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Globalization, Poverty and Role of Infrastructures

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Abstract. The aim of this paper is to complement the theoretical and empirical literature on the globalization-poverty nexus. Based on a simple model of social welfare, the paper demonstrates that the different types of globalization have different effects on social welfare. The main empirical findings suggest that globalization contributes to poverty reduction but with a larger magnitude in the presence of infrastructures instruments. It follows that good quality of infrastructure is a necessary condition for a higher globalization effect on poverty reduction. The empirical evidence also supports the idea that globalization driven by the reduction in information access cost and the removal of barriers to their dissemination has the greatest impact on poverty reduction. Finally, the study discusses the economic policy implications and suggests in particular investment in adequate ICT and energy infrastructures for globalization to contribute significantly to the reduction of poverty.
Keywords. Globalization, poverty, Infrastructure, Instrumental variables.
JEL. H54, I32, F15, F41, O15.

1. Introduction

The global economy has experienced over the last decade a process of globalization characterized by an increasing degree of market opening and greater integration between countries (Nissanke & Thorbecke, 2008). Despite this strong globalization of economies, its impact on poverty reduction remains undetermined, making the impact of globalization on poverty as key debate in both academic and political circles.

Globalization is supposed to impact poverty through multiple channels that affect wage levels, employment, technology transfer, production and household's consumption (Goldberg & Pavcnik, 2004). Nissanke & Thorbecke (2008) and Bourguignon (2004) in particular show that globalization directly impacts poverty through changes in relative prices and indirectly through economic growth. Trade reforms can positively affect the well-being of the poor by changing relative prices to the consumers and producers (Harrison & Macmillan, 2006). Davis and Mishra (2004) develop a model in which they show that if the imported goods and those produced by the poor are not substitutable, then open up trade by reducing tariffs on imports will help increase the real income of the poor. This effect associated with an increase in prices of goods produced by the poor (agricultural products) will contribute to a significant reduction of poverty. However, the gains from globalization to the poor are not that straightforward. Important divides are registered in the literature leaving the debate opened (Asongu, 2013; Round, 2007; Neutel & Heshmati, 2006; Kose et al, 2006; Sinszindre 2005; Agenor 2002).

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Some of these divides can be explained by the non-uniqueness of globalization. Globalization is a polysomic concept which in practice can take many forms. Moreover Harrison (2007) points out, that the effect of globalization on the poor depends on how it's been measured. Globalization understood as volume of exports and FDI flows would be beneficial for the poor while globalization understood as tariffs disarmament and volume of imports would be detrimental to poverty.

Chen and Ravallion (2004) and Round (2007) confirms the point by showing that many countries have implemented trade reforms, economic liberalization measures, privatization and deregulation policies and are missing the positive fallout of globalization on poverty. This ambivalent effect depending on the nature of the globalization has fueled skepticism among public policymakers and stimulated debates among researchers on the suitable policies for an economy to gain from its integration to the global economy. Sindzingre (2005) Nissanke and Thorbecke (2008) and many other authors argue that globalization can have a positive effect on developing economies only in the presence of effective institutions. Thus, the effect of globalization on poverty depends on the type of political regime and the structures of the local political economy, the consistency and the reliability of market institutions (Acemoglu et al., 2001a, 2001b; Rodrik et al., 2002; Sacks & Warner, 1995; 2001).

Along with the institutions, the availability and the quality of infrastructures become an important point of the transmission of globalization to poverty. Several authors argue that infrastructures facilitate the interaction between communities and economies, and thus increase their likelihood to exchange goods and services and to take advantage of international trade (Winters, 2014; Osmani, 2005; Esfahani & Ramirez, 2003). Infrastructures support increase in income through specialization, economies of scale and ensure full participation in the global economy. The importance of infrastructure in globalization is also supported by the works of the new economic geography. The latter argues that factors such as the cost of land, cost of transport, the search for economies of scale, proximity to markets can push the geographic concentration or contrary to their dispersion (Krugman & Venables, 1990). Infrastructures for international trade are critical in that they reduce transport costs and facilitate market proximity. Consequently, the presence of transport, energy, education, irrigation, telecommunication infrastructures accelerates the transmission the globalization effects to poverty reduction (Zheng & Kuroda, 2013; Khandker & Koolwal, 2010; Golub et al., 2007).

This study seeks to participate in the debate by trying to derive the type of globalization as well as infrastructures that best suit with poverty reduction goal. The rest of the paper is organized as follows. Section 2 provides a short overview of the theoretical and empirical literature while section 3 derives a simple model of the differentiated effects of the different types of globalization on social welfare. Section 4 discusses the methodology. Our empirical findings are gathered in section 5. Section 6 contains concluding remarks.

1. Overview of theoretical and empirical literature

The first temptation to device a theoretical link between globalization and poverty began with the Stopler-Samuelson theorem, which states that trade liberalization, will lead to relative wages adjustment. When a developing country, abundant in unskilled labor opens up to international trade, real wages of the unskilled labor will gradually grow and the real wage of skilled labor will decrease. Unskilled labor being the most abundant factors in developing countries, the consequence is that the poor, generally unskilled labor will see their real wages adjusted upwards and will be better off. From this theorem many authors

concluded that globalization would benefit the poor (Bhagwati & Srinivasan, 2002).

However, changes in the wage distribution didn't support the Stolper-Samuelson predictions. Davis and Mishra (2006) impressively demonstrated that the Stolper-Samuelson theorem is worse than false; it is dangerous. They showed that Stolper-Samuelson holds in a case where the partner countries produce same goods or very close substitutes. However, they argue that the openness affects the poor through price. The decrease in customs duties and tariffs in connection with the trade openness results in a decrease in prices of goods poor people import and if the openness results in higher prices of goods produced by the poor, globalization will then be beneficial to the poor.

The relative competitiveness of the sector in which the poor are employed can also explain the extinct to which globalization can affect poverty. Based on a specific-sector framework the proponents of this analysis argue that openness will initially exert a downward pressure on the prices of previously protected sectors, which eventually will result in a decline in the demand for labor. Since the labor cannot be easily relocated, it'll finally result in poverty increasing (Harrison, 2007).

Easterly (2007) analyzing the link between globalization and poverty in a neoclassical growth context shows that globalization can have two effects on the poor. In a situation of different factor endowments but similar productivity, globalization by promoting free movement in the production factors will lead to an equalization of capital return. This would benefit poor countries that receive important influx of capital. However, if the income difference is rather caused by an exogenous factor other than the difference in factor endowments, globalization in the best case will have no effect on the poor; and in the worst case, will worsen poverty, due to capital movement from the low return to the higher return.

In all, on a theoretical basic and under particular conditions, arguments supporting positive effect of globalization on poverty are legion. The transmission channels of globalization to poverty include economic growth, capital accumulation, prices, wages and productivity.

The empirical verifications of these theoretical predictions are rarer. The literature is quite abundant in the understanding of the inequality effect of globalization (Goldberg & Pavcnik's, 2004). However, recent years have seen more active literature on this field. The main lesson learnt so far is that the opinions are divided. Harrison (2007) in its collective work 'Globalization and Poverty' 'makes an enlightening presentation of this. Globalization produces both winners and losers among the poor. However, the common trend that emerges from the various studies suggests that the effect changes depending on the type of globalization or how globalization is measured.

It is widely reported in the literature that globalization benefits the poor as long as it relates to exports and FDI flows. Tests in many regions of the developing world revealed that (Topalova, 2007; Goh & Javorcik, 2007; Balat & Porto, 2007; Hanson, 2007; Goldberg & Pavcnik, 2007). At the same time, financial globalization has proven harmful to poor people in the sense that it results in much more income volatility for poor countries. The latter in absence of strong institutions and appropriate complementary policies are more vulnerable to financial crises (Bhagwati & Srinivasan, 2002).

The empirical literature also puts a major emphasis on the role of institutions and complementary policies especially on social safety net and inequality reduction policies to enable poor people to share the benefits of globalization (Bhagwati & Srinivasan, 2002). Sound infrastructures policy plays also a key role of leverage effect in the transmission of globalization to poverty (Winters, 2014; Zheng & Kuroda, 2013; Khandker & Koolwal, 2010; Osmani, 2005).

Overall, globalization could benefit poor people depending on whether the emphasis is put on the right type or nature of globalization or on the appropriate infrastructures –physical or institutional – for its various effects on poverty reduction depend on its main manifestation. Similarly, sound institutions and inequalities reduction policies associated with policies in strengthening infrastructural capacity have proven necessary for the transmission of globalization to poverty reduction.

2. Methodology and Data

2.1.Methodology.

The methodology of the paper is organized into two stages. In the first stage we provide a simple derivation of the differential effects of the various manifestations of globalization on poverty and in a second stage, we provide an empirical test of the effect of different measures of globalization on poverty.

2.1.1. The differentiated impact of globalization on social welfare

We start from the assumption that the phenomenon of globalization is not unique but multiple. Globalization understood as increasing preponderance of financial, economic, environmental, political, social and cultural processes worldwide, goes beyond the traditional flow of goods and services to cover the aspects of capital flows, technology transfer, knowledge and information sharing to migration. This complexity explains the many different ways globalization is measured in the literature (Harrison, 2007; Bardhan, 2006). In the following, we call those different ways, the different manifestations, natures or types of globalization.

For simplicity sake, we assume that there are two different types or manifestations of globalization. The objective for the society is to maximize the welfare it derives from its participation in the global economy.

Let q_1 the exchange flow associated with the globalization type (G_1) and q_2 the exchange flow associated with the globalization type (G_2); these could include such things as capital, information goods and services, cultural or technology flows, etc. Consider $U(q)$ a social welfare function of the participation of the society or the country in the global economy.

$$U(q) = \prod_{i=1}^{2}(q_i - c_i)^{\gamma_i} \qquad (1)$$

with$\gamma_1 + \gamma_2 = 1, (q_i - c_i) \geq 0.\, U(q)$is increasing, concave and differentiable for $q_i \geq 0$.

c_i is the subsistence level of q_i. c_1 and c_2 are nul only if the society is completely self-sufficient or autartic. p_i is egal to the unit price q_i. p_i incompasses or the social and economic cost the society bears to enjoy q_i. It includes for example, the necessary investment in infrastructure, the institution building cost, and the different opportunity costs. In the literature many authors reported the importance of these to harness globalization gain (Bardhan, 2006; Timmer, 2004; UNCTAD, 2004; Bigsten et al. Durevall, 2003). We can assume that p_i depends on the level of globalization to complexity the analysis, but we prefer for the sake of simplicity of the analysis to assume that p_i is the minimum cost any country supports to enjoy globalization gain.

After linearization, the 1st order conditions give::

$$L = \gamma_1 \ln(q_1 - c_1) + \gamma_2 \ln(q_2 - c_2) + \lambda(I - p_1 q_1 - p_2 q_2)$$

$$L_{q_1} = \frac{\gamma_1}{q_1 - c_1} - p_1\lambda = 0 \qquad (2)$$

$$L_{q_2} = \frac{\gamma_2}{q_2 - c_2} - p_2\lambda = 0 \quad (3)$$

$$L_\lambda = I - p_1q_1 - p_2q_2 = 0 \quad (4)$$

from (2) and (3) we get :

$$\frac{\gamma_1/(q_1 - c_1)}{\gamma_2/(q_2 - c_2)} = \frac{p_1\lambda}{p_2\lambda}$$

$$\Longrightarrow \frac{\gamma_1}{\gamma_2} * \frac{q_2 - c_2}{q_1 - c_1} = \frac{p_1}{p_2}$$

$$\Longrightarrow p_1\gamma_2(q_1 - c_1) = p_2\gamma_1(q_2 - c_2)$$

$$\Longrightarrow (q_1 - c_1) = \frac{p_2\gamma_1(q_2 - c_2)}{p_1\gamma_2}$$

$$\Longrightarrow q_1 = \frac{p_2}{p_1} * \frac{\gamma_1}{\gamma_2}(q_2 - c_2) + c_1 \quad (5)$$

and

$$q_2 = \frac{p_1}{p_2} * \frac{\gamma_2}{\gamma_1}(q_1 - c_1) + c_2 \quad (6.1)$$

(5) and (6.1) in (4) gives

$$I = p_1q_1 + p_2\left[\frac{p_1}{p_2} * \frac{\gamma_2}{\gamma_1}(q_1 - c_1) + c_2\right] \quad (6.2)$$

$$I = p_1q_1 + \frac{p_2}{p_2} * \frac{\gamma_2}{\gamma_1}p_1(q_1 - c_1) + p_2c_2 \quad (6.3)$$

$$\Longrightarrow I - p_2c_2 = p_1q_1 + \frac{\gamma_2}{\gamma_1}p_1(q_1 - c_1) \quad (6.4)$$

$$\Longrightarrow I - p_2c_2 = p_1q_1 + \gamma_2\left(\frac{p_1q_1}{\gamma_1} - \frac{p_1c_1}{\gamma_1}\right) \quad (6.5)$$

Replacing $\gamma_2 = 1 - \gamma_1$ in (6.5) we get:

$$\Longrightarrow I - p_2c_2 = p_1q_1 + \frac{p_1q_1}{\gamma_1} - \frac{p_1c_1}{\gamma_1} - p_1q_1 + p_1c_1 \quad (6.6)$$

Multiplying (6.6) by $\frac{\gamma_1}{p_1}$ gives:

$$\frac{\gamma_1}{p_1}(I - p_1c_1 - p_2c_2) = q_1 - c_1 \quad (7.1)$$

$$\Longrightarrow q_1^* = c_1 + \frac{\gamma_1}{p_1}(I - p_1c_1 - p_2c_2) \quad (7.2)$$

$$\Longrightarrow q_2^* = c_2 + \frac{1-\gamma_1}{p_2}(I - p_1c_1 - p_2c_2) \quad (7.3)$$

Equations (7.2) and (7.3) represent the equilibrium demands of exchange flows associated with types G_1 and G_2 of globalization. $(I - p_1c_1 - p_2c_2)$ can be interpreted as the residual income after financing the minimum and consumption of c_1 and c_2. q_1^* and q_2^* represent the ''additional exchange flow'' associated with G_1 and G_2. These quantities are negatively correlated with the price and positively correlated to the importance of the flow in the social welfare function.

In our case, if γ_1 increases, it implies that $q_1$is relatively more important than q_2. The society will consume more q_1 and less of q_2 (all other things equal). As $U(.)$is strictly increasing, if $q_1 > q_2$ then $\Longrightarrow \frac{\partial U'(.)}{\partial q_1} > \frac{\partial U'(.)}{\partial q_2}$, and the society derives more satisfaction from the consumption of q_1 than q_2.

This result shows that the different manifestations of globalization do not provide the same gain for the society and it becomes necessary to investigate empirically the different effects of the different types of globalization on the social welfare.

2.1.2. Empirical strategy

Our empirical strategy proceeds in two steps. First, we estimate a baseline model by OLS with different globalization measures and in the second steps we provide an alternative IV estimation, in which the quality of infrastructure is used as instrument to globalization. The objective is to access the relevance of infrastructure in achieving the benefits of the various manifestations of globalization.

As the result of the difficult access to poverty data, we use a cross sectional and we specify the social welfare as function of the exchange flow derive from the participation in the global economy and a set of control variables. We measure the social welfare by the level of poverty. From Andres (2006), Neutel and Heshmati (2006) and Heshmati (2004), we can assume:

$$Pov_i = \gamma_0 + \gamma_1 Global_i + \gamma_2 Emp_i + \gamma_3 PubExp_i + \gamma_4 Inf_i + \varepsilon_i \quad (8)$$

Where Pov_i measures the poverty incidence in country i. $Global_i$ measures the integration level of country i in the global economy. Following KOF index of globalization measures developed by Dreher (2006) and updated by Dreher, Gaston and Martens (2008), we use two groups of globalization manifestations. The economic globalization as the first group, which includes: i) the economic flow measured by the composite index of trade flows, transfer and FDI and ii) restrictions as measured by the composite index of hidden barriers, the average level of tariff in international trade. The second group includes: iii) the social globalization measured by the flow of information (internet, TV and trade in newspaper) and iv) the cultural proximity measured by the composite index of the number of McDonald, trade in book, number of ikea. This various measure will allow accessing the effect of the different type of globalization on poverty. Emp_irefers to the level of employment in the total labor force, $PubExp_i$ refers to public spending and is measured by the ratio of public spending to GDP; Inf_i refers to the level of inflation in the economy i; ε denotes the error term.

Robustness of the analysis will be ensured with: (i) use of alternative specifications; (ii) modeling with Heteroscedasticity and Autocorrelation Consistent (HAC) standard errors and; (iii) Ramsey's Regression Equation Specification Error Test (RESET) for validity of model specification. Since we are modeling with Ordinary Least Squares (OLS), the four basic concerns of this approach are tackled. While, autocorrelation in the residuals and heteroscedasticity are tackled with HAC standard errors, the assumption of linearity is verified with Ramsey's RESET.

As stated above, given the research problem under consideration, OLS only provide a baseline of the globalization-poverty nexus. Corresponding estimates have to be compared with models that instrument the nexus with infrastructures quality indicators.

To do this, the paper adopts a Two-Stage Least Squares (2SLS) Instrumental Variable (IV) estimation technique. IV estimation solves the issue of endogeneity and hence, avoids the inconsistency of estimated coefficients by OLS when the exogenous variables are endogenous (correlated with the error term in the main equation). The intuition behind this is that we have at least two reasons to suspect the presence of endogeneity: i) there is possibility of existence of unobserved common factors (not observed correlation) that explain poverty as well as the level globalization. Because these factors are not observed they are in the error terms and therefore are correlated with the globalization measure; ii) while globalization affects the level of poverty, it is not excluded that the poverty level also determines the conditions of openness and integration into the world economy; thus leads to a simultaneity. The 2SLS are appropriate to control for the endogeneity to appreciate the importance of infrastructure in the globalization-poverty nexus.

The 2SLS estimation will entail the following steps:

First stage:

$$Global_i = \alpha_0 + \alpha_1 Instrument_i + \alpha_2 X_i + u_i \quad (9.1)$$

Second stage:

$$Pov_i = \beta_0 + \beta_1 (\widehat{Global_i}) + \beta_2 X_i + v_i \quad (9.2)$$

In equations (9.1) and (9.2), and u_i and v_i represent the error terms. We use as an instrumental variables the quality of infrastructure; these variables like the quality of telecommunications infrastructure, rail infrastructure, airport infrastructure and energy infrastructure.

We proceed further with the IV analysis as following: (i) justify the choice of a 2SLS over an OLS estimation technique with the Hausman-test for endogeneity; (ii) verify the instruments are exogenous to the endogenous components of the main explaining variable (Globalization) and; (iii) ensure the instruments are valid and not correlated with the error-term in the main equation with an Over-identifying Restrictions (OIR) test.

2.2. Data and sources

We examine a sample of 133 developing countries with data from the WDI (*pov, emp, pubexp, inf*) the KOF index of globalization and the Global Competitiveness Index (infrastructure data).

In the regressions, we control for the macroeconomic environment (inflation, employment levels, public spending). The rationale behind these variables is that high level of inflation reduces the purchasing power and contributes to exacerbate poverty. Several arguments are advanced in the literature to support that an increase in inflation will result in increase in poverty (Albanesi, 2007; Cardoso, 1992; Ravallion, 1998; Braumann, 2004; Chaudhary, 1995; Erosa & Ventura, 2002) while a low level of inflation should help to reduce poverty (Lopez, 2004; Bulir, 1998). Employment is the first channel through which public policy can help to reduce poverty (Borgeraas & Dahl, 2010). Public spending is projected to increase aggregate demand and consumption, which in turn stimulates economic growth. It's therefore helpful for poverty reduction. This view is widely supported in the literature (Benneth, 2007; Zaidi, 2005).

In the following paragraphs, we justify the rationale and the intuition behind the instrumental variables. The aim of the paper is to assess the effect of globalization on poverty and to appreciate the importance of infrastructure that nexus. Thus, we'll focus on demonstrating how the quality of rail, telecommunications, airport

and energy infrastructures, are involved in the globalization-poverty nexus. The measures of these variables are from the Global Competitiveness Index. The higher the score, the better is the quality of the infrastructure.

3. Results

This empirical section addresses four main issues: (i) the ability of globalization to explain poverty conditional on other covariates (control variables); (ii) the ability of infrastructures to explain poverty beyond the globalization channel; (iii) the more efficiency of some types of globalization over others in reducing poverty and (iv) the instrumentality to infrastructure in the globalization-poverty nexus. The first issue is addressed by the significance and signs of estimated coefficients in the baseline model; the second depends on the outcome of the Sargan over-identification test; the third depends on the magnitude of the coefficients in the 2SLS-IV model while the fourth concern depends on the three preceding issues.

TABLE 1: *Effect Of Globalization Poverty (2SLS-IV)*

Variable	Dependent Variable incidence of poverty (1,2US$)			
	Equation1 (2SLS-IV)	**Equation2 (2SLS-IV)**	**Equation3 (2SLS-IV)**	**Equation4 (2SLS-IV)**
Economic Globalization				
- Actual flow	-1.58 (0.009)***	-	-	-
- Restrictions	-	-	-	-1.85 (0.001)***
Social Globalization				
- Information flow	-	-	-2.26 (0.000)***	-
- Cultural proximity	-	-0.95 (0.002)***	-	-
Inflation	-0.01 (0.706)	-0.05 (0,061)*	-0.05 (0.070)*	-0.76 (0.018)***
Gov Expenditure	-0.69 (0.318)	-0.53 (0.339)	0.66 (0.344)	-0.22 (0.707)
Employment	0.22 (0.624)	0.29 (0.402)	-0.29 (0.457)	0.39 (0.283)
const	40.85 (0.008)	64.03 (0.029)	187 (0.000)	127 (0.002)
Hausman test	14.6744 (0.0003)***	5,33254 (0.0241)**	5.69606 (0.0200)***	7.11988 (0.0097)***
Sargan OIR test	1.81513 (0.6116)	4.3495 (0.2261)	2.26265 (0.5197)	2.25346 (0.5215)
Adjusted R^2	0.3990	0,4007	0.4010	0.3069
Prob > Fischer	0.0006***	0.0000***	0.0000***	0.0000***
Observations	71	71	70	69

*,**,*** significativity at 10%, 5% and 1% respectively ; () p-value; OIR : over identified Restriction

The Hausman endogeneity at the end of each regression test the null hypothesis of the OLS estimates efficiency and consistency. Hence, the rejection of the null

hypothesis points to the inconsistency of OLS owing to endogeneity and lends credit to the choice of the 2SLS estimation strategy as means of assessing the instrumentality infrastructure in the globalization-poverty nexus. The probability associated with the statistics of Sargan over-identification test allows us to consider the instruments as valid instruments for globalization. The quality of rail, energy, telecommunications and quality of airport infrastructures are validated as instruments of globalization. Table 1 reports regressions of poverty on globalization using 2SLS and table 2 in the appendix presents the corresponding OLS values.

As concern the first issue, globalization has a negative effect on poverty. Globalization through it different flows contribute to reduce the poverty incidence. To address the second issue, OLS specifications provide a baseline and we compare their corresponding estimates with those of 2SLS. The resulting conclusion is that, infrastructures are instrumental in the positive effect of globalization on poverty reduction. This is because, in the absence of infrastructure quality instruments (OLS specifications), the corresponding magnitudes of the globalization-poverty nexus are lower and sometime less significative. The direction of the relationship also reinforces a part of the literature. In general, greater globalization contributes to poverty reduction (Dollar & Collier, 1999; Dollar, 2004; Dollar & Kraay, 2001). For the third concern is achieved through the different magnitude among the estimated parameters. The magnitude varies according to the measure and therefore the type of globalization. The information flows (-2.26) tends to be the more efficient globalization on poverty reduction, followed by restrictions (-1.85), actual flow of goods, services and FDI (-1.58) and finally cultural proximity (-0.95). These results suggest that the most beneficial effect of globalization on poverty in developing countries refers to the sharing of information and knowledge. Through the mass media and internet development, countries have costless access to the necessary information for innovation and development. The access to internet democratizes information and gradually removes various barriers and property rights and thus allows developing countries to develop new processes and introduce innovations in their system of production and consumption. It thus highlights an aspect of the digital economy, Rifkin (2014) describes as cooperative economy in the sense that the information is accessible at almost zero marginal cost. Bernstein and Cashore (2000); Coleman and Grant (1998) argue that development requires greater access to innovation and reducing barriers to their dissemination. Our results support that idea.

The second most beneficial effect of globalization for developing countries refers to the restriction of trade. This might seem paradoxical and contradictory to the concept of globalization itself. However, this result finds many echoes in the literature. Indeed, some authors estimate that in its first stage globalization could be harmful to developing countries if they didn't take the necessary steps to be able to hold the international competition. Thus, the unfettered trade liberalization could be damaging for the poor (Agenor, 2003). Our results show that restrictions can be good for poor; it's just a call on controlled and gradually openness so as to protect the more vulnerable. The actual flows measured as a composite index of goods, services, transfers and FDI flows comes at the third rank in the ability of globalization to reduce poverty. This result provides support to some development in the literature that consider sees free trade as an important leverage to benefit from globalization (Goldberg & Pavcnik, 2004; Nissanke & Thorbecke, 2008; Bourguignon, 2004). However its rank shows the ambiguity he is the subject in the globalization-poverty nexus.

Finally to a lesser extent, cultural proximity as a measure of globalization contributes to poverty reduction. However, its scope is very limited relatively to other types of globalization. In the literature, linguistics distance is considered as an obstacle to trade and exchange. Therefore linguistic similarity would be a catalyst for trade and exchange and the promotion of the best practices everything that can result in poverty reduction (Arbia et al. 2010; Felbermayr & Tubal, 2010).

Table 3 in appendix, highlights the weight of the various infrastructure as instrument to globalization. Telecommunications infrastructures have a significant effect whatever the type of globalization; then come the energy infrastructures. Airport infrastructures are significant in the case of cultural proximity while the coefficient associated with the rail infrastructures is significant only in the case of actual flows. This suggests that priority should be given to telecommunications infrastructures and those relating to energy.

4. Conclusion

The object of this paper has been to complement theoretical globalization literature with empirical evidence in a dual manner: on the one hand we have assessed the poverty reduction effect of globalization and; on the other hand, the instrumentality of infrastructure in the nexus. The main findings suggest that globalization contributes to poverty reduction but with a larger magnitude in the presence of infrastructures instruments. It follows that good quality of infrastructure is a necessary condition for a higher globalization effect on poverty reduction.

The appealing effect of globalization on poverty can be explained by at least three factors. Reducing the cost of access to information and the removal of barriers to their dissemination facilitates knowledge and innovations sharing and costless accessing. This has proven to accelerate production, value added and thus poverty reduction. Targeted and controlled restrictions could better protect the domestic economy and prepare it to benefit from greater openness. Exchange flows can result in lower consumption price, what is good for poverty reduction. Lastly, cultural proximity has proven to be a favorable asset to poverty reduction in some extent.

The study also finds that to harness the benefit of globalization, developing countries should give priority to telecommunications and energy infrastructures.

APPENDIX :

TABLE 2: *Effect Of Globalization Poverty (OLS, baseline model)*

Variables	Dependent Variable : incidence of poverty (1,2US$)			
	Equation1 (MCO)	**Equation 2 (MCO)**	**Equation3 (MCO)**	**Eaquation4 (MCO)**
Economic Globalization				
- Actual flow	-0.11 (0.539)	-	-	-
- Restrictions	-	-	-	0.79 (0.000)***
Social Globalization				
- Information flow	-	-	-1.15 (0.000)*	-
- Cultural proximity	-	-0.46 (0.001)***	-	-
Inflation	-0.04 (0.001)***	-0.05 (0.000)***	-0.04 (0.000)***	-0.05 (0.000)***
Gox Expenditure	-0.89 (0.063)*	-0.77 (0.078)*	-0.59 (0.184)	-0.56 (0.276)
Employment	0.61 (0.073)*	0.49 (0.133)	0.06 (0.840)	0.49 (0.168)
cons	38.36 (0.221)	46.90 (0.079)	126.71 (0.000)	73.73 (0.024)
Adjusted R^2	0.4147	0.4986	0.4444	0.4977
Prob > Fischer	0.0000***	0.0000***	0.0000***	0.0000***
Observations	89	90	89	83

*,**,*** significativity at 10%, 5% and 1% respectively ; () p-value

TABLE 3. *First Stage Of The 2SLS*

Variables	**Actual flow**	**Restrictions**	**Information flow**	**Cultural proximity**
Rail infra	4.04 (0.050)**	-1.74 (0.292)	-0.97 (0.567)	-0.65 (0.825)
Airport infra	-0.004 (0.029)**	-0.00 (0.147)	-0.00 (0.352)	0.007 (0.038)*
Energy infra	2.87 (0.011)**	3.34 (0.008)***	2.80 (0.021)**	3.19 (0.156)
Telecomm infra	0.06 (0.028)**	0.07 (0.000)***	0.07 (0.015)**	0.11 (0.001)**
Inflation	0.01 (0.019)**	-0.01 (0.004)***	-0.00 (0.873)	-0.00 (0.179)
Gox Expenditure	0.02 (0.929)	0.21 (0.173)	0.59 (0.007)***	0.36 (0.255)
Employment	-0.01 (0.948)	-0.00 (0.990)	-0.25 (0.111)	-0.09 (0.685)

cons	32.11 (0.092)	32.94 (0.015)	48.19 (0.002)	-3.64 (0.878)
Adjusted R^2	0.4663	0.4784	0.5539	0.4091
Prob > Fischer	0.0000***	0.0000***	0.0000***	0.0000***
Observations	71	69	70	71

*,**,*** significativité à 10%, 5% et 1% respectivement ; () p-value des coefficients estimés

TABLE 4: *Variables Definition And Sources*

Variables	Definition	sources
Actual exchange flow	KOF index of composite indicator of Trade (percent of GDP), Foreign Direct Investment, stocks (percent of GDP), Portfolio Investment (percent of GDP) and ncome Payments to Foreign Nationals (percent of GDP)	KOF Globalization Index
Restrictions	KOF index of composite indicator of Hidden Import Barriers,Mean Tariff Rate, Taxes on International Trade (percent of current revenue), Capital Account Restrictions.	KOF Globalization Index
Information flow	KOF index of composite indicator of Internet Users (per 1000 people), Television (per 1000 people) and Trade in Newspapers (percent of GDP)	KOF Globalization Index
Cultural proximity	KOF index of composite indicator of Number of McDonald's Restaurants (per capita), Number of Ikea (per capita) and Trade in books (percent of GDP).	KOF Globalization Index
Inflation	Price variation rate (consumption price)	WDI
Gov Expenditure	Ratio of Gov expenture (percentage of GDP)	WDI
Employment	Proportion of the active population in employment	WDI
Poverty	Incidence of Poverty	WDI
Rail Infrastructure	Quality of rail Infrastructure (Global Competitiveness survey)	GCI (Global Competitiveness Index)
Airport Infrastructure	seat km/week	GCI (Global Competitiveness Index)
Energy Infrastructure	Quality of energy Infrastructure (Global Competitiveness survey)	GCI (Global Competitiveness Index)
Telecomm Infrastructure	Mobile teledensity	GCI (Global Competitiveness Index)

Source: Author

TABLE 5: *Descriptive Statistics.*

Variables	Mean	Stand dev	Min	Max	Obs
Actual exchange flow (act_flo)	57.82832	18.25081	16.53	97.3	113
Restrictions (restric)	50.13825	15.19435	12.2	84.15	97
Information flow (inf_flo)	58.1208	16.66105	18.01	96.45	112
Cultural proximity (cul_prox)	18.74737	20.85723	1	86.34	114
Inflation (infl)	16.80139	98.69185	-3.704296	1096.678	123
Gov Expenditure (dep2)	21.78319	10.4431	0.0287864	62.3713	103
Employment (emploi)	59.03571	12.93639	33	86	112
Poverty (pov)	43.55639	34.35012	34.35012	87.72	133
Rail Infrastructure (qri_gc)	2.439067	0.9353315	1.19055	4.9	82
Airport Infrastructure (aas_gc)	374.0349	1181.626	0	10157.13	95
Energy Infrastructure (qes_gc)	3.648723	1.309289	1.218866	5.909059	96
Telecomm Infrastructure (mts_gc)	99.9497	70.20594	1.42	370.5522	96

Source: Author

References

Acemoglu, D., Johnson,S. &Robinson, J. A. (2001). The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review* 91, 1369-1401.

Addison T. & Heshmati, A. (2004). The New Global Determinants of FDI to Developing Countries.*Research in Banking and Finance*", 4, 151-186.

Agenor (2002). Does Globalization Hurt the Poor? Washington, DC: World Bank. September. Mimeo.

Albanesi, S., (2007). Inflation and Inequality. *Journal of Monetary Economics*, 54(4), 1088-1108.

Andres, R. A. **(**2006). Software Piracy and Income Inequality.*Applied Economics Letters*, 13, 101-105.

Arbia, G., Battisti, M., & di Vaio, G. (2010). Institutions and Geography: Empirical Test of SpatialGrowthModels for European Regions. *Economic Modelling*, 27(1), 12-21.

Asongu, S. A.,(2013). Fighting Corruption in Africa: Do ExistingCorruption-Control LevelsMatter. *International Journal of Development Issues*. 12(1), 36-52.

Balat, J. F., & Porto, G. G. (2007). Globalization and ComplementaryPolicies: Poverty Impacts on Rural Zambia. In Ann Harisson (Eds.),*Globalization and Poverty* (pp. 373-416). University of Chicago Press.

Bardhan, P. (2005). Globalization, Inequality, and Poverty: An Overwiew.University of California at Berkeley, mimeo. Accessed november 2014 http://www.webmeets.com/files/papers/LACEA-LAMES/2009/332/FGS_Empirical_200909.pdf.

Barro R. J. (1990). Government Spending in a Simple Model of Endogenous Growth. *Journal of Political Economy*, 98, 103-125.

Barro, R. (2007). Inequality and Growth Revisited. Accessed November 2008. http://aric.adb.org/pdf/seminarseries/2007.10.26%20Barro%20presentation.pdf.

Benneth, O., (2007). Fiscal Policy and PovertyReduction: SomePolicyOptions for Nigeria. African Economic Research Consortium, Aerc research Paper 164.

Bernstein, S., & Cashore, B. (2000). Globalization, FourPaths of Internationalization and DomesticPolicyChange: The Case of Ecoforestry in British Columbia, Canada. *Canadian Journal of Political Science/Revue canadienne de science politique*, 33(01), 67-99.

Bhagwati, J. & Srinivasan, T. N. (2002). Trade and Poverty in the PoorCountries. *American Economic Review*, 180-183.

Bigsten, A. & Durevall, D. (2003). Globalization and Policy Effects in Africa. *World Economy*, 16 (8): 1119-36.

Borgeraas, E. & Dahl, E. (2010). Low Income and Poverty lines in Norway: a Comparison of Three Concepts.*International Journal of Social Welfare*, 19, 73-83.

Bourguignon, F. (2004). The Poverty-Growth-Inequality Triangle. Mimeo, The World Bank. Accessed January 2015 http://www.proparco.fr/webdav/site/afd/shared/PUBLICATIONS/RECHERCHE/Archives/Notes-et-documents/10-notes-documents.pdf#page=62.

Braumann, B. (2004). High Inflation and Real Wages. *IMF Staff Papers*, 51(1), International Monetary Fund. Washington, D.C.

Bulir, A., (1998). Income Inequality: DoesInflationMatter?. IMF Working Paper No. 98/7.

Cardoso, E. (1992). Inflation and Poverty. *NBER Working Paper*. No. 4006. Cambridge, MA.

Chaudhary, M. A., Ahmad, N., & Siddiqui, R. (1995). Money Supply, Deficit, and Inflation in Pakistan [with Comments]. *The Pakistan Development Review*, 945-956.

Chauhary, T. T. and Chaudhary, A. A. (2008). The Effects of Rising Food and Fuel Costs.*The Lahore Journal of Economics, Special Edition*,117-138.

Coleman, W. D., & Grant, W. P. (1998). Policy Convergence and Policy Feedback: Agricultural Finance Policies in a GlobalizingErea. *European Journal of Political Research*, 34(2), 225-247.

Collier P. & Dollar, D. (2001). Can the World CutPoverty in Half? How Policy Reform and EffectiveAid Can Meet International Development Goals.*World Development*, 29(11), 1787-1802.

Collier P. & Dollar, D. (2002). Aid Allocation and PovertyReduction.*European Economic Review*, 46, 1475-1500.

Cornia G.A. & Court, J. (2001), Inequality, Growth and Poverty in the Erea of Liberalization and Globalization, Policy Brief No. 4, Helsinki: UNU/WIDER.

Davis, D. R.,& Mishra, P. (2007). Stolper-Samuelson is Dead: And OtherCrimes of BothTheory and Data. In Ann Harisson (Eds.),*Globalization and poverty* (pp. 87-108). University of Chicago Press.

Dawson, J. (2007). The Empirical Institutions-Growth Literature: Is Something Amiss at the Top**?** *Econ Journal Watch*, 4(2), 184-196.

Dollar, D., & Kraay,A.(2001). Trade, Growth and Poverty. World Bank Development Research Group Working Paper no. 2615. Washington, DC: World Bank.

Dollar, D.,& Kraay, A. (2004). Trade, Growth, and Poverty. *The Economic Journal*, 114(493), F22-F49.

Dollar, D. & Collier, P. (1999). Can the World CutPoverty in Half? How Policy Reform and EffectiveAid Can Meet International Development Goals. How Policy Reform and Effective Aid Can Meet International Development Goals (November 1999). World Bank Policy Research Working Paper, (2403).

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* , New York: Springer.

Easterly, W. (2007). Inequality DoesCauseUnderdevelopment: Insights From a New Instrument. *Journal of Development Economics*, 84(2), 755-776.

Erosa, A. & Ventura, G. (2002). On Inflation as a Regressive ConsumptionTax. *Journal of Monetary Economics,* Elsevier, 49(4), 761-795. Federal Reserve Bank of Kansas City. Qtr III.

Esfahani, H. S. &Ramirez, M. T. (2003). Institutions, Infrastructure and Economic Growth. *Journal of development Economics*, 70(2), 443-477.

Fujita, M., Venables, A. J. & Krugman,P. R. (1999). *The Spatial Economy: Cities, Regions and International Trade*. Cambridge. MA: MIT Press.

Gabriel Felbermayr Farid Toubal (2010) "Cultural Proximity and Trade" *European Economic Review*, Elsevier, 2010, 54,279-293,<10.1016/j.euroecorev.2009.06.009>

Glaeser, E., L. , La-Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2004). Do Institutions Cause Growth? *Journal of Economic Growth, 9(3),* 271-303.

Goh, C. C.,& Javorcik, B. S. (2007). *Trade protection and industry wage structure in Poland*. In Globalization and Poverty (pp. 337-372). University of Chicago Press.

Goldberg, P. K.,& Pavcnik, N. (2007). Distributional Effects of Globalization in DevelopingCountries (No. w12885). National bureau of economic research.

Goldberg, P.& PavcnikN. (2004). Trade, Inequality, and Poverty: What do we Know? Evidence FromRecentTradeLiberalizationEpisodes in DevelopingCountries. InS. Collins & C. Graham (Eds.), *Brookings trade forum 2004*, 223–69. Washington, DC: Brookings Institution Press.

Golub, S., Jones, R. W. & Kierzkowski, H. (2007**).** Globalization and Country-Specific Service Links. HEI Working Paper No: 05/2007 S. University of Rochester.

Greenwood, J., & B. Jovanovic, (1990). Financial Development, Growth and the Distribution of Income.*Journal of Political Economy*, 98(5), 1076–1107.

Guillaumont J. & Kpodar K.(2008). Can There Be a Benefit Without a Cost?" Working Paper African Department Financial Development and Poverty Reduction: Authorized for distribution by Dhaneshwar Ghura March 2008. Graduate Institute of International Studies.

Hanson, G. H. (2007). Globalization, LaborIncome, and Poverty in Mexico. In Ann Harisson (Eds.),*Globalization and poverty* (pp. 417-456). University of Chicago Press.

Harrison, A. E., &McMillan, M. S. (2006). Dispelling SomeMythsAboutOffshoring. *The Academy of Management Perspectives*, 20(4), 6-22.

Harrison, A.,& McMillan, M. (2007). On the Links BetweenGlobalization and Poverty. *The Journal of Economic Inequality*, 5(1), 123-134.

Harrison, Ann, & H. Tang. (2006). *Liberalization of Trade: Why so MuchControversy*? In The GrowthExperience: Lessons from the 1990s, ed. N. Roberto Zagha. Washington, DC: World Bank.

Heshmati, A.(2004). Growth, Inequality and Poverty Relationships. IZA Discussion Papers 1338, Institute for the Study of Labor (IZA).

Kai, H., Hamori, S.,(2009). Globalization, Financial Depth and Inequality in Sub-Saharan Africa. *Economics Bulletin*, 29 (3), 2025-2037.

Khandker, S. R., & Gayatri B. K. (2010). How Infrastructure and Financial Institutions Affect Rural Income and Poverty: Evidence from Bangladesh. *Journal of Development Studies* 46(6): 1109–1137.

Kose, M. A., Prasad, E. S., Rogoff, K., & Wei, S. J., (2006). Financial Globalization: a Reappraisal. IMF Staff Papers. 56(1), 8-62.

Lopez, J. H. (2004). Pro-Poor Growth: a Review of What We Know (and of What We Don't). Washington, DC: World Bank. Mimeo.

Murdoch, J. C.,&Sandler, T. (2002). Economic Growth, Civil Wars, and Spatial Spillovers. *Journal of Conflict Resolution, 46(1),* 91-110.

Ndikumana, L. & Baliamoune-Lutz, M., (2008). Corruption and Growth: Exploring the Investment Channel. University of Massachusetts, Amherst.

Neutel, M.& Heshmati, A.,(2006). Globalisation, Inequality and Poverty Relationships: A Cross Country Evidence. IZA Discussion Papers 2223, Institute for the Study of Labor (IZA).

Nissanke, M. &Thorbecke, E., (2008). "Introduction: Globalization-Poverty Channels and Case Studies from Sub-Saharan Africa". *African Development Review*. 20(1), 1-19.

Osmani, S. (2005). Defining pro-poor growth. International Poverty Center of United Nations Development Programm.

Ravallion, M. (1998). Reform, Food Prices and Poverty in India. *Economic and PoliticalWeekly*, 33, 10-16.

Ravallion, M. &Chen, S. (2004). China's (Uneven) Progress Against Poverty. Washington, DC: Development Research Group, World Bank. Mimeo.

Rifkin, J. (2014). *The Zero Marginal Cost Society: The Internet of Things, The Collaborative Common And The Eclipse of the Capitalisme*. Palgrave Macmillan

Rodrik, D. (2002). Institutions, Integration and Geography: In Search of the Deep Determinants of Economic Growth. Cambridge: John F. Kennedy School of Government, Harvard University. Mimeo.

Round, J. I. (2007). Globalization, Growth, Inequality and Poverty in Africa: a macroeconomic perspective (No. 2007/55). Research Paper, UNU-WIDER, United Nations University (UNU).

Sachs, J.D. & Warner, A. (1995). Economic Reform and the Process of Global Integration.*Brookings Papers on Economic Activity*, 1,1-118.

Sachs, J.D. & A. Warner (2001). The Curse of Natural Ressources. *European Economic Review*, 45,827-838.

Sindzingre, A., (2005). Explaining Threshold Effects of Globalization on Poverty: An Institutional Perspective, UN-WIDER Research Paper No. 2005/53 UNDP 2003. Human Development Report, 2003. United Nations Development Programme, New.

Temple, J. (1999). The New Growth Evidence. *Journal of Economic Literature*,37, 112-156.

Timmer, C. P. (2004). The Road to Pro-Poor Growth: The Indonesian Experience in Regional Perspective. Center for Global Development Working Paper no. 38, Washington DC.

Topalova, P. (2007). *Trade Liberalization, Poverty and Inequality: Evidence From Indian Districts*. In Ann Harisson (Eds.), *Globalization and Poverty* (pp. 291-336). University of Chicago Press.

UNCTAD (2004). Economic Development in Africa: Trade Performance and Commodity Dependence. New York and Geneva: United Nations.

United Nations Department of Economic and Social Affairs Report on the World Social *Weekly*, Mumbai, India.

Winters, L. A. (2004). Trade Liberalization and Economic Performance: An Overview. *Economic Journal* 114(493), 14–21.

Winters, L. A. (2014). Globalization, Infrastructure, and Inclusive Growth. ADBI Working Paper 464. Tokyo: Asian Development Bank Institute. : http://www.adbi.org/working-paper/2014/02/24/6176.globalization.infrastructure.inclusive.growth/

Zaidi, S. A., (2005). *The Issues in Pakistan Economy*. Oxford University Press, Karachi.

Zheng, D. & K. Tatsuaki. (2012). The Role of Public Infrastructure in China's Regional Inequality and Growth: A Simultaneous Equations Approach. *The Developing Economies* 51(1), 79–109.

Zheng, D. & Kuroda, T. (2013). The Role of Public Infrastructure in China's Regional Inequality and Growth: A Simultaneous Equations Approach. *The Developing Economies, Institute of Developing Economies*, 51(1), 79-109.

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