The Impact of Globalization on Poverty at Different Stages of Economic Development

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Abstract:

The effect of globalization on poverty is an issue that has been theoretically discussed. The neoliberals argue that poverty falls with economic integration since it increases the efficiency and creates incomes for the poor via growth. However, the counterargument has reservation that the gains from the globalization do not distribute evenly within countries and the inequality increases in most of the countries. The aim of this research is to find the evidence that the gains for the poor from globalization are only valid in developed countries which have well-established governance and human capital endowments such as education quality. We test the hypothesis that the impact of globalization on poverty differentiates depending on the stage of economic development of countries. We use the data of the 2005-2013 for 52 countries and our methodology is based on static panel data analysis. Our dependent variable is the poverty rate under 3$ per day and independent variables are globalization index (Dreher (2006)), education index, trade freedom, growth, per capita income, unemployment rate, inflation rate and Gini index which are taken from World Bank. We find that the globalization has positive effect on the poverty fighting for the developed countries whereas it has no significant effect in the developing and less developed countries. In the developing countries, the education level is an effective reducing factor on the poverty rates. To conclude, the poverty alleviation programs needs country specific adjustments for the achievement goals of the sustainable development.

Keywords: Globalization, Poverty, Economic Development

JEL Codes: I32, F6, I25

1. Introduction

According to the neoliberal argument, poverty is expected to decrease with the gains for the poor from globalization and the economic integration. There are various studies in the literature that support this hypothesis (see Kraay and Dollar; 2001 and Winters, 2003). Contrary to this, there are also opposite opinions that economic integration will lead to increases in the level of poverty (see Rosenthal, 1996; Guan, 1995). However, when the economic, demographic and political structures of the countries are considered to be different from each other, it can be said that the argument of neoliberals is not completely valid (see Santos-Paulino,2012).
The level of economic development of countries is the main determinant of the volume of exploitation of globalization. Countries that have completed their economic development to a great extent in the period in which globalization movements have started can benefit more from the globalization process since they have sufficient resource, equipment, capital stock and human capital accumulation in terms of labor as against the least developed or developing countries.

It is essential to define poverty comprehensively and to take account the improvements on poverty concept over time. The $ 1 approach of the World Bank defines absolute poverty and uses minimum food requirement per day for survival. However, the definition of poverty depending on the diversification of goods and services and technological developments. In this case, it is necessary to choose a line that accounts improvements in the understanding poverty and how poverty changes in the light of economic developments. For this purpose, we prefer to use the World Bank's definition of poverty created by the $ 3 per day approach for the least developed and developing countries and the relative poverty definition for developed countries.

The main determinants of economic growth are the accumulation of physical capital and the accumulation of human capital. Lucas (1988) states that the accumulation of human capital may increase through learning by doing, and that learning by doing in high-tech goods producing sectors will be faster and thus the accumulation of human capital will increase faster. Thus increasing educational levels play a key role in poverty alleviation.

Based on these motivations, our study aimed to investigate the effects of globalization and education on poverty in countries with different economic development levels. One of the important contributions of this study is to examine the effects of globalization on poverty by grouping them in terms of development level of countries. Secondly, contrary to the studies that generally use the $ 1 per day approach (see Dollar, 2004; Bergh and Nilsson, 2014) the $ 3 per day approach is used for the reasons described before.

As a result of the study, it is found that globalization has a poverty-reducing effect in developed countries whereas it has not any significant effect on poverty in the least developed and developing countries. In addition, it is examined that education level has a decreasing effect on poverty for all countries.

2. Literature Review

In the process of globalization, the restrictions on the trade of goods and services of the countries are removed, the barriers to the free movement of capital in financial terms are reduced and the integration of the countries in terms of ideas and culture is realized. The development of international trade contributes to the diversification of goods and services and the growth of countries. There are many cross-section researches in the literature explaining the positive effects of globalization on economic growth. One of them is the study of Kraay and Dollar (2001). They find that globalizing countries after 1980 have experienced tremendous increases in trade during twenty years and their growth rates have caught rich countries and have gone beyond other developing countries. Sachs and Warner (1995) and Frankel and Romer (1999) also claim the positive effects of globalization on growth.

Contrary to the neo-classical discourse that argues globalization will be in favor of growth, there are also researches that express the negative or suspicious effects of globalization on poverty. Although Harrison (1996) finds a positive relationship between openness and growth, she stated that the strength of the relationship can vary according to different specifications of the econometric model.

Economic growth depends on the accumulation of physical and human capital within the country. Therefore, education level and quality of education in a country play a key role as an indicator of human capital accumulation in the country. Le Goff and Singh (2013) found that trade deficit reduces poverty in countries where the financial sectors are intense, the levels of education are high and there are strong governments based on the data of African countries after 1980s.

It is argued that if the investments turn to productive areas, all people of the society will benefit from growth. As a result, poverty will be reduced according to trickle-down approach. In the literature this argument has been discussed whether growth is pro-poor or not. In addition, it is expected that globalization reduces poverty (see Dollar and Kraay, 2002). However, the impact of growth on poverty may change when countries have different levels of development, or when there are conjunctures within countries. Janvry and Sadoulet (2000) examine that income growth is more effective in reducing urban poverty if the levels of inequality and poverty are relatively lower, and the levels of secondary education higher for Latin American countries. In addition, recession has a strong negative effects on poverty and there is an asymmetry in the impact of growth on poverty.

Based on all these arguments, we test the following hypothesis:

H1: When the impacts of growth and other variables on poverty are controlled, the impact of globalization on poverty differs according to the economic development stages of the countries.

H2: Economic globalization has no effect on poverty in the least developed and developing countries.

H3: Higher education reduces poverty at all stages of economic development.

Apart from these, there are also studies examining the factors that directly affect poverty. Lawson, McKay and Okidi (2003) investigate the factors affecting poverty dynamics in Uganda via geographic, educational, demographic, and economic variables. We also use some of these factors in our analysis. Gerşil ve Yeşilyurt (2014) indicate that the situation of the labor market, household characteristics, growth and income distribution, geographical characteristics, social policies, inflation and other factors such as wars, disasters etc. are reasons of poverty.

3. Data and Methodology

In this study, the impact of economic globalization on poverty is examined in terms of countries with different levels of economic development, while the data set is created for approximately 61 countries for the period 2005-2013. The classification of countries according to economic development level is done based on the classification of United Nations (UN, 2014)[1]. The 3-dollar head count ratio approach has been preferred. In addition to these, growth rate, unemployment rate, inflation rate[2] and Gini index are added as control variables. They all obtained from the World Bank database, and the variable of education index is drawn from the UN database. Finally, economic globalization index (KOF index), which have been calculated by Dreher (2006), is obtained from the Swiss Economic Institute database.

Deaton (1995) indicate that trade data may be biased upward due to over-invoicing of imports. A method often used to transfer funds from low-income countries, causing a systematic bias in trade data and in national accounts (Bergh and Nilsson, 2014). So that using KOF[3] index is more helpful for the empirical analysis. The same variables are used as the explanatory variable in the model for developed countries. However, relative poverty rate which is obtained from OECD database, is used in analysis for developed countries due to the lack of data in the poverty 3-dollar head count ratio in the World Bank database. Since these countries are generally high-income level countries, using the 3-dollar poverty line in poverty measurement will not provide proper measurement of poverty.

In this study, it is preferred to use homogenous panel data models according to the development level of the countries. Since the education index covers the period 2005-2013. Separate models have been established for each groups of economic development stages and diagnostic tests have been performed according to the appropriate models.

[1] The countries used in the study are respectively; as the least developed countries: Bangladesh, Chad, Cambodia, Haiti, Madagascar, Malawi, Mali, Mauritian, Mozambique, Myanmar, Nepal, Niger, Rwanda, Senegal and Uganda; as the developing countries: Albania, Algeria, Argentina, Belize, Botswana, Brazil, Chile, China, Columbia, Ecuador, Fiji, Georgia, Ghana, Guatemala, Guyana, Honduras, India, Indonesia, Jamaica, Jordan, Malaysia, Mexico, Morocco, Namibia, Nicaragua, Pakistan, Panama, Paraguay, Peru, Philippines, Thailand, Tunisia, Turkey, Ukraine and Uruguay and lastly as the developed countries: Belgium, Canada, Finland, Greece, Iceland, Italy, Latvia, Lithuania, Poland, Portugal and Slovenia.

[2] The current account balance ratio to GDP, GDP per capita constant prices, public debt ratio to GDP, merchandise trade of GDP etc. have been also added to analyses but no significant effects have been found.

[3] This index is calculated based on actual follows (trade/GDP, FDI/GDP, portfolio investment/GDP, income payments to foreign nationals/GDP) and restrictions (hidden import barriers, mean tariff rate, taxes on international trade, capital account restrictions) by Dreher (2006).

The following model for the least developed and developing countries is established with both poverty measures:

$$Poverty_{it} = \beta_o + \beta_1 Economic\ Globalization_{it} + \beta_2 Education\ Index_{it} + \beta_3 Unemployment_{it} + \beta_4 Growth_{it} + \beta_5 Inflation_{it} + \beta_6\ Gini_{it} + \mu_i + u_{it} \quad (1)$$

The model is as follow for developed countries:

$$Relative\ Poverty_{it} = \beta_o + \beta_1 Economic\ Globalization_{it} + \beta_2 Education\ Index_{it} + \beta_3 Unemployment_{it} + \beta_4 Growth_{it} + \beta_5 Inflation_{it} + \beta_6\ Gini_{it} + \mu_i + u_{it} \quad (2)$$

Here, i identifies the unit as countries, t shows the time dimension, μ_i shows unit effect and finally u_{it} shows the error terms.

Table 1 Descriptive Statistics

	Observation	Mean	Standard Deviation	Min	Max
Least Developed Countries					
Poverty $ 3 (%)	135	66.1	20.4	16.5	91.3
Economic Globalization (%)	135	44.8	11.0	21.5	69.4
Education Index	135	0.4	0.1	0.2	0.5
Unemployment (%)	135	6.9	5.9	0.2	24.3
Growth (%)	135	6.3	4.0	-5.9	18.9
Inflation (%)	135	7.4	6.1	-9.0	35.0
Gini Index	36	50.5	3.6	45.0	56.4
Developing Countries					
Poverty $ 3 (%)	315	21.0	17.2	0.1	74.6
Economic Globalization (%)	315	59.4	11.1	35.5	84.9
Education Index	315	0.6	0.1	0.3	0.8
Unemployment (%)	315	8.8	4.5	0.7	21.0
Growth (%)	315	4.6	3.5	-14.8	14.2
Inflation (%)	315	5.9	4.0	-7.1	25.2
Gini Index	243	45.3	6.1	34.0	57.4
Developed Countries					
Relative Poverty (%)	99	0.1	0.0	0.1	0.2
Economic Globalization (%)	99	79.4	7.0	67.0	95.7
Education Index	99	0.8	0.1	0.7	0.9
Unemployment (%)	99	9.4	4.3	2.3	27.5
Growth (%)	99	1.3	4.6	-14.8	11.9
Inflation (%)	99	3.0	2.7	-4.5	15.4
Gini Index	99	36.0	3.6	27.2	42.0

Table 1 shows the nine year averages of the variables used in the analysis of aggregated countries according to different stages of economic development. Poverty average is found to be the highest in the least developed countries. In the same countries, the indices of education

and economic globalization are relatively low. On the other hand, the average growth rate and average unemployment rate of these countries is better than the others. In developed countries, relative poverty is low and average of economic globalization and education index is high compared to the other countries.

4. Results

Table 2 shows the results according to the $ 3 per day poverty approach. First column presents results coming from first model for the least developed and developing countries. Since the Gini index has missing values and reduces the sample size, the model is re-solved by including the Gini index again and the analysis results are given in the second column. The same steps are repeated separately for the least developed and developing countries. Finally, table 4 presents result for developed countries by using the relative poverty measures.

Finally, the appropriate models (random or fixed effect) are determined according to the Hausman test and diagnostic tests are performed. According to Pesaran (2004) and Friedman (1937) tests, no cross-sectional dependence is observed in any model, but autocorrelation and heteroscedasticity are observed. Therefore, in order to obtain robust estimators, models were finalized by using Arellano (1987) Froot (1989) Rogers (1993) estimators. In addition, the time effect is tested with LR test and it is not found as significant in all models.

Table 2, shows that education index has a decreasing effect on poverty, while unemployment rate has a significant and increasing effect on poverty. According to the results of the model in Column 2, growth is not pro-poor, i.e. it increases poverty. In the third column model, which is only employed with the least developed countries, it is observed that only the education index reduces poverty and the others do not have a significant effect on poverty. Forth column shows that inequality and growth significantly increase poverty and economic globalization reduce poverty. However, since the sample size is small, there is less confidence in this model. Finally, in the model for developing countries, it is observed that the education index significantly reduces poverty and unemployment increases it significantly.

Table 2 Fixed or Random Arellano Froot Rogers Robust Estimators over Poverty 3 $[#]

Poverty $ 3	The Least Developed & Developing Countries (RE)	The Least Developed & Developing Countries (FE)	The Least Developed Countries (RE)	The Least Developed Countries (FE)	Developing Countries (RE)	Developing Countries (RE)
Economic Globalization	0.01	-0.09	-0.03	-0.59	0 .004	-0.06
	(0.08)	(0.10)	(0.14)	(0.29)	(0.08)	(0.10)
Education Index	-127.25***	-123.10***	-93.27**	29.31	-123.50***	-118.35***

	(17.74)	(31.53)	(42.65)	(58.13)	(25.77)	(29.00)
Growth	0.15	0.28**	0.29	1.14**	0.10	0.18*
	(0.10)	(0.14)	(0.26)	(0.26)	(0.08)	(0.09)
Unemployment	0.76**	1.07**	0.78	0.81	0.86***	1.09**
	(0.33)	(0.46)	(1.00)	(0.80)	(0.33)	(0.43)
Inflation	0.08	0.13	0.05	-0.12	0.13	0.09
	(0.07)	(0.10)	(0.10)	(0.05)	(0.08)	(0.10)
Gini		0.62		7.43**		0.18
		(0.56)		(1.40)		(0.37)
Constant	94.70***	64.22*	94.02***	-319.15**	86.75***	77.80***
	(10.87)	(32.95)	(18.00)	(87.45)	(16.59)	(25.62)
R-Square						
within	0.33	0.42	0.23	0.90	0.42	0.49
between	0.60	0.45	0.05	0.41	0.37	0.40
overall	0.60	0.45	0.06	0.09	0.37	0.40
N	468	297	135	36	315	243
id	52	33	15	4	35	27
t	9	9	9	9	9	9
Wald chi2	69.38***	7.85***	13.07**		38.55***	46.94***
rho	0.94	0.93	0.94	0.99	0.93	0.93

 # Standard errors are in the parenthesis
** Statistical significance at the 10% levels.*
*** Statistical significance at the 5% levels.*
**** Statistical significance at the 1% levels.*

Finally, in Table 3, presents that economic globalization and education level significantly reduce poverty whereas inflation and inequality significantly increase poverty in developed countries.

Table 3 Random Arellano Froot Rogers Robust Estimators over Relative Poverty[#]

Relative Poverty	Developed Countries (RE)
Economic Globalization	-0.001***
	(0.0004)
Education Index	-0.098**
	(0.0461)
Growth	0.0002
	(0.0001)
Unemployment	-.0004
	(0.000)
Inflation	0.002***
	(0.000)
Gini	0.005***
	(0.001)
Constant	0.13*

	(0.07)
R-Square	
within	0.53
between	0.73
overall	0.70
N	99
id	11
t	9
Wald chi2	3866.70***
rho	0.78

 # Standard errors are in the parenthesis
** Statistical significance at the 10% levels.*
*** Statistical significance at the 5% levels.*
**** Statistical significance at the 1% levels.*

5. Conclusion

This research contributes to the globalization poverty relationship differentiating the relationship with respect to countries that is on different stages of economic development. It is concluded that economic globalization has a significant effect on poverty reduction in only developed countries whereas it does not have a significant effect in both least developed and developing countries for $ 3 poverty measurement levels. The main difference from other researches is that we choose a poverty measure defining a higher poverty line than 1 dollar per day approach namely 3 dollars per day approach.

The research also found an evidence that unemployment increases poverty in developing countries. We observe the negative effects of inflation on poverty for developed countries. The one of the determinants of poverty in developed countries is inequality. Since we use relative poverty approach, the positive sign is expected relationship between inequality and poverty.

The human capital accumulation has an impact on poverty reduction in all countries and at all levels of development. As education provides an exit way from chronic poverty by increasing the production in the long term, improvements in education should be implemented as a priority in poverty alleviation policies.

In order for globalization to have an impact on the poor, the increasing effect of globalization on related sectors should be integrated by considering the country's specific economic structure. For this reason, it is necessary to pay attention to trade restrictions for the sectors where the poor work.

For future studies, countries can be compared in detail by examining time series models on a country-by-country basis. Thus, specific policy proposals can be made considering the economic structure of the countries.

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