Globalization Effects on Sub-Saharan Africa: the Impact of International Trade on Poverty and Inequality

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Abstract: In a context of growing cooperation marked by increasing international transactions, the international trade which is a key component of globalization occupied a non-negligible position. Considering the divergence of ideas about the impact of international trade on countries, this paper focuses on the effect of globalization, through international trade, on poverty and inequality in selected developing countries. To do so, three types of (simple and multiple) linear regression models were set namely a naive model which includes only one dependent variable, a standard model and an improved standard model including respectively one and two control variables. The ratio of external trade (sum of exports and imports related to GDP) captured openness in international trade, our main explanatory variable. Poverty was caught using three indicators from the FGT family and inequality by the GINI index. With these variables, we tried to see if there is any relationship between international trade and poverty on the one hand, and between international trade and inequality on the other hand. The findings showed that of the three predefined models only the last two ones were significant to conduct our analysis. Thus, it appeared that international trade, hence globalization, contributes to reducing poverty and inequalities in developing countries. In other words, in these developing countries, increasing openness to international trade goes with a sharp decrease in poverty and inequalities, all other things being equal.

Keywords: Developing countries, Globalization, International Trade, Poverty, Inequality

1. Introduction

We are witnessing an increasing integration of societies and economies at a global level which is called globalization. The causes of this phenomenon are the reduction of transportation costs and borders customs, the increasingly and fast spreading of ideas, the growth of capital flows and the increasing incitement to people mobility (World Bank, October 2002). Globalization includes different aspects of our existence with all implications engendered.

During the last century, the global average revenue per capita has improved a lot but with some inequalities between countries. A study contained in the 2006 world economic perspectives and taking into account 42 countries representing 90 % of the world population testifies this reality. The study found that production per capita has increased perceptibly while the distribution of revenues is more uneven than at the beginning of this century (IMF).

The total percentage of people in the world living with less than 1 dollar a day dropped from 28.3 to 24 between 1987 and 1998. However, because of the global population growth, the absolute number of poor has remained stable around 1.2 billion. If we consider 2 dollars as poverty threshold instead of 1 dollar, the number of poor would have increased of 250 million

over the same period, and the global number of poor would be around 2.8 billion, which is almost half of the world population (World Trade Organization, 2000). Besides, according to the World Bank projections these statistics are unlikely to decrease in the short run.

If we take actions to stimulate growth and to better divide up the profits of that one, the World Bank considers that 500 million people could get out of extreme poverty soon. Even with this more optimistic scenario, Latin America, Caribbean and mostly sub-Saharan Africa would lag. That statement still holds if the poverty threshold is 2 dollars a day (World Trade Organization, 2000). In light of these pessimistic statistics and projections, one can well understand the increasing concern of national public opinions and international community about poverty and its related social impact.

This article aims to study the relationship between globalization, poverty, and inequalities by focusing on the role played by international trade which is one of globalization's aspects. Particularly, our article investigates two points. First, is there any link between poverty and globalization? Second, what is the relationship between inequality and globalization? In others words, does international trade contribute to reduce or to worsen poverty and inequalities?

Such a study allows to linking theory to the economic practice used in quantitative economics. Moreover, the globalization process of national economies divides the world into two groups, people in favor of globalization and those against. In this context, it seems opportune to release an objective scientific study to get a clear view of the debate. To do so, it is necessary to bear in mind that globalization is multidimensional and includes numerous aspects. From economy to culture passing by environment until the relationship between countries, many things are encompassed (IMF, 2001). Thus, an article could not analyze completely such a phenomenon. And we do not pretend to do so. That is why our work focuses more on international trade and its effect on poverty level and inequalities in 35 developing countries in the year 2006 based on two main hypotheses.

By the study of Stiglitz (2002), we assume that globalization through international trade has helped many countries to develop quite quickly. Additionally, globalization leads to higher financial inclusion which results in higher economic growth (Bigirimana and Hongyi, 2017). While exports promote growth, international trade contributes to economic development. We also suppose that globalization through international trade helps to reduce poverty and societal inequality.

2. Literature Review

2.1 Globalization

Over the years, the history of economic thought faced some changes. For example, that was the case of neo-Keynesian dominating the economic policies around the world in the 50s. They have been dropped in the 70s in favor of neo-classical and neo-Marxism ideas which were accusing them for the economic crises in the world at that time. The theoretical models adopted to address these crises, unlike the previous ones, claimed the significance of market, thus promoting the use of ultra-liberal policies.

This tendency has been reinforced with the splitting of the Soviet bloc and its socialist ideas based on centralized planning in the 80s. Since the United States was now the only world power, they spread neoclassical thought across the world using what they called the "Washington consensus." That was the beginning of globalization. The concept refers to the increasing integration of economies around the world, mostly thanks to exchanges and financial flows.

2.2 Poverty

Even if there is a minimum agreement around the world about the concept of poverty, there is no absolute definition of this word. It is a complex and multiform phenomenon to be analyzed regarding a given context. The literature on poverty abounds and shows many ways to define poverty. These ways lead to different identifications of the poor.

According to the Welfare School, the concept of poverty comes from the modern microeconomic theory and the hypothesis according to which individuals maximize their welfare. They argue that it is a feeling provides by the satisfaction of a need and this satisfaction can come from marketable or non-marketable goods and services.

The School of basic needs defines poverty considering a small subset of goods and services specifically identified and perceived as satisfying basic needs of any human being. These needs are called « basic » because they are prerequisites to achieve a certain life quality (Asselin and Dauphin, 2000). As per the School of capabilities poverty neither depends on utility nor some needs' satisfaction but it is analyzed through human capacity. « In fact, the life value of a given person depends on a set of being and doing manners that are generally called functioning». Many other approaches to the concept exist such as the three categories of poverty developed by Professor Kalonji Ntalaja, absolute poverty (Verger et al., 2005) or relative poverty.

2.3 Inequality

Inequality has very close links with many socio-economic problems. Because of its multidimensional nature, it refers to the notion of relative poverty as well as issues related to distribution and social cohesion.

For instance, if we consider a household as "poor" when it has not enough resources to participate in the different activities regarded as "normal" nor to dispose of life conditions considerably approved by the whole society, we deal directly with social inequality (Miceli, 1997). From this point of view, inequality in relative terms could be understood as the gap or the difference to an appropriate notion of distribution (Sen et al., 1973). A sociological definition apprehends inequality as the biased access of the members of the same society to different kinds of social goods (Levy and Solomon, 1997).

2.4 Discussion on the Relationship between International Trade, Poverty, and Inequality

In a study released by the World Trade Organization dealing with international trade, « disparities of revenues and poverty » (2000), it appears that the links between international trade and poverty are not more direct and immediate than those between poverty and government policies in the field of education, health, employment, etc.

Within the same study, Professor Dan Ben-David from Tel-Aviv University analyzes interactions between international trade, economic growth, and international differences in revenues. The main finding is that within a global economy characterized by an increasing distance of revenues between developed and developing countries; international trade can contribute to change things in a better way. However, he noticed that in states which have opted for liberalization, the change goes with more fast growth.

Besides, Professor Alan Winters examines the different mechanism through which international trade can affect the economic projection of the poor. He concludes that generally, global trade liberalization contributes favorably to reduce poverty because it helps people to fulfill their production potential, to stimulate economic growth, and to limit arbitrary interventions of public power. However, most of the reforms have a cost for some categories of population (even a durable one sometimes) and could worsen poverty temporarily. In such a case the appropriate policy consists in easing the persons more vulnerable, facilitate the adjustment rather than

dropping the reform process. Finally, the author gives a list of points to be examined to help authorities to evaluate the effect of the reform of international exchanges on poverty. According to Bruno, Ravallion, and Squire in a study released in 1998: "very few countries knew a significant increase or decrease of inequalities over the last decades." Due to this, they explained apparent stable inequalities inside a country as the result of its structural features such as land's distribution, political system, level of education or also religious beliefs (Gradstein et al., 2001). Two recent studies introduced trade openness among the variables allowing to explain inequalities in different countries. Their findings are almost opposed to each other (Rama, 2005).

Dollar et Kraay (2001) proved that consumption or revenue of the poorest quintiles of the population increases at the same rate with the revenue per capita of the country. This relationship is not affected by economic reforms; trade openness included as well. Only decisions against inflation are related to a reduction in inequalities. Following these results, they do not consider globalization as a "main" cause of this situation.

On the other hand, Lundberg and Squire (1999) found that trade openness causes sharp inequalities. This effect is not statistically significant for the two more poor quintiles of the population but obvious for the rich ones. The effect of the GINI index is also statistically adequate.

Bringing back together these results is not that easy (Ravallion, 2001). Rather than trying to reproduce the same experiments, we verify in the next part the strength of the link between international trade, poverty, and inequalities because in reality, international trade can have undesirable effects and positive ones as well.

3. Research Methodology

In the framework of the empirical analysis, we examine the role played by trade openness which is a small part of the globalization process. For this purpose, we analyze the relationship between trade globalization and poverty on the one hand and between trade globalization and inequalities on the other.

The ratio of external trade (sum of exports and imports related to GDP) represents openness to trade, poverty is caught using three indicators from the Foster Greer Thorbecke (FGT) family and inequality by the GINI index. With these variables, we try to see if there is any relationship between international trade/poverty, and international trade/inequalities.

The relationship between globalization and poverty is verified using regression models between poverty indicators (dependent variable) and the ratio of international trade (independent variable). In the model, we add other interactive variables. That holds as well for the relationship globalization/inequalities with the GINI index (dependent variable). E-views is the software we use to estimate our model.

In relation to these clarifications and the study hypotheses, the expected symbol is negative which implies that an increase in trade openness leads to a reduction of poverty and inequalities. Though the specification may be a little bit arbitrary, more explanatory variables can reduce the risk to make confusion between the effects of trade openness and that of other economic variables. In this specification, the openness indicator is in the same model with interactive variables (standard model and improved standard model) such as poverty line, the monthly average of revenue or consumption.

Naive Model: The specification of the naive model takes into account only one explanatory variable which is the ratio of international or external trade (comment).

Table 1: Models

POVERTY AND GLOBALIZATION	
Logarithm of population proportion living under the poverty line (LH)	
Naive model (M1)	$LH_i = á + â_1 commext_i + å_i$
Standard model (M2)	$LH_i = á + â_1 commext_i + â_2 LZ_1 + å_i$
Improved standard model (M3)	$LH_i = á + â_1 commext_i + â_2 LZ_1 + â_3 LZ_2 + å_i$
Logarithm of poverty depth (LPGAP)	
M1	$LPGAP_i = á + â_1 commext_i + å_i$
M2	$LPGAP_i = á + â_1 commext_i + â_2 LZ_1 + å_i$
M3	$LPGAP_i = á + â_1 commext_i + â_2 LZ_1 + â_3 LZ_2 + å_i$
Logarithm of poverty severity (LSPG)	
M1	$LSPG_i = á + â_1 commext_i + å_i$
M2	$LSPG_i = á + â_1 commext_i + â_2 LZ_1 + å_i$
M3	$LSPG_i = á + â_1 commext_i + â_2 LZ_1 + â_3 LZ_2 + å_i$
INEQUALITIES AND GLOBALIZATION	
Logarithm of GINI coefficient (LGINI)	
M1	$LGINI_i = á + â_1 commext_i + å_i$
M2	$LGINI_i = á + â_1 commext_i + â_2 LZ_1 + å_i$
M3	$LGINI_i = á + â_1 commext_i + â_2 LZ_1 + â_3 LZ_2 + å_i$

Standard Model: In each case of the dependent variable we consider the same explanatory variable like in the naive model, and we add one interactive variable LZ_1 (logarithm of the product of external trade ratio and poverty line by average monthly revenue or average monthly consumption per capita).

Improved Standard Model: At this stage, we introduce a second interactive term LZ_2 (the logarithm of the product of international trade ratio and GINI index).

$â_j$, $á$, and $å$ are respectively the parameters (slope) of the different explanatory variables used (j= 1,2,3), the constant (intercept) and the error term.

4. Data Analysis and Interpretation

4.1 Naive model (M1)

LH: The explanatory power of our independent variable is deficient. This variable explains only 1.4 % of the proportion level of poor in the total sample. The whole model is not significant because the probability of Fisher statistic is more than 0.05. We conclude that the proportion of the poor in the whole population of the developing countries is not explained by globalization.

LPGAP: The proportion of external trade in the GDP has no effect on the poverty gap given that the coefficient related to this variable is not statistically significant. The explanatory variable explains only 0.24 % (low) of the poverty depth level in these countries. The whole model is not significant for the same reason as previously. So, the poverty depth (poverty gap) is not explained by globalization in our sample.

LSPG: The proportion of external trade in the GDP has no impact on the poverty severity because the coefficient related to this variable is not statistically significant. The explanatory variable

explains only 2.10 % (low) of the poverty severity. The whole model is not significant because the probability of Fisher statistic is more than 0.05. Then the poverty severity is not explained by globalization in our sample.

Table 2: Results

Relationship	variables	models	$\hat{a}_1$	$\hat{a}_2$	$\hat{a}_3$	t-stat	prob. (t-stat)	r^2	prob. (f-stat)
Poverty and Globalization	**LH**	M_1	- 0.42	-	-	- 0.66	0.51	0.014	0.51
		M_2	- 3.12	2.32	-	- 5.31	0	0.59	0.00
		M_3	- 6.65	2.17	4.40	- 11.17	0	0.85	0.00
	LPGAP	M_1	- 0.17	-	-	- 0.27	0.78	0.0024	0.78
		M_2	- 2.85	2.29	-	- 4.67	0.0001	0.56	0.00
		M_3	- 5.62	2.17	3.46	- 6.80	0	0.72	0.00
	LSPG	M_1	- 0.54	-	-	- 0.81	0.42	0.021	0.42
		M_2	- 2.87	2.10	-	- 4.42	0.0001	0.50	0.00
		M_3	- 4.87	2.02	2.49	- 4.86	0	0.59	0.00
Poverty and Inequality	**LGINI**	M_1	- 0.17	-	-	- 2.39	0.02	0.14	0.02
		M_2	- 0.21	0.03	-	- 2.11	0.04	0.15	0.06
		M_3	-	-	-	-	-	-	-

LGINI: The proportion of external trade in the GDP affects relatively inequalities within the sample countries because the coefficient related to this variable is statistically significant. However, the independent variable explains only 14 % of inequalities level. The whole model is relatively significant because the probability of Fisher statistic is less than 0.05. Then inequalities are explained by globalization in our sample.

4.2 Standard Model (M2)
The standard model gives better results. For the independent variables LH, LPGAP and LSPG, the explanatory power of the indicator of openness together with the interactive variable is respectively 59, 56 and 50 percent. The parameters are also significant. Moreover, the standard model for the three variables is also good because probability of Fisher statistic is less than 0.05. Thus, proportion of poor (LH), poverty gap (LPGAP) and poverty severity (LSPG) are explained by trade openness (commext) and the interactive variable LZ1. As per inequalities (LGINI), there is no significant change with the previous model.

4.3 Improved Standard Model (M3)
This model is good for the first three dependent variables. Parameters remain significant while the explanatory power becomes better. Openness indicator and the two interactive variables explain 85, 72 and 59 percent of proportion of poor (LH), poverty gap (LPGAP) and poverty severity (LSPG) respectively. Because we use logarithmic data, the parameters of the explanatory variable are elasticity. Thus, any variation in trade openness or the other explanatory (interactive) variables has an impact on poverty. For instance, considering the proportion of poor (LH), an increase of 1% in the openness indicator causes a decrease of 6.65% in the poverty rate of our countries. In the same way, a rise of 1% in the interactive variable

between external trade ratio and the poverty line by the average monthly revenue or consumption per capita causes growth of 2.17% in the poverty rate of the total population. An increase of 1% in the interactive variable between external trade ratio and the GINI causes an increase of 4.4% in the poverty rate of the total population.

5. Conclusion and Recommendations

In summary, the findings of this article allow confirming our research hypothesis according to which international trade which is an aspect of globalization among many others contributes to reducing poverty and inequalities in developing countries: the increasing openness to international trade goes with a decrease in their poverty and their inequalities all other things being equal. However, other factors have to be considered together with a trade to notice this impact.

This conclusion is close to that of Martin Rama according to which globalization is not a source of inequalities. On the contrary, quoted by Rama, Lundberg and Squire (1999) found that trade openness causes strong inequalities.

Globalization is growing than ever, and countries, especially the developing or less developed ones would gain from international trade as exhibited by our findings. Regional exchanges must be improved through policies to ease trade. Beyond that, the quality of exported products from less developed countries should be upgraded to provide more value added to the economy. That is to say exportation of half-finished and finished products. Such a transformation can happen if these countries invest in the development of their industrial sector, another challenge to overcome.

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