Birth: 1990-2000

Year	Arab Countries	Average per Arab Country	"Globalizers"	Average per "Globalized" Country	All Countries
1990	23033	1097	965035	40210	1536483
1991	27070	1289	1280801	53367	1827167
1992	27884	1329	475101	19796	973977
1993	28577	1361	417103	17379	904292
1994	27244	1297	374246	15594	804416
1995	32837	1564	321674	13403	720461
1996	36374	1732	436369	18182	915900
1997	31630	1506	382459	15936	798378
1998	27677	1318	329464	13728	654451
1999	26556	1265	334698	13946	646568
2000	33242	1583	428955	17873	849807

Source: compiled from USINS (2000: 11-14 table 3). For country details see annex tables (A. 2) and (A.3).

The table clearly shows that immigrants from Arab countries do not constitute a significant flow in absolute numbers. Indeed the average number of immigrants for the group of "gobalizers" was greater than the total number of Arab immigrants for 1990 and 1991. By the year 2000 the average number of immigrants from this group of countries was about 54% of the total number of Arab immigrants. In terms of trend, however, the total number of Arab immigrants shows an increasing trend. This trend could best be looked at in terms of the share of Arab immigrants in the overall total from all countries. From the table it is an easy matter to show that this share has increased from about 1.5% in 1990 to about 4.1% in 1999 and 3.9% in 2000. Be this as it may, and using the average number of immigrants from the group of "globalizers" annex table (A.2) shows that none of the Arab countries has sent more than 6186 immigrants (Egypt in 1996) during any year over the period under consideration. This is obviously lower than the lowest recorded average number of immigrants (of 13403 in 1995) sent by the average country from the group of "globalizers". Thus on account of this measure none of the Arab countries could be considered as having "globalized" during the period 1990-2000.

The intersection of the set of Arab "globalizers" on the basis of the rate of growth of the trade-GDP ratio and the set of Arab "globalizers" on the basis of the stock of FDI to GDP ratio is Tunisia. This confirms the World Bank's result noted above that the Arab region, up to the end of the year 2000, seem to have been left out of the current wave of "globalization".

IV. **Inequality in the Arab Countries:**

Using the Gini coefficient, and based on the most recent available high quality data, table (6) reports a comparison among world regions. The table, adapted from Deininger and Olinto (2002), adopts the standard World Bank classification of world regions. The Middle East and North Africa region of the World Bank is represented in the Deininger and Squire (1996) high quality data set by six Arab countries. The table summarizes the degree of inequality for various regions over five five-year periods (1966-1990) and as such it provides a highly aggregated picture. Nonetheless, it will be helpful to compare the Arab region with regions in the world in terms of the level and trend of income inequality.

Table (6): Income Inequality in the Arab Countries and World Regions 1966-1990 (Gini Coefficients in percentages)

Region	Number of Countries	1966-70	1971-75	1976-80	1981-85	1986-90
Arab Countries	6	43.67	41.65	41.90	42.95	38.17
East Asia and Pacific	9	37.26	38.89	38.53	38.60	40.04
Latin America	17	57.24	50.93	49.77	49.06	50.16
North America	2	35.61	35.28	35.91	35.12	36.54
South Asia	4	33.30	33.32	35.37	36.68	33.57
Sub-Saharan Africa	7	39.00	-----	44.00	41.21	35.75
Western Europe	15	37.09	34.88	30.82	29.74	30.83
Sample	60	40.63	39.32	38.51	36.91	38.58

Source: Deininger and Olinto (2002: 23, table (1)).

The table shows that the Arab countries, as a group, ranked second to Latin America as the highest inequality region for the first two sub-periods as well as for the 1981-85 sub-period. During the sub-periods 1976-80 and 1986-90 the region ranked as the third highest inequality region. This is reflected in an average Gini coefficient for the distribution of consumption expenditure of about 44% compared to one of 57% for Latin America for the first sub-period. For the sub-period 1986-90 the Arab region's Gini coefficient of about 38% was the third highest with East Asia and the Pacific region ranking second highest (with a Gini coefficient of about 40%) and Latin America ranking as the highest inequality region (with a Gini coefficient of about 50%). We hasten to note that such comparison has to acknowledge the fact that for all regions, except Latin America and Western Europe and North America, the Gini coefficients are based on consumption expenditure rather than income. In this respect it is known that the distribution of expenditure is generally more equal than the distribution of income. Indeed Deininger and Squire (1996) advise researchers to upward adjust their expenditure based Gini coefficients by 6.6 percentage points to make them comparable to those based on income. Making such an adjustment, however, does not change the ranking of the regions. Making the adjustment the Gini coefficient of the distribution of income in the Arab countries becomes 50% for the first sub-period and about 45% for the last, which reflects a fairly high degree of inequality in the distribution of income[20].

In terms of inequality trends, the table shows that inequality in the Arab region recorded a declining trend with a decrease in the Gini coefficient from about 44% in the first sub-period to about 38% in the last sub-period, with a slight increase during the period 1971-1985. Declining inequality trends are reported for Latin America, Sub-Saharan Africa and Western Europe while increasing inequality trends are reported for East Asia and the Pacific and North America. Inequality in South Asia remained virtually the same. Noting that these results are based on averages over countries and that the Gini coefficient is not additively separable, the above should be interpreted with caution. However, the trend of declining inequality for Arab countries is confirmed by detailed official country information.

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[20] It needs to be cautioned that such average comparisons are sensitive to the countries included in the sample and they should only be used as indications. Moreover, due to the fact that the Gini coefficient is not additively separable it is very difficult to compare their averages over countries. Alternative methodologies compute inequality measures from decile observations from various countries of a given region as will be noted below.

For six Arab countries for which data is available in Deininger and Squire data base, in addition to Yemen for which what can be considered as high quality data has recently been published in official sources, table (7) provides the Lorenz reading, in terms of the share of various quintiles in consumption expenditure. For each country the information is provided for two years: a first year from the late 1980s or early 1990s and a second year from the late 1990s. Following the standard practice in the literature the first years are taken to represent the state of distribution in the early 1990s while the second year is assumed to represent the late 1990s. The assumption being invoked is that the distribution of consumption expenditure over the relevant period did not change substantially, problematic this assumption as it may be especially in the Arab countries. The table also provides the Gini coefficients for the distribution of consumption expenditure for each country for the relevant years, as well as the annual rate of increase of the Gini coefficients.

Table (7): Changes in the Distribution of Consumption Expenditure for a Sample of Arab Countries: (percentages)

Country	Poorest 20%	2nd poorest 20%	3rd poorest 20%	4th poorest 20%	Richest 20%	Expenditure Gini Coefficient	Annual Rate of Change of Gini Coefficient (%)
Algeria: 1988	6.86	10.97	14.94	20.74	46.55	38.73	
1995	7.00	11.60	16.10	22.70	42.60	35.53	-1.22
Egypt: 1991	8.71	12.49	16.27	21.44	41.09	32.00	
1995	9.50	13.20	16.60	21.4	39.00	28.99	-2.44
Jordan: 1991	6.47	10.29	14.61	20.94	47.69	40.66	
1997	7.60	11.40	15.50	21.10	44.40	36.35	-1.85
Mauritania: 1992	3.60	10.30	16.20	23.00	46.20	46.32	
1998	6.20	10.80	16.40	22.00	45.60	39.14	-2.77
Morocco: 1991	6.57	10.45	14.97	21.71	46.30	39.20	
1998	6.50	10.60	14.80	21.30	46.60	39.82	0.20
Tunisia: 1985	5.54	9.63	12.24	21.02	49.57	43.43	
1990	5.86	10.41	15.27	22.13	46.33	40.24	-1.54
Yemen: 1992	6.10	10.90	15.30	21.60	46.10	39.50	
1998	8.00	11.00	17.50	22.50	41.00	34.28	-2.35
Kuwait: 1987	6.88	10.95	15.47	21.98	44.71	34.68	
1999	5.93	10.66	15.72	22.80	44.89	36.02	0.32
Oman: 2000	5.13	8.95	14.78	23.42	47.73	39.86	NA

Source: Deininger and Squire data base except for Yemen 1998 which is from theYCSO (1999), Kuwait which is from KMP (2001) and Oman which is from OMNE (2002).

The table shows that in the early 1990s inequality in the distribution of expenditure varied among Arab countries. The highest degree of inequality is recorded for Mauritania in 1992 with an expenditure Gini of about 50% (corresponding to an income Gini of 56.6%). The lowest degree of inequality is recorded for Egypt in 1991 with an expenditure Gini of 32% (an income Gini of 38.6%). Other high inequality Arab countries include Jordan (with an expenditure Gini of about 41%), Yemen (with a Gini of about 40%), Morocco and Algeria (39%). In the early 1990s, the average Gini for the high quality sample is 40.06 % with a standard deviation of 4.87 percentage points.

For all the countries in the sample, except for Morocco, the table shows that inequality has declined towards the late 1990s. The highest degree of inequality is recorded for Tunisia in 1990 (with an expenditure Gini of about 40%, corresponding to an income Gini of 46.6%) while the lowest degree of inequality is recorded for Egypt (with an expenditure Gini of about 29%). High inequality countries in the late 1990s include Morocco (with an expenditure Gini of about 40%) and Mauritania (with an expenditure Gini of about 39%). In the late 1990s the average expenditure Gini coefficient for the sample is 36.19% with a standard deviation of 4.52 percentage points.

In terms of the time trend of inequality, the table shows that seven of the eight Arab countries recorded a quantitatively important decline in the inequality of the distribution of expenditure over relatively short periods of time. The largest decline of 6.5 percentage points in the Gini coefficient is recorded for Mauritania over a period of six years. The annual rate of decline of the Gini coefficient of Mauritania is 2.8 per cent. The second largest absolute decline is recorded for Yemen (5.22 percentage points) over a period of six years thus resulting in an annual rate of decline of 2.34 per cent, while the third highest absolute decline is that for Egypt (3.01 percentage points). Morocco is the only country that recorded an increase in inequality of 0.62 percentage points, but the increase is not quantitatively significant being at an annual rate of 0.22%.

Thus, contrary to the results by Li, Squire and Zou (1998) the distribution of expenditure in the Arab region tends to show quantitatively significant changes over fairly short periods of time. This declining trend is in conformity with the results of Squire and Olinto (2002) summarized in table (4). However, the recorded declining trend in inequality does not seem to accord with an intuitive understanding of the economic and social changes that have been taking place in most of the Arab countries in the sample. Given the short periods of time over which the above changes in the distribution of expenditure have occurred, and given the fact that the underlying structural factors affecting inequality are not likely to have undergone drastic changes over the same period, it is open to empirical investigation as to what might have caused such changes. One possible hypothesis worthy of testing is that perhaps changes in macroeconomic policy may be the cause. Almost all of these countries have experienced such macro policy changes during the indicated time periods. However, the precise ways in which macro policy changes affect income inequality are not theoretically well known, though the design and content, of most policy packages would suggest that their influence would be to worsen the state of expenditure distribution. An important component of these macroeconomic policy packages is that of trade policies designed to increase the degree of openness of these countries to the global market[21].

An alternative hypothesis would be that the household surveys on the basis of which these Gini coefficients are calculated somehow fail to capture the top expenditure groups that have emerged following the implementation of the policy packages. A case in point is that of Egypt. Thus, for example, Datt, Jolliffe and Sharma (1998: 16 table 3) report a Gini coefficient for the distribution of consumption expenditure of 35% for 1997. Their result is based on Egypt Integrated Household Survey, which is a nationally representative household survey that collected information on household composition, income, consumption and several other characteristics. Thus, on the basis of these results income inequality in Egypt could be seen to have increased by an annual rate of growth of 9.9% since 1995 or 1.5% since 1991. Such a result would conform to casual observations of the state of distribution in Egypt.

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[21] For a possible explanation of the declining trend see Page and van Gelder (2002).

To properly assess the effect of globalization on inequality in the Arab region we follow the recent literature and generate an income distribution profile for the region as a whole utilizing the income distribution information available at the country level (see, for example, Milanovic (2002) and Sala-i-Martin (2002)). As noted earlier the construction of a regional distribution based on country information attempts the assignments of per capita incomes to the various income classes on the assumption that within each income class there is an even distribution. Using the standard Lorenz curve relationship between the share of the bottom p[th] percent of the population and the overall average income in a given country such assignment of incomes can be undertaken. Recall that the share of the bottom p[th] percent of the population, L(p), is given by the Lorenz relationship:

(1) $L(p) = p [\mu_p/\mu]$

where μ is the overall mean income and μ_p is the mean income of the bottom p[th] percentage of the population and p varies from zero to unity. The results for all countries can then be arrayed in terms of per capita incomes in an ascending order.

The above approach was applied to the six high quality data sample in addition to Yemen (representing about 57% of the population of the Arab region in 1998). For the early 1990s and late 1990s periods 35 per capita income groups were generated. The early 1990s per capita incomes in the sample of Arab countries ranged from a low per capita income of US$ 94 to a high of US$ 4769 with a mean of US$1981; while for the late 1990s period the range is from US$218 to US$4797with a mean of US$ 1917. On the basis of these groups the following quintile distributions of income were generated and the Gini coefficients were calculated.

Table (8) : The Distribution of Income in the Arab Region: High Quality Data

Quintile	Expenditure Share in Early 1990s (%)	Expenditure Share in Late 1990s (%)
First Quintile	5.8	6.1
Second Quintile	11.2	11.7
Third Quintile	18.6	18.7
Fourth Quintile	27.0	26.7
Fifth Quintile	37.3	36.8
Gini Coefficient	32.74	31.77

Source: own calculations based on table (7).

As would have been expected from the discussion of the state of inequality in various Arab countries in the previous section, where countries posted a decline in the Gini coefficient between the first and second years, the above table shows that for the high quality sample of Arab countries inequality in the distribution of consumption expenditure has declined during the 1990s as indicated by a decease in the Gini coefficient from 32.7% in the early 1990s to 31.8% in the late 1990s. Of the seven countries in the Arab high quality sample Tunisia, Morocco and Yemen have been identified as having globalized according to the World Bank's trade measure of globalization.

In an attempt to capture the diversity of the Arab countries alluded to in section (3) above we augmented the high quality sample with two countries for which distribution data is available

the quality of which, however, has not been assessed. These are Kuwait, for which data is available for 1987 and 1996, and Sudan, for which data is available for 1987 and 1999. For the early 1990s period 66 per capita consumption groups were generated which ranged from a low of US$37 to a high of US$ 21682 with an overall mean of US$ 2110. For the late 1990s period 63 per capita consumption groups were generated which ranged from a low of US$71 to a high of US$ 18535 with an overall mean of US$2237. The resulting distributions are reported in table (9).

Table (9): The Distribution of Income in the Arab Region: Expanded Sample

Quintile	Expenditure Share in Early 1990s (%)	Expenditure Share in Late 1990s (%)
First Quintile	5.12	4.47
Second Quintile	12.27	10.65
Third Quintile	17.58	16.08
Fourth Quintile	23.96	22.95
Fifth Quintile	41.08	45.85
Gini Coefficient	33.43	38.02

Source: own calculations.

The results of the expanded sample show that inequality in the Arab region has increased during the 1990s as reflected in an increase in the Gini coefficient from 32.2% in the early 1990s to about 40% in the late 1990s. The number of Arab "globalizers" in the sample has not increased as a result of expanding the sample but their share in total population and income has declined. Comparing the results of tables (8) and (9) indicates the sensitivity of the results to the sample composition and as such does not provide conclusive evidence as to the effect of "globalization" on inequality in the region.

V. **The Effect of Globalization on Inequality**:

V.I. **The Indirect Effect Revisited**:

As noted in section (2) the most celebrated empirical result on the effect of globalization on inequality is that of Dollar and Kraay (2000-a and b). Recall that the link between "globalization" and inequality was obtained in an indirect fashion by first establishing that the average income of the poorest 20% of the population has a unitary elasticity with respect to the overall average income (a relationship which is true by definition) and then by noting that trade intensity measure is positively associated with growth in per capita income in the empirical growth literature. As noted above DK (2000-a: 33) conclude "we have found little evidence of a systematic effect of trade volumes on income inequality. Combining this observation with the results on the growth benefits of greater trade, we conclude that the balance of the evidence suggests that, on average, greater globalization is a force for poverty reduction". In the context of the DK definition of the poor the policy message of the DK's conclusion should be read as saying that "on average, greater globalization is a force for reducing inequality".

Ali and Elbadawi (2001) presented an alternative set of results on the relationship between the average income of the poor and overall average income where the poor are properly

defined as those falling below an appropriately defined poverty line instead of the bottom 20% of the population. In this regard it should be noted that the average income of the poor could be derived from the relationship between the head-count measure and the poverty-gap measure[22]. On the basis of this definition of the average income of the poor and overall average income it can be shown that the elasticity of the average income of the poor and overall average income in not in general proportional and depends on three components: the income elasticity of the head-count ratio (call it E_H); the income elasticity of the poverty-gap ratio (call it E_{PG}); and the income elasticity of the poverty line (call it E_z). Indeed Ali and Elbadawi show that the elasticity of the average income of the poor with respect to overall average income (call E_{yp}) is given by :

(2) $\quad E_{yp} = E_z + (1 - E_z)(1 - E_H/E_{PG})$

Note that if the poverty line is assumed constant across countries, and possibly over time as the tradition in the World Bank deems appropriate, Ez will be zero and the elasticity of the average income of the poor with respect to overall average income will depend on the magnitude of the income elaticities of the poverty measures and that in general it is not equal to unity[23]. For a sample of 48 developing countries, including the six Arab countries, for which high quality data is available, the average income of the poor is calculated in a direct fashion. The results are summarized in table (10) where standard deviations are reported in brackets.

Table (10): The Average Income of the Poor in a Sample of Developing Countries: A Summary

Detail	Arab Countries	Sub-Saharan Africa	Asia	Latin America	All Countries
Number of Countries	6	18	8	16	48
Average Income (US$)	115 (45.13)	75 (70.36)	98 (45.62)	172 (82.01)	109 (78.64)
Poverty Line (US$)	51 (13.72)	42 (24.21)	46 (13.37)	74 (32.66)	52 (27.75)
Head-count Ratio (%)	21.52 (8.80)	52.10 (13.78)	24.72 (12.22)	34.83 (8.57)	37.96 (16.33)
Poverty-gap Ratio (US$)	6.51 (5.83)	23.04 (8.06)	6.99 (4.25)	14.40 (5.04)	15.41 (9.10)
Average Income of the Poor (US$)	37.66 (11.73)	24.27 (17.10)	33.45 (8.81)	43.00 (17.81)	33.72 (30.18)
Gini Coefficient (%)	38.90 (3.6)	48.00 (10.1)	37.00 (7.2)	50.40 (6.7)	45.80 (9.4)

Source: Ali an Elbadawi (2001: 6 table (1)).

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[22] Note that the head-cunt measure of poverty is given by $H = q/n$, where q is the number of people with incomes below the poverty line, z. The poverty gap measure of poverty $PG = H (1 - y_p/z)$, where y_p is the average income of the poor. Therefore, the average income of the poor, $y_p = z (1 - PG/H)$. Thus the average income of the poor can be calculated once information on the head-count, the poverty-gap and the poverty line is available. This, of course, requires calculating the poverty measures.

[23] Note that a necessary and sufficient condition for E_{yp} to equal unity is that E_z is equal to unity which will obtain if the poverty line is assumed to be a constant proportion of overall average income. If such an assumption is made it can be shown that all poverty measures that are homogeneous of degree zero in mean income and the poverty line will be functions of the degree of inequality in the distribution of income. This automatically implies that E_H will be zero. Moreover, note that if E_z is assumed to be zero equation (2) in the text collapses to that derived by Kakwani (1980).

We note in passing that the table shows that the head-count ratio varies among countries in a given region, as well as for the whole sample, as clearly indicated by the reported standard deviations. Thus, the major assumption used by Dollar and Kraay (2001-b) of looking at the mean income of the bottom 20% of the population as representing that of the poor has nothing to do with measured poverty.

On the basis of detailed calculations of the magnitudes involved in equation (2) Ali and Elbadawi (2001) provide average results for the elasticity with respect to mean income of the head-count ratio, E_H, the poverty-gap ratio, E_{PG} and the poverty line, E_z as well as estimates for the elasticity of the mean income of the poor with respect to mean income, E_{yp} . A summary of these results is presented in table (11).

Table (11): The Elasticity of the Mean Income of the Poor with Respect to Mean Income in a Sample of Developing Countries: Averages

Region	Income Elasticity of Head-count Ratio (EH)	Income Elasticity of the Poverty-gap Ratio (EPG)	Ratio of Elasticities (EH/EPG)	Income Elasticity of the Poverty Line (Ez)	Income Elasticity of the Average Income of the Poor (Eyp)
Arab Countries	-2.29	-3.20	0.77	0.29	0.45
Sub-Saharan Africa	-0.98	-1.43	0.68	0.19	0.46
Asia	-2.44	-3.42	0.77	0.25	0.43
Latin America	-1.17	-1.52	0.79	0.39	0.51
Sample Countries	-1.45	-2.01	0.74	0.26	0.47

Source: Ali and Elbadawi (2001: 7, table (2)).

The last column is the relevant set of calculations for testing whether there exists one-for-one effect of the increase in the mean income of society on the mean income of the poor (along the lines of the Dollar-Kraay findings). According to these results the highest response is recorded for Latin America where a one percent increase in the overall average income will be expected to increase the mean income of the poor by 0.51 percentage points. The lowest response is reported for the Asian group of countries where the mean income of the poor increases by 0.43 of the percentage increase in the mean income of society. For the whole sample the increase in mean income of the poor is slightly lower than half, 0.47, of the percentage increase in the mean income of society. At this level of analysis, therefore, there is no evidence to support a strict one-to-one proportionality, given the proper definition of the average income of the poor[24]. These results, it is suggested, are more in line with an intuitive understanding of what was happening to the poor during economic growth episodes than the

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[24] On the basis of detailed country calculations these results a t-test was performed for regions and for the whole sample where it is found that for all regions except Sub-Saharan Africa the income elasticity of the average income of the poor is not significantly different from 0.5. The income elasticity of the poor in Sub-Saharan is significantly lower than 0.5.

claim that the "income of the poor rises one-for-one with overall growth"[25]. The results for the six Arab countries are reported in table (12).

Table (12): The Elasticity of the Mean Income of the Poor with Respect to Mean Income in a Sample of Arab Countries

Region	Income Elasticity of Head-count Ratio (EH)	Income Elasticity of the Poverty-gap Ratio (EPG)	Ratio of Elasticities (EH/EPG)	Income Elasticity of the Poverty Line (Ez)	Income Elasticity of the Average Income of the Poor (Eyp)
Algeria	- 2.67	-3.00	0.89	0.305	0.38
Egypt	- 3.54	- 5.67	0.62	0.239	0.53
Jordan	-2.28	-3.51	0.65	0.348	0.58
Mauritania	-1.26	-1.13	1.11	0. 145	0.05
Morocco	-2.13	-3.29	0.65	0.289	0.54
Tunisia	-1.86	-2.60	0.72	0.430	0.59
Mean	-2.29	-3.20	0.77	0.290	0.45
S.D.	0.77	1.48	0.19	0.100	0.21

Source: Ali and Elbadawi (2001: 15, appendix table (A. 2)).

The table shows that for the Arab countries the highest response of the income of the poor to an increase in overall average income is recorded for Tunisia, followed by Jordan, Morocco and Egypt. The lowest response is recorded for Mauritania. The overall mean elasticity for the Arab countries is 0.45, which is not statistically different from 0.5 as noted above. Thus in the Arab countries the spill over from the positive growth effect of trade to the poor is not to increase their average income one-for-one as claimed by DK but rather by only 50% of the increase in per capita income.

In addition to the above direct calculations of the elasticity of the average income of the poor with respect to overall average income Ali and Elbadawi (2001) also conducted a regression test for the proportionality hypothesis. In addition to the original DK (2000-b) specification, where the logarithm of the mean income of the poor is regressed against the logarithm of the overall average income, quadratic formats in the level and log of overall average income were run to allow the elasticity in question to vary according to the level of development as reflected by the overall average income. In view of the observed significant difference of Sub-Saharan Africa a dummy for this region was introduced. The results are summarized in table (13), where figures between brackets are adjusted White's heteroscedasticity consistent standard errors[26].

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[25] For similar results see Foster and Szekely (2001) who use the concept of general means to track low incomes. The authors specifically acknowledge that it is the difficulty of computing appropriately defined average income of the poor, using poverty lines for a large number of countries, and the arbitrariness of poverty lines, that prompted them to use the concept of general means to track low incomes. Their overall conclusion is that "living standards at the bottom of the distribution improve with growth, but that the poor gain proportionately much less than the average individual" (Foster and Szekely (2001: 17).

[26] Dollar and Kraay argue that simple OLS could result in inconsistent parameter estimates for at least three reasons: measurement errors, omitted variables bias or endogeneity due to feedback from mean income of the poor to society's mean income. For other purposes these econometric issues can be investigated. For our purposes the results should be taken as possible confirmation to the direct calculations reported above.

Table (13): Regression Results: Dependent Variable Logarithm of Average Income of the Poor

Independent Variables	Original DK Specification	DK Specification	Quadratic in Levels	Quadratic in Logs
Average Income			0.0073 (0.0014)	
Squared Average Income			-0.000007 (0.000004)	
Ln Average Income	0.6937 (0.0937)	0.6929 (0.0955)		-0.892 (0.467)
Squared Ln Average Income				0.1633 (0.059)
SSA Dummy		-0.0058 (0.1858)	-0.1644 (0.058)	-0.1453 (0.059)
Constant	1.342 (0.368)	1.3472 (0.4127)	2.749 (0.1005)	4.07 (1.069)
R-Squared	0.5354	0.5354	0.899	0.901
Adjusted R-Squared	0.5253	0.51477	0.892	0.894

Source: Ali and Elbadawi (2001: 10, table (6)).

The table reports a set of interesting results. Results in the first column correspond to that of Dollar and Kraay and provide a direct estimate of the elasticity of the mean income of the poor with respect to mean income of society. According to the result the elasticity of the average income of the poor is about 0.69, and is significantly different from unity with a t-value of 3.27. The results for the quadratic in levels and in logs show that the curvature term in mean income is highly significant (at better than 5% level of significance) which suggests that in general the income elasticity of the average income of the poor should be expected to vary between countries depending on the state of development as captured by overall average income.

On the basis of the results for the quadratic specifications the income elasticity of the average income of the poor with respect to overall average income can be calculated for various countries and groups of countries. Thus, for example, the calculations show that, for the whole sample the mean income elasticity of the average income of the poor is 0.58 (with a standard deviation of 0.25) for the quadratic in levels and 0.59 (with a standard deviation of 0.23) for the quadratic in logs. For the quadratic in levels the mean elasticity varied from a low of 0.40 for Sub-Saharan Africa to a high of 0.76 for Latin America and for the quadratic in logs the range of the mean elasticity is from a low of 0.43 for Sub-Saharan Africa to a high of 0.76 for Latin America. For the six Arab countries the results are reported in table (14).

Table (14): Income Elasticity of the Average Income of the Poor in Arab Countries

Country	Quadratic in Levels	Quadratic in Logs
Algeria	0.67	0.67
Egypt	0.54	0.57
Jordan	0.75	0.72
Mauritania	0.34	0.39
Morocco	0.64	0.65
Tunisia	0.87	0.81
Mean (S.D.)	0.63 (0.18)	0.63 (0.14)

Source: Ali and Elbadawi (2001: 16 appendix table (A.3)).

The results for the Arab countries are similar to those for other regions and the whole sample in the sense that the mean elasticity is identical under the two specifications. For the Arab countries, and from the information provided in the table, it is an easy matter to show that the regional elasticities are significantly different from unity. For the elasticity based on the quadratic in levels the t-value is 5.04; while for the quadratic in logs the t-value is 6.47. The highest response of the average income of the poor to changes in overall average income is recorded for Tunisia, followed by Jordan, Algeria and Morocco. The lowest response is recorded for Mauritania. These results confirm the earlier results based on direct calculations and more importantly caution against using constant elasticities in general. Thus, on average, the growth effects of "globalization", in the sense of possible increases in per capita income, will be expected to benefit the Arab poor only to the extent of about 63% of the percentage increase in per capita income rather than the claimed one-to-one effect.

V.2. **Direct Effects:**

As noted in section (2) direct effects of globalization on inequality can be captured by regressing various inequality measures as dependent variables on measures of "globalization", or measures of openness as proxy for "globalization". Utilizing DK (2000-b) data set we are able to identify a sample of 51 countries for which we could calculate the average income of the poor as was done by Ali and Elbadawi (2001). In their data set DK provide the following measures of "openness": (a) exports plus imports as a share of GDP in PPP. The variable is taken as the average for five years up to and including the year of the survey. This variable is denoted as OPENAV; (b) adjusted OPENADJAV which is based on the residuals from pooled ordinary least squares regression of OPENAV on Frankel-Romer instrument and the logarithm of population in 1990[27]; (c) Sachs and Warner openness dummy, denoted SWAV, and defined as the average over five years up to and including the year of the survey; and, (d) a dummy variable for the membership (=1) of WTO or GATT, denoted as WTOAV, and defined as the average over five years up to and including the year of the survey[28]. The results are reported in table (15) where figures in brackets are White heteroscedastic consistent t-values.

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[27] Frankel and Romer (1999), in the context of exploring the role of trade in explaining growth, regressed bilateral trade flows as a share of GDP on measures of country mass, distance between trade partners, and a few other geographical variables and then constructed a predicted aggregate trade share for each country using the estimated coefficients.

[28] Other measures of openness in the DK data set include (i) capital account restriction, denoted KARESTAV; and, (ii) import taxes as a share of imports, denoted IMPTAXAV. These were not used because they will reduce the size of the sample for which we can calculate poverty measures and hence the average income of the poor.

Table (15): Openness and the Average Income of the Poor

(dependent variable is the logarithm of the average income of the poor)

Independent Variables	I	II	III	IV	V	VI	VII	VIII
Ln Average Income	0.6525 (14.65)	0.6389 (13.16)	0.6562 (14.71)	0.6529 (16.40)	-2.9354 (3.96)	-2.8554 (3.84)	-2.7626 (3.76)	-2.4565 (4.03)
Squared Ln Average Income					0.2518 (4.91)	0.2459 (4.80)	0.2407 (4.72)	0.2174 (5.15)
OPNAV	-0.0193 (0.09)				0.1459 (0.80)			
OPENADJAV		0.1800 (0.78)				0.1859 (0.95)		
SWAV			0.0112 (0.13)				0.0024 (0.04)	
WTOAV				0.0887 (1.13)				0.0798 (1.12)
Constant	1.2043 (3.95)	1.3138 (3.80)	1.1765 (3.89)	1.1404 (1.68)	13.79 (5.22)	13.5834 (5.09)	13.1772 (5.04)	12.1302 (5.61)
# Observations	49	49	47	51	49	49	47	51
Adjusted R-Squared	0.8084	0.8116	0.8173	0.8289	0.8784	0.8802	0.8823	0.8872

The above, it is suggested, are interesting results. Columns I-IV in the table report results on the basis of the original DK specification for the various measures of openness. It should be noted that in the above results the income elasticity of the average income of the poor is les than unity as Ali and Elbadawi (2001) have argued. As for the effect of openness on the average income of the poor it is clear that none of the openness indicators has a statistically significant effect on the average income of the poor. The trade intensity measure has a negative effect in the sense that controlling for the overall income level it is expected that an increase in trade volumes as a ratio of GDP will reduce the average income of the poor. For the other three measures there is a positive relationship to be appropriately interpreted.

Columns V-VIII in the table report the results of the effect of openness measures on the average income of the poor for the quadratic format that allows the elasticity of the average income of the poor with respect to overall average income to vary with the level of development as captured by per capita GDP. An interesting result to note is that there seems to exist a Kuznets process in the sense that at early stages of development the average income of the poor seems to decline before it increases. This is captured by the negative and significant coefficient of the logarithm of average and the positive and significant coefficient of the squared logarithm. This means that as per capita income increases the average income of the poor tends to decline first before it increases. As for the effect of the various measures of openness on the average income of the poor the results for the original DK specification obtain for the quadratic form. None of the measures is significantly related to the average income of the poor.

The above two sets of results confirm the results reported by DK regarding the effect of openness on the average income of the poor where the poor are defined as the poorest 20% of the population. To the extent that these various measures of openness can be taken to reflect the status of globalization of countries then it can be concluded that perhaps the poor will not be affected by "globalization". More direct results, however, would require the use of a more direct measure of globalization.

To apply the direct measures of globalization a new sample of 58 countries for which Gini coefficients are available for the 1990s is chosen from DK's data set. A test of the effect of globalization on inequality is performed by regressing the Gini coefficient on the World Bank's measures of globalization, namely the rate of increase of the trade intensity ratio over the period 1980-2000 (TGR); the stock of FDI as a ratio of GDP in 1999 (FDI); and, the logarithm of the average annual number of immigrants to the US, where the average is taken over the period 1990-2000 (LIM). In all regressions a dummy (DUM) for Arab countries is introduced. The Arab countries in the sample are Algeria (for which the Gini coefficient is reported for 1995), Egypt (1991), Jordan (1997), Mauritania (1993), Morocco (1990), Tunisia (1990) and Yemen (1992). The assumption being made regarding inequality is the usual one used in the literature where a Gini observation for a 1990s year is taken to represent inequality during the decade. The Gini coefficient and its logarithm are used as dependent variables. The qualitative results, as well as the explanatory powers, of the two formats are similar and as such only the results for the logarithm of the Gini are reported in table (16) where the absolute values of the White heteroscedastic consistent t-values are between brackets.

Table (16): Globalization and Inequality in Developing Countries

(dependant variable= logarithm of the Gini coefficient)

Model	TGR (growth rate of Trade/GDP)	FDI Stock/GDP	LIM (logarithm of annual immigrants to USA)	DUM (Arab dummy)	Constant	Adjusted R-squared (%)
I	-0.0109 (1.81)*			-0.1997 (3.60)**	3.8850 (125.2)***	9.19
II		0.0011 (2.98)***		0.1531 (2.75)***	3.8198 (122.3)***	9.17
III			-0.0249 (2.54)**	-0.1753 (3.97)***	4.0311 (55.53)***	15.16
IV	-0.0096 (1.46)	0.001 (2.49)**		-0.1848 (3.27)**	3.8506 (103.9)***	11.1
V	-0.0030 (0.39)		-0.0224 (2.04)**	-0.1837 (3.81)***	4.0222 (53.33)***	13.8
VI		0.0008 (1.95)*	-0.0225 (2.24)**	-0.1654 (3.61)***	3.9887 (49.79)***	16.1
VII	-0.0025 (0.31)	0.0008 (1.89)*	-0.0205 (1.85)*	-0.1727 (3.42)***	3.9816 (49.05)***	14.7

Note: *, **, and *** indicate significance at the usual 10, 5 and 1 percent levels.

The table shows the expected direction of qualitative effect of each globalization measure on its own as well when all measures are considered together. In all the results the dummy for Arab countries is negative and significant indicating that in the 1990s income inequality in the Arab countries was on average lower than that prevailing in the developing countries of the sample. The results show that increased participation in world trade as reflected by the growth rate of the trade intensity measure is likely to reduce inequality in developing countries in a statistically significant, fashion. A one percent increase in the rate of growth of trade intensity is expected to reduce the Gini index by 0.01 percent. On its own increased trade explains about 9 percent of the observed variation in inequality in developing countries. Globalization as captured by immigration to the US is also expected to reduce inequality in

the developing countries in a statistically significant fashion. An increase in the average number of immigrants per country per year by one percent is expected to reduce the Gini coefficient by 0.03 percent. On its own immigration to the USA explains about 9 percent of the observed variation in inequality. In contrast to the effect of these two globalization measures, an increase in the ratio of the stock of foreign direct investment to GDP is expected to increase inequality in a statistically significant fashion, but the effect is rather small. A percentage point increase in the FDI/GDP ratio increases the Gini coefficient by 0.001 percent. On its own the FDI variable explains 15 percent of the variation in inequality.

In all the remaining results the trade intensity variable loses its statistical significance and the two other globalization measures keep theirs as well as the qualitative direction, and the quantitative magnitude, of their effect. The FDI and immigration variables together explain about 16 percent of the variation in inequality in developing countries, while the three globalization measures explain about 15 percent. Either way these seem to be reasonable results in view of the known structural, and policy, variables affecting inequality in various economies.

VI. <u>Summary and Concluding Remarks</u>:

The most important results of this paper could be summarized as follows:

(a) that the Arab region, diverse and oil rich as it may be, has so far been left out of the third globalization wave of the 1980s to the present. At best, using the growth rate of trade to GDP ratio over the period 1980 to the present as the indicator of globalization, only five Arab countries could be considered as having "globalized". These countries are Morocco, Syria, Tunisia, UAE and Yemen. The only Arab country identified by the World Bank as having "globalized", Jordan, does not belong to this set of Arab "globalizers". This suggests that the identification of countries on the globalization scale is sensitive to the period over which globalization measures are constructed. Using the FDI stock as a ratio of GDP measure of globalization only two Arab countries can be considered as having "globalized" by the end of 1999. These countries are Bahrain and Tunisia. At the other extreme, using the immigration to the US measure of globalization albeit in a heuristic fashion, none of the Arab countries could be considered as having "globalized" as yet;

(b) that despite the problems involved in getting high quality data on income, or expenditure, distribution there is evidence to show that the Arab region boasts a fairly high degree of income inequality. The time trend of the degree of inequality, however, is subject to debate. Official data show inequality to have declined over the 1990s decade. Given the fact that the Arab region has so far been left out of the third globalization wave, it is not clear as to whether globalization is responsible for this declining trend in inequality in the Arab region;

(c) that like in many other developing countries the Arab poor, appropriately defined, stand to benefit from trade induced economic growth by about 50 percent of the increase in per capita income. This is contrary to the celebrated result that purports to promise the poor a one-to-one increase in their income as a result of "globalization" induced increase in per capita incomes;

(d) that there exists preliminary evidence of a direct causal link between globalization as measured by FDI/GDP ratio and immigration to the USA in such a way that FDI increases inequality while immigration reduces it.

The above tentative results should be looked at as calling for increased research efforts that need to be made to ascertain the possible effects of "globalization" on various aspects of the social dimensions in developing countries. Inequality in the distribution of the fruits of economic growth is an important aggregator of the social dimension that is likely to have serious implications for political stability with an obvious corollary for macroeconomic stability. In this respect strong policy advocacy messages of the form that globalization induced economic "growth is good for the poor" are not likely to helpful to policy makers in developing countries, including Arab countries. As rightly noted by Rodrik (2001: 2) world "markets are a source of technology and capital; it would be silly for the developing world not to exploit these opportunities. But globalization is not a short cut to development. Policy makers need to forge a domestic growth strategy, relying on domestic investors and domestic institutions". It is in the context of such growth and development strategies that distributional conflicts that may arise from deeper integration in world markets can be resolved.

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Annex table (A. 1): Trade GDP Ratio in the Arab Countries 1980-2000

Year	Algeria	Bahrain	Egypt	Jordan	Kuwait	Lebanon	Libya	Morocco	Oman	Qatar	Saudi Arabia	Syrian	Tunisia	UAE	Yemen	Comoros	Sudan	Mauritania
1980	64.68	239.35	73.38	124.05	112.65	118.70	97.59	45.27	100.31	85.99	101.02	54.76	85.84	112.41	45.88	60.64	33.73	103.48
1981	65.46	251.14	82.18	140.18	107.98	116.06	91.18	54.92	102.78	79.74	103.42	49.60	91.21	103.20	43.27	60.97	33.27	120.01
1982	59.92	225.76	68.97	130.85	106.87	121.03	87.03	52.96	101.70	108.82	96.50	39.64	84.35	98.99	62.84	69.53	34.35	124.77
1983	53.74	189.63	61.91	114.44	108.48	116.16	80.48	51.56	91.72	96.97	102.66	40.74	77.08	95.70	49.46	73.51	31.84	122.04
1984	53.18	190.33	58.16	114.33	104.75	134.34	41.64	58.25	87.86	82.39	95.67	37.17	77.29	90.82	48.37	64.55	24.93	118.72
1985	50.33	191.61	51.96	113.07	96.42	113.59	39.37	59.69	87.01	76.08	79.97	37.99	70.24	89.65	52.58	67.06	17.63	140.70
1986	36.03	183.52	41.33	84.75	94.20	92.43	33.82	50.34	80.17	75.57	74.23	34.19	67.49	87.13	48.15	57.93	12.96	135.47
1987	32.68	189.77	35.32	93.99	89.66	70.05	29.99	51.63	77.94	58.35	79.22	45.51	70.64	94.23	36.47	57.75	16.66	115.67
1988	38.11	172.83	52.48	112.19	90.50	82.03	28.00	52.32	78.64	55.71	76.27	43.65	83.68	98.44	30.96	59.76	15.79	113.30
1989	47.15	186.27	50.24	133.38	93.77	109.94	55.69	52.66	78.79	62.64	75.40	54.39	92.01	103.75	30.63	54.17	27.42	106.57
1990	48.38	210.16	52.76	154.65	103.01	117.92	63.43	58.88	83.34	72.49	82.35	56.29	94.16	105.80	34.35	51.40	27.66	106.37
1991	52.72	180.64	63.61	142.21	142.61	97.43	50.29	53.87	86.95	71.63	85.99	56.48	85.69	113.77	49.32	58.22	22.33	96.35
1992	49.19	181.12	60.86	131.42	94.69	87.24	40.48	56.86	88.85	76.59	84.47	63.89	86.00	122.70	46.16	59.89	19.88	89.65
1993	44.92	164.60	58.39	130.27	92.06	80.48	45.10	58.13	91.04	71.77	77.57	68.77	88.41	124.53	56.45	57.68	19.77	103.48
1994	51.49	155.18	51.08	118.20	93.18	74.05	51.39	55.79	89.20	78.65	68.80	78.45	92.73	131.33	47.71	67.56	19.99	87.72
1995	57.90	152.46	49.95	123.05	96.57	77.11	50.55	61.50	74.72	87.67	74.28	68.98	93.38	133.83	64.13	64.33	17.06	108.63
1996	54.12	164.12	46.14	129.20	92.71	69.34	48.08	55.93	78.00	83.51	76.48	69.91	85.78	147.00	79.24	59.70	27.96	103.03
1997	52.86	148.58	45.38	119.59	93.94	59.84	43.41	60.26	79.92	71.98	76.50	66.22	89.98	132.44	73.94	61.17	21.17	88.14
1998	47.35	128.49	42.63	108.53	96.98	55.04	38.41	59.74	79.43	81.78	66.18	61.42	89.29	130.04	70.20	59.28	24.95	93.62
1999	52.17	136.01	38.84	105.58	86.26	49.07	41.89	64.02	76.19	79.64	67.79	64.13	86.64	131.00	78.95	58.29	23.28	87.77
2000	64.32	145.37	38.87	110.96	88.40	50.76	42.97	68.58	81.41	77.80	75.29	72.60	91.58	113.70	91.90	57.52	32.98	97.93

Sources: World Bank (2002); Arab Monetary Fund (2002 and 1985); League of Arab States el al (2000 and 1995)

Annex table (A.2): Arab Immigrants to the USA 1990-2000

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Algeria	302	269	407	360	364	650	1,059	717	804	789	907
Bahrain	58	58	81	93	87	78	76	80	53	70	106
Comoros			2	3	1	2	3	3			3
Djibouti	22	21	14	14	10	25	19	18	15	6	14
Egypt	4,117	5,602	3,576	3,556	3,392	5,648	6,186	5,031	4,831	4,429	4,461
Iraq	1,756	1,494	4,111	4,072	6,025	5,596	5,481	3,244	2,220	3,372	5,134
Jordan	4,449	4,259	4,036	4,741	3,990	3,649	4,445	4,171	3,255	3,274	3,909
Kuwait	691	861	989	1,129	1,065	961	1,202	837	749	803	1,018
Lebanon	5,634	6,009	5,838	5,465	4,319	3,884	4,382	3,568	3,290	3,040	3,674
Libya	268	314	286	343	166	216	250	171	166	156	181
Mauritania	3	9	2	9	10	22	26	51	78	24	88
Morocco	1,200	1,601	1,316	1,176	1,074	1,726	1,783	2,359	2,410	2,971	3,626
Oman	9	5	24	21	32	31	25	36	25	40	51
Qatar	33	56	59	88	51	60	79	70	60	78	97
Saudi Arabia	518	552	584	616	668	788	1,164	815	703	763	1,063
Somalia	277	458	500	1,088	1,737	3,487	2,170	4,005	2,629	1,710	2,465
Sudan	306	679	675	714	651	1,645	2,172	2,030	1,161	1,354	1,538
Syria	2,972	2,837	2,940	2,933	2,426	2,362	3,072	2,269	2,840	2,056	2,374
Tunisia	226	275	216	167	149	189	228	163	200	150	308
UAE	192	164	172	196	286	317	343	329	329	310	436
Yemen		1,547	2,056	1,793	741	1,501	2,209	1,663	1,859	1,161	1,789
Total	23,033	27,070	27,884	28,577	27,244	32,837	36,374	31,630	27,677	26,556	33,242

Source: USNIS (2000: table (3)).

Annex table (A. 3) : Immigration to the US from the World Bank's Globalized Developing Countries

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hungary	1,655	1,534	1,304	1,091	880	900	1,183	949	809	698	1,025
Bangladesh	4,252	10,676	3,740	3,291	3,434	6,072	8,221	8,681	8,621	6,046	7,215
China, R.	31,815	33,025	38,907	65,578	53,985	35,463	41,728	41,147	36,884	32,204	45,652
India	30,667	45,064	36,755	40,121	34,921	34,748	44,859	38,071	36,482	30,237	42,046
Jordan	4,449	4,259	4,036	4,741	3,990	3,649	4,445	4,171	3,255	3,274	3,909
Malaysia	1,867	1,860	2,235	2,026	1,480	1,223	1,414	1,051	1,011	994	1,556
Nepal	184	174	212	257	257	312	431	447	476	453	617
Philippines	63,756	63,596	61,022	63,457	53,535	50,984	55,876	49,117	34,466	31,026	42,474
Thailand	8,914	7,397	7,090	6,654	5,489	5,136	4,310	3,094	3,102	2,381	3,785
Cote d'Ivoire	184	347	259	250	268	289	432	430	364	305	439
Mali	34	63	55	51	55	94	124	97	83	72	109
Rwanda	6	12	10	25	16	41	118	170	52	98	73
Zimbabwe	272	261	296	308	246	299	385	274	186	184	323
Mexico	679,068	946,167	213,802	126,561	111,398	89,932	163,572	146,865	131,575	147,573	173,919
Dominican R.	42,195	41,405	41,969	45,420	51,189	38,512	39,604	27,053	20,387	17,864	17,536
Haiti	20,324	47,527	11,002	10,094	13,333	14,021	18,386	15,057	13,449	16,532	22,364
Jamaica	25,013	23,828	18,915	17,241	14,349	16,398	19,089	17,840	15,146	14,733	16,000
Costa Rica	2,840	2,341	1,480	1,368	1,205	1,062	1,504	1,330	1,204	886	1,324
Nicaragua	11,562	17,842	8,949	7,086	5,255	4,408	6,903	6,331	3,521	13,389	24,029
Argentina	5,437	3,889	3,877	2,824	2,318	1,762	2,456	1,964	1,511	1,393	2,331
Brazil	4,191	8,133	4,755	4,604	4,491	4,558	5,891	4,583	4,401	3,902	6,959
Colombia	24,189	19,702	13,201	12,819	10,847	10,838	14,283	13,004	11,836	9,966	14,498
Paraguay	704	538	514	668	789	559	615	304	275	217	342
Uruguay	1,457	1,161	716	568	516	414	540	429	368	271	430
Total	965,035	1,280,801	475,101	417,103	374,246	321,674	436,369	382,459	329,464	334,698	428,955

Source: USNIS (2000: table (3)).

Annex table (A.4) : Average Income of the Poor in a Sample of Developing Countries: Ali and Elbadawi Sample

	Country	Year	Average Income (US$ per person per month)	Poverty Line (US$ per person per month)	Head-count Ratio : H (%)	Poverty-gap Ratio: PG (%)	Average Income of the Poor (US$ per person per month)	Gni Coefficient (%)
1	Algeria	1988	118.00	50.4	16.9	4.21	37.82	39.3
2	Egypt	1991	88.77	42.3	13.9	2.08	35.93	32.0
3	Mauritania	1988	51.00	33.2	38.7	18.19	17.62	42.5
4	Morocco	1991	110.77	48.4	21.3	4.97	37.09	39.2
5	Tunisia	1990	184.24	73.5	19.1	5.32	53.05	40.0
6	Jordan	1991	139.09	57.1	19.2	4.26	44.45	40.7
7	Botswana*	1986	53.67	33.81	54.46	25.63	17.90	54.2
8	Cote d'Ivore	1988	65.00	36.38	30.10	8.86	25.67	36.9
9	Gabon	1977	133.04	55.16	46.22	21.64	29.34	62.9
10	Guinea	1995	28.42	28.61	63.68	34.43	13.14	46.9
11	Guinea Bissau	1991	37.27	30.35	61.86	34.81	13.27	56.2
12	Kenya	1992	49.95	33.00	59.40	28.42	17.21	57.9
13	Lesotho	1987	80.79	40.21	45.77	21.79	21.07	56.0
14	Madagascar	1993	31.72	29.25	65.48	27.97	16.76	43.5
15	Mauritius	1991	278.79	117.50	16.01	4.24	86.38	36.6
16	Niger	1992	32.40	29.38	61.06	21.59	18.99	36.2
17	Nigeria	1993	62.85	35.88	40.03	17.53	20.17	44.9
18	Rwanda	1983	36.34	30.17	50.03	13.12	22.25	29.1
19	Senegal	1991	63.04	35.93	49.66	22.67	19.53	54.1
20	South Africa	1993	229.20	92.75	45.61	23.50	44.96	61.1
21	Tanzania	1993	26.00	28.15	70.95	30.50	16.05	38.1
22	Uganda	1993	30.18	28.95	67.42	27.64	17.08	40.7
23	Zambia	1976	52.13	33.48	52.42	24.24	18.00	52.0
24	Zimbabwe	1990	58.52	34.89	57.56	26.07	19.09	56.8
25	Bangladesh	1986	45.45	32.04	41.67	12.86	22.15	39.0
26	China	1992	132.06	54.85	18.75	7.26	33.61	37.3
27	India	1992	44.21	31.78	40.84	10.37	23.71	32.0
28	Indonesia	1993	107.72	47.47	10.68	1.19	42.18	31.7
29	Malaysia	1989	182.51	72.79	28.43	9.37	48.80	48.4
30	Pakistan	1991	80.29	40.09	15.13	3.42	31.03	31.1
31	Philippines	1988	104.00	46.41	29.31	9.23	31.80	46.7
32	Sri Lanka	1990	85.10	41.31	12.94	2.18	34.35	30.1
33	Bolivia	1990	71.57	37.94	34.46	11.50	25.28	42.0
34	Brazil	1989	282.15	119.31	48.05	23.42	61.16	60.7
35	Chile	1994	226.66	91.57	38.10	14.95	55.64	56.5
36	Columbia	1991	226.43	91.47	28.34	11.81	53.35	50.3
37	Costa Rica	1989	191.14	76.23	25.69	10.42	45.31	46.1
38	Dom. Rep.	1989	124.93	52.60	32.80	11.90	33.52	50.8
39	El Salvador	1977	91.97	43.11	39.72	13.44	28.52	47.5
40	Guatemela	1989	155.93	62.88	40.84	20.51	31.30	59.9
41	Hondouras	1992	77.12	39.30	41.05	16.94	23.08	51.8
42	Jamaica	1993	120.71	51.31	17.63	4.02	39.61	37.9
43	Mexico	1989	300.86	129.66	38.20	16.45	73.82	55.3
44	Nicaragua	1993	59.83	35.19	47.02	19.82	20.36	50.1
45	Panama	1989	140.35	57.54	38.19	19.87	27.60	56.8
46	Peru	1994	155.22	62.63	24.86	8.21	41.95	45.1
47	Trinindad**	1981	233.12	94.57	24.35	11.74	48.97	41.6
48	Venzuela	1990	304.78	131.88	38.05	15.39	78.54	53.8

Source: Ali and Elbadawi (2001: 14, appendix table (A.1)).

Annex table (A. 5): Average Income of the Poor and Openness Measures in a Sample of Developing Countries

Country	Survey Year	Average Monthly Income (US$: PPP))	Monthly Poverty Line (US$: PPP)	Average Monthly Income of the Poor (US$: PPP)	WTOAV	OPENAV	OPENADJAV	SWAV	GINI (%)
Jordan	1991	159	53	40. 24	0	0.349	-0.455	0.75	40. 66
Mauritania	1993	55	31	20. 19	1	0.415	-0.069	0	50. 05
Tunisia	1990	141	47	32. 83	0.2	0.381	-0.122	0.4	40. 20
Yemen	1992	44	31	19. 77	0	0.088	-0.317	1	39. 50
Burundi	1992	45	31	22. 35	1	0.0819	-0.431	0	33. 33
B. Faso	1994	32	31	16. 32	1	0.153	-0.1978	0	48. 20
Bolivia	1990	106	35	29. 16	0.2	0.1283	-0.056	1	42. 04
Brazil	1993	200	67	33. 61	1	0.0912	0.162	0.5	61. 55
Chile	1992	265	88	55.41	1	0.239	0.079	1	50. 70
China	1990	55	31	22. 01	0	0.063	0.194	0	34. 60
Cote d I'voire	1993	66	31	23. 52	1	0.332	-0.069	0	36. 91
Colombia	1995	208	69	40. 23	1	0.157	-0.023	1	57.40
Costa Rica	1996	181	60	39. 30	1	0.419	-0.068	1	47. 08
Dominican Rp.	1989	155	52	34. 55	1	0.284	-0.2	0	50.46
Ecuador	1994	164	55	39. 66	0	0.197	-0.093	0.33	43. 00
Ethiopia	1995	22	18	11. 73	0	0.077	-0.141	0	40. 00
Guinea	1991	46	31	14. 99	0	0.245	-0.256	1	46. 80
G Bissau	1991	42	31	13. 31	0	0.143	-0.507	1	56. 12
Guatemala	1987	148	49	29. 20	0	0.142	-0.34	1	58. 26
Guyana	1993	69	31	20. 81	1	0.665	0.16	0	40. 22
Honduras	1996	76	31	17. 18	0.6	0.315	-0.227	1	53. 72
Jamaica	1993	117	42	35. 65	1	0.6514	0.18	0	37. 92
Korea	1993	355	119	88. 62	1	0.397	0.023	1	31. 59
Lesotho	1993	91	31	15. 7 2	1	0.434	-0.012	0	57. 94
Madagascar	1993	45	31	20. 03	1	0.145	-0.104	1	46. 85
Mexico	1995	330	110	74. 91	1	0.186	0.145	0	53. 73
Mali	1994	33	31	15. 78	0.4	0.208	-0.113	1	50. 50
Mongolia	1995	68	31	22. 27	0			0.66	33. 20
Mozambique	1996	66	31	20. 85	1	0.077	-0.209		39. 61
Mauritius	1991	289	97	86. 82	1	0.439	-0.122	0	39. 63
Malaysia	1995	275	92	70. 66	1	0.73	0.32	1	48. 52
Niger	1992	28	24	16. 19	1	0.132	-0.178	1	36. 10
Nigeria	1991	50	31	17. 05	1	0.143	-0.09	0	37. 02
Nicaragua	1993	92	31	19. 91	1	0.195	-0.296	0.25	50. 30
Nepal	1995	75	31	27. 01	0	0.058	-0.282	0.5	38. 78
Panama	1995	164	55	26. 63	0	0.503	0.015		57. 07
Peru	1994	149	50	36. 66	1	0.162	0.006	0.33	42. 76
Philippines	1991	103	34	26. 28	1	0.235	0.001	0.6	46. 08
Puerto Rico	1989	485	162	93. 40	0				50. 86
Paraguay	1991	136	46	37. 25	0	0.405	0.15	0.4	59. 13
Senegal	1991	75	31	17. 06	1	0.283	-0.167	0	54. 12
Salvador	1989	125	42	15. 02	0	0.183	-0.373	0	48. 96
Thailand	1992	177	59	37. 56	1	0.276	0.023	1	51. 50
T. and Tobago	1988	399	133	98. 92	1	0.289	-0.266	0	42. 60
Turkey	1994	205	69	49. 74	1	0.182	-0.121	1	49. 00
Tanzania	1991	41	31	20. 26	1	0.123	-0.164	0	59. 01
Uruguay	1989	269	90	58. 53	1	0.191	-0.205	0	42. 33
Venezuela	1993	421	140	91. 05	0.8	0.163	-0.062	0.75	41. 68
S. Africa	1993	157	53	27. 19	1	0.293	0.062	0.25	62. 30
Zambia	1991	34	31	17. 87	1	0.359	0.015	0	43. 51
Zimbabwe	1990	62	31	17. 98	1	0.1825	-0.103	0	56. 83

Source: own calculations based on Dollar and Kraay (2002) data set.

Annex table (A. 6): Globalization Measures and Inequality in a Sample of Developing Countries

Country	Survey Year	Number of Immigrants to the US	Annual Growth Rate of Trade/GDP Ratio	Stock of FDI/GDP Ratio 1999	Dummy for Arab Countries	Gini Coefficient (%)
Algeria	1995	603	-1.15	3	1	36.7
Bangladesh	1995	6386	6.48	1.5	0	35.03
Bolivia	1990	1820	1.87	56.9	0	43.44
Brazil	1993	5133	6.51	21.6	0	61.55
Burkina Faso	1994	17	-3.23	5.2	0	49.6
Central African Republic	1992	9	2.95	19.4	0	56.4
China, People's Republic	1995	41490	1.61	10	0	41.49
Colombia	1995	14108	5.86	30.9	0	57.4
Costa Rica	1996	1504	4.43	43.3	0	47.08
Cote d'Ivoire	1993	324	1.58	26.4	0	38.31
Dominican Republic	1996	34830	1.94	24.9	0	48.71
Ecuador	1994	8081	1.94	32.5	0	44.4
Egypt	1991	4621	-1.4	19.2	1	33.4
El Salvador	1995	27052	6.22	14.8	0	49.86
Ethiopia	1995	4876	1.75	12.4	0	41.4
Gambia, The	1992	161	-3.99	30.6	0	49.2
Ghana	1997	3646	4.1	15	0	34.1
Guinea	1991	94	-2.01	6.9	0	48.2
Guinea-Bissau	1991	56	-1.86	14.1	0	57.52
Guyana	1993	7750	4.01	93.4	0	41.62
Honduras	1996	7163	-0.55	22.5	0	53.72
India	1993	37634	5.99	3.6	0	32.92
Jamaica	1993	18050	1.21	45.4	0	39.32
Jordan	1997	4016	0.92	19.3	1	37.82
Kenya	1992	1392	3.03	8.2	0	55.79
Lesotho	1993	8	-3.29	262.7	0	59.34
Madagascar	1993	34	1.07	7.2	0	44.84
Malawi	1993	57	-0.05	24.5	0	63.4
Malaysia	1995	1520	4.35	65.3	0	48.52
Mali	1994	76	1.06	13.7	0	51.9
Mauritania	1993	29	-2.57	10.7	1	51.45
Mauritius	1991	60	0.26	9.6	0	38.09
Mexico	1995	266403	9.26	16.4	0	53.73
Morocco	1990	1931	1.56	16	1	40.6
Mozambique	1996	54	-2.97	22.4	0	41.01
Namibia	1993	26	-0.001	49.4	0	75.73
Nepal	1995	347	8.49	2	0	40.18
Nicaragua	1996	9934	6.56	48.1	0	57.07
Niger	1992	117	1.47	20.1	0	37.5
Nigeria	1997	6923	1.99	44.5	0	51.96
Pakistan	1996	12210	-0.34	17.2	0	32.6
Panama	1995	2497	-2.28	69.9	0	57.07
Papua New Guinea	1996	16	3.82	53.5	0	52.3
Paraguay	1991	502	3.84	20.6	0	39.74
Peru	1994	11041	4.11	15.5	0	46.27
Philippines	1997	51755	7.02	14.9	0	47.56
Senegal	1991	456	-1.77	14.9	0	55.52
South Africa	1993	2240	5.28	39.5	0	58.25
Sri Lanka	1995	1092	3.28	14.2	0	35.76
Tanzania	1991	444	-0.08	11.2	0	60.41
Thailand	1998	5214	2.02	17.5	0	42.76
Tunisia	1990	206	-0.3	57	1	41.6
Turkey	1994	2617	7.1	4.4	0	49
Venezuela	1993	3005	3.56	20.9	0	41.68
Vietnam	1992	42720	19.27	55.6	0	34.1
Yemen	1992	1632	0.13	16.1	1	40.9
Zambia	1996	213	0.22	58.4	0	51.2
Zimbabwe	1990	276	7.86	18.6	0	58.23

Source: USNIS (2001), UNCTAD (2001), World Bank (2001) and Dollar and Kraay (2002) data set.