

Relationship between Globalization and Inequality in Different Economic Blocks

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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 inequality in countries worldwide.

The objective of this paper is thus to evaluate the effect of globalization on inequality among nations. We specify a panel income distribution regression model using cross-sectional data of the selected countries and relevant time series over 1985-2004. Several specified for globalization have significant and different effects on income distribution of countries with different levels of income.

In our augmented model specification, we also evaluate an interacted effect of a block implementation (e.g. emerging market economies, high income, middle income and low income countries) with globalization on inequality. The results confirm this effect significantly on income inequality.

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

JEL Classification: C23, D31, D63, F15

1. Introduction

In accordance with the globalization process, relevant 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 higher rate of income inequality among world nations. This is the main motivation of this paper to evaluate the impact of globalization on income inequality of the selected different level-income countries worldwide.

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

The remaining of the paper focuses on the related literature in section 2. Section 3 specifies an empirical model and then introduces data resources. Section 4 presents the empirical results, and finally Section 5 concludes the remarks.

2. Related Literature

Globalization and inequality is a highly debated topic in the literature. Various studies prove that globalization increases inequality, whereas numerous other studies claim that globalization reduces inequality. 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 income inequality. Agenor (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. Agenor presented cross-country regressions that relate measures of real and financial integration to inequality. 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 inequality. 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.

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).

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 Foreign Direct Investment (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 inequality 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 increase income inequality in both periods.

Hence, according to different and controversial views on the role of globalization in inequality, we develop deeply the issue by specifying an income inequality model exploring the role of economic blocks in reducing income gaps among the nations in the era of globalization. In the 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 an economic block like the emerging market countries may reduce the income dispersion among members.

3. The Model

A general form of the panel regression model, introduced by Agenor (2002), Mah (2003) and Neutel and Heshmati (2006), is developed, 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 EHI 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

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

¹ Foreign direct investment

² $IIT_{it} = 1 - \left[\frac{m_{it} - x_{it}}{x_{it} + m_{it}} \right]$, 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.

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/>).

4. 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 significant 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, which again do not deal with a progress in 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 inequality.

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 market countries leads inequality to fall expectedly.

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.

5. 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 income 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.

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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.