Globalization, Financial Depth, and Inequality in Sub-Saharan Africa

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Abstract

This paper examines the relationship between globalization, financial deepening, and inequality in sub-Saharan Africa between 1980 and 2002. We provide the first detailed econometric analysis in this regard covering the entire sub-Saharan African region; such an analysis has hardly been conducted owing to the lack of relevant data. We find that while globalization deteriorates inequality, its disequalizing effect depends on the level of development of the country. Further, this paper confirms that globalization deteriorates the equalizing effect of financial depth, although the latter helps to reduce inequality. We conclude that in sub-Saharan Africa, as a result of globalization, the rich have become richer and the poor have become poorer.

1. Introduction

Numerous developing countries, including those in sub-Saharan Africa, have promoted globalization as a tool for economic growth since the 1980s. Most of these countries have promoted large-scale deregulation in trade and investment policies as a part of structural adjustment programs since the mid-1980s. As compared to other developing countries, foreign direct investment (FDI) into African countries is rather limited, but the FDI stock as a proportion of GDP is not very different, and has been increasing annually. Moreover, African exports and imports are large relative to GDP, which indicates little difference from those of other developing countries (Round, 2007). As such, the countries of sub-Saharan Africa are promoting globalization commensurate with their respective economic development.

In recent years, it has been argued that while many developing countries have achieved economic development through globalization, there have also been negative impacts owing to globalization, such as the worsening of inequality. Various research works have been conducted on the correlation between globalization and inequality, but a single conclusion has yet to be reached from either the theoretical or empirical perspective. Neoclassical theory holds that globalization boosts efficiency and promotes economic growth through improved resource allocation and technology transfer. It is shown that globalization enables an increase in exports and FDI and the mobilization of deposits. In case of developing countries, this leads to an increase in economic development, income, and employment and a decrease in inequality. Under the Hekschler-Ohlin-Samuelson model, advanced countries export skill-intensive products in which they have a comparative advantage, while developing countries, which have an abundance of cheap labor, export labor-intensive products (in which they have a comparative advantage). Thus, this increases the demand for low-skilled labor and reduces inequality in developing countries. However, many economists emphasize that, contrary to the neoclassical view that liberalization reduces inequality, globalization actually worsens inequality in developing countries. They argue that trade liberalization promotes a shift to more sophisticated economic activities accompanied by the transfer of technology, increase in FDI, and surge in outsourcing. This leads to an increase in the demand for high-skilled labor, and worsens any disparity in wages (Dreher and Gaston, 2008; Silva, 2007; Zhu and Trefler, 2005; Gaston and Nelson, 2002; Wood, 2002;

Feenstra and Hanson, 1996, 1997). Furthermore, these economists show that aggressive promotion of liberalization by developing countries with underdeveloped financial markets can trigger a financial crisis and instability, and cause severe deterioration of the poor (Claessens and Perotti, 2007; Arestis and Caner, 2004). Moreover, with the opening of markets, it is possible that the ability to redistribute income decreases and inequality conceivably worsens (Page, 1996).

Amid such controversy at the theoretical level, there is also controversy surrounding the results of empirical analyses related to the effects of globalization on inequality in developing countries. Many of the results indicate that globalization worsens inequality (Wagle, 2007; Milanovic and Squire, 2005; Behrman, Birdsall, and Szekely, 2000). Simultaneously, various economists argue that there is no significant correlation between globalization and inequality (Edward, 1997; Sylwester, 2005). For example, Behrman, Birdsall, and Szekely (2000) conducted an empirical analysis of 18 countries in Latin America from 1980 to 1998. They found while the globalization policy widens wage disparities, the degree of such disparities gradually declines. Wagle (2007) used panel data on southern Asia from 1980 to 2003 and indicated that liberalization (deregulation) worsened inequality. However, Edward (1997) argued that trade liberalization in developing countries does not have a significant effect on income inequality. Further, using data on 29 developing countries, Sylwester (2005) showed that there is no significant positive correlation between FDI and income inequality. As the effects of globalization on inequality are controversial from the theoretical and empirical perspectives, there is a need for a more detailed analysis in the forward direction, including regional level analysis.

Another negative impact of globalization is its effect on financial deepening, which it is very closely linked with. McKinnon (1973) and Show (1973) rejected the argument related to financial repression supported by the Tobin Monetary Growth Model (1965) and revealed that market intervention hinders a country's financial deepening and economic growth. In light of this, many developing countries have begun to promote globalization for the purposes of financial deepening and economic growth. However, it is possible that globalization will actually reduce the equalizing effect of financial deepening.

Financial deepening refers to the development of the financial sector. It promotes

efficient credit allocation, risk reduction through diversified investment in financial intermediaries and the lowering of transaction costs of these intermediaries through information generation. As a result, financial deepening is believed to promote economic growth and thereby reduce inequality. Further, it is possible to deduce that financial deepening eliminates credit constraints on the poor, increases their productive assets and productivity, and thus, contributes to poverty reduction (World Bank, 2001; Jalilian and Kirkpatrick, 2002). Moreover, empirical analyses, albeit limited, on the relationship between financial deepening and inequality have been conducted. These analyses indicate that financial deepening reduces inequality (Li et al, 1998; Beck et al, 2004).

With regard to theoretical issues and the results of empirical analyses, while financial deepening can be considered to be an effective policy for reducing inequality, it can also be ascertained that such effects of financial deepening will change as globalization increases. As indicated by McKinnon (1973) and Show (1973), while financial liberalization generally promotes financial deepening, it also "worsens" financial deepening and reduces its equalizing effects. When a small number of banks monopolize the market, for example, in developing countries, it can be analyzed that the lending rate ceiling increases the deposit and loan amounts, and the effects of the financial repression policy on deposit amounts are rendered dependent on market structure (Demetriades and Luintel, 2001, 1996; Courakis, 1984). It can be also regarded that liberalization concentrates fund allocations to the rich, limits access to finance, and changes the quality of financial deepening. Ang (2008) states that, before liberalization, the poor were able to obtain financial access through direct credit programs that allocate funds to agricultural and small businesses in India, but owing to liberalization, the prevalence of these programs decreased and the poor suffered. According to Ang (2008), banks were obligated to hold a certain number of branches in rural areas before liberalization, but these rules were eased after liberalization. Consequently, foreign and private banks pulled out of rural areas and supplied funds in areas populated by the rich, and thus, reduced the poor's access to finance. Even if financial deepening occurs and if markets become more open, funds are allocated only to efficient clients and a country's income redistribution functions are undermined. As a result, funds fail to reach the poor and inequality worsens. Thus, it can be deduced that

liberalization changes the quantity and quality of financial deepening, and consequently, reduces equalizing effects. Liberalization for the purpose of financial deepening can actually worsen financial deepening or reduce its great equalizing effects. Hence, there is a need to analyze the compound effects of liberalization and financial deepening as this will enable us to determine whether or not economic liberalization for achieving financial deepening will reduce its equalizing effects, and to further elucidate the impact of liberalization on inequality.

In this study, we conduct an empirical analysis of sub-Saharan Africa in relation to the impact of globalization on inequality and on the equalizing effects of financial deepening. Despite confirming that inequality in sub-Saharan Africa has worsened with liberalization since the 1980s, there has hardly been any development in the form of empirical analyses covering the entire sub-Saharan African region owing to the lack of relevant data. Since data on inequality has hitherto been limited as compared to other regions, simulation modeling analysis on sub-Saharan Africa such as Fosu and Mold (2007) has been conducted. However, no development with regard to econometric analysis has been observed. The only relevant analysis has been conducted by Odedokun and Round (2004), who used cross-country data on 35 countries and revealed that there is no significant correlation between trade liberalization and inequality. Since 2005, however, abundant data on inequality in the sub-Saharan African region have become available through the Estimated Household Income Inequality Dataset (EHII). This has made it possible to conduct a detailed econometric analysis and to obtain more accurate empirical results. Given that an econometric analysis on sub-Saharan Africa has hitherto not been conducted because of data unavailability and that the compound effects of globalization and financial deepening have not yet been researched, we believe that this research is extremely meaningful.

2. Model

To assess the relationship between globalization and inequality in sub-Saharan Africa, we use panel data regression methodology following the recent empirical literature at the regional level, such as Wagle (2007). Our empirical analysis is based on unbalanced

panel data between 1980 and 2002 for 29 sub-Saharan African countries, and the empirical specifications are as follows:

Model 1: $$y_{it} = \alpha + \beta L_{it} + \psi(L_{it} * I_{it}) + \gamma D_{it} + \eta X_{it} + \mu_i + e_{it},$$

Model 2: $$y_{it} = \alpha + \beta L_{it} + \psi(L_{it} * I_{it}) + \gamma D_{it} + \omega(L_{it} * D_{it}) + \eta X_{it} + \mu_i + e_{it},$$

where y_{it} indicates the inequality measure; L_{it} represents the globalization measure; I_{it} denotes the logarithm of GDP per capita; D_{it} indicates the measure of financial depth; X_{it} is a vector of control variables; μ_i represents the country fixed effect; and e_{it} denotes random disturbance (i: country, t: time).

Model 1 is the baseline model to examine the effects of globalization and financial depth on inequality. Model 2 is the specification where the interaction terms between globalization and financial depth are added to Model 1 in order to examine the compound effect of globalization and financial depth on inequality. This is aimed at determining whether or not globalization lowers the equalizing effect of financial depth.

A globalization measure is included to assess the impact of globalization on inequality. Following empirical literature such as Milanovic (2002) and Wade (2004), we employ an FDI to GDP ratio and a Trade (export and import) to GDP ratio as the globalization measure. Neoclassical theory assumes that inequality decreases as globalization intensifies. However, on the basis of other conflicting literature such as Dreher and Gaston (2008) and Claessens and Perotti (2007), we can expect greater inequality to be associated with a higher degree of globalization.

The interaction term between globalization and the logarithm of GDP per capita is included to determine if the globalization-elasticity of inequality depends on the level of development of a country. In poor countries, since globalization benefits only those with basic and high education, and lowers the income share of those with no education (Milanovic, 2002; Wood, 1994), we assume that the equalizing effect of globalization increases as the national income level increases.

To assess the impact of financial depth on inequality, our analysis includes financial depth measured by an M2 to GDP ratio, which is often employed in previous literature

such as Li et al (1998) and Milanovic (2002). We expect financial depth to be associated with lower inequality by its effect of easing credit constraints on the poor.

We include the interaction term between globalization and financial depth in order to determine whether or not globalization deteriorates the equalizing effect of financial depth. We expect that the financial depth-elasticity of inequality will reduce as globalization intensifies.

Furthermore, the analysis includes control variables such as the logarithm of GDP per capita, inflation rate, and democracy index. According to Kuznets' inverted-U-shape hypothesis, inequality deteriorates until the country income reaches a certain level, and after the turning point, inequality declines, owing to which previous literature included both GDP per capita and its square terms in the model. Considering that the sub-Saharan African countries are at an early stage of development, our analysis expects a higher level of income to be linearly correlated with higher inequality, and thus, it includes only the logarithm of GDP per capita in the model. Moreover, we assume that inequality deteriorates as inflation increases because high inflation has an adverse impact mainly on the poor and it substantially increases the number of poor people. Furthermore, on the basis of standard political economy theories (Gradstein et al, 2001), we expect a high degree of democracy to be associated with lower inequality.

3. Data

The data for our analysis comprises unbalanced panel data for 29 sub-Saharan African countries from 1980 to 2002, obtained from World Development Indicators (WDI). WDI is a cross-country comparable database published by the World Bank. Owing to scarce inequality data for sub-Saharan Africa from WDI, we use the estimated household income inequality data obtained from the University of Texas Inequality Project (UTIP). The sample countries are those for which data is available from UTIP and those that have not experienced a civil war or partition. While the FDI data that we employ is inward FDI-stock obtained from UNCTAD (United Nations Conference on Trade and Development) Foreign Direct Investment Database online, the democracy index used is from Institutionalized Democracy by Marshall and Jaggers (2009).

4. Empirical Results

Table 2 shows the regression results of Model 1. The first column displays the result of regression using an FDI to GDP ratio as the globalization measure, and the second column shows the result using a Trade (export and import) to GDP ratio as the globalization measure. The Hausman test result leads us to choose the random effect model over the fixed effect model. The random effect model results indicate that the globalization measure is significantly positive at the 1% level in column (a) and at the 5% level in column (b). These results are not consistent with the neoclassical theory, which predicts that globalization diminishes inequality. They support other conflicting literature such as Dreher and Gaston (2008) and Claessens and Perotti (2007).

Furthermore, the empirical results show that the coefficients on the interaction between the globalization measure and the logarithm of GDP per capita are significantly negative at the 1% level in column (a) and at the 5% level in column (b). This indicates that although globalization deteriorates inequality, its effect declines as countries get richer. It seems that since globalization mainly benefits those with basic education, the equalizing effect of globalization magnifies in the case of richer countries where basic education is likely to become a norm for most people, which is consistent with Wood (1994) and Milanovic (2002).

Moreover, the results show that financial depth is significantly negative at the 1% level in both columns (a) and (b). It can be observed that financial deepening results in lower inequality by easing credit constraints on the poor. Our results support the theory of World Bank (2001) and Jalilian and Kirkpatrick (2002), and are consistent with predominant previous empirical results such as those of Li et al (1998) and Beck et al (2004).

Next, Table 3 displays the regression results of Model 2. Similarly, the first column reports the result of regression using an FDI to GDP ratio as the globalization measure, and the second column reports the result using a trade (export and import) to GDP ratio as the globalization measure.

The Hausman test result shows that the random effect model is better than the fixed effect model. The random effect model results show that the coefficients on the

interaction between the financial depth and globalization measures are significantly positive at the 5% level in column (a) and at the 10% level in column (b). Our results indicate that although financial depth lowers inequality, its effect declines as globalization intensifies. It can be argued that as globalization has intensified, the financial markets have begun to favor the richer, and the equalizing effect of financial deepening has reduced.

With regard to control variables, the inflation rate and democracy index are not significant in any case, while the logarithm of GDP per capita is significantly positive in all cases, except for column (a) in Table 2. This indicates that inequality increases linearly as sub-Saharan African countries become richer.

5. Conclusion

Owing to the lack of data on inequality in the sub-Saharan African region, there is almost no regional level analysis on the relationship between globalization and inequality. While empirical analyses have been conducted for a broader group of regions, including sub-Saharan Africa, their empirical results are controversial. A more detailed regional level analysis exclusively on the sub-Saharan Africa region is required. Hence, this paper conducted a comprehensive analysis on the effects of globalization on inequality in sub-Saharan Africa using a new database with abundant data on inequality in the region, which became available since 2005. This is the first detailed econometric analysis on sub-Saharan Africa. Furthermore, an empirical analysis was conducted to determine whether or not globalization reduces the equalizing effects of financial deepening. An analysis on the compound effects of globalization and financial deepening has not been previously conducted. This research work featured the first ever analysis in this regard.

The main results of the empirical analysis in this paper are as follows:

(1) Globalization worsens inequality.

(2) The disequalizing effects of globalization decrease as a country's economic development increases.

(3) Financial deepening reduces inequality.

(4) Globalization reduces the equalizing effects of financial deepening.

As such, the results of our empirical analysis found that globalization is worsening inequality in sub-Saharan Africa. To the best of our knowledge, a positive significant correlation between globalization and inequality in sub-Saharan Africa has not been confirmed previously. This is the first research work that could confirm such a relationship on the basis of relevant data. It was found that there is a disequalizing effect in globalization up to a certain level of economic development. In order to expect globalization to reduce inequality, a certain minimum level of economic development is necessary. Hence, when promoting globalization in poor countries, additional consideration to the poor (e.g., strengthening safety nets) is probably necessary. Moreover, it was confirmed that financial deepening helps to reduce inequality in sub-Saharan Africa. However, it was also confirmed that globalization reduces the equalizing effects of financial deepening, and it can be analyzed that financial deepening through globalization leads to the formation of a financial system that benefits the rich. Domestic financial markets should be cultivated first in order to mould their development such that inequality is reduced. Credit constraints on the poor form an important issue in developing countries. It is possible that financial services to the poor are provided not by attracting foreign funds through globalization, but by cultivating domestic financial markets. As such, it has been confirmed that globalization is worsening inequality in sub-Saharan Africa. Further, globalization may be forming a society where the rich are becoming richer and the poor are becoming poorer. Probably, there is a need for countries to avoid relying solely on the markets and implement market intervention to reduce inequality, such as strengthening safety nets and financial access for the poor.

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Table 1 Definition and Summary Statistics

Variable	Definition	Mean	Standard Deviation
Inequality	Estimated Household Income Inequality	45.735	4.976
FDI to GDP ratio	Inward Foreign Direct Investment-stock, (% of GDP)	15.397	17.806
Trade(Export+Import) to GDP ratio	Exports of goods and services + Imports of goods and services (% of GDP)	69.505	35.524
M2 to GDP ratio	Money and quasi-money(M2) as % of GDP	27.231	13.590
Logarithm of GDP per capita	Logarithm of GDP per capita (constant 2000 US$)	6.394	1.089
Inflation rate	Inflation, GDP deflator (annual %)	14.694	16.359
Democracy index	Institutionalized Democracy	0.993	13.203

Source:
Estimated Household Income Inequality; University of Texas Inequality Project (UTIP)
Inward FDI-stock; UNCTAD Foreign Direct Investment database online
Democracy index; Marshall and Jaggers (2009)
Others: World Development Indicators (WDI)

Table 2 Empirical Results for Model 1

Variables	(a)		(b)	
	coefficient	*p-value*	*coefficient*	*p-value*
FDI to GDP ratio	0.450	0.009		
Interaction between FDI to GDP ratio and the Logarithm of GDP per capita	-0.065	0.009		
Trade (Exports + Imports) to GDP ratio			0.204	0.019
Interaction between Trade (Exports + Imports) to GDP ratio and the Logarithm of GDP per capita			-0.030	0.032
M2 to GDP ratio	-0.132	0.001	-0.119	0.003
The Logarithm of GDP per capita	0.935	0.231	2.087	0.073
Inflation rate	-0.001	0.955	0.005	0.745
Democracy index	0.007	0.660	0.007	0.696
Constant	43.735	0.000	35.577	0.000
Number of Observations	275		280	
F ratio	0.002		0.002	
R-squared				
Within	0.062		0.054	
Between	0.183		0.228	
Overall	0.205		0.202	
Hausman test	0.992		0.866	

Table 3 Empirical Results for Model 2

Variables	(a)		(b)	
	coefficient	*p-value*	*coefficient*	*p-value*
FDI to GDP ratio	0.449	0.009		
Interaction between FDI to GDP ratio and the Logarithm of GDP per capita	-0.083	0.002		
Trade (Exports + Imports) to GDP ratio			0.273	0.004
Interaction between Trade (Exports + Imports) to GDP ratio and the Logarithm of GDP per capita			-0.048	0.005
M2 to GDP ratio	-0.206	0.000	-0.280	0.004
Interaction between M2 to GDP ratio and FDI to GDP ratio	0.005	0.035		
Interaction between M2 to GDP ratio and Trade (Exports + Imports) to GDP ratio			0.002	0.068
The Logarithm of GDP per capita	1.343	0.097	3.500	0.012
Inflation rate	0.002	0.906	0.002	0.905
Democracy index	0.000	0.994	0.004	0.821
Constant	42.853	0.000	31.016	0.000
Number of Observations	275		280	
F ratio	0.001		0.001	
R-squared				
Within	0.077		0.069	
Between	0.201		0.200	
Overall	0.232		0.198	
Hausman test	0.996		0.777	