Archives of Business Research – Vol. 10, No. 3
Publication Date: March 25, 2022
DOI:10.14738/abr.103.11641.
Nazirou, S. C. M., Mousa, D. S. M., & Afolabi, T. A. (2022). The impact of Economic Freedom and Democracy on Income Inequality: Empirical Evidence from Sub-Saharan African Countries. Archives of Business Research, 10(03). 217-234.

The impact of Economic Freedom and Democracy on Income Inequality: Empirical Evidence from Sub-Saharan African Countries

Sabi Couscous Mouhamadou Nazirou
PhD Candidate at School of Economics
Zhongnan University of Economics and Law

Dalal Subhi Mousa Mousa
PhD Candidate at School of Economics
Zhongnan University of Economics and Law

Dr AFOLABI Tunde Ahmed
Associate Researcher at Economic Association of Namibia/
Consultant at ATA Consultancy

ABSTRACT

Throughout our study entitled the impact of economic freedom and democracy on Income Inequality: empirical evidence from Sub-Saharan African countries. We have demonstrated that the economic freedom which is defined as the elementary right of all humans to have control on his or her own labor and property and an important impact on the economic growth. Individuals have the freedom to work, to produce, to consume and to save or invest the way they want in an economically free society. We use the measure of Fraser Institute's economic freedom from the world summary index (EF). A composite of five major sub-indices: Access to sound money index (SM), Freedom to trade internationally index (FT), Government size index (GV), legal structure and security of property rights index (PR), and regulation of credit, labor and business index (RG). The results show that the Freedom to trade internationally index (FT), the Government size index (GV), the regulation of credit, labor and business index (RG) have negative impact on the income inequality. Concerning the Governance, Government Effectiveness, Rule of Law, and Regulatory Quality is negatively related to Income Inequality. Nevertheless, the Control of Corruption and the coefficient of Political Stability and Absence of Violence have a positive impact on Income Inequality. The stability promotes the income inequality and through the protest and demonstration by the least privileged leads the government to reconsider the system of ruling. Our control variables such as economic growth and population throughout the four estimations they show none significance with the Income Inequality. So basically the economic growth doesn't affect the income inequality in Sub-Saharan Africa. As Africa financial institutions, the Banks have a clear mandate to support the Regional Communities, to strengthen strategies and to lower the income inequalities across countries and within countries. The inclusive growth plans and agenda of the Banks and their new Long Term Strategy will position the Bank as a leading institution to promote activities that foster economic growth in an inclusive

INTRODUCTION

Significance of the study

Nowadays there are multitude of literatures on the variables affecting subjective well-being measures (Frey and Stutzer 2001; Dolan et al. 2008; Blanch flower and Oswald 2011). One of the study subjects are at a standstill in its infancy, nevertheless, is the link between economic freedom and subjective well-being. The Economic freedom is defined as the elementary right of all humans to have control on his or her own labor and property. Individuals have the freedom to work, to produce, to consume and to save or invest the way they want in an economically free society. Governments permit for this reason the free movement of labor, capital, and goods. According to Gwatney et al (2004), the Economic freedom is related to the degree of personal choice, freedom of competition, voluntary exchange, and protection of privately owned property afforded by society. Prior to that, research has demonstrated that economic freedom stimulates life satisfaction (Veenhoven 2000; Ovaskaand Takashima 2006; Gropperetal.2011). Graafland and Compen in 2015 have shown that the positive association between economic freedom and life satisfaction is mediated by income per capita and generalized trust. Definitely, as many studies have shown, economic freedom stimulates income per capita or economic growth (Dawson 1998; De Haan and Sturm 2000; Gwartney et al. 2004; De Haan et al. 2006; Justesen 2008; Altman 2008).

Coming to the well-being, even though this concept is broadly used, there is no universally agreed definition of just what it is. Furthermore, the expressions well-being, quality of life, happiness and life satisfaction are frequently employed interchangeably. We can think of a person's well-being as increasing from a combination of material (possession) and relational (being able to make use of possession), and the level of fulfillment or subjective quality of life that they obtain from what they possess and can do (McGregor, 2007). The increasing day by day of income and wealth inequality has been issue of division of many modern societies and becomes a threat to the growth and freedom of the global economy. Piketty in 2014 has addressed the danger of rising wealth inequality in the twenty-first century and has called for a progressive annual tax on wealth. He showed that both income and wealth inequality have been rising endlessly since the 1980s. 60% of GDP growth since the 1960s has gone to the top 1% (Piketty and Saez 2013). He related the cause of the risen to the combination of market forces and economic policy. The wealth inequality keeps extending which not only hinders sustainable growth but also raises ambiguity in the free-market institutions that defend property rights and support voluntary exchange and freedom of choice across nations (OECD, 2015).

One of the most challenging questions of government is to build up policies with objectives of raising the standard of living in a society avoiding the creation of large income gaps between the rich and poor. Nevertheless to a great extent, raising living standards and income redistribution are mutually exclusive goals. The existential debates on wealth and income inequality as result of instabilities today can't be ignored. Should something be done about it, and if so, what? These contemporary concerns are closely related to two research questions. **What is the effect of the emergence of economic freedom on Income inequality? What is the impact of democratic government on Income inequality?** If one were asked to sum up the received wisdom about these questions, it would be first that the income inequality is awful for democracy, and secondary the democracies are also likely to implement policies that reduce income inequality. The simple ground for this is that people with no or modest income occupied

a big proportion of the population and therefore have more votes than the wealthy. This same model has already been noted for democratic politics and income inequality; Acemoglu & Robinson (2000, 2006) and Boix (2003) are the most heavily cited proponents of the idea that democracy involves equalizing policies, although these authors have been challenged on multiple fronts, and some of their own recent empirical work suggests a different conclusion. The democracy can be apprehended by a system in which we have government by the people; a form of administration in which the ultimate power is vested in the people and exercised directly by them or by their selected agents under a free and open electoral system.

The general objective of this paper is to empirically examine the impact of Economic Freedom and Democracy on wealth inequality of Sub-Saharan African countries.

LITERATURE REVIEW

Theoretical Literature Review

Democracy and Income Inequality

The theoretical awareness of the literature are mostly all conducive to the universal statement that democracy lessens income inequality. This theoretical argument has its foundations on the median voter theorem.

The median voter theorem states that the democratic rules and regulations will result in redistribution from the rich to the poor at the moment the mean income is more than the median income (Meltzer and Richard, 1981). The democratic governments are known to increase political competition and consequently have important effect on income distribution in the sense in which according to Key (1999), the political opponents will get the opportunity to act and their actions in return will bring political outcomes and benefits to them. More to the point, under democratic systems, opportunities can be given to the most disadvantaged clan or group to be empowered since there is existential of the elections and the right to organize political opposition, and the underprivileged groups can push towards a more equal distribution of goods. In the absence or lack of democratic right, it is obvious that there will be a concentration of power in the hands of a minority who will use their influence to implement narrowly targeted policies and rent-seeking activities (Keefer and Khemani, 2000). On the contrary, we refer to the work of Simpson in 1990, he found that when there is a wide participation of population in democratic systems, the power of the elites or the privileged minority is weakened and redistribution more likely to occur.

The democratic regimes are connected with a greater influence of strong labor unions which likely use their bargaining power in a way to prevent the real wage from falling (Rodrik, 1999). Nevertheless, it is quite difficult to prove the evidence for the above theoretical predictions in the empirical literature. The couple of papers investigated by Sirowy and Inkeles (1990), to be exact in total twelve, He found that seven papers affirm that democracy reduces income inequality, whilst five affirm the existence of no relationship. The authors as Stack (1979), followed by Weede (1982), Muller (1988), Rodrik (1999), and Feng (2003) are amongst the few supportive studies. Another groups of researchers namely Crenshaw (1992, 1993), Muller (1989b) and Weede (1990) from their studies got a positive impact of democracy on income inequality. The findings support the claim of Hayek (1976, 1983) that comparing two regimes autocratic and democratic, the autocratic governments dispose a strong capacity to implement

egalitarian reforms compared to democratic governments that may be weakened by interest groups.

The Role of Economic Freedom

In this section we will show how economic freedom affects the redistributive role of democracy. We propose next two interrelated arguments.

- Economic Freedom Increases the Tax Base

Tax remains is the most important source of revenue to government worldwide. Nevertheless, the amount of revenue coming from tax is affected by both conventional and non-conventional factors. The conventional factors have their foundation in the traditional theories and they had been the center of most research studies on tax revenue performance. Despite the fact that the significance of the conventional factors is the main determinants of tax performance it cannot be ignored. Bird et al. (2008) have argued that risen the tax revenue level for a country is not a wise policy advice. Moreover, Tanzi (1989) had previously affirmed that the conventional factors can't adequately explained the variation in tax revenue in numerous countries but had suggested that change in macroeconomic policy environment plays a very important role in tax revenue performance. Ghura (1998), at the same time, has opined that modest can be done in the short run to change the conventional determinants of tax revenue, however efforts need to be directed to change other non-conventional factors able to influence tax revenue in the long-run.

- **Economic Freedom Moderates the Tax Rate**

The median voter theorem associates the democracy to a full redistribution of income but increasing taxation as purpose to redistribute later tends to reduce the incentives to work and produce. These negative incentives are bigger in a free market environment since greater is the elasticity of the factors supply. The free movement of goods, capital, and labor is responsible to the exit option of the factors of production and creates a knock-on effect on the tax base. Meaning a free market economy increases the opportunity cost of a high taxation and asset expropriation. As a result, high tax rates and asset expropriation have therefore become less attractive for voters and policy makers alike and the voters will later realize the fact that high tax rates has an adverse effect on their income since the economy will have less investment. As for the policy makers, they will find out that asset expropriation will make the country less attractive for FDI and give them access to less tax revenues. Acemoglu and Robinson (2001) proved that the high taxation and asset expropriation lead to political hostility and this in turn may reverse the process of democratization.

Political participation mechanism

Referring to some tremendous selective versions of democratic theory, namely Schumpeter (1942) and Sartori (1987), the duty of citizens is limited to the vote of their leaders. These theorists hold on to what Riker (1982) called a 'liberal' model of democracy, a point of view with three important constituents: citizens have some special preferences, which are regarded as fixed and exogenous to the democratic process itself, over the personnel of government, they only expressed indirectly through a system of representation. The three important constituents are participation as influencing attempts (Verba and Nie, 1972), (Verba et al. 1978: 46; Kaase & Marsh 1979: 42), (Parry et al. 1992: 16; Verba et al.1995:37); Participation as political discussion (see, e.g., Habermas 1996; Gutmann & Thompson 1996; Bohman & Rehg 1997;

Elster 1998b), (Miller 1992: 75–78); Influencing attempts and equal protection of interests (Verba et al.'s, 1995), (cf. Manin et al. 1999: 9).

Political competition mechanism

This mechanism places interest on the importance of electoral connection. Reelection-oriented democratic leaders race for citizen support, and consequently invest more in solving the problems of the larger segments of suffrage who are in general the low and middle income earners. In order to seduce and win the voters' support, they adopt a range of redistributive measures namely welfare spending and benefits, greater access to healthcare and education, price subsidies, and other public services provisions.

Empirical Literature Review

Researchers have empirically proved in their different studies with diverse methods but all with objective to investigate the relationship between economic freedom and income inequality found that the more the economic is free from external forces, it leads to lower taxes, a relaxation of regulations, and consequently to a higher economic growth. Berggren (1999) in his paper titled "Economic Freedom and Equality: Friends or Foes?" has argued that there is positive connection between changes in economic freedom and equality: an increase in economic freedom conducts to a lesser taxes, lesser relaxation of regulations, and a higher economic growth between 1975 and 1985.The higher the level of equality around 1985. Most significant moreover is trade liberalization and financial deregulation.

Scully (2002) examined, in his paper Economic Freedom, Government Policy and the Trade-Off Between Equity and Economic Growth, the role of economic freedom in income distribution for 126 countries in a pooled panel sample and with the use of EFI of Gwartney et al. (2006). He concluded that economic freedom leads greater equality with the existence of a marginal trade-off between growth and income inequality.

In his research entitled An Empirical Note on Economic Freedom and Income Inequality (2006), Carter argued that higher levels of economic freedom is able to increase income equality by increasing income-earning prospects, but also decrease equality by diminishing income redistribution prospects. He later found that the effect is more important than the former except at very low levels of freedom; consequently, associating a trade-off between economic freedom and income equality, with the effect of economic freedom increasing at higher levels of freedom.

Cebula, Richard and Clark, J.R. and Mixon, Franklin (2012) studied the Impact of Economic Freedom on Per Capita Real GDP with a sample of OECD Nation over the 2003-2006 period, with the use of fixed-effects PLS estimations, they found strong evident that the higher the degree of economic freedom, the higher the level of economic activity and hence the higher the per capita real GDP level and trade freedom, business freedom, freedom from corruption, monetary freedom, investment freedom, government size freedom, and property rights freedom are positive function of economic freedom.

Clark and Lawson (2008) investigated the role of tax policy on income distribution. They found that an increase in the income inequality is due to progressive taxation with high top marginal tax rates.

Carter (2006) has argued that there is a positive relationship between economic freedom and income inequality. He has statistically and significantly demonstrated it via the dispute of Berggren's interpretation of his own findings. He concluded that there is a difference between the impact of greater freedom on income inequality in the short and long run. Since the short run effect of greater freedom is to encourage greater equality in income distribution what it is not in the long run. Meaning greater freedom will be responsible to taking greater measures or strategies to reduce income inequality.

We can clearly notice a certain degree of confusion and ambiguity as to the true nature of the relationship between economic freedom and significant social and economic measures. Adding more to the confusion De Haan and Strum (2000) in their study on the relationship between economic freedom and economic growth, reported the level of ambiguity as far as the impact of economic freedom on income inequality is concerned. They later stated that a pronounced relationship could be found based on a number of measures of economic freedom whilst other indicators showed no relationship at all.

There could be some empirical ambiguities attributed to several reasons to the previous literatures discussed so far. We can name some of the reasons might be due to the quality of the data employed in the UNU/WIDER world income inequality database. Regardless of the recent upgrading of the database both in terms of quality and length, it is very hybrid concerning the unit of analysis it uses. The existence of little evidence might have also occurred since diverse specifications were employed in the previous empirical analyses. Atkinson and Brandoloni (2001) for example stated there is no benchmark empirical model common to all studies. Therefore, the very large diversity of specifications and the inclusions of inappropriate control variables might have caused bogus empirical results.

More significantly, the studies have to include together with democracy some important factors in order to reach a successful understanding of the link between democracy and income inequality. In 1988 Muller example argued that transitory democracies need to be strengthened in order to be translated into egalitarian economies. Since Muller stated that the issue regards to income inequality is sensitive to the years of democratic experience rather than the level of democracy. Later Feng (2003) confirmed a parallel path and adjusts the periods of years of democracy calculate used by Muller by building a weighted democratic experience index (WDE) based also on the principle of consolidation.

RESEARCH METHOD AND METHODOLOGY

Empirical Framework

From the literatures we have read so far, we are unable to find a benchmark specification for income inequality. However, the inverted-U relationship between growth and inequality from the Kuznet hypothesis (1950-1960s), commonly considered in all specifications of income inequality will be used. The economic growth is known to have a non-linear effect on income inequality. At near to the ground level of development, the economic growth increases income inequality, but at afterward stages this positive effect is reversed. Meaning that economic growth initially worsens income inequality and later improves it at a higher stage of economic development. The inverted-U curve implies that as nation experiences industrialization and particularly the mechanization of agriculture the center of the nation's economy shifts to the cities. As consequence farmers looking for better-paying jobs in urban hubs create a significant

rural-urban inequality gap, hence rural populations decline as urban populations augment. The inequality for that reason is expected to decline when a certain level of average income is obtained and the processes of industrialization, democratization and the rise of the welfare state creating for the benefits from rapid growth, and increase the per-capita income.

Model specification

Our model specification will be composed of **GDP per capita PPP**, its quadratic term and **Democracy**, to see its impact on income inequality. Concerning the effect of **Economic Freedom** on income inequality we will use the index of economic freedom.

The general specification that we estimate is:

Income Inequality=f (Economic Freedom, Democracy, Control Variables….)

$$\mathbf{HHI_{it} = \beta_0 + \beta_1 EF_{it} + \beta_2 DEM_{it} + \gamma lnX_{it} + CD_i + TD_t + \varepsilon_{it}}$$

Whereby,

HHI: stands for the estimated household income inequality.

EF: Economic Freedom. It is a measure of Fraser Institute's economic freedom from the world

summary index (EF). It is a composite of five major sub-indices: Access to sound money index (SM), Freedom to trade internationally index (FT), Government size index (GV), legal structure and security of property rights index (PR), and regulation of credit, labor and business index (RG).

DEM : Governance Indicators: Government Effectiveness, Regulatory Quality, Voice and Accountability, Political Stability and Absence of Violence, Rule of Law and Control of Corruption.

X: Stands for the vector of control variables including, economic growth, school attainment, inflation rate, population size, and natural resource rents;

CD and **TD**: are Country Dummy and Time Dummy, and $\boldsymbol{\varepsilon_{it}}$ is the random error term. The subscript i refer to country and t to year.

For the purpose of the regression analysis, we will first estimate the baseline models for 44 countries from 2000–2017 and later will incorporate control variables in the robustness section.

We will start with the regression with the ordinary least squares (OLS) estimation, what we believe, firstly, that there will be inconsistency since Economic growth may be endogenous, a reverse causality between Economic growth and income inequality. Secondly, income inequality measures are more likely to have measurement errors, particularly for the developing countries. Lastly, the inconsideration of numbers of critical explanatory variables such as moral law, culture, geography, and so on, that affects the income inequality that may be omitted from the regression models and are correlated with one or more explanatory variables. To tackle the possible endogeneity, we will apply three alternative econometric strategies.

This consist on at the first stage conduct an estimation using a two-stage least squares (2SLS) instrumental variable (IV) approach (IV-2SLS).

Second stage we will consider a lagged value of the Income inequality series in the OLS estimates to mitigate endogeneity bias.

Third stage we will use Arellano and Bover (1995) and Blundell and Bond's (1998) system Generalized Method of Moment with two-stage to control the potential endogeneity of all explanatory variables by using internal instruments. However, the system GMM estimator may not entirely solve the endogeneity issue due to weak instrument problem, but it is likely to give more unbiased estimates than OLS regressions.

Choice of the variables

The Economic growth used in Equation as one of the control variables matters for economic freedom. It is believed that higher growth may generate resources necessary for policy-makers to establish, reform, or improve existing institutions and policies (La Porta et al., 1999). There is existence of a positive effect of Education on economic freedom since the educated citizens are more likely to resolve their divergences through dialogues, discussion and negotiation instead of using violence behaviors, conflicts and thereby the greater the human and social capital of a community, the more attractive its institutional opportunities (Djankov et al., 2003; Glaeser et al., 2004). On contrary the poor macroeconomic management can impact economic freedom since high and volatile rates of inflation distort relative prices, can be responsible to job losses and the increase of the insecurity in long-term (Gwartney et al., 2016).

As for the size of the population, it might have mixed effects on economic freedom. At one hand, larger countries could provide better economic institutions because of the agglomeration effects, lower per capita costs for public good provision and market size; and on the other hand, countries with high density could experience more diversity which in return could produce additional cost and lower the quality of economic institutions (Rose, 2006).

The profusion of natural resources holds back economic freedom and investment, which could lead to an observed resource curse (Campbell and Snyder, 2012). According to Mehlum et al. (2006) and Papyrakis (2017), the natural resource rents deteriorate freedom since the rent windfalls encourages grabber friendly institutions to involve more in rent-seeking and unproductive activities.

Data

Our data are collected from the Fraser Institute's economic freedom of the world summary, World Bank Development Indicators, World Inequality Database (https://wid.world/data/) covering a period from 2000 to 2017 of 44 Sub Sahara Africa Countries.

Result and Explanation

Table: Descriptive Statistic

Variable	Obs	Mean	Std. Dev.	Min	Max
hhi	687	.5087622	.0718343	.3008	.7125
sm	639	7.02277	1.491345	0	9.67
ft	638	6.122351	.9782683	2.06	8.55
sg	677	6.418936	1.106973	1.48	9.01
pr	642	4.055857	1.379412	1.35	7.63
rg	568	5.5125	1.042964	2.81	8.26
gov_eff1	738	-.6707891	.5890469	-1.884151	1.056994
ru_law1	738	-.6270394	.6352243	-2.008507	1.07713
c_c1	738	-.5813022	.6117589	-1.562825	1.216737
pol_st1	738	-.4814456	.8794089	-2.699193	1.28206
reg_qual1	738	-.5848939	.5632671	-2.236245	1.12727
v_acc1	738	-.4966047	.6762474	-1.733551	.9825176
gdp_gr	737	4.453917	4.729803	-36.39198	33.62937
rents	738	2.510629	5.837921	0	46.62465
lnpop	738	15.91018	1.481149	11.30382	19.06712
sch_pr	439	7.619427	7.199453	.35198	40.59604
inf	646	8.452322	1.672488	0	10

Source: Made by us with World Bank Data, World Inequality Data

Table: Correlation Matrix

	hhi	sm	ft	sg	pr	rg	gov_eff1	ru_law1	c_c1	pol_st1	reg_qu~1	v_acc1	gdp_gr	rents
hhi	1.0000													
sm	0.0768	1.0000												
ft	0.1144	0.5870	1.0000											
sg	-0.2571	0.2251	0.1568	1.0000										
pr	0.3224	0.3445	0.6207	-0.0523	1.0000									
rg	0.1033	0.4956	0.5705	0.0796	0.6590	1.0000								
gov_eff1	0.2559	0.5196	0.6991	0.0614	0.8202	0.6171	1.0000							
ru_law1	0.2088	0.4999	0.6986	0.0975	0.8132	0.6679	0.9370	1.0000						
c_c1	0.3461	0.4668	0.6220	-0.0645	0.7655	0.6356	0.8851	0.9087	1.0000					
pol_st1	0.3261	0.3141	0.5938	0.0400	0.6496	0.4306	0.7519	0.7917	0.7642	1.0000				
reg_qual1	0.2367	0.5896	0.7584	0.1665	0.7561	0.6410	0.9089	0.9251	0.8441	0.7136	1.0000			
v_acc1	0.2587	0.4471	0.6309	0.1063	0.6852	0.5854	0.8413	0.8828	0.8221	0.7598	0.8511	1.0000		
gdp_gr	-0.0825	-0.2290	-0.1471	0.0032	-0.0503	-0.1479	-0.1032	-0.1564	-0.1546	-0.1473	-0.1750	-0.1498	1.0000	
rents	-0.2456	-0.0315	-0.0273	-0.1132	-0.0950	-0.0197	-0.1818	-0.1300	-0.0587	-0.1192	-0.1078	-0.1503	-0.0462	1.0000
lnpop	-0.1567	-0.3267	-0.3595	0.1056	-0.3925	-0.3289	-0.4612	-0.4878	-0.5703	-0.5530	-0.4014	-0.3623	0.1994	-0.0533
sch_pr	0.0938	0.4052	0.5384	0.1104	0.5299	0.5243	0.6474	0.5880	0.5347	0.4826	0.5853	0.5494	-0.1827	-0.0708
inf	-0.0294	0.2528	0.0806	-0.0182	-0.0479	0.0276	0.0093	0.0409	0.0605	0.1055	0.0651	0.0891	-0.0901	0.0807

	lnpop	sch_pr	inf
lnpop	1.0000		
sch_pr	-0.3862	1.0000	
inf	-0.2642	0.1242	1.0000

Source: Made by us with World Bank Data, World Inequality Data

RESULT

VARIABLES	OLS HHI	(2SLS) HHI	GLS HHI	GMM HHI
SM	-0.00220	0.00568	0.00639*	0.00525
	(0.00219)	(0.00354)	(0.00362)	(0.00351)
FT	0.000544	-0.0121**	-0.0125**	-0.0121**
	(0.00339)	(0.00555)	(0.00554)	(0.00555)
SG	-0.00429**	-0.0127***	-0.0129***	-0.0125***
	(0.00216)	(0.00353)	(0.00353)	(0.00352)
PR	0.000855	0.0271***	0.0259***	0.0261***
	(0.00328)	(0.00477)	(0.00465)	(0.00466)
RG	-0.00430	-0.01000**	-0.00946*	-0.00906*
	(0.00274)	(0.00496)	(0.00488)	(0.00488)
Gov_Eff	-0.00999	-0.0482**	-0.0382**	-0.0344*
	(0.0110)	(0.0226)	(0.0187)	(0.0185)
Ru_Law	-0.0270**	-0.138***	-0.143***	-0.143***
	(0.0123)	(0.0206)	(0.0199)	(0.0200)
C_C	0.00708	0.0921***	0.0885***	0.0894***
	(0.0104)	(0.0147)	(0.0145)	(0.0145)
Pol_St	-0.00194	0.0293***	0.0298***	0.0293***
	(0.00464)	(0.00680)	(0.00679)	(0.00679)
Reg_Qual	0.0577***	0.0671***	0.0652***	0.0638***
	(0.0104)	(0.0178)	(0.0175)	(0.0175)
V_Acc	0.00924	0.0137	0.0155	0.0137
	(0.00933)	(0.0108)	(0.0109)	(0.0108)
GDP_gr	-0.000366	-0.00115	-0.00120	-0.00127
	(0.000372)	(0.000862)	(0.000853)	(0.000854)
Rents	-0.000585	-0.00299***	-0.00289***	-0.00291***
	(0.000412)	(0.000473)	(0.000465)	(0.000466)
lnPop	0.00747	0.00510	0.00403	0.00495
	(0.00775)	(0.00330)	(0.00338)	(0.00330)
Sch_Pr	-0.000980***	-0.000807	-0.000155	-0.000243
	(0.000370)	(0.000593)	(0.000576)	(0.000573)
Inf	-9.98e-05		-0.00355	
	(0.00154)		(0.00292)	
Constant	0.598***	0.502***	0.553***	0.509***
	(0.123)	(0.0738)	(0.0814)	(0.0734)
Wooldridge test for autocorrelation	F(1, 29) = 350.046 Prob > F = 0.0000			
Observations	319	319	319	319
R-squared		0.425		
Number of ID	36		36	

Standard errors in parentheses
***** p<0.01, ** p<0.05, * p<0.1**

Interpretation of the results

In our regression we use 4 estimations, the first column we use Ordinary Least Squared(OLS), follow by the Two-stage least squares (2SLS) instrumental variable (IV) approach (IV-2SLS), later the Generalized Least Squared (GLS) and finish with the Two Stage Generalized Method of Moment (2S-GMM). Our explanation will be mainly base on the result of the 2S-GMM.

The Freedom to trade internationally index (FT), is statistically and negatively significant at 5% level meaning a percentage change in the Freedom to trade internationally will lead the income inequality decrease by 0.0121 percent, holding other factors constant in the short run. Hence, the income inequality and Freedom to trade internationally exhibit an inelastic relationship.

The Government size index (GV) is highly statistically significant at 1% level and negatively correlated with the Income Inequality. A percentage increase in the Size of the Government will decrease the Income Inequality by 0.0125%. Hence, the income inequality and Government size index (GV) exhibit an inelastic relationship. This result can be explain by the level of opulence that the government authorities are living in SSA and the dream of many underprivileged people to one day lead and benefit from the advantages related to those position.

The legal structure and security of property rights index (PR) is positively related to the Income Inequality and it is statistically significant at 1% level. Meaning if the legal structure and security of property rights increases by 1%, the Income Inequality will also increase by about 0.0261%, ceteris paribus. Hence, the income inequality and the legal structure and security of property rights index exhibit an inelastic relationship.

One percentage increase in the regulation of credit, labor and business index (RG), holding other factors constant will decrease the Income Inequality by about 0.00906%, since the coefficient of regulation of credit, labor and business (RG) is statistically significant at 10% and diversely related to the Income Inequality. Hence, the income inequality and the regulation of credit, labor and business index (RG) exhibit an inelastic relationship.

The Government Effectiveness is statistically significant at 10% level and negatively related to Income Inequality. Holding all the factors constant, if the Governments of SSA countries could be 1% more effective, the Income Inequality gap would reduce by 0.0344%. Hence, the income inequality and the Government Effectiveness exhibit an inelastic relationship.

The coefficient of the Rule of Law is highly statistically significant at 1% level and negatively related to the Income Inequality. Meaning, 1% increase in the Rule of Law will Increase the Income Inequality by about 0.143%, holding other factors constant. Since the income inequality and the Rule of Law exhibit an inelastic relationship.

Control of Corruption is positively related to Income Inequality and statistically significant at 10% level. As interpretation, if the measures taken to control the corruption increase by 1%, the income inequality also will increase by about 0.0894%. Hence, the income inequality and the Control of Corruption exhibit an inelastic relationship. This fact can be explain by the fact that the corruption can be favorable to companies wishing to finance investment activities however, come up against bureaucratic challenges because of excessive government

URL: http://dx.doi.org/10.14738/abr.103.11641

regulations. In these conditions, some companies are prepared to bribe to speed up administrative procedures.

The coefficient of Political Stability and Absence of Violence is statistically significant at 1% level and positively associated to Income Inequality. Meaning holding other factors constant, one percentage increase in the effort of government to maintain political stability and absence of violence will increase also the Income Inequality by about 0.0293%. Hence, the income inequality and the Political Stability and Absence of Violence exhibit an inelastic relationship. This can be explained by the fact that the stability promotes the income inequality and through the protest and demonstration by the least privileged lead the government to reconsider the system of ruling.

One percentage decrease in the Regulatory Quality, ceteris paribus, will decrease the Income Inequality by about 0.0638%, since the Regulatory Quality is highly significant at 1% and positively associated to the Income Inequality. Hence, the income inequality and the Regulatory Quality exhibit an inelastic relationship.

The coefficient of the Rents is statistically significant at 1% level and negatively impacts the Income Inequality. As interpretation, one unite change in the rents will also change the Income Inequality by about 0.00291 unite, holding other factors constant. Hence, the income inequality and the rents exhibit an inelastic relationship.

However, for our control variables such as economic growth and population throughout the four estimations they show none significance with the Income Inequality. So basically the economic growth doesn't affect the income inequality in Sub-Saharan Africa. Our result is confirmed by the study entitled Growth and Income Inequality: A Comparative Analysis, done by Ayla Ogus Binatli in 2011, where by the author investigated whether the link between income inequality and growth changes over time. To do so, He divided the sample into two time periods and compared the findings. He discovered no statistically significant link between inequality and growth in both time periods. Nevertheless, there are indications that effect of inequality on growth may be different after the two periods of study that he considered. In addition to Ayla Ogus Binatli (2011), Neves, Silva, & Afonso, (2012) also found no relationship. The relationship between income inequality and economic growth is conflicting; some find a positive link (Li & Zou, 1998; Forbes, 2000), even as others find a negative relationship (Wahiba & El Weriemmi, 2014; Cingano, 2014). And some other researches produce mixed evidence (e.g., Barro, 2000; Voitchovsky, 2005; Binatli, 2012; Halter, Oechslin, & Zweimü ller, 2014; Fawaz, Rahnama, & Valcarcel, 2014). This disagreement could be due to the use of different econometric methodologies, different datasets and sample coverages, different specifications of models, and/or different countries.

CONCLUSION

The most challenging questions of government are how to come up with policies with objectives of raising the standard of living in a society avoiding the creation of large income gaps between the rich and poor. The existential debates on wealth and income inequality as result of instabilities today can't be ignored. Efforts have been made and strategies are adopted. Day by day, Africa is experiencing economic boom, however despite the impressive growth recorded in recent years, Africa is still home to wide spread uneven distribution of income. Throughout

our study entitled the impact of economic freedom and democracy on Income Inequality: empirical evidence from Sub-Saharan African countries. We have demonstrated that the economic freedom which is defined as the elementary right of all humans to have control on his or her own labor and property and an important impact on the economic growth. Individuals have the freedom to work, to produce, to consume and to save or invest the way they want in an economically free society. We use the measure of Fraser Institute's economic freedom from the world summary index (EF). A composite of five major sub-indices: Access to sound money index (SM), Freedom to trade internationally index (FT), Government size index (GV), legal structure and security of property rights index (PR), and regulation of credit, labor and business index (RG).

We find that the Freedom to trade internationally index (FT), the Government size index (GV), the regulation of credit, labor and business index (RG) have negative impact on the income inequality. This result can be explain by the level of opulence that the government authorities are living in SSA and the dream of many underprivileged people to one day lead and benefit from the advantages related to those position. However the legal structure and security of property rights index (PR) positively affects the Income Inequality.

Concerning the Governance, Government Effectiveness, Rule of Law, Regulatory Quality is negatively related to Income Inequality. Nevertheless, the Control of Corruption and the coefficient of Political Stability and Absence of Violence have a positive impact on Income Inequality. Thus can be explain by the fact that the corruption can be favorable to companies wishing to finance investment activities however, come up against bureaucratic challenges because of excessive government regulations. In these conditions, some companies are prepared to bribe to speed up administrative procedures. The stability promotes the income inequality and through the protest and demonstration by the least privileged lead the government to reconsider the system of ruling.

Our control variables such as economic growth and population throughout the four estimations they show none significance with the Income Inequality. So basically the economic growth doesn’t affect the income inequality in Sub-Saharan Africa.

Income inequalities are widespread in all the sub-regions across the continent. Nonetheless, some countries are apt to exhibit very high inequalities particularly those in the middle income group such as Namibia and South Africa. The existence of a strong middle class accompanied by the right polices, may promote and reduce the income inequalities. In this respect, government policies and or donor interventions that lead to the formation of the middle class will have effects to lower the income inequalities and hence poverty levels.

As Africa financial institutions, the Banks have a clear mandate to support the Regional Communities, to strengthen strategies and to lower the income inequalities across countries and within countries. The inclusive growth plans and agenda of the Banks and their new Long Term Strategy will position the Bank as a leading institution to promote activities that foster economic growth in an inclusive way.

Base on our findings, more efforts need to be done by the SSA governments to reduce the huge income gap between rich and poor. The Bank should seek to promote job-creating and pro-poor

economic growth. This requires: 1) Increased employment opportunities for all, to support productivity gains and economic growth but also to create a sense of dignity and control over people's own destiny; 2) Achieving value for money and accountability in service delivery, fighting corruption and promoting voice in decision making, making sure public money works to deliver services to all including the poorest; and 3) Inclusion and social cohesion, including safety nets and other risk protection mechanisms (AfDB, 2012).

Reference

[1]. Acemoglu, D. and J.A. Robinson, (2010). Why is Africa poor? Economic History of Developing Regions, Vol. 25, No. 1, pp. 21-50.

[2]. Acemoglu, D., S. Johnson and J.A. Robinson, (2001). The colonial origins of comparative development: an empirical investigation.

[3]. AfDB's Human Capital Development Strategy 2012-2016, (2012). Human Development Department. African Development Bank.

[4]. AfDB Market Brief, (2011), "The Middle of the Pyramid: Dynamics of the Middle Class in Africa", The Chief Economist Complex. African Development Bank.

[5]. African Economic Outlook (2011). African Development Bank.

[6]. Africa Development Indicators, (2008/2009), "Youth Employment in Africa: The Potential, the Problem, the Promise", World Bank.

[7]. Africa Progress Panel, (2014). Grain Fish Money: Financing Africa's Green and Blue Revolutions.

[8]. Altman, M, (2008). How much economic freedom is necessary for economic growth? Theory and evidence. Economics Bulletin, *15,* 1–20.

[9]. Alwy, A. and S. Schech, (2004). Ethnic inequalities in education in Kenya. International Education Journal, Vol. 5, No. 2.

[10]. American Economic Review, No. 91, pp. 1369-1401.

[11]. Anyanwu, J. C. (2011), "International Remittances and Income Inequality in Africa". Working Paper Series N°135. African Development Bank.

[12]. Appleton, S. (1999). Changes in poverty in Uganda, 1992-1997. Economic Series Working Papers, WPS/1999-22. University of Oxford, Department of Economics.

[13]. Ashby, N., and R. Sobel. (2008). Income inequality and economic freedom in the U.S. states. Public Choice 134: 329-346.

[14]. Ashby, N., A. Bueno, and F. McMahon. (2011). Economic Freedom of North America 2011. Vancouver, BC: The Fraser Institute.

[15]. Atkinson, A.B. (1983). The economics of inequality. Oxford: Clarendon Press.

[16]. Ayla Ogus Binatli (2011), Growth and Income Inequality: A Comparative Analysis.

[17]. Barro, R.J. and Sala-i-Martin, X. (1992). Public finance in models of economic growth, Review of Economic Studies 59(4): 645-661.

[18]. Barro, R.J. and Lee, J.-W. (1993). International comparisons of educational attainment. Journal of Monetary Economics 32(3): 363-394.

[19]. Berggren, N. (1999). Economic freedom and equality: Friends or foes? Public Choice 100: 203-223.

[20]. Berggren, N. (2003). The benefits of economic freedom: A survey. The Independent Review 8(2): 193-211.

[21]. Bhorat, H. (2013). The Challenge of Job Creation: Input to the Post-2015 HLP Agenda. Cape Town, Development Policy Research Unit, University of Cape Town. (Available upon request)

[22]. Bigsten, A. and A. Shimeles. (2004). Prospects for pro-poor growth in Africa. UNU-WIDER Research Paper No. 2004/02.

[23]. Blanchflower, D.G., Oswald, A.J., (2004). Well-being over time in Britain and the United States. Journal of Public Economics 88, 1359–1386.

[24]. Bratton, M. and N. van de Walle. (1997). Democratic Experiments in Africa: Regime transitions in comparative perspective. New York, Cambridge University Press.

[25]. Bulte, E. H., R. Damania and R.T. Deacon. (2005). Resource intensity, institutions, and development. World Development 33(7), 1092-1044.

[26]. Canagarajah, S. and S. Thomas. (2001). Poverty in a wealthy economy. International Monetary Fund. IMF Working Papers, 02/114.

[27]. Carter, J. (2006). An empirical note on economic freedom and income inequality, Public Choice 130: 163-177.

[28]. Clark, J., and R. Lawson. (2008). The impact of eco-nomic growth, tax policy and economic freedom on income inequality. The Journal of Private Enter-prise 24(1): 23-31.

[29]. Cox, M., and R. Alm. (1995). By Our Own Boostraps: Economic Opportunity & the Dynamics of Income Distribution. Federal Reserve Bank of Dallas, Annual Report.

[30]. Davis, O.A. and Wu, W. (1996). Measuring economic freedom,Unpublished manuscript.

[31]. Dawson, J. W. (1998). Institutions, investment, and growth: New cross-country and panel data evidence. Economic Inquiry, 36,603–619.

[32]. De Haan, J., Lundstro¨m, S., & Sturm, J. E. (2006). Market-oriented policies and economic growth: A critical survey. Journal of Economic Surveys, 20(2), 157–192.

[33]. De Haan, J., & Sturm, J. E. (2000). On the relationship between economic freedom and economic growth. European Journal of Political Economy, 16(2), 215–241.

[34]. De Vannsay, X. and Spindler, Z.A. (1994). Freedom and growth: Do constitutions matter? Public Choice 78(3-4): 359-372.

[35]. Deininger, K. and Squire, L. (1996). Measuring income inequality: A new database. World Bank Economic Review 10(3): 565-591.

[36]. Demombynes, G. and J.G.M. Hoogeveen. (2004). Growth, inequality, and simulated poverty paths for Tanzania, 1992-2002. World Bank Policy Research Working Paper, 3432.

[37]. Dolan, P., Peasgood, T., White, M., (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. Journal of Economic Psychology 29, 94–122.

[38]. Fölster, S. and Trofimov, G. (1996). Does equality promote growth? Working Paper No. 461, The Industrial Institute for Economic and Social Research, Stockholm.

[39]. Frey, B.S., Stutzer, A., (2002). What can economists learn from happiness? Journal of Economic Literature 40, 402–435.

[40]. Galbraith, J., and T. Hale. (2006). State income inequality and presidential election turnout and outcomes. Working Paper, The University of Texas at Austin.

[41]. Graafland, J. J., & Compen, B. (2015). Economic freedom and life satisfaction: Mediation by income per capita and generalized trust. Journal of Happiness Studies, 16(3), 789–810

[42]. Gwartney, J.D., Lawson, R.A., (2004). Economic Freedom of the World Annual Report. Fraser Institute, Vancouver, B.C.

[43]. Gwartney, J.D., Lawson, R.A., Holcombe, R.G., (1999). Economic freedom and the environment for economic growth. J. Inst. Theor. Econ. 155, 643–663.

[44]. Gwartney, J.D., Lawson, R. and Block, W. (1996). Economic freedom of the world: 1975- 1995. Vancouver, BC: The Fraser Institute.

[45]. Gyimah-Brempong, K. (2002), "Corruption, economic growth, and income inequality in Africa", Economics of Governance, 3: 183–209, Springer-Verlag.

[46]. Heston, A. and Summers, R. (1991). The Penn world table (Mark 5): An expanded set of international comparisons, 1950-1988. Quarterly Journal of Economics 106(2): 327-368.

[47]. Kaldor, N., (1957). A model of economic growth. Econ. J. 67, 591–624.

[48]. Kayizzi-Mugerwa, S. (2001), "Globalization, growth and income inequality: the African experience". Working paper, N°186. OECD Development Center.

[49]. Keynes, J.M., (1920). The Economic Consequences of the Peace. Macmillan and Co. Limited, London.

[50]. Krieger, T., Meierrieks, D., (2016). Political capitalism: the interaction between income inequality, economic freedom and democracy. Eur. J. Polit. Econ. 45, 115–132.

[51]. Kuznets, S., (1955). Economic growth and income inequality. Amer. Econ. Rev. 45, 1–28.

[52]. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., (1999). The quality of government. J. Law, Econ., Organ. 15, 222–279.

[53]. Leigh, A., (2007). How closely do top income shares track other measures of inequality? Econ. J. 117, F619–F633.

[54]. Madsen, J.B., Islam, M.R., Doucouliagos, H., (2018). Inequality, financial development and economic growth in the OECD, 1870–2011. Eur. Econ. Rev. 101, 605–624.

[55]. Marrero, G.A., Rodríguez, J.G., (2013). Inequality of opportunity and growth. J. Dev. Econ. 104, 107–122.

[56]. McBride, M., (2001). Relative-income effects on subjective well-being in the cross section. Journal of Economic Behavior and Organization 45, 251–278.

[57]. McCulloch, N., B. Baulch and M. Cherel-Robson. (2000). Poverty, inequality and growth in Zambia during the 1990s. Working Paper. Institute for Development Studies, University of Sussex.

[58]. McMillan, M., D. Rodrik and I. Verduzco-Gallo. (2014). Globalisation, structural change, and productivity growth, with an update on Africa. World Development 63, 11-32.

[59]. Mehlum, H., Moene, K., Torvik, R., (2006). Institutions and the resource curse. Econ. J. 116, 1–20.

[60]. MIller, T., Kim, A.B., (2016). 2016 Index of Economic Freedom: Promoting Economic Opportunity and Prosperity. Heritage Foundation, Washington, D.C.

[61]. Miller, T., Kim, A.B., (2017). 2017 Index of Economic Freedom: Institute for Economic Freedom. Heritage Foundation, Washington, D.C.

[62]. Murphy, R.H., (2015). The impact of economic inequality on economic freedom. Cato J. 35, 117–131.

[63]. Neves, P.C., Afonso, Ó., Silva, S.T., (2016). A meta-analytic reassessment of the effects of inequality on growth. World Dev. 78, 386–400.

[64]. Neves, P.C., Silva, S.T., (2014). Inequality and growth: Uncovering the main conclusions from the empirics. J. Dev. Stud. 50, 1–21.

[65]. OECD, (2011). Divided We Stand: Why Inequality Keeps Rising. OECD Publishing, Paris.

[66]. OECD, (2015). In It Together: Why Less Inequality Benefits All. OECD Publishing, Paris.

[67]. Oxfam, (2014). Working For the Few: Political Capture and Economic Inequality. Oxfam GB for Oxfam International, Oxford.

[68]. Oxfam, (2017). An Economy for the 99 Percent. Oxfam GB for Oxfam International, Oxford.

[69]. Papyrakis, E., (2017). The resource curse - what have we learned from two decades of intensive research: introduction to the special issue. J. Dev. Stud. 53, 175–185.

[70]. Perez-Moreno, S., Angulo-Guerrero, M.J., (2016). Does economic freedom increase income inequality? Evidence from the EU countries. J. Econ. Policy Reform. 19, 327–347.

[71]. Perotti, R., (1996). Growth, income distribution, and democracy: what the data say. J. Econ. Growth 1, 149–187.

[72]. Persson, T., Tabellini, G., (1994). Is inequality harmful for growth? Amer. Econ. Rev. 84, 600–621.

[73]. Piketty, T., (2014). Capital in the Twenty-First Century. Belknap Press of Harvard University Press, Cambridge.

[74]. Piketty, T., Zucman, G., (2014). Capital is back: wealth-income ratios in rich countries, 1700–2010. Q. J. Econ. 129, 1255–1310.

[75]. Ovaska, T., & Takashima, R. (2006). Economic policy and the level of self-perceived well-being: An international comparison. Journal of Socio-Economics, 35,308–325.

[76]. Ravallion, M. (1994). Can high-inequality developing countries escape absolute poverty? Economics Letters 56, 51-57.

[77]. Ravallion, M. and S. Chen. (2007). China's (uneven) progress against poverty. Journal of Development Economics 82, 1-42.

[78]. Ravallion, M. and G. Datt. (1996). How important to India's poor is the sectoral composition of economic growth. The World Bank Economic Review 10(1), 1-25.

[79]. Reed, W.R., (2015). On the practice of lagging variables to avoid simultaneity. Oxford Bull. Econ. Stat. 77, 897–905.

[80]. Rivera-Batiz, F.L., Rivera-Batiz, L.A., (2002). Democracy, participation, and economic development: an introduction. Rev. Devel. Econ. 6, 135–150.

[81]. Rose, A.K., (2006). Size really doesn't matter: in search of a national scale effect. J. Jpn. Int. Econ. 20, 482–507.

[82]. Rotman, D., (2014). Technology and Inequality. MIT Technology Review, October 21.

[83]. Scully, G.W., (2002). Economic freedom, government policy and the trade-off between equity and economic growth. Public Choice 113, 77–96.

[84]. Smith, A., (1776). An Inquiry into the Nature and Causes of the Wealth of Nations. Methuen & Co. Ltd., London.

[85]. Sokoloff, K.L., Engerman, S.L., (2000). History lessons: institutions, factors endowments, and paths of development in the new world. J. Econ. Perspect. 14, 217–232.

[86]. Solow, R.M., (1956). A contribution to the theory of economic growth. Q. J. Econ. 70, 65–94.

[87]. Sonin, K., (2003). Why the rich may favor poor protection of property rights. J. Compar. Econ. 31, 715–731.

[88]. Sturm, J.-E., De Haan, J., (2015). Income inequality, capitalism, and ethno-linguistic fractionalization. Amer. Econ. Rev. 105, 593–597.

[89]. Transparency International (2011), "Corruption Perceptions Index 2011". World Development Indicators (2011), World Bank.

[90]. UN (United Nations). (2010). World Population Projections: The 2010 Revision. New York, United Nations.

[91]. UNDP (United Nations Development Programme) Regional Bureau for Africa. (2016). Africa Human Development Report 2016: Accelerating Gender Equality and Women's Empowerment in Africa. New York.

[92]. UNU-WIDER (2014) United Nations University World Institute for Development Economics Research World Income Inequality. Database V3.0B. www.wider.unu.edu/research/WIID3-0B/en_GB/database/.

[93]. Van de Walle, N. (2009). The institutional origins of inequality in sub-Saharan Africa. The Annual Review of Political Science 12, 307-327.

[94]. Vigdor, J. L. (2004). Community composition and collective action: analyzing initial mail response to the 2000 Census. The Review of Economics and Statistics 86, 303-12.

[95]. Veenhoven, R. (2000). Freedom and happiness. In E. Diener & E. M. Suh (Eds.), Culture and subjective wellbeing (pp. 257–288). Boston: MIT Press.

[96]. WEF, (2017). The Global Risks Report 2017, 12th ed. World Economic Forum, Geneva.

[97]. Williamson, C.R., Mathers, R.L., (2011). Economic freedom, culture, and growth. Public Choice 148, 313–335.

[98]. Windmeijer, F., (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. J. Econom. 126, 25–51.

[99]. World Bank (2013). Africa's Pulse: An Analysis of Issues Shaping Africa's Economic Future. Washington, D.C.

[100]. World Bank (2014a). An analysis of issues shaping Africa's economic future. Africa's Pulse. Vol. 10, October 2014. Washington, DC., World Bank.

[101]. World Bank (2014b).. World Development Indicators. Washington, D.C.: The World Bank. http://data.worldbank.org/data-catalog/world-development-indicators.

[102]. World Bank (2014c). Povcalnet 2014. Washington, D.C.: The World Bank.

[103]. Young, A.T., Zuleta, H., (2013). Do Unions Increase Labor's shares? Evidence from Us Industry-Level Data. Mimeo.