

Relationship between Globalization and Inequality: Implications for Integrating Economic Blocks

Seyed Komail Tayebi¹ Sepideh Ohadi²

Abstract

Now many scholars debate the different impacts of globalization on the economic behaviors of all nations, that globalization reduces or increases poverty, raises or drops wages and labor standards in societies and so on. Accordingly, we make in particular a question whether globalization affects income distribution in countries worldwide.

The objective of this paper is thus to evaluate the effect of globalization indexes on nations' inequality around the world. We specify a panel income distribution regression model using cross-sectional data of the selected countries and relevant time series over 1985-2004. Integration of international trade (IIT) is a proxy for globalization which has a significant and expected effect on income distribution of the high-level income countries, but unexpected effect on low and middle-income nations.

In our augmented model specification, we also evaluate an interacted effect of a block implementation (e.g. emerging markets, high income, middle income and low income countries) with globalization on inequality. The implication is that countries participating in an economic integrating block may be able to reduce the income dispersion.

Key words: Globalization, Inequality, Economic Integration, World Economy, Panel Data

JEL Classification: C23, D31, D63, F15

1. Introduction

In accordance with the globalization process, some studies focus on the exploration of a relationship between financial developments and corruption, leading to more poverty in developing countries. Research finds that increases in corruption are associated with lower growth (for example, Mauro, 1995). Wei (1997) also finds that corruption significantly reduces foreign direct investment, which is generally considered to be beneficial to growth. Although financial deepening improves an economy's rate of growth, it is possible that poverty will remain the same or increase because the resulting growth could lead to greater income inequality. However, Dehejia and Gatti (2002) indicate clearly that global financial development is associated with a reduction in poverty and even with a reduction in the use of child labor. Hence, there are still challenges that whether globalization causes a higher economic growth rate and more welfare or leads to a deepening rate income distribution among world nations. This is the

¹ Associate Professor, Department of Economics, University of Isfahan, Iran, komail@econ.ui.ac.ir

² M. A. in Economics, Islamic Azad University, Khorasgan Branch, ohadi.sepideh@gmail.com

main motivation of this paper to evaluate the impact of globalization on income inequality of the selected different level-income countries worldwide.

Our specific methodology is to modeling the effect of globalization on income inequality using several proxies of globalization (such as IIT, openness, and social-cultural globalization indexes) in a panel framework including data on cross-sectional countries over the period 1985-2004. In our augmented model specification, we also evaluate an interacted effect of a block implementation (e.g. emerging markets, a sub-block of the OIC, etc.) and globalization on inequality.

The remaining of the paper focuses first on a brief overview on global poverty in Section 2, and then, Section 3 will review the related literature. Section 4 is devoted to a model specification and data resources. Section 5 presents the empirical results and finally Section 6 concludes the remarks.

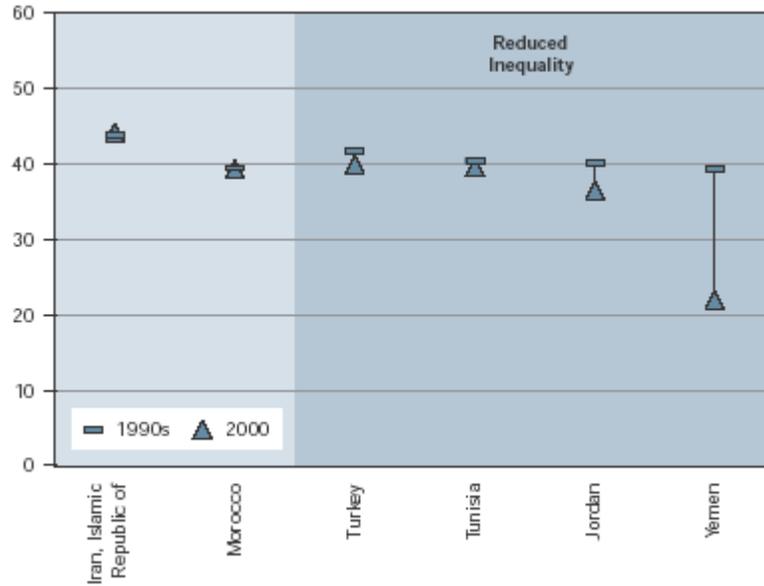
2. An Overview on Global Poverty

Poverty goes beyond lack of income. It encompasses economic, social, and governance dimensions. Economically, the poor are not only deprived of income and resources, but of opportunities. Markets and jobs are often difficult to access, because of low capabilities and geographical and social exclusion. Limited access to education affects the ability of the poor to get jobs and to obtain information that could improve the quality of their lives. Poor health due to inadequate nutrition, hygiene and health services further limits their prospects for work. The situation is made worse by the structure of societies and institutions that tend to exclude the poor from participating in decision-making over the direction of social and economic development.

Globally, the proportion of people living in poverty declined from 29 percent in 1987 to 26 percent in 1998, although the total number of poor remained almost unchanged at around 1.2 billion. The reduction in the incidence of global poverty is attributed to progress made in East Asia, although progress was somewhat reversed during the recent Asian economic crisis and seems to have stalled in China. The performance in three other regions (Africa, Latin America, and South Asia) shows only moderate or no declines in the incidence of poverty, while the number of people in poverty in these regions has increased. In Sub-Saharan Africa, an additional 74 million people joined the ranks of the poor reaching a total of 291 million in 1998. In Latin America the figure increased from 64 to 78 millions; and in South Asia a total of 522 million people live in poverty. Countries in Eastern Europe and Central Asia experienced an increase in both the incidence of poverty and the number of people living below the international poverty line. Here, the incidence rose from 2 percent to 5 percent, translating into 24 million people in poverty (Gore, 2002).

Among the few countries, of the Middle East and North Africa for which data are available, there were only moderate changes (in either direction), as income inequality remained close to levels present in the early 1990s. Only Yemen, and to some extent Jordan, experienced noteworthy reductions in income inequality, with the former posting one of the most significant declines found in any of the regions. A change in income inequality as measured by changes in the Gini index is drawn in Fig.1. (World of Work Poverty, 2008).

Figure1. Gini index of Middle East and North Africa



Source: World of Work Poverty (2008)

Africa, despite an abundance of resources, natural and human, currently suffers from widespread and persistent poverty and a high degree of income inequality. In 1987, 47 percent of the population was below the international poverty line. By 1998, this rate had declined only marginally to 46 percent. High levels of income inequality (the Gini coefficient for the region as a whole is as high as 44) compound the problem and undermine the prospects for sustainable and equitable economic growth and a significant reduction in the incidence of poverty.

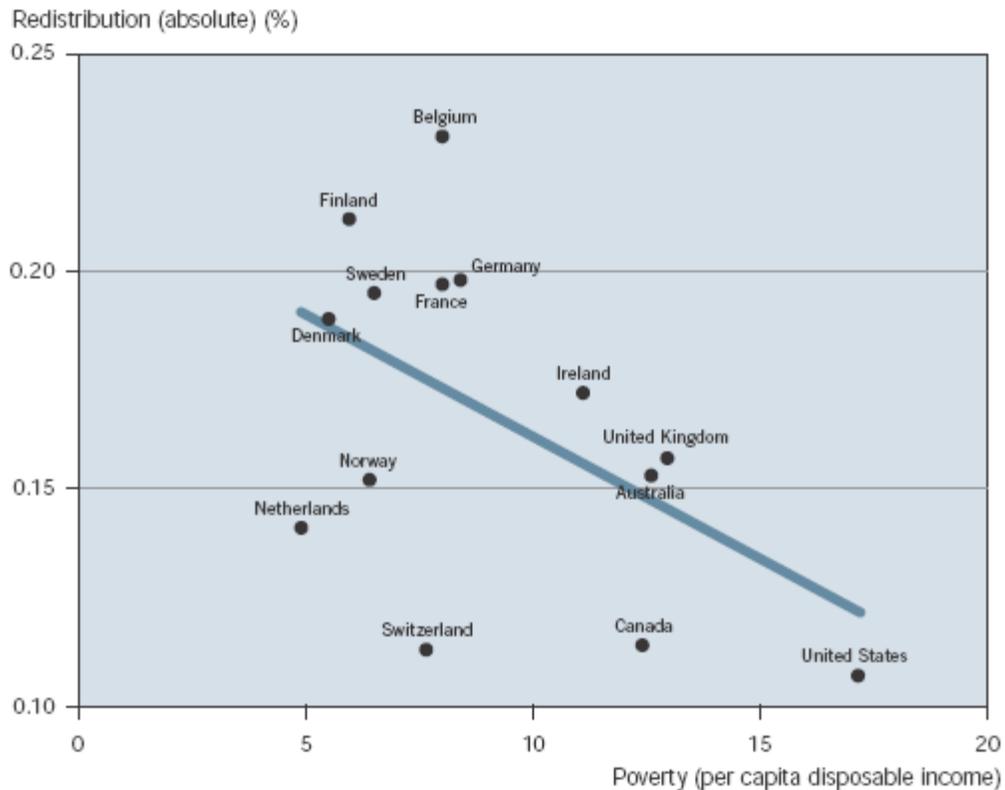
Poverty in the Asia and Pacific region is marked by two significant factors: magnitude and diversity. Close to 900 million or 75 percent of the world's poor live in the Asian and Pacific Region, including Central Asia. Nearly one in three Asians is poor. Within the region, East Asia and China in particular performed well in reducing poverty, until the Asian economic crisis reversed some of the earlier gains. Some progress has been made in South Asia, although the depth of poverty reaches similar levels as Sub-Saharan Africa, but on a much larger scale as more than half a billion people are in poverty. Central Asia has been newly exposed to the threat of poverty as many countries undergo difficult transition periods. The countries in the Pacific, despite their relatively higher per capita income, are vulnerable and have limited capacities to deal with external shocks.

The incidence of poverty decreased in Latin America and the Caribbean during the first half of the nineties. However, the resumption of economic growth in a number of countries was insufficient to reduce the absolute number of poor people. Adverse shocks in the second half of this decade stymied the region's efforts to produce noticeable progress in poverty reduction. Moreover, as the region became more unequal in the 1980s, and remained so in the 1990s, progress in reducing poverty slowed, despite the renewed growth. As a result, in 1990s the incidence of poverty in Latin America

remained approximately 3 percent higher than in 1980, with roughly 70 million more people living in poverty (Okinawa Summit, 2000).

The developments of income distribution in OECD countries are different. According to a study (Mahler and Jesuit 2006), social transfers generally have a greater impact on redistribution than taxes. On average, transfers contribute to 75 per cent of fiscal distribution in OECD countries, compared for taxes. Moreover, the share of fiscal distribution through taxes decreased from 27 per cent in 1980s to 24 per cent in the late 1990s, while the contribution of transfers increased in the same proportion. Low-inequality countries (the Nordic countries, Germany, Belgium and the Netherlands) rely heavily on social transfers as a redistribution device. By contrast, countries with higher inequality (Australia, Canada AND United States) rely more heavily on taxes. The strong redistributive effects of social transfers can also be illustrated by considering the links between transfers and poverty (see Fig 2). Countries that have higher levels of poverty-individuals with lower disposable income-tend to redistribute less. For example, the United States, which has the highest level of poverty in the developed world, redistributes the least, while Denmark, Finland and Sweden, which have low levels of poverty, redistribute the most (World of Work Poverty, 2008).

Figure 2. Redistribution and poverty in OECD countries



Source: Mahler and Jesuit 2006

In the literature, such as Wade (2004), doubts have been raised about the role of globalization in poverty that the allegedly positive trends in poverty and inequality have been driven by rising integration of poorer countries into the world economy, as seen in rising trade/GDP, foreign direct investment/GDP, and the like.

Clearly the proposition is not well supported at the world level if we agree that globalization has been rising while poverty and income inequality have not been falling. Indeed, it is striking that the pronounced convergence of economic policy toward “openness” worldwide over the past 20 years has gone with divergence of economic performance. But it might still be possible to argue that globalization explains differences between countries: that more open economies or ones that open faster have a better record than less open ones or ones that open more slowly.

3. Related Literature

Globalization and poverty is a highly debated topic in the literature. Various studies prove that globalization increases poverty, whereas numerous other studies claim that globalization reduces poverty. Those in favor of globalization claim that there have been significant steps in the fight against global poverty, as well as a decrease in inequality in the last 20 years, and that globalization has been responsible for this achievement. In contrast, there are the critics who claim that globalization has led directly to increases in poverty and inequality (Neutel and Heshmati 2006). Levinsohn (2000) believes that globalization may benefit the poor in some countries and harm those in other countries. Also, even within a country, globalization is likely to help some of the poor and hurt others.

Neutel and Heshmati (2006) examined relationship between globalization, inequality and poverty. Their results from cross-national regression analysis show that there is a significant relationship between globalization and poverty and income inequality. Agnor (2002) examined the extent to which globalization affects the poor in low- and middle-income countries. He began with a description of various channels through which trade openness and financial integration may have an adverse effect on poverty. Agnor presented cross-country regressions that relate measures of real and financial integration to poverty. He used not only individual indicators of trade and financial openness but also a "globalization index" based on principal components analysis, and tested for both linear and nonlinear effects. His results suggested that there is inverted U-shape relationship between globalization and poverty. At low levels, globalization appears to hurt the poor; but beyond a certain threshold, it seems to reduce poverty-possibly because it brings with it renewed impetus for reform.

Figini and Gorg (1999) analyzed the effects of multinational companies wage inequality in the host country. Their empirical results for the Irish manufacturing sector between 1979 and 1995 suggested that there is an inverted-U shape in wage inequality. They found that the presence of MNCs has the effect of first increasing, and then decreasing, wage gaps between the two groups. This is due to the introduction of new technologies through MNCs, which increases the demand for skilled labour, leading to rising wage inequality between skilled and unskilled workers. Over time, indigenous firms learn the new technology by imitating MNCs, and previously unskilled workers become skilled through working with the new technology. This, subsequently, leads to a decrease in wage inequality.

Globalization witnessed nowadays can be characterized by the increase of trade values and FDI flows. According to Stolper and Samuelson (1941), the people having relatively abundant factors benefit from free trade, whereas those having scarce factors suffer from it. It implies that in developing countries, labor abundant countries, the returns to laborers have been manifested both in lower income inequality within the workforce and in lower levels of unemployment among prospective workers (Mah 2003).

Mundell (1957) believed that using more foreign capital will result in an increase in labor marginal product leading to higher wages and finally less inequality will be achieved (Mousavi and Taheri, 2008).

Feenstra and Hanson (1997) examined the increase in the relative wages of skilled workers in Mexico during the 1980s. They argued that rising wage inequality in Mexico is linked to capital inflows from abroad. The effect of these capital inflows, which correspond to an increase in outsourcing by multinationals from the United States and other Northern countries, is to shift production in Mexico towards relatively skill-intensive goods thereby increasing the relative demand for skilled labor. They find that growth in FDI, as a progress in globalization is positively correlated with the relative demand for skilled labor. In the regions where FDI has been most concentrated, growth in FDI can account for over 50 percent of the increase in the skilled labor share of total wages that occurred during the late 1980s and 1990s, reducing the poverty rate.

Milanovic (2003) presented another attempts to discern the effects of globalization by using data from household budget surveys and looking at the impact of openness and foreign direct investment on relative income shares of low and high deciles. He found some evidence that at very low average income levels, it is the rich who benefit from openness. As income level rises to those of countries such as Chile, Colombia, or Czech Republic, for example, the situation changes, and it is the relative income of the poor and the middle class that rises compared with the rich. It seems that openness makes income distribution worse before making it better, or differently in that the effect of openness on a country's income distribution depends on the country's initial income level.

Adams (2007) examined the impact of globalization on income inequality for a cross section of 62 developing countries over a period of 17 years. The results of the study indicate that globalization explains only 15% of the variance in income inequality. This findings suggest that globalization has both costs and benefits and that the opportunity for economic gains can be realized within an environment that supports and promotes sound and credible government institutions, education and technological development.

Wan et al. (2007) discussed China's globalization process and estimated an income generating function, incorporating trade and FDI variables. They found that globalization constitutes a positive and substantial share of regional inequality and the share rises over time. Also economic reform characterized by privatization exerts an increasingly significant impact on regional inequality, and finally the relative contributions of education, location, urbanization and dependency ratio to regional inequality have been declining.

Cornia (2003) reviewed changes in global, between-country and within-country inequality over 1980-2000 against the background of the shifts that occurred in this area during the globalization of 1870-1914. He found that recent changes in global and between-country inequality are not marked and depend in part on the conventions

adopted for their measurement. In contrast, within-country inequality appears to have risen clearly in two thirds of the 73 countries analyzed mainly because of the policy drive towards domestic deregulation and external liberalization. Meschi and Vivarelli (2009) used a dynamic specification to estimate the impact of trade on within-country income inequality in a sample of 65 developing countries (DCs) over the 1980–99 periods. Their results suggested that trade with high income countries worsen income distribution.

Sato and Fukushige (2009) analyzed the determinants of the Gini coefficient for income and expenditure in South Korea between 1975 and 1995. In both cases, they did not find support for the Kuznets inverted-U hypothesis. From an economic globalization viewpoint, the opening of goods markets reduces income inequality in both short run and long run. On the other hand, the opening of capital markets may increases income inequality in both period.

Hence, according to different and controversial views on the role of globalization in inequality, we develop deeply the issue by augmenting an income inequality model exploring the role of integrating economic blocks in reducing income gaps between world nations in the era of globalization. In next section, we develop a regression model which will estimate the effect of globalization on income inequality. Our model will also verify the fact that integrated trading blocks may reduce the income dispersion among members.

4. The Model

A general form of the panel regression model, introduced differently by Agnor (2002), Mah (2003) and Neutel and Heshmati (2006), is developed as follows, in order to examine the impacts of globalization and other determinants on income inequality worldwide:

$$INEQ_{it} = \alpha + \sum_j \beta_j X_{jit} + \gamma GLOB_{wit} + \phi DUM_k + u_{it} \quad (1)$$

Where,

$INEQ_{it}$: Income inequality variable, proxied by the *EHII* index, for country *i* in time *t*.

X_{jit} : A set of explanatory variables ($j = 1, 2, \dots, J$) such as GDP per capita, squared GDP per capita (Kuznets hypothesis), FDI¹ and squared FDI for country *i* in time *t*.

$GLOB_{wit}$: A set of globalization proxies ($i = 1, 2, 3$ and 4) such as IIT^2 ($Glob_{1it}$), economic globalization ($Glob_{2it}$), social globalization ($Glob_{3it}$), and political globalization ($Glob_{4it}$) indexes. According to the 2008 KOF indexes of globalization: economic globalization index is measured on the proportions of trade, FDI, portfolio investment, etc. Social globalization is based on outgoing telephone traffic, transfers, international tourism, international letters (per capita) and internationalization of education, while political globalization is indexed by the proportions of embassies in country, membership in international organization and participation in U.N. Security Council Missions (Dreher, 2006).³

¹ Foreign direct investment

² $IIT_{it} = 1 - \frac{|m_{it} - x_{it}|}{(x_{it} + m_{it})}$, which m_{it} and x_{it} denote imports and exports of country *i* and time *t*. (Makhija et al., 1997).

³ Updated in Dreher, A., N. Gaston and P. Martens (2008), *Measuring Globalization- Gauging its Consequences*, New York: Springer. For further information, see Appendix A.

DUM_k : A set of dummies ($k = 1, 2, 3, 4$) for economic blocks such as emerging markets (DUM_1) and high-income (DUM_2), middle income (DUM_3) and low income (DUM_4) countries.

u_{it} : Disturbance terms.

The empirical analysis in this paper makes use of a type of a time-series/ cross-country dataset that provides comparable and consistent measurements of variables both across countries and through time. We use data on inequality, the EHII index, that is an index (ranging from 0 to 1 as a conventional Gini index) of estimated household income inequality and is built combining the information in the Deninger and Squire (D&S) data with the information in the UTIP-UNIDO data (Meschi and Vivarelli, 2009). The data for 60 countries worldwide over 1985-2004 are obtained from the World Bank CD-ROM (2008) and Penn World Table (<http://pwt.econ.upenn.edu/>).

5. Empirical Results

The model specified in Equation (1) is estimated by several econometric panel procedures such as random effects (RE), fixed effects (FE) and random effects-GLS (RE-GLS), where the results are obtained by Stata 9.2. The results are reported in Tables (1)-(5), using different proxies for globalization, as mentioned earlier.

The results in Table 1 imply several proxies for globalization indicating different effects on income inequality in the countries worldwide. The variable of openness is a relevant proxy which explains significantly inequality, but in a wrong way. This reveals the fact that there are different trade strategies in countries, whereas the significant and expected effect of IIT (as another proxy) is observed by the model estimation. That is, the contribution of countries to an integrating trade plan is followed commonly, as they have the same commitments due to their trade agreements. Two other proxies for globalization, that is, social and political globalization, indicate different effects on income inequality in the selected nations. First, social globalization affects positively inequality, which is not effective in reducing income dispersion, even though the index contains activities of global telecommunication and international tourism. Second, political globalization is indexed by the proportions of embassy and membership in international organizations. These types of social and political activities do not make sense economically toward poverty reduction.

The results show that per capita GNP has a significant effect on inequality even though the Kuznets hypothesis is not accepted, as the coefficient of the squared variable ($pcGNP^2$) is positive. Although foreign direct investment (FDI) affects unexpectedly nations' inequality, its squared values have a correct sign in the estimated model. This result is consistent with Figini and Gorge analysis, which implies an inverted U-curve relationship between measure of income inequality and FDI inflows. According to Figini and Gorge, in the first stage of presence of multinationals, new technologies improve the skills of white-collar workers mainly, thus increasing their productivity and wage. Blue-collar workers remain initially unskilled, while white-collar workers become skilled. However, in stage two blue-collar workers eventually become more skilled in order to be able to work with the new technology. Overall, wage inequality between unskilled blue-collar and skilled white-collar workers initially widens, but, as blue-collar workers become more skilled, the wage gap gradually becomes reduced.

However, convergence in political globalization issues among countries that stand for social globalization affects negatively and expectedly inequality, implying an integrating program in political affairs is able to bear economic advantages, particularly in lessening the world poverty.

Table (2) reports the impacts of several dummies, which stand for economic blocks, on income inequality. A significant cross effect of globalization in its all aspects and the block of emerging market countries on inequality is obtained by estimating the coefficients of $GLOB_w * DUM_1$. This implies an interchanged relationship between globalization and the emerging markets leads inequality to fall expectedly. In addition, such relationships between other aspects of globalization and this block have the same effects.

According to Table (3), the cross effects of globalization and the block of high income countries, denoted by $GLOB_w * DUM_2$, on world inequality, except for $GLOB_w * DUM_2$, are significantly negative. This result implies that high income developing countries benefit from all aspects of globalization. This is also true for middle income countries, (Table 4), while such effects are a bit more pronounced for the former countries.

However, as the estimated results represented in Table (5) show, such effects are relatively ambiguous for low income countries. This is because the coefficients of all $GLOB_w * DUM_4$ variables have been estimated positively, even though they are significant. This reveals the fact that there has been worse-off for the poor due to the interacted effects of globalization on their economic conditions.

6. Conclusion

This paper made efforts to explore different effects of globalization (in economic, social, cultural and political points of view) on income inequality worldwide. It was done by specifying a panel regression model using data available for 60 selected countries over 1985-2004. To reach the paper objectives, we used several dummies for different country blocks and indexes for all aspects of globalization.

The results confirm mostly the hypothesis that globalization has influenced significantly and expectedly inequality to be reduced. More specifically, economic liberalizations, openness, WTO commitments and international competitiveness, which are imperatives of economic globalization, help nations around the world to fight poverty and inequality for further welfare. This is also true for other aspects (social, political and cultural) of globalization. Telecommunication, ICT, international tourism, internationalization of education, membership in international organizations and participation in international missions have globalized nations' tastes and production, a better-off or a worse-off situation for the poor.

Although we study the effect of globalization on international inequality, we know that the actual level of global inequality of income is extremely high—with a Gini coefficient between 0.64 (Milanovic, 2005) and 0.66 (Bourguignon & Morrisson, 2002). Therefore, a renewed emphasis on increased redistribution from aid, lowering economic barriers and implementing policy reforms is necessary to assure that aid and freer movements of factors and goods enhance growth prospects for low-income countries. Indeed, participation in economic agreements would meet these needs, which is the main implication of this paper.

Reference

Adams, S. (2007), "Globalization and Income Inequality: Implications for Intellectual Property Rights," *Journal of Policy Modeling*, Vol. 30, pp. 725-735.

Agenor, P. R. (2003), "Does Globalization Hurt the Poor?" World Bank Policy Research, Working Paper, No. 2922.

Bourguignon, F. and C. Morrisson (2002), "Inequality among World Citizens: 1890–1992," *American Economic Review*, Vol. 92 (4), pp. 727–744.

Cornia, G. (2003), "The Impact of Liberalization and Globalization on Income Inequality in Developing and Transitional Economics," CESifo Working Paper, No.843. pp. 1-32.

Dehejia, R. and R. Gatti (2002), Child Labor: The Role of Income Variability and Access to Credit Across Countries, NBER Working Papers 9018, National Bureau of Economic Research, Inc.

Dreher, A. (2006), "Does Globalization Affect Growth? Empirical Evidence from a new Index," *Applied Economics*, Vol. 38, No. 10, pp. 1091-1110.

Feenstra, R. C., & Hanson, G., (1997). "Foreign Direct Investment and Relative Wages: Evidence from Mexico's Maquiladoras", *Journal of International Economics*, Vol. 42, pp. 371-393.

Figini, P. and H. Gorg (1999), "Multinational Companies and Wage Inequality in the Host Country: the Case of Ireland," Trinity Economic Paper Series, Technical Paper, No. 98/16.

Galbraith, J. K. and H. Kum (2003), Inequality and Economic Growth: A Global View Based on Measures of Pay, *CESifo Economic Studies*, Vol. 49, pp. 527–556.

Gore, Ch., (2002). "Globalization, the International Poverty Trap and Chronic Poverty in the Least Developed Countries", *CPRC Working Paper*, No.30.

Levinsohn, J. (2000), Globalization and Poverty, National Bureau of Economic Research, Prepared for Meeting of the G-24, Geneva, Switzerland.

Mah, J. (2003), "A Note on Globalization and Income Distribution, the Case of Korea, 1975-1995," *Journal of Asian Economics*, No.14. pp: 157-164.

Mahler, V A.; Jesuit, D. K. 2006, "Fiscal Redistribution in the Developed Countries: new insights from Luxembourg Income Study", in *Socio-Economic review*, Vol 4, No 3, PP 483-511.

Makhija, M. V., K. Kim and S. D. Williamson (1997), "Measuring Globalization of Industries Using a National Industry Approach: Empirical Evidence Across Five Countries and over Time," *Journal of International Business Studies*, pp. 676-710.

Mauro, P. (1995), "Corruption and growth," *Quarterly Journal of Economics*, Vol. 110, pp . 681–712.

Meschi, E. and M. Vivarelli (2009), "Trade and Income Inequality in Developing Countries," *World Development*, Vol. 37, No. 2, pp: 287-302.

Milanovic, B. (2005), *Worlds Apart: Measuring International and Global Inequality*, Princeton, New Jersey: Princeton University Press.

Milanovic, B. (2003), *Can We Discern the Effect of Globalization and Income Distribution? Evidence from Household Budget Surveys*, Policy Research Working Paper, No. 2876.

Mousavi, S. N. and F. Taheri (2008), "Globalization and Income Inequality: Case of Iran," *American-Eurasian J. Agric. & Environ. Sci.*, Issue 2 (Supple 1), pp.118-123.

Neutel, M. and A. Heshmati (2006), *Globalization, Inequality and Poverty Relationships: A Cross Country Evidence*, IAZ Discussion Paper, No. 2223.

Okinawa Summit, (2000), *Global Poverty Report*, G8. July 2000.

Sato, S. and M. Fukushige (2009), "Globalization and Economic Inequality in the Short and Long Run: The Case of South Korea 1975–1995," *Journal of Asian Economics*, No. 20, pp. 62-68.

Wade, R. (2004), "Is Globalization Reducing Poverty and Inequality?" *World Development*, Vol. 32, No. 4, pp. 567-589.

Wan, G. L. M. and Z. Chen (2007), "Globalization and Regional Income Inequality: Empirical Evidence from Within China," *Review of Income and Health*, Series 53, No.1.

Wei, S. J. (1997), *How Taxing is Corruption on International Investors?*, NBER Working Papers 6030, National Bureau of Economic Research, Inc.

World of Work Poverty, (2008), *Income Inequalities in the Age of Financial Globalization*, International Labor Office, International institute for Labor Studies, Geneva: ILO, 2008, 180p.

Table (1): Empirical results on income inequality model including different proxies for globalization

Variables	RE-GLS Model	Random Effects Model	Fixed Effects Model	RE-GLS Model
<i>PcGDP</i>	-0.0008 Z: -14.51 p> z : 0.000	-0.0005 Z: -4.81 p> z : 0.000	-0.0003 t: -2.01 p> t : 0.045	-0.0009 Z: -15.46 Pro> z : 0.000
<i>PcGDP</i> ²	1.79 Z: 8.89 p> Z : 0.000	1.54 Z: 6.26 p> z : 0.000	1.09 t: 3.50 p> t : 0.000	1.98 Z: 10.31 p> z : 0.000
<i>FDI</i>	0.522 Z: 4.49 p> z : 0.000	0.426 Z: 6.65 p> z : 0.000	0.204 t: 2.74 p> t : 0.006	0.223 Z: 1.69 p> z : 0.90
<i>FDI</i> ²	-0.021 Z: -3.05 p> z : 0.002	-0.014 Z: -3.96 p> z : 0.000	-0.006 t: -1.58 p> t : 0.115	-0.002 Z: -0.39 p> z : 0.700
<i>GLOB</i> ₁	-6.108 Z: -4.18 P> z : 0.000			
<i>GLOB</i> ₂		0.015 Z: 3.66 p> z : 0.000		
<i>GLOB</i> ₃			0.134 t: 9.13 p> t : 0.000	
<i>GLOB</i> ₄				-0.023 Z: -2.35 p> z : 0.019
Statistics	Wald chi2(5): 716.21 ^a Prob>chi2: 0.000	Wald chi2(5): 151.88 ^a Prob>chi2: 0.000 H-chi2(4): 33.80 ^b Prob>chi2: 0.000 LM chi2(1): 3662.92 ^c Prob>chi2: 0.000	H-chi2(4): 26.38 ^b Prob>chi2: 0.000 F _L (51,831): 7544 ^d Prob>F: 0.000	Wald chi2 (5): 736.63 ^a Prob>chi2: 0.000

^a The Wald Statistic which is used for the 'goodness of fit' of the RE and RE-GLS models.

^b The Hausman test which is used for testing a consistent selection of RE or FE.

^c Brusch-Pagan LM Statistic, which tests the consistent results of OLS or RE.

^dF-Leamer Statistic, which tests a consistent selection of FE and a pooled model.

Table (2): Empirical results on income inequality model using different proxies for globalization: Including a dummy for emerging market countries

Variables	RE-GLS Model	RE-GLS Model	RE-GLS Model	RE-GLS Model
<i>PcGDP</i>	-0.0008 Z: -14.68 p> z : 0.000	-0.0009 Z: -17.90 p> z : 0.000	-0.0012 Z: -12.93 p> z : 0.000	-0.0009 Z: -16.07 p> z : 0.000
<i>PcGDP</i> ²	1.73 Z: 8.66 p> z : 0.000	2.00 Z: 10.65 p> z : 0.000	2.41 Z: 10.22 p> z : 0.000	1.93 Z: 10.26 p> z : 0.000
<i>FDI</i>	0.585 Z: 5.04 p> z : 0.000	0.541 Z: 4.59 p> z : 0.000	0.248 Z: 1.79 p> z : 0.074	0.375 Z: 2.84 p> z : 0.005
<i>FDI</i> ²	-0.024 Z: -3.47 p> z : 0.001	-0.024 Z: -3.45 p> z : 0.001	-0.003 Z: -0.48 p> z : 0.634	-0.008 Z: -1.18 p> z : 0.237
<i>GLOB</i> ₁	-4.91 Z: -3.33 p> z : 0.001			
<i>GLOB</i> ₁ * <i>DUM</i> ₁	-0.0007 Z: -4.34 p> z : 0.000			
<i>GLOB</i> ₂		0.011 Z: 2.24 P> z : 0.025		
<i>GLOB</i> ₂ * <i>DUM</i> ₁		-0.00001 Z: -6.54 p> z : 0.000		
<i>GLOB</i> ₃			0.054 Z: 2.92 p> z : 0.003	
<i>GLOB</i> ₃ * <i>DUM</i> ₁			-0.0002 Z: -7.11 p> z : 0.000	
<i>GLOB</i> ₄				-0.015 Z: -1.54 p> z : 0.125
<i>GLOB</i> ₄ * <i>DUM</i> ₁				-0.00001 Z: -5.65 p> z : 0.000
Statistics	Wald chi2(6): 747.24 ^a Prob>chi2: 0.000	Wald chi2(6): 798.76 ^a Prob>chi2: 0.000	Wald chi2(6): 819.75 ^a Prob>chi2: 0.000	Wald chi2(6): 795.13 ^a Prob>chi2: 0.000

^a The Wald Statistic which is used for the 'goodness of fit' of the RE and RE-GLS models.

Table (3): Empirical results on income inequality model using different proxies for globalization: Including a dummy for high income countries

Variables	Random Effects Model	RE-GLS Model	Random Effects Model	Random Effects Model
<i>PcGDP</i>	0.00001 Z: 0.10 p> z : 0.919	-0.0012 Z: -15.03 p> z : 0.000	-0.0007 Z: -4.74 p> z : 0.000	-0.0003 Z: -2.14 p> z : 0.033
<i>PcGDP</i> ²	6.10 Z: 2.15 p> z : 0.031	2.69 Z: 11.54 p> z : 0.000	1.90 Z: 6.60 p> z : 0.000	1.25 Z: 4.52 p> z : 0.000
<i>FDI</i>	0.394 Z: 6.22 p> z : 0.000	0.486 Z: 4.10 p> z : 0.000	0.224 Z: 2.95 p> z : 0.003	0.376 Z: 5.00 p> z : 0.000
<i>FDI</i> ²	-0.013 Z: -3.65 p> z : 0.001	-0.025 Z: -3.52 p> z : 0.000	-0.005 Z: -1.34 p> z : 0.179	-0.012 Z: -3.16 p> z : 0.002
<i>GLOB</i> ₁	6.97 Z: 6.59 p> z : 0.000			
<i>GLOB</i> ₁ * <i>DUM</i> ₂	-13.25 Z: -7.00 p> z : 0.000			
<i>GLOB</i> ₂		-0.005 Z: -1.14 P> z : 0.256		
<i>GLOB</i> ₂ * <i>DUM</i> ₂		0.046 Z: 4.41 p> z : 0.000		
<i>GLOB</i> ₃			0.150 Z: 9.38 p> z : 0.000	
<i>GLOB</i> ₃ * <i>DUM</i> ₂			-0.063 Z: -2.35 p> z : 0.019	
<i>GLOB</i> ₄				-0.065 Z: 5.90 p> z : 0.000
<i>GLOB</i> ₄ * <i>DUM</i> ₂				-0.073 Z: -3.26 p> z : 0.001
Statistics	Wald chi2(6): 230.16 ^a Prob>chi2: 0.000 H-chi2(3): 29.72 ^b Prob>chi2: 0.000 LM chi2(1): 3669.60 ^c Prob>chi2: 0.000	Wald chi2(6): 798.76 ^a Prob>chi2: 0.000	Wald chi2(6): 216.46 ^a Prob>chi2: 0.000 H-chi2(5): 1112.23 ^b Prob>chi2: 0.000 LM chi2(1): 3459.79 ^c Prob>chi2: 0.000	Wald chi2(6): 155.21 ^a Prob>chi2: 0.000 H-chi2(5): 57.10 ^b Prob>chi2: 0.000 LM chi2(1): 3341.11 ^c Prob>chi2: 0.000

^a The Wald Statistic which is used for the 'goodness of fit' of the RE and RE-GLS models.

^b The Hausman test which is used for testing a consistent selection of RE or FE.

^c Brusch-Pagan LM Statistic, which tests the consistent results of OLS or RE.

Table (4): Empirical results on income inequality model using different proxies for globalization: Including a dummy for middle income countries

Variables	RE-GLS Model	RE-GLS Model	RE-GLS Model	RE-GLS Model
<i>PcGDP</i>	-0.0009 Z: -15.36 p> z : 0.000	-0.0010 Z: -19.13 p> z : 0.000	-0.0013 Z: -14.19 p> z : 0.000	-0.001 Z: -16.86 p> z : 0.000
<i>PcGDP</i> ²	1.85 Z: 9.27 p> z : 0.000	2.13 Z: 11.50 p> z : 0.000	2.62 Z: 11.19 p> z : 0.000	2.05 Z: 10.95 p> z : 0.000
<i>FDI</i>	0.5683 Z: 4.93 p> z : 0.000	0.5166 Z: 4.47 p> z : 0.000	0.228 Z: 1.69 p> z : 0.092	0.327 Z: 2.52 p> z : 0.012
<i>FDI</i> ²	-0.023 Z: -3.38 p> z : 0.001	-0.024 Z: -3.59 p> z : 0.001	-0.002 Z: -0.35 p> z : 0.728	-0.006 Z: -0.91 p> z : 0.364
<i>GLOB</i> ₁	-3.76 Z: -2.47 p> z : 0.013			
<i>GLOB</i> ₁ * <i>DUM</i> ₃	-2.35 Z: -4.92 p> z : 0.000			
<i>GLOB</i> ₂		0.020 Z: 3.91 P> z : 0.025		
<i>GLOB</i> ₂ * <i>DUM</i> ₃		-0.041 Z: -8.14 p> z : 0.000		
<i>GLOB</i> ₃			0.070 Z: 3.85 p> z : 0.000	
<i>GLOB</i> ₃ * <i>DUM</i> ₃			-0.097 Z: -9.43 p> z : 0.000	
<i>GLOB</i> ₄				-0.010 Z: -1.01 p> z : 0.313
<i>GLOB</i> ₄ * <i>DUM</i> ₃				-0.044 Z: -6.49 p> z : 0.000
Statistics	Wald chi2(6): 758.32 ^a Prob>chi2: 0.000	Wald chi2(6): 842.60 ^a Prob>chi2: 0.000	Wald chi2(6): 889.54 ^a Prob>chi2: 0.000	Wald chi2(6): 813.59 ^a Prob>chi2: 0.000

^a The Wald Statistic which is used for the 'goodness of fit' of the RE and RE-GLS models.

Table (5): Empirical results on income inequality model using different proxies for globalization: Including a dummy for low income countries

Variables	RE-GLS Model	RE-GLS Model	RE-GLS Model	RE-GLS Model
<i>PcGDP</i>	-0.0006 Z: -10.02 p> z : 0.000	-0.0008 Z: -13.29 p> z : 0.000	-0.0006 Z: -6.49 p> z : 0.000	-0.0006 Z: -9.11 p> z : 0.000
<i>PcGDP</i> ²	1.34 Z: 6.22 p> z : 0.000	1.65 Z: 8.26 p> z : 0.000	1.20 Z: 4.96 p> z : 0.000	1.34 Z: 6.50 p> z : 0.000
<i>FDI</i>	0.556 Z: 4.85 p> z : 0.000	0.455 Z: 3.92 p> z : 0.000	0.216 Z: 1.63 p> z : 0.103	0.317 Z: 2.47 p> z : 0.014
<i>FDI</i> ²	-0.023 Z: -3.37 p> z : 0.001	-0.17 Z: -2.57 p> z : 0.010	-0.002 Z: -0.32 p> z : 0.752	-0.007 Z: -1.03 p> z : 0.304
<i>GLOB</i> ₁	-6.41 Z: -4.45 p> z : 0.000			
<i>GLOB</i> ₁ * <i>DUM</i> ₄	3.09 Z: 5.44 p> z : 0.000			
<i>GLOB</i> ₂		-0.011 Z: -2.26 P> z : 0.024		
<i>GLOB</i> ₂ * <i>DUM</i> ₄		0.037 Z: 6.54 p> z : 0.000		
<i>GLOB</i> ₃			-0.010 Z: -0.61 p> z : 0.541	
<i>GLOB</i> ₃ * <i>DUM</i> ₄			0.177 Z: 11.12 p> z : 0.000	
<i>GLOB</i> ₄				-0.056 Z: -5.21 p> z : 0.000
<i>GLOB</i> ₄ * <i>DUM</i> ₄				0.060 Z: 7.21 p> z : 0.000
Statistics	Wald chi2(6): 767.65 ^a Prob>chi2: 0.000	Wald chi2(6): 801.32 ^a Prob>chi2: 0.000	Wald chi2(6): 952.73 ^a Prob>chi2: 0.000	Wald chi2(6): 831.79 ^a Prob>chi2: 0.000

^a The Wald Statistic which is used for the 'goodness of fit' of the RE and RE-GLS models.

Appendix A

2007 KOF Index of Globalization

Indices and Variables	Weights
A. Economic Globalization	[36%]
i) Actual Flows	(50%)
Trade (percent of GDP)	(16%)
Foreign Direct Investment, flows (percent of GDP)	(21%)
Foreign Direct Investment, stocks (percent of GDP)	(23%)
Portfolio Investment (percent of GDP)	(19%)
Income Payments to Foreign Nationals (percent of GDP)	(22%)
ii) Restrictions	(50%)
Hidden Import Barriers	(24%)
Mean Tariff Rate	(28%)
Taxes on International Trade (percent of current revenue)	(28%)
Capital Account Restrictions	(20%)
B. Social Globalization	[38%]
i) Data on Personal Contact	(29%)
Outgoing Telephone Traffic	(14%)
Transfers (percent of GDP)	(8%)
International Tourism	(27%)
Foreign Population (percent of total population)	(25%)
International letters (per capita)	(27%)
ii) Data on Information Flows	(35%)
Internet Hosts (per 1000 people)	(20%)
Internet Users (per 1000 people)	(24%)
Cable Television (per 1000 people)	(20%)
Trade in Newspapers (percent of GDP)	(14%)
Radios (per 1000 people)	(23%)
iii) Data on Cultural Proximity	(37%)
Number of McDonald's Restaurants (per capita)	(40%)
Number of Ikea (per capita)	(40%)
Trade in books (percent of GDP)	(20%)
C. Political Globalization	[26%]
Embassies in Country	(35%)
Membership in International Organizations	(36%)
Participation in U.N. Security Council Missions	(29%)

Source: Dreher, Axel (2006), Does Globalization Affect Growth? Empirical Evidence from a new Index, *Applied Economics* 38, 10: 1091-1110.