



RELATIONSHIP BETWEEN GLOBALIZATION, ECONOMIC GROWTH AND POVERTY REDUCTION IN DEVELOPING COUNTRIES

Peter Adamu (PhD)

Department of Economics, Faculty of Social Sciences, Kaduna State University, Kaduna,
Nigeria

(peter.adamu@kasu.edu.ng)

+2348069807100

&

Ali Abubakar (PhD)

Department of Business Administration, Faculty of Management Science, Nile University,
Abuja, Nigeria

(ali.abubkar@nileuni.edu.ng/abunet42@yahoo.com)

+2348037147012

Abstract

This study investigates the relationship between globalization, economic growth and poverty reduction using 93 developing countries for the period 2005-2018. Despite the spread of globalization across countries of the world, poverty reduction is still the main topic of discussion in the developing world. Although, some regions have made progress in poverty reduction, others have stagnated or even regressed. The empirical literature has reported mixed findings for the globalization-poverty nexus and this has made the debate open till date. The mixed findings emanate from the problems of misspecification error, method of data analysis and proxies to capture poverty reduction. This study adopts the recent measure of poverty reduction known as household final consumption per capita to measure poverty reduction, applied a dynamic method (GMM) as against the static model and updated data on relevant variable as well as utilized an interactive model to explain the nexus. The baseline model shows that only economic and social globalization are significant in poverty reduction in the developing countries while political globalization is insignificant. The interaction of institutional quality with globalization revealed that at better institutions, are needed for the impact of globalization to be felt by the poor. Although the empirical result shows that globalization reduces poverty, economic growth is a more effect tool to reduce poverty in developing countries because the result shows that 1% increase in economic growth reduces poverty by 0.162% in the baseline model as well as subsequent models as against a reduction from average globalization of 0.066%. Also, policy makers in the developing countries should encourage school enrolment, fight against price instability and increasing population because results reveal they are detrimental to the poverty.

Keywords: *Globalization, Economic Growth, Poverty Reduction, GMM*

1. Introduction

The neoliberal argument suggests that the number of people living in extreme poverty has been on a decline in recent times. They attribute the progress largely on the rising density of economic integration between countries and improvement in multilateral and bilateral arrangements (i.e. globalization in general) promoted by World Trade Organization (WTO). Globalization is said to have made the use of resources efficient and this has triggered countries and regions to specialize in line with the principle of comparative advantage. On the contrary, anti-neoliberal stated that the advanced countries have little interest in poverty reduction in the developing countries. They argue



that world poverty and inequality have been rising, not falling, due to forces released by globalization (Mazur, 2000).

The question on whether globalization is good or bad for the poor have been explored in empirical studies with variant conclusions (Yanikkaya, 2003; Agenor, 2004; Collins & Graham, 2004; Noguer & Siscart, 2005; Wacziarg & Welch, 2008) but some problems still exist. Prominent among the problems is the issue of endogeneity because globalization can either be a cause or effect of income. Also, no consensus as to the measurement globalization because different proxies have been applied. Most previous studies tend to assign the concept of globalization, especially, economic globalization to proxies, such as FDI inflows or trade openness. This error tend to incorrectly estimate the impact of globalization on economic performance according to Dreher (2006). This is an issue because FDI inflows and trade openness are only components of economic globalization whereas the concept of globalization is broader and it include other factors such as; cross-border transactions of goods and services, payments to foreign nationals and portfolio investment among others. This study applied the KOF Index of Globalization, (Dreher, 2006 and Dreher & Gaston, 2008) which provides various measures of globalization (economic, social and political) as against using FDI and trade openness as proxy. The endogeneity problem between globalization and income was addressed in this study using interaction term and the role of institution as a means for globalization to reduce poverty was empirically verified.

2. Theoretical and Empirical Literature

The theoretical literature on globalization and poverty nexus have been expanding in recent times with only few empirical studies. According to Agenor (2004) globalization exhibit a J-curve effect on poverty and increases absolute poverty in the short run due to a number of factors. These factors include: Shortage or poor human capital because globalization comes with advanced technology which require highly skilled manpower than already existing to absorb the technological spillovers. Cost of transport is another factor because as economies open up to the world through globalization, cheaper capital becomes available. Also, globalization result to the replacement of labour with capital in production, and poverty rate might increase before laid-off workers get new jobs. In addition, increase in the level of competition caused by economic openness may lead to rise in the poverty rate because domestic firms might be forced out of business. Globalization may affect the size of government, for instance, decrease in social spending, which might increase poverty rate. Sinn (1997) used the race to the bottom hypothesis to argue that open economies may have to compete by lowering taxes followed by less social spending. However, it is not certain as to whether globalization is the reason behind the fall in in poverty from 79% to about 27% between the period using an 1981-2001 in China and a fall from 63% to about 42% an international poverty line of \$1.08 per day (at 1993 purchasing power parity) (Chen & Ravillion, 2004).

Furthermore, Rodrik (1998) used the compensation hypothesis to conclude that open economies develop larger welfare system similar to an insurance institution. Globalization increases poverty in the long run according to some plausible mechanisms. For instance, Kawachi & Wamala (2007) argue that trade openness can lead to a faster spread of infectious diseases such as HIV/AIDs and Avian influenza virus) and this might result to a fall in productivity with a consequent of an increase in poverty rate. Also, the adverse effect may affect the poor people more than the rich and this illustrates the possibility that trade openness can promote growth without decreasing poverty. In the same vain, globalization can affect social norms and lifestyle patterns of the people.



These might be in the form of their eating and smoking habits eating which might affect their health and productivity negatively (Medez & Popkin, 2004; Yach, Wipfli, Hammond, & Glantz, 2007).

In addition, Wade (2004) explains what is known as the neoliberal argument, which holds that world poverty and income inequality showed signs of falling around 1990 and this is attributed to increasing economic integration. The empirical literature have always related globalization issues for poverty reduction through economic growth. For example, Dollar & Kraay (2004) argues that trade is good for growth, and that there is no systematic relationship between changes in trade volumes and changes in the income distribution within countries. Thus, they conclude, if trade increases growth rates, this can translate into proportionate increase in the income of the poor people. The direct globalization-poverty nexus can mostly be felt in the short run and not necessarily through economic growth. Growth does not necessarily translate to poverty reduction because it occurs only when average real income increases, while absolute poverty depends only on the real incomes of the poor people. Therefore, the capacity of economic growth to reduce absolute poverty exhibits a large regional variations (Kalwij & Verschoor, 2007).

Among the pioneer studies that attempted to adopt household survey data for more than one country is the study by Litchfield, McCulloch, & Winters (2003). They applied a multinomial logit model and concluded that international trade is a means through which household can get out of poverty in Vietnam. Several reasons were presented by Agenor (2004) as means through which economic globalization can foster growth and decrease poverty in the long run. These include direct applications of mainstream economic theory which include: specialization, economics of scale, competition, incentives for macro-economic stability, and innovation. The more a poor country is integrated into the global economy, the more her chances of increasing her returns on higher education and this might in turns, decrease the rate of poverty in the long run (Stark (2004). Using household survey data, Heltel et al. (2003) concluded that trade liberalization leads to poverty reduction in the long run but only when labour and capital are mobile across sectors. This is basically because of the increase in the demand for unskilled labour which raises the income of everyone including those that were formerly self-employed but can easily move into the wage labor market. In the same vain, Edmonds & Pavcnik (2003) narrate how Trade liberalization of rice in the 1990s in Vietnam led to a gainful reallocation of labor of the poor from household occupations to the wage labor market. It is worthy to note that most of the studies reviewed focused specifically on trade liberalization and not globalization in general. Since the proxy for globalization is available, this study utilizes it to investigate it impact on poverty over the years.

3. Data, Model and Empirical Strategy

The total number of countries used in this study was 93 and the choice of countries selected for this study was primarily dictated by available of data and their classification by World Development as developing countries. The period of study covered is 2005-2013 and was based strictly on the availability of data for some relevant variables. Our data on globalization measure is the KOF Index (Dreher et al., 2008), regulatory quality data was obtained from World Governance Indicators (WGI) and data for all other variables were retrieved from World Development Indicators (2014).



A number of proxies to measure poverty have been suggested in literature. Poverty headcount, Gini coefficient and income per capita have been suggested but these proxies are not without problems because the dimensions of poverty such as deprivation in education, health and standard of living are not accounted for. Also, the data on poverty head count and poverty line measured in terms of United States Dollar (USD) was 1.25 a day between 1981-2011 but recently, this has changed to 1.90 USD averaged for the period of three years (See World Bank, 2016). Again, these data is only available for few countries and few years and this has made the usage of the other proxy for poverty rate was necessary. More reliable to measure poverty is data that captures ability to acquire basic necessities of life (see Woolard & Leibbrandt, 1999; Ravallion, 1992; Odhiambo, 2009). Poverty have always being measured in terms of income but the expenditure approach which have been adjudged to be more appropriately captures the ability of households to provide for their basic needs such as food, clothing and shelter. Some other studies have shown that household consumption per capita is more reliable and stable compared to income (Odhiambo, 2009). Therefore, this study utilizes the total final consumption per capita of household as a proxy for poverty reduction (see Quartey, 2005) and this measure tallies with the definition of poverty according to the World Bank in 1990 as “the inability to attain a minimal standard of living” measured in terms of basic consumption needs.

3.1 Model Specification

We employed a specification that is largely similar to that of Berg & Nilsson (2014). However, until the study by Berg & Nilsson (2014), this study utilizes a dynamic model which tends to capture the previous information about poverty to form part of the model since poverty is a dynamic phenomenon. Therefore, our baseline model to examine the impact of globalization on poverty can be expressed as follows:

$$Poverty_{i,t} = \beta_0 + \beta_1 GLOT_{i,t} + \beta_2 GROWTH_{i,t} + \beta_3 HUM_{i,t} + \beta_4 INF_{i,t} + \beta_5 POPG_{i,t} + \mu_i + \nu_t + \varepsilon_{i,t} \quad (1)$$

Where: Poverty is proxy for household consumption per capita, GLOT denote average total globalization, GROWTH represents gross domestic product per capita, HUM is human capital proxied by school enrolment, INF denote inflation rate and POPG is population growth rate and μ_i and ν_t represents country specific and time effects respectively. Since poverty is a dynamic phenomenon because poverty in the past affects current rate of poverty. Therefore, in a dynamic framework, the model for this study is specified as:

$$Poverty_{i,t} = \alpha_0 + \alpha_1 Poverty_{i,t} + \alpha_2 GLOT_{i,t} + \alpha_3 GROWTH_{i,t} + \alpha_4 HUM_{i,t} + \alpha_5 INF_{i,t} + \alpha_6 POPG_{i,t} + \mu_i + \nu_t + \varepsilon_{i,t} \quad (2)$$

Equation 2 captures the dynamism in the relationship between the variables based on the fact that the lagged dependent variable is part of the independent variables. However, the model has a potential problem of endogeneity as well as reverse causality because of the relationship between the lagged dependent variable and the error term. To overcome this problems, the generalized method of moments (GMM) estimator specifically developed by Arrelano & Bond (1991), Arrelano & Bover (1995), and Blundell & Bond (1998) for dynamic panel data modelling was applied. Specially, to control for country unobserved effects, these estimator applied the differencing procedure for the variables or used instruments. Again, the lagged dependent variable



and previous information of the independent variables are used as internal instruments. To eliminate unobserved specific effects, the first difference of equation (2) is presented as:

$$Poverty_{it} - Poverty_{i,t-1} = \theta(Poverty_{i,t-1} - Poverty_{i,t-2}) + \alpha_1(GLOT_{it} - GLOT_{i,t-1}) + \alpha_2(GROWTH_{it} - GROWTH_{i,t-1}) + \alpha_3(HUM_{it} - HUM_{i,t-1}) + \alpha_4(INF_{it} - INF_{i,t-1}) + \alpha_5(POPG_{it} - POPG_{i,t-1}) + (\varepsilon_{it} - \varepsilon_{i,t-1}) \quad (3)$$

Applying the differencing method suggests that the constant variables over time are eliminated. Also, internal instruments are needed to remove the likely endogeneity of the independent variables and the problem that might arise when the newly constructed error term $\varepsilon_{it} - \varepsilon_{i,t-1}$ is correlated with the lagged dependent variable $Poverty_{it} - Poverty_{i,t-1}$. The instruments uses the powers of the panel structure of the data in that they comprise of previous information or observation of the independent and lagged dependent variables. However, this method allows for current and future values of the independent variables to be affected by shocks emanating from poverty rate. It is this type of endogeneity problem that the GMM is designed to handle. If it is established that the error term is not serially corrected and the independent variables are weakly exogenous, the GMM panel estimator considers the following conditions of moment:

$$E[Poverty_{i,t-2}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad (4)$$

$$E[GLOT_{i,t-1}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad (5)$$

$$E[GROWTH_{i,t-1}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad (6)$$

$$E[HUM_{i,t-1}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad (7)$$

$$E[INF_{i,t-1}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad (8)$$

$$E[POPG_{i,t-1}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \quad (9)$$

In theory, the potential set of internal instruments emanates from all sufficiently large observations (instruments grows with time period, T). This study falls under this situation and uses three lags of each time-varying independent variables. The GMM estimator which is shown in equation 3 is called the difference GMM. Despite its advantages in favour of a simpler panel data estimator, the difference GMM has some statistical problems. This is because the persistence of the explanatory variables over time renders the lagged levels of these variables weak instruments in the difference GMM (Blundell & Bond, 1998; and Alonso-Borrego & Arrelano, 1999). The presence of weak instruments in the difference GMM regression equation affects its asymptotic and small sample performance to produce inefficient and biased coefficients. Therefore, to reduce the possible biases and inefficiencies associated with the difference GMM, an estimator that put together the difference and level equation into a system of equation is considered for this study. The method is known as the system GMM developed by Arrelano & Bover (1995) and Blundell & Bond (1998). The findings of this study are based on the results of twostep system GMM.

Furthermore, the consideration to introduce interaction terms in regression models have gained supports in empirical research of the 21st century and this is due to the fact that interaction terms



are ways to establish indirect link between variable. This study adopts this approach to examine the link between globalization and poverty reduction in developing countries. The variables to be interacted is the institutional quality explains country characteristics in terms of the economic and political structure as well as the ability of the government to formulate and implement sound policies that promote private sector growth. The proxy used to capture this is the regulatory quality. Therefore, the model with interaction term is specified as:

$$Poverty_{i,t} = \alpha_0 + \alpha_1 Poverty_{i,t} + \alpha_2 RUQ_{i,t} + \alpha_3 GLOT_{i,t} + \alpha_4 GROWTH_{i,t} + \alpha_5 HUM_{i,t} + \alpha_6 INF_{i,t} + \alpha_7 POPG_{i,t} + \alpha_8 (GLOT * RUQ) + \mu_i + \nu_t + \varepsilon_{i,t} \quad (10)$$

The equation (10) is the model with the interaction term. Recently, the importance of multiplicative interaction models in economic analysis have been established. Including interaction terms to a regression model have the potential to greatly expand the understanding of the relationships among the variables in the model and allows for more hypotheses to be tested. In the globalization-poverty nexus, the use of institutional quality became necessary because the policy to allow free trade between countries depends on good institutions (Anderson & Marcouiller (2002). Therefore, since the debate as to whether globalization reduces poverty or not has not ended, the empirical verification of this nexus contingent on institutions quality is paramount.

However, the interpretation of interaction terms in recent times has been viewed differently (Brambor, Clark, & Golder, 2006; Kam & Franzese; 2007). They suggests researchers to desist from current practice of interpreting interaction terms based on a single constant effect but should focus on interpretations which are based on multiple marginal effects depending on the variable (s) upon which the interaction is based (Brambor et al., 2006; Kam & Franzese, 2007).

The marginal effect of institutional quality is $\frac{\partial Poverty_{it}}{\partial GLOT_{it}} = \alpha_3 + \alpha_8 RUQ_{it}$ for equations (10). The

significance of the marginal effect cannot be concluded by the standard errors of (α_3, α_8) because the standard cannot be averaged according to Kam & Franzese (2007). They suggest the computation of a new standard error for the different values of RUQ and considering minimum, mean and maximum. Therefore, the interaction terms in this study would be interpreted based on marginal effects with robust standard errors. For the equations (10), the marginal effects estimation is described below as follows:

$$\sigma_{\frac{\partial Poverty_{it}}{\partial GLOT_{it}}} = \sqrt{Var(\hat{\alpha}_3) + RUQ_{it}^2 Var(\alpha_8) + 2RUQ_{it} COV(\hat{\alpha}_3 \hat{\alpha}_8)} \quad (11)$$

The equations (10) yield the standard error of the marginal effect of globalization on poverty conditional on the quality of institutions. From this equation, the institutional quality indicator will have significant effects on poverty level if the marginal effects in equation (11) is found to be significant. Brambor et al. (2006) illustrated that only a hand-full of studies which adopted the multiplicative interaction approach calculated the marginal effect by obtaining robust standard errors. It therefore means that majority of the studies that used multiplicative interaction models without considering the computation of a separate standard error are misleading and this study is timely to fill the gap especially in the international trade literature.



4. Results and Discussions

The discussion of the results of this study commences by explaining the bi-variate relationship between the variables under consideration and the Pearson correlation analysis was applied (Table 1). All the variables produced a positive and strong relationship with poverty rate except for inflation rate and political globalization. This suggests that a large percentage of the variables considered in this study have positive and strong correlation with poverty and when taken seriously by policy makers, the rate of poverty in developing countries might fall continuously. Specifically, all the components of globalization and average total globalization shows a strong and positive relationship with poverty reduction expect for political globalization whose correlation value is 0.11.

Table 1: Correlation Matrix

Variable	Poverty	GDPC	HUMAN	INF	POPG	RUQ	GLOT	ECG	SOLG	POLG
Poverty	1									
GDPC	0.97	1								
HUMAN	0.78	0.76	1							
INF	-0.01	-0.02	0.02	1						
POPG	-0.59	-0.57	-0.57	-0.02	1					
RUQ	0.52	0.49	0.49	-0.25	-0.35	1				
GLOT	0.78	0.76	0.76	-0.09	-0.52	0.70	1			
ECG	0.61	0.60	0.60	-0.17	-0.41	0.64	0.78	1		
SOLG	0.87	0.84	0.76	-0.07	-0.63	0.58	0.85	0.63	1	
POLG	0.11	0.10	0.07	0.03	-0.01	0.27	0.48	0.01	0.13	1

Note: GDPC=GDP per capita, HUMAN=Human Capital, INF=Inflation rate, POPG=Population growth, RUQ=Regulatory quality, GLOT=Total globalization, ECG=Economic globalization, SOLG=Social globalization, POLG=Political globalization. All variables are logged except regulatory quality.

Table 2: Twostep System GMM: Impact of Globalization on Poverty Reduction (Baseline Models)

Variable	Model 1	Model 2	Model 3	Model 4
Lagged Poverty	0.801 (0.011)***	0.807(0.011)***	0.771(0.116)***	0.808 (0.011)***
Growth	0.162(0.009)***	0.161(0.010)***	0.177(0.009)***	0.164(0.009)***
Human capital	0.021(0.009)**	0.023(0.009)**	0.024(0.100)**	-0.025(0.009)***
Inflation	-0.001(0.002)***	-0.001(0.0002)***	-0.001(0.002)**	-0.001(0.0002)***
Population growth	-0.009(0.002)***	-0.009(0.002)	-0.006 (0.003)**	-0.010(0.003)***
Globalization (Total)	0.066(0.018)***	-	-	-
Economic Globalization	-	0.030(0.045)**	-	-
Social Globalization	-	-	0.068 (0.012)***	-
Political Globalization	-	-	-	0.007(0.006)
Constant	-0.104 (0.054)**	0.003 (0.038)	-0.006 (0.034)	0.050 (0.038)
Groups	91	91	91	91
No. of Instruments	33	33	33	33
AR(1)	0.003	0.003	0.003	0.003
AR(2)	0.872	0.893	0.860	0.872
Hansen	0.075	0.064	0.077	0.059

Notes: the standard errors are reported in parentheses. The number of instruments for all models are greater than the number of groups and significance is indicated as follows: ***, ** and * for 1%, 5% and 10% respectively. Time dummies are jointly significant. All model are estimated using xtabond2 as in Roodman(2009)



Table 3: Twostep System GMM: Impact of Globalization on Poverty Reduction (Interactive Models for Globalization (Total))

Variable	Model 1	Model 2	Model 3
Lagged Poverty	0.793 (0.011)***	0.795(0.011)***	0.793(0.111)***
Growth	0.166(0.009)***	0.161(0.010)***	0.168(0.009)***
Human capital	0.028(0.009)**	0.022(0.010)**	0.021(0.100)**
Inflation	-0.0005(0.0002)***	-0.001(0.0003)***	-0.001(0.0003)**
Population growth	-0.010(0.002)***	-0.009(0.002)***	-0.009 (0.003)***
Regulatory Quality	0.017(0.006)***	0.007(0.006)	-0.087(0.084)
Globalization (Total)		0.057(0.017)***	0.073(0.020)***
Economic Globalization (Economic Globalization*Regulatory Quality)		-	0.024(0.022)
Social Globalization	-		
Political Globalization	-	-	
Constant	0.127 (0.039)**	-0.055 (0.063)	-0.123(0.074)
Groups	91	91	91
No. of Instruments	33	34	35
AR(1)	0.003	0.003	0.003
AR(2)	0.867	0.867	0.866
Hansen	0.058	0.074	0.079
MARGINAL EFFECTS	Maximum	Mean	Minimum
	0.097(0.015)***	0.064(0.045)*	0.032(0.069)

Notes: the standard errors are reported in parentheses. The number of instruments for all models are greater than the number of groups and significance is indicated as follows: ***, ** and * for 1%, 5% and 10% respectively. Time dummies are jointly significant. All model are estimated using xtabond2 as in Roodman(2009)

The baseline models (Table 1) is presented to show the empirical results of the nexus between globalization, economic growth and poverty reduction in developing countries. The three division of globalization (economic, social and political) revealed interesting relationships with poverty. While average total globalization, economic and social globalization are means through which poverty can be reduced, political globalization is not significant in reducing poverty in developing countries. This finding is consistent with the studies by Wade (2004) and Bergh & Nilsson (2014) who conclude that globalization generate mutual benefit across the world. Similarly, economic growth which has been widely considered a perquisite for income generation and poverty reduction in many countries produced a positive result in this study. In fact, the result shows that economic growth is a more effective tool for poverty reduction than globalization. This can be revealed by the fact that a 1% increase in average total globalization reduces poverty rate by 0.067%, 0.030% for economic globalization and 0.068% for social globalization while for economic growth, the rate of reduction in poverty is 0.162%. This results suggests that more should be done to promote rapid economic growth for poverty reduction. However, the issues of high rate inflation and rapid population growth must be addressed because the results in this study (Table 1) shows that poverty is increased when inflation and population growth are increasing.



Furthermore, the role played by institutions in the globalization-poverty nexus was empirical investigated and the results presented in table 3. The results are based on the calculated robust standard error approach suggested by Brambor et al (2006). The estimated result shows that higher level of institutional quality is essential for globalization to reduce poverty in developing countries. Countries are expected to promote good institution for the effects on globalization to be felt by the poor. Also, the promotion of globalization is essential for the improvement of quality of institutions (Bergh, Mirkina & Nilsson, 2014).

5. Conclusion

This study investigates the impact of globalization and economic growth on poverty reduction using 93 developing countries for the period 2005-2013. The debate as to whether globalization reduces poverty in developing countries has not been laid to rest. The empirical findings of this study found that globalization is a poverty reducing agents and countries must have effective regulatory quality to direct the impact of globalization to the poor. This finding is consistent with the study by Wade (2004), Bergh & Nilsson find globalization to be of mutual benefit to all. The finding by Le Goff and Singh (2011) also conclude that trade openness is an essential for poverty reduction in Sub-Saharan African countries especially when the macroeconomic structure of these countries are stable. Additional findings were produced by economic growth which is shown to be more effective to reduce poverty. Worthy to note are impacts on poverty emanated from the inflation rate, human capital development and population growth. To effectively address the plight of the poor in the developing countries, policy makers must consider a stable economy, promote human capital development through school enrolment and control the growing population which usually erode the gains from globalization.

References

- Agénor, P., 2004. Does globalization hurt the poor? *International Economics and Economic Policy*, 1(1), 21-51.
- Arellano, M., Bond, S., (1991). Some tests of specification for panel data: Montecarlo evidence and an application to employment equations. *Review of Economic Studies*, 58 (2), 277-297.
- Arellano, M., Bover, O., (1995). Another look at the instrumental-variable estimation of error-components models. *Journal of Econometrics*, 68 (1), 29–52.
- Arellano, M., Bond, S., (1998). Dynamic panel data estimation using dpd98 for gauss: a Guide for users. *Mimeo*. CEMFI. <ftp://ftp.cemfi.es/pdf/papers/ma/dpd98.pdf>.
- Bergh, A., Mirkina, I., & Nilsson, T. (2014). Globalization and institutional quality—A panel data analysis. *Oxford Development Studies*, 42(1), 1–30. <https://doi.org/10.1080/13600818.2014.884555>.
- Bergh, A., & Nilsson, T. (2014). Is globalization reducing absolute poverty? *World Development*, 62, 42–61. <https://doi.org/10.1016/j.worlddev.2014.04.007>.
- Blundell, R. & Bond, S., (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87 (1), 115–143.
- Brambor, T., Clark, W. R., & Golder, M. (2006). Understanding interaction models: Improving empirical analyses. *Political Analysis*, 14(1), 63–82. <http://doi.org/10.1093/pan/mpi014>.
- Chen, S., & Ravallion, M. (2004). How have the world's poorest fared since the early 1980s? *World Bank Research Observer*, 19(2), 141–170.
- Collins, S. M., & Graham, C., (Eds.) (2004). *Brookings trade forum 2004: globalization, poverty, and inequality*. Brookings Institution Press.



- Dollar, D., & Kraay, A. (2004). Trade, growth and poverty. *The Economic Journal*, 114(493), F22–F49.
- Dreher, A. (2006). Does globalization affect growth? Empirical evidence from a new index. *Applied Economics*, 38(10), 1091–1110.
- Dreher, A., Gaston, N., & Martens, P. (2008). *Measuring globalization: Gauging its consequences*. Springer.
- Edmonds, E., & Pavcnik, N. (2003). Trade liberalization and the allocation of labor between households and markets in a poor country. Mimeo. New Hampshire: Dartmouth College.
- Hertel, T. W., Ivanic, M., Preckel, P. V., Cranfield, J. A. L., & Martin, W. (2003). Short- versus long-run implications of trade liberalization for poverty in three developing countries. *American Journal of Agricultural Economics*, 85(5), 1299–1306.
- Kalwij, A., & Verschoor, A (2007). Not by growth alone: The role of the distribution of income in regional diversity in poverty reduction. *European Economic Review*, 51(4), 805.
- Kawachi, I., & Wamala, S. (2007). *Globalization and Health*. Oxford: Oxford University Press.
- Kam, C. D., & Franzese, R. J. (2007). *Modeling and interpreting interactive hypotheses in regression: analysis: Michigan, USA*: The University of Michigan Press.
- Litchfield, J., McCulloch, N., & Winters, L. A. (2003). Agricultural trade liberalization and poverty dynamics in three developing countries. *American Journal of Agricultural Economics*, 85(5), 1285–1291.
- Mazur, J. (2000). Labor's new internationalism. *Foreign Affairs*, 79 (January/February), 79–93.
- Noguer, M., & Siscart, M. (2005). Trade raises income, a precise and robust result. *Journal of International Economics*, 65(2), 447–460.
- Rodrik, D. (1999). *The new global economy and developing countries: making openness work*. In Policy Essay 24, Overseas Development Council. Baltimore: Johns Hopkins University Press.
- Sinn, H. W., (1997). The selection principle and market failure in systems competition. *Journal of Public Economics*, 66, 247–274.
- Stark, O. (2004). Rethinking the brain drain. *World Development*, 32(1), 15–22
- Wade, R. H. (2004). On the causes of increasing world poverty and inequality, or why the Matthew Effect prevails. *New Political Economy*, 9(2).
- Yach, D., Wipfli, H., Hammond, R., & Glantz, S. (2007). *Globalization and tobacco*. In I. Kawachi, & S. Wamala (Eds.), *Globalization and health*. Oxford: Oxford University Press.
- Yanikkaya, H. (2003). Trade openness and economic growth: A crosscountry empirical investigation. *Journal of Development Economics*, 72(1), 57–89.