Ofori, Isaac Kwesi

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Towards Building Shared Prosperity in Sub-Saharan Africa: How Does the Effect of Economic Integration Compare to Social Equity Policies?

Isaac K. Ofori
School of Economics,
University of Insubria,
Via Monte Generoso, 71, 21100, VA, Varese, Italy.
Email: isaac.ofori1@ucc.edu.gh
ikofori@uninsubria.it;

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Towards Building Shared Prosperity in Sub-Saharan Africa: How Does the Effect of Economic Integration Compare to Social Equity Policies?

Isaac K. Ofori

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Abstract

The debate on the need for Sub-Saharan African (SSA) countries to foster inclusive growth has intensified following the coming into force of the African Continental Free Trade Area (AfCFTA), and the emergence of the coronavirus pandemic. A conspicuous lacuna in the literature is a lack of rigorous empirical work(s) exploring: (1) the joint effect of economic integration and resource allocation, and (2) social equity policies on inclusive growth in SSA. Using data from the World Bank's World Development Indicators and the Global Consumption and Income Project (1980–2019) for 43 SSA countries, I provide evidence robust to several econometric techniques— the fixed-effect, random-effect, and the system generalized method of moments estimators to show that: (1) though economic integration induces inclusive growth, the effect is higher in the presence of greater financial deepening and productive government expenditure; (2) relative to economic integration, social equity policies are rather remarkable in enhancing inclusive growth. Policy recommendations are provided in line with the AfCFTA and the reversals of welfare gains due to the coronavirus pandemic.

Keywords: AfCFTA, Economic Integration, Financial Deepening, Globalisation, Inclusive Growth, Sub-Saharan Africa, Social Protection, Social Inclusion

***JEL Codes**: E6; F14; F15; F6; H5; O55*

1.0 Introduction

The coronavirus disease (COVID-19) has among others, made clear the porous growth trajectories of the world in recent times. It has indeed amplified the slow recovery of the world towards a resilient growth path a decade after the global financial crisis (Celik, Kose and Ohnsorge 2020; Kose and Ohnsorge 2019). For instance, in 2019, the global economy expanded by a modest 1.9 per cent before tumbling into a record 4.4 per cent recession in 2020 (IMF 2020a). One region hardest hit by the disruptive effects of the COVID-19 pandemic is the Sub-Saharan Africa (SSA), which contracted by at least 3 per cent in 2020 from a mild 0.8 per cent in 2019 (World Bank 2020a; IMF 2020a). More troubling is the erosion of the welfare gains particularly on Sustainable Development Goals (SDGs)[1] 1 and 10 (World Bank 2020b). The concern does not only lie in the assessment of the implication of COVID-19 on welfare outcomes such as the quality of life, health, education but also how policymakers can build resilient economies post the pandemic (World Bank 2020b). This has rekindled research interest on how policymakers can build a more sustainable and equitable growth in disadvantaged regions like the SSA. More germane, the pandemic calls for strategic policies targeting various aspect of lives especially in SSA where the focus has largely been on reducing absolute poverty and income inequality. Indeed, the current research agenda should focus more on building inclusive growth, which rest on broad-based sectorial development in social equity, and effective resource allocation in line with economic integration[2] of the region.

Though bereft of empirical backing, the Bretton Woods institutions— the International Monetary Fund and World Bank (2020) identify resource allocation[3] as a possible channel through which the welfare setbacks due to COVID-19 can be mitigated. However, with development finance from the tax systems and donor agencies expected to fall due to the slowdown in economic activity (OECD 2020), resource allocation in SSA should be done using vehicles that enhance sustainable growth. In line with this is the unprecedented rise in economic integration of SSA— evidenced by the coming into force of the African Continental Free Trade Area (AfCFTA). Indeed, the power of globalisation may have been underestimated in the past but the recent global health and economic turmoil shows that,

[1] In respective terms, SDGs 1, 8 and 10 seek to end poverty, ensure decent work and economic growth, and reduce income inequality.

[2] The structure of the SSA plausibly calls for greater and effective resource allocation in terms of financial deepening and government expenditure, especially in the area of infrastructure development (Peprah *et al.* 2019; African Development Bank 2010).

[3] In fact, the World Bank recognize that mobilizing adequate resources remains the backbone of SDGs, which generally seek to end poverty, lessen inequality and injustice as well as combat climate change by 2030

going forward, globalisation should be a core consideration in addressing welfare issues (UNCTAD 2020; World Bank 2020c). It is equally imperative to point out that globalisation can also present policymakers with challenges that can amplify the susceptibility of their economies to greater poverty and inequality challenges (Bourguignon 2016; Bergh and Nilsson 2010, 2010; Stiglitz 2002). For the SSA, if governments or policymakers are to change the novelty of (1) being primary supplier in the global value chain, and (2) pursuing economic growth at the expense of shared prosperity, then resource allocation and globalisation should be looked at critically.

In a region where infrastructure gap is marked (African Development Bank (2010), institutions are in their early stages of development, poverty and income inequality levels are high and even made more severe due to the COVID-19 pandemic (ILO 2020a; World Bank 2020b), economic integration like the AfCFTA may not be potent enough in achieving the desired growth and inclusivity objectives. This is backed by the growing evidence that despite the growth-inducing effects of economic integration, it can also fuel inequality in the developing world (see, Bergh and Nilson 2010; Stiglitz 2002). This forms the motivation of this study, where I explore the pathways through which social equity policies, and economic integration affect inclusive growth in SSA.

In doing this, I deviate from the proliferation of opinions shared on how policymakers can build prosperous and all-inclusive societies post COVID-19 but without rigorous empirical backing. I also shy from the use of proxies such as gross domestic product per capita (GDP per capita) and GDP growth alone as measures for inclusive growth. Indeed, the few studies I sighted, which are in line with my empirical analysis are bereft of methodological rigor and policy relevance. First, these empirical works focus solely on trade flow indicators, clearly losing tabs on the fact that economic integration does not signify a total elimination of tariff[4] (see e.g., Anand, Mishra and Peiris 2013). Second, inclusive growth proxies such as GDP per capita and GDP growth are shallow as they downplay the relevance of social equity in economic development. In fact, Berg and Ostry (2011) labels it as a '*mistake*' to separate the analyses of income distribution and economic growth in empirical works of this nature. Third and more germane, the possible pathway (joint) effects of economic integration on inclusive growth in line with resource allocation in the SSA remain unexplored. Four, trade openness has generally been the headline economic integration indicator in empirical works of this nature though this indicator is shallow as it

[4] Tariff bands are set for various groups of commodities from the medium term to long term. This suggests the need for research providing support or otherwise for tariff reduction.

does not capture the effects of foreign direct investment and capital flows fundamental of economic integration (see e.g., Anand *et al.* 2013). My contribution to the literature, particularly on SSA is thus in two-folds: (1) I explore the effects of economic integration and social equity policies[5] on inclusive growth, and (2) I explore the joint effects of resource allocation and economic integration on inclusive growth. While I expect economic integration, social equity policies, and resource allocation to induce inclusive growth, I hypothesis greater inclusive growth-inducing effects of economic integration in line with effective resource allocation.

The rest of the paper is organised as follows: the next section is dedicated to a brief review of the literature on inclusive growth. Section 3 also presents the methodological foundation of the paper. The results and discussions are presented in section 4 while chapter 5 concludes with some policy recommendations.

2.0 Literature survey on measures and drivers of inclusive growth

Achieving economic growth is one thing while achieving shared prosperity is another. If there is any region of the world in need of attention in terms of policy recommendations in fostering inclusive growth, then it is the SSA. The region is the most disadvantaged, ranking highest in terms of poverty and inequality (Ravallion and Chen 2019). Aside the erosion of the welfare gains[6] due to the coronavirus pandemic, is the projection of a rise in vulnerable employment (ILO 2020b), amid challenges posed by climate change and geopolitical fragility of the region. Though a number of countries, for instance, Ghana, Angola, Rwanda, Botswana, Lesotho, and Ethiopia boast of achieving high growth rates in recent times, little is known of how inclusive or equitable such growth trajectories are.

According to Ravallion and Chen (2003) and IMF (2007), inclusive growth is defined in absolute terms as growth that is largely beneficial to the poor and marginalized (i.e., sustained growth in GDP per capita). The IMF (2011) also define inclusive growth as growth in incomes of the poor relative to that of the overall population. Taking cues from the absolute and relative definitions of inclusive growth, Ali and Son (2007) also define inclusive growth as growth trajectories that increase social opportunities in terms of incomes, employment, human capital development, and social safety nets. Inclusive growth thus encompasses several facets of national development particularly with regards to the creation

[5] This refers to improvements in institutional framework and policies targeting social inclusion and protection

[6] World Bank (2020b) estimated that the pandemic has pushed a staggering 88 – 115 million people back into poverty, with at least half of this number expected to reside in SSA alone. More crippling is the projection of a further rise in this number by 23 – 35 million in 2021.

of equitable opportunities aimed at increasing the incomes, welfare and participation of especially the poor in economic development (Berg and Ostry 2011; Commission on Growth and Development 2008).

While the pace and distribution of economic growth is undoubtedly crucial for inclusiveness, what matters for the latter goes beyond the former. For instance, Anand *et al.* (2013) find that for emerging economies, while foreign direct investment, and trade openness induce inclusive growth plausibly due to greater financial openness and employment, inflation proved otherwise. Also, Paramasivan, Mani and Utpal (2014), and Estache, Ianchovichina, Bacon and Salamon (2013) argue that while productivity and employment growth are crucial, interventions in human capital development, gender equality, and social safety nets are equally significant in enhancing inclusive growth. Corroborating the argument of Ali and Son (2007) is the proposition by the World Bank (2013; 2009) and Acemoglu and Robinson (2012) that inclusive growth rests on stronger institutions, structures, and policies aimed at building the capabilities of the marginalised. Particularly on social inclusion, Lustig Lopez-Calva and Ortiz-Juarez (2012) argue that the recent poverty reduction and income equality gains in the Latin America and the Caribbean (LAC) is at the backdrop of efficient direct transfers and redistribution.

Further, Hull (2009) and ECLAC (2011) attribute the success stories of Brazil and Ireland in the achievement of greater equitable growth in the past two decades to investment in human capital resulting in greater equitable distribution of labour market earnings. However, in regions with significant numbers of unskilled labour like the SSA and East Asia, the Asian Development Bank (2012) proposes that equitable growth can be achieved through deliberate resource allocation[7] in building the capacity of small and medium scale enterprises while partnering the private sector in the establishment of labour intensive firms. Also crucial for fostering inclusive growth is government expenditure on infrastructure and irrigation, which enhances access to opportunities and productivity especially in the areas of wider market, education and health which would ordinarily have been inaccessible to the poor and rural folds (Calderón and Servén 2014; Gajigo and Lukoma 2011). This study is thus timely as it seeks to provide comprehensive analyses of the plausible inclusive growth effects of the AfCFTA, social equity policies, and resource allocation in SSA taking cues from the conceptual framework in Figure 1. Indeed, the graphical relationship between inclusive growth and economic integration indicators as shown in Figure A1 (*Appendix A*) also

[7] This is because financial inclusion alone may be ineffective in boosting the growth of the vast SME subsector (see, AWID 2011)

conform to theory.

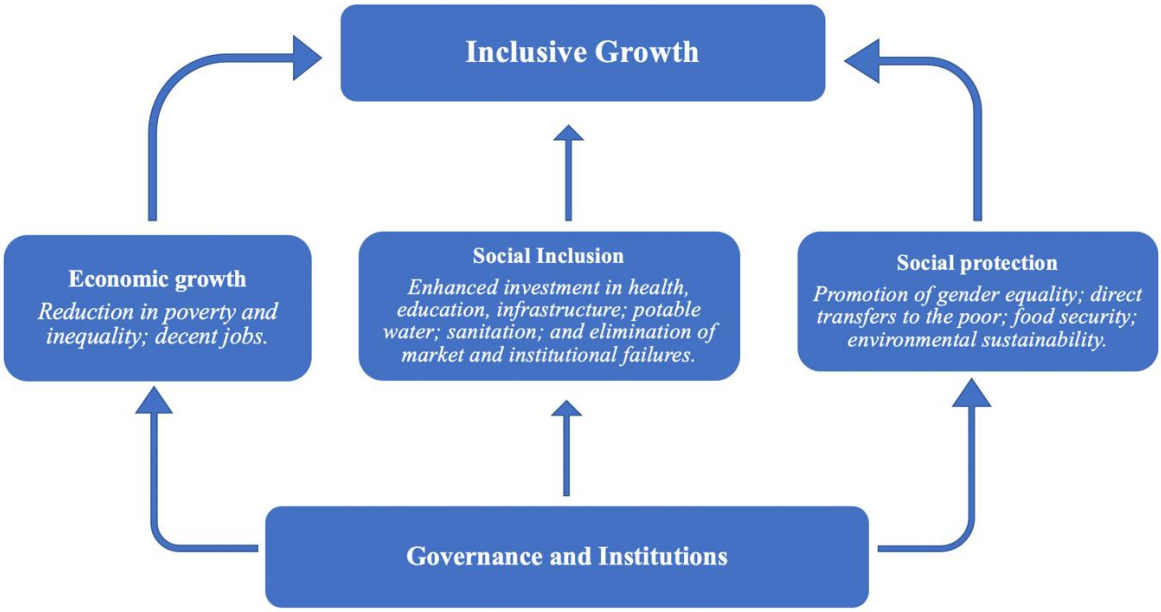

Figure 1: Pillars of inclusive growth
Source: Adapted from Paramasivan et al. (2014) and Zhuang and Ali (2010).

Data and methodology

3.1 Data

The dataset underpinning the analysis spans 1980 – 2019 for 43 SSA countries. Data on the outcome variable, inclusive growth is generated following Anand *et al.* (2013) (*see Appendix B*). Alternatively, I check the robustness of the results using the Palma ratio, sourced from the Global Consumption and Poverty Project, and real GDP per capita growth. The choice of these two inclusive growth indicators follows the absolute and relative definitions of pro-poor growth (Ravallion and Chen 2003; IMF 2011) as well as the treatment of economic growth and income distribution together in inclusive growth analyses (Berg and Ostry 2011). On the variables of interest, first, the study uses four main indicators[8] to capture economic integration (tariff, trade openness, foreign direct investment, and economic globalisation index). Second, on social equity, the study uses the coverage of social inclusion and social protection policies. The latter captures government policies for redistribution and labour market regulations that reduce the risk of becoming poor, assist those who are poor to better manage further risks, and ensure a minimal level of welfare to all people.

[8] Tariff proxies trade policy while trade openness, foreign direct investment and economic globalisation index, denote trade flow policies.

The former also denotes coverage of government policies in promoting gender equality, equity of public resource use, building human resources, and policies and institutions for environmental sustainability. Further, informed by policy and the structure of the SSA, I consider control variables capturing macroeconomic stability, human capital, and the structure of the region. In specifics, I control for financial deepening, government expenditure, vulnerable employment, inflation, and adult literacy. Human capital is proxied by adult literacy and the choice is informed by econometric prudence as the other components of human capital are captured in social equity policies. Inter alia, human capital development includes health and safety of the population which also forms part of social inclusion efforts. Therefore, using adult literacy as a proxy for human capital index is imperative. This is supported by the strong correlation between human capital index and adult literacy as shown in the correlation matrix (Appendix D). Save for the data on economic globalisation, which is sourced from the Konjunkturforschungsstelle (KOF) index of globalisation[9] (Dreher 2006; Gygli, Haelg, Potrafke and Sturm 2019), foreign direct investment, tariff, and trade openness as well as the controls are sourced from the World Development Indicators (World Bank 2020d). The description of the variables is provided in Table 1. It is imperative to note that I settle on 43 countries and the study period due to data availability. Particularly, data on economic globalisation and social equity exist up to 2019 and are limited for countries such as Eritrea, Somalia, South Sudan, and Zimbabwe.

Table 1: Variable Description

Variables	**Description**	**Data Source**
Inclusive growth	It is captured as the integration of economic growth and income distribution for a given country.	Generated
Palma ratio	The ratio of the share of the top 10% to that of the bottom 40 % in the population	GCIP
Tariff	Average weighted tariff rate of all products	WDI
Trade Openness	Sum of export and import as a percentage of GDP	WDI
Economic globalisation	Captures trade in goods and services; customs duties, taxes and trade restrictions; capital account openness and international investment (including FDI) agreements.	Kof. index
GDP per capita	Calculated as GDP divided by midyear population	WDI
Vulnerable employment	Total contributing family and own-account workers as a share of total employment	WDI
Financial deepening	Domestic credit to the private sector as percentage of GDP	WDI
Foreign direct investment	Measured as the net inflows in the reporting economy from foreign investors as a share of GDP.	WDI

[9] The KOF index of globalisation is an index measuring the degree of globalisation of 122 countries. The index provides statistics on three main dimensions of globalisation— economic, social, and political.

Government expenditure	Government consumption expenditure as a percentage of GDP	WDI
Human capital	The proportion of the adult literacy to the entire to population	WDI
Inflation	Year-on-year changes in the average consumer price index	WDI
GDP per capita growth	Annual percentage growth rate of GDP per capita based on constant local currency	WDI
Social protection	Coverage scores in terms of government policies in social protection and labor market regulations that reduce the risk of becoming poor, assist those who are poor to better manage further risks, and ensure a minimal level of welfare to all people.	WDI
Social inclusion	Coverage score in terms of policies for promoting gender equality, equity of public resource use, building human resources, and policies and institutions for environmental sustainability.	WDI

Note: WDI is world development indicators; GCIP is global consumption and inequality project; and Kof. index is the Konjunkturforschungsstelle (KOF) index of globalisation

3.2 Theoretical and estimation strategy

The theoretical thrust of this paper lies in the argument that shared prosperity is multidimensional, requiring stronger institutions, efficient resource allocation, and pro-poor policies aimed at providing a level playing field to all citizens (Paramasivan *et al.* 2014; Acemoglu 2012; ADB 2011; Zhuang 2010). This study, therefore, draws on three key streams of ideas on how pro-poor or inclusive growth is achieved. The first is the classical Heckscher-Ohlin (Ohlin 1933) model, the Samuelson (1939) argument, and the Stolper-Samuelson (1941) theorem, which all posit that countries can foster shared growth through trade by specializing in production activities which they have a relative abundant factor. In line with these theories is the contemporary argument that efficient resource allocation enhances shared prosperity if policies are aligned to take advantage of trade (see, Demirgüç-Kunt and Levine 2009). The last is the Sustainable Livelihood Approach (SLA), which puts the poor at the core of sustainable development efforts (Messer and Townsley 2003). The SLA points to the relevance of the State in: (1) building the capabilities of the poor to create opportunities for themselves, and (2) enhancing the capacities of especially the poor to cope/withstand, and manage/recover from socioeconomic shocks. The approach signifies the need for policy formulations aimed at promoting gender equality, equity in public resource use, human resources development, safety nets for the vulnerable, and environmental sustainability.

The empirical strategy is thus the exploration of pathways through which institutions, resource allocation and economic integration affect inclusive growth in SSA. Following

Anand *et al.* (2013), I specify several models, with the first in each case being a baseline model before introducing economic integration and social equity policies in their various forms. Finally, I introduce the interaction terms for resource allocation and economic integration in the models[10]. However, considering the possible correlation between country-specific errors and the regressors in the fixed-effect models as well as the introduction of the lag of the dependent variable (inclusive growth) is an indication of endogeneity, which I address using the system GMM estimator (see, Arellano and Bond 1995). The specification of the fixed-effect and random-effect models follow equation (1)

$$ln(igrowth_{it}) = \varphi_0 + \delta_1 ln(igrowth_{it-1}) + \delta_2 ln(hci_{it}) + \delta_3 ln(inf_{it}) + \delta_4 ln(vul_{it}) + \delta_5 ln(findep_{it}) + \delta_6 ln(gov_{it}) + \delta_7 ln(soc_{it}) + \delta_8 ln(ecoint_{it}) + \delta_9 ln(ecoglob_{it} \times gov_{it}) + \delta_{10}\, ln(ecoglob_{it} \times findep_{it}) + \mu_i + \mu_t + \epsilon_{it} \quad (1)$$

Where ***igrowth*** denotes inclusive growth and is the indicator for shared prosperity; ***hci*** is human capital proxied by adult literacy; ***vul*** is vulnerable employment; and ***inf*** is inflation. Also, ***ecogint*** is economic integration[11] and captures *tariff*, *trade openness*, *foreign direct investment*, and *economic globalisation*; ***gov*** is government expenditure; ***findep*** is financial deepening, while ***soc*** is social equity, denoting *social protection* and *social inclusion*. Also, ***ecoglob*×*findep*** is the interaction term for financial deepening and economic globalisation; ***ecoglob*×*gov*** is another interaction term for government expenditure and economic globalisation; i is country; t is time; ln is the natural logarithm; μ_i is the country-specific effects; and ϵ_{it} is the idiosyncratic error term. Finally, I estimate equation (1) via the system GMM approach on the grounds of endogeneity aforementioned. While the study expects financial access, social equity policies, government expenditure and human capital to induce inclusive growth, inflation and vulnerable employment are expected to prove otherwise. The expected higher joint effects of economic integration and government expenditure (net effect) is expressed as

$$\frac{\partial ln(igrowth)}{\partial ln(gov)} = \delta_6 + \delta_9 \overline{ln(ecoglob)} \quad (2)$$

where $\overline{ecoglob}$ is the mean of economic globalisation. Similarly, the net effect of economic integration and financial deepening is expressed in (3) as:

[10] I introduce interaction terms for Kof economic globalisation and government expenditure on the one hand, and Kof economic globalisation and financial deepening on the other hand.
[11] The economic integration indicators do not enter the same model.

$$\frac{\partial ln(igrowth)}{\partial ln(findep)} = \delta_5 + \delta_{10}\overline{ln(ecoglob)} \quad (3)$$

4.0 Results and discussion

4.1 Summary statistics

Table 2 shows the summary statistics of the variables over the study period.

Table 2: Summary statistics

Variables	Obs	Mean	Std. Dev.	Minimum	Maximum
GDP per capita	1701	3842.539	4335.963	436.72	29223.465
Inclusive growth	1720	355.157	845.452	10.834	14647.05
Kof. economic globalisation	1677	40.621	11.112	13.188	85.299
Tariff	1555	12.404	5.707	.84	91.27
Trade openness	1647	69.232	37.461	6.32	311.354
Foreign direct investment	1712	2.952	6.413	-28.624	103.337
Social inclusion	1717	3.175	.467	2.2	4.3
Social protection	1717	3	.512	2	4.5
Vulnerable employment	1720	69.948	23.648	8.826	94.759
Human capital	1203	59.511	22.055	10.895	95.868
Financial deepening	1704	18.315	21.075	0	160.125
Inflation	1645	68.708	63.971	0	1344.193
Government expenditure	1669	14.697	6.567	0	51.975
Palma ratio	1524	7.232	3.392	2.484	30.065

Note: Obs is Observation; and Std. Dev. is Standard Deviation

The data[12] shows an average GDP per capita of US$3843 for the subregion. Interestingly, the value of inclusive growth (shared prosperity) is a modest US$355. As detailed in Figure A2 (Appendix C), growth in the region is less inclusive and is striking in countries such as South Africa, Gabon, Seychelles, Botswana, and Namibia. Also, the mean vulnerable employment value is 69.9 per cent, which is a clear indication of the structure of employment in SSA. The data also shows an average score of 18.3 per cent, 3.2 per cent, and 40.6 per cent for financial deepening, social protection, and economic globalisation (Kof index) respectively. In Table A1 of Appendix D, the correlations between the variables are provided.

4.2 Preliminary results on social equity, economic integration and inclusive growth in SSA

I first present the results for the fixed-effect and random-effect estimators (see Table 3). I find that foreign direct investment and tariff are in line with economic integration calls (see columns FE 2 and FE 4).

[12] The variables are stationary under both the Cross-sectionally Augmented Dickey–Fuller, and the Cross-sectionally Augmented Im Pesaran Shin tests. For brevity, I do not provide the results in this section.

Table 3: Panel fixed-effect and random-effect results on effects of social equity policies and economic integration on inclusive growth in SSA (Dependent variable: Inclusive growth)

Variables	(FE1)	(RE1)	(FE2)	(RE2)	(FE3)	(RE3)	(FE4)	(RE4)	(FE5)	(RE5)	(FE6)	(RE6)	(FE7)	(RE7)	(FE8)	(RE8)	(FE9)	(RE9)
Lag of inclusive growth	0.635***	0.736***	0.610***	0.710***	0.629***	0.737***	0.628***	0.737***	0.635***	0.740***	0.636***	0.741***	0.634***	0.734***	0.643***	0.743***	0.638***	0.740***
	(0.044)	(0.039)	(0.043)	(0.036)	(0.045)	(0.039)	(0.044)	(0.039)	(0.044)	(0.039)	(0.045)	(0.039)	(0.045)	(0.040)	(0.045)	(0.039)	(0.045)	(0.039)
Vulnerable employment	-0.004	-0.007**	0.002	-0.009***	-0.003	-0.006**	-0.001	-0.008**	-0.005	-0.007**	-0.005	-0.007**	-0.006	-0.007**	-0.002	-0.007**	-0.004	-0.007**
	(0.010)	(0.003)	(0.010)	(0.003)	(0.011)	(0.003)	(0.011)	(0.003)	(0.011)	(0.003)	(0.011)	(0.003)	(0.011)	(0.003)	(0.011)	(0.003)	(0.011)	(0.003)
Human capital	0.003	0.004	0.002	0.001	0.004	0.004	0.001	0.003	0.003	0.004	0.003	0.004	0.003	0.005	0.003	0.004	0.003	0.004
	(0.006)	(0.003)	(0.006)	(0.003)	(0.006)	(0.003)	(0.006)	(0.003)	(0.006)	(0.003)	(0.006)	(0.003)	(0.006)	(0.003)	(0.006)	(0.003)	(0.006)	(0.003)
Financial deepening	-0.021***	-0.004	-0.014***	0.001	-0.021***	-0.003	-0.022***	-0.004	-0.020***	-0.003	-0.020***	-0.003	-0.020***	-0.003	-0.023***	-0.004	-0.020***	-0.003
	(0.004)	(0.002)	(0.004)	(0.002)	(0.004)	(0.002)	(0.004)	(0.002)	(0.005)	(0.002)	(0.005)	(0.002)	(0.005)	(0.002)	(0.006)	(0.003)	(0.005)	(0.002)
Inflation	-0.000	-0.001**	-0.000	-0.001*	-0.000	-0.001**	-0.000	-0.001**	-0.000	-0.001*	-0.000	-0.001*	-0.000	-0.001*	-0.000	-0.001**	-0.000	-0.001*
	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
Government expenditure	0.004	-0.005	-0.001	-0.009	0.004	-0.006	0.003	-0.006	0.004	-0.005	0.004	-0.005	0.004	-0.005	0.002	-0.006	-0.008	-0.006
	(0.011)	(0.008)	(0.011)	(0.007)	(0.011)	(0.007)	(0.011)	(0.008)	(0.011)	(0.008)	(0.011)	(0.007)	(0.011)	(0.008)	(0.011)	(0.008)	(0.018)	(0.015)
Tariff			-0.030***	-0.046***														
			(0.010)	(0.008)														
Trade openness					0.0003	0.0004												
					(0.001)	(0.001)												
Foreign direct investment							0.015*	0.009										
							(0.009)	(0.008)										
Kof. economic globalisation									-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.004	-0.005	-0.006	-0.003
									(0.007)	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)	(0.007)	(0.006)	(0.008)	(0.006)
Social protection											0.010	-0.007						
											(0.161)	(0.095)						
Social inclusion													0.068	-0.076				
													(0.207)	(0.109)				
Kof. economic glob*fin. deep															0.105	0.063		
															(0.100)	(0.082)		
Kof. economic glob*gov. expend																	0.164	0.017
																	(0.211)	(0.183)
Constant	2.486***	1.848***	1.795*	1.656***	2.387**	1.746***	2.391***	1.907***	2.596***	1.869***	2.638**	1.878***	2.892**	2.139***	1.901	1.598***	1.853	1.797*
	(0.916)	(0.441)	(0.947)	(0.421)	(0.929)	(0.433)	(0.911)	(0.442)	(0.956)	(0.450)	(1.191)	(0.554)	(1.314)	(0.596)	(1.162)	(0.587)	(1.350)	(0.930)
Observations	188	188	172	172	184	184	188	188	187	187	187	187	187	187	187	187	187	187
Number of groups	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
R-Squared	0.674	–	0.703	–	0.669	–	0.681	–	0.674	–	0.674	–	0.674	–	0.677	–	0.676	–
Hausman statistic	34.79	–	26.18	–	39.10	–	42.63	–	37.82	–	38.19	–	36.46	–	39.06	–	40.07	–
[P-value]	0.000	–	0.000	–	0.000	–	0.000	–	0.000	–	0.000	–	0.000	–	0.00	–	0.000	–

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1;
Kof. economic glob*fin. deep is interaction term for financial deepening and economic globalisation;
Kof. economic glob*gov. expend is interaction term for government expenditure and economic globalisation
FE(1), ……., FE(9) are fixed effect models while RE(1), ……, RE(9) are random effect models

Further, the results show evidence of the hypothesized positive joint effects of resource allocation and economic integration on inclusive growth (see columns FE 8 and FE 9). With the Hausman test statistics significant in all the models, there is clear evidence of correlation between the regressors and the unique errors, denoting the presence of endogeneity, which I address next using the system GMM.

4.3 Effect of social equity policies and economic integration on inclusive growth in SSA

In this section, I present the system GMM results on the effects of social equity policies, resource allocation, and economic integration on inclusive growth in SSA (see Table 4).

Table 4: System GMM results on effects of social equity and economic integration on inclusive growth in SSA (Dependent variable: Inclusive growth)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lag of inclusive growth	0.591***	0.563***	0.576***	0.614***	0.581***	0.602***	0.582***	0.664***	0.609***
	(0.017)	(0.006)	(0.021)	(0.022)	(0.016)	(0.030)	(0.034)	(0.019)	(0.027)
Vulnerable employment	-0.017***	-0.011***	-0.017***	-0.015***	-0.021***	-0.020***	-0.027***	-0.005***	-0.017***
	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)	(0.003)	(0.004)	(0.001)	(0.003)
Human capital	0.005***	0.001**	0.005***	0.005***	0.002**	0.005***	0.004**	-0.001	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Financial deepening	0.011***	0.002***	0.011***	0.010***	0.017***	0.022***	0.025***	0.034***	0.017***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)	(0.005)	(0.002)
Inflation	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Government expenditure	0.004*	0.013***	0.005*	0.005*	0.005	0.005	0.000	0.025***	0.001
	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)	(0.005)	(0.004)	(0.003)	(0.015)
Tariff		-0.048***							
		(0.002)							
Trade openness			0.001***						
			(0.000)						
Foreign direct investment				0.010***					
				(0.004)					
Kof. economic globalisation					0.012***	0.013***	0.010***	0.026***	0.014**
					(0.001)	(0.002)	(0.003)	(0.002)	(0.007)
Social protection						0.429***			
						(0.122)			
Social inclusion							0.478***		
							(0.085)		
Kof. economic glob*fin. deep								0.001***	
								(0.000)	
Kof. economic glob*gov. expend									0.0001
									(0.000)
Constant	3.377***	2.551***	3.364***	3.060***	3.442***	4.478***	5.531***	1.248***	2.827***
	(0.153)	(0.108)	(0.197)	(0.370)	(0.352)	(0.691)	(0.372)	(0.279)	(0.451)
Observations	188	172	184	188	187	187	187	187	187
Number of Groups	41	41	41	41	41	41	41	41	41
Net-effect	–	–	–	–	–	–	–	0.075	–
Joint-Significance Test	–	–	–	–	–	–	–	16.95	–
[p-value]	–	–	–	–	–	–	–	0.000	–
Hansen P-value	0.648	0.393	0.702	0.570	0.341	0.687	0.633	0.685	0.581
AR(2)	0.480	0.300	0.544	0.888	0.938	0.970	0.974	0.208	0.964
Wald X^2	19515.3	66724.8	39400	69408.1	27729.1	43269.2	55341	27498	20220
[p-value]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1*
*Kof. economic globalisation*gov. expend is interaction term for government expenditure and economic globalisation*
*Kof. economic globalisation*fin. deep is interaction term for financial deepening and economic globalisation*

The baseline results as presented in column 1 show empirical support for inclusive growth-inducing effects of financial deepening, human capital, and government expenditure. The results further show that reducing tariff enhances inclusive growth by 0.04 per cent in SSA. Also, I find that for every 1 per cent increase in foreign direct investment inflow and trade openness, inclusive growth rises by 0.01 per cent and 0.001 per cent respectively. The results for foreign direct investment and trade openness concur that of Anand *et al.* (2013) for emerging countries. Also, the key measure of economic integration in this paper (i.e., the Kof economic globalisation index) is positive and statistically significant irrespective of the type of model specification. Further, the results show that social equity policies of social protection and social inclusion are more potent in spurring inclusive growth in the SSA. The magnitudes show that while the former boost inclusive growth by 0.42 per cent, the latter induces inclusive growth by 0.48 per cent. Finally, there is empirical evidence for the hypothesized positive joint effect of resource allocation and economic integration on inclusive growth. However, the result shows that in line with economic integration, financial deepening is more effective in boosting inclusive growth in the SSA. The net-effect for economic globalisation and financial deepening interaction is computed as:

$\frac{\partial ln(igrowth)}{\partial ln(findep)} = 0.034 + \left(0.001 * \overline{ecoglob}\right)$, from the summary statistics in Table 2, the mean of economic globalisation ($\overline{ecoglob}$) $= 40.621$

$$\frac{\partial ln(igrowth)}{\partial ln(findep)} = 0.034 + (0.001 * 40.621) = 0.0746$$

The findings I show provides policymakers in SSA with cautious optimism regarding the effect of the AfCFTA in boosting inclusive growth. While economic integration enhances inclusiveness in the SSA, policies aimed at ensuring social equity in the form of social protection and inclusion are rather remarkable. The result show that in building long-term shared prosperity in the SSA, strengthening institutions particularly on social inclusion and protection can be a game changer. Indeed, such policies are crucial for building the capacity of the poor and vulnerable to: (1) create opportunities for themselves, (2) cope or manage socioeconomic shocks, and (3) participate fully in nation building. This result concurs that of Lustig *et al.* (2012) who show that social protection has been significant in reducing income inequality and poverty in the LAC over the last two decades. Additionally, the joint effect of

the financial deepening and economic integration show that enhancing greater access to credit can boost growth inclusivity. Indeed, financial deepening can address the liquidity challenge inhibiting the graduation of the huge vulnerable private sector of the region into the formalized informal sector. Financial deepening can also support innovation and aid the region's fight against human resource wastage by putting the youthful population to work to contribute meaningfully to national development. The positive joint effect of government expenditure and economic globalisation also suggests that, in line with the opportunities the AfCFTA provides, channeling resources to address the huge infrastructural gap of SSA can reduce the cost of doing business and aid robust private sector growth. Such productive State expenditure can support firms in terms of market expansion and the achievement of scale economies by enhancing global value chain participation and competitive capacity. For the controls, I find that vulnerable employment and inflation are harmful to inclusive growth in the SSA irrespective of the type of model specification. For instance, the results in column 9 shows that for every 1 per cent increase in inflation and vulnerable employment, inclusive growth reduces by 0.001 per cent and 0.01 per cent respectively. This means that in building shared prosperity post COVID-19, maintaining a stable macroeconomy while enhancing shared opportunities in the form of decent jobs can be crucial for fostering inclusive growth.

4.4 Robustness checks

4.4.1 *Robustness check 1*

The result on the effects of resource allocation, economic integration and social equity policies on inclusive growth in Table 4 is checked using the Palma ratio as the outcome variable (see results in Table 5).

Table 5: System GMM results on effects of social equity and economic integration on inclusive growth in SSA (Dependent variable: Palma ratio)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lag of palma ratio	0.985***	0.981***	0.975***	0.985***	0.986***	0.986***	0.983***	0.982***	0.975***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
Vulnerable employment	0.003***	0.0001**	0.009***	0.002***	0.006***	0.004***	0.001*	0.002***	0.001***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Human capital	-0.001***	-0.0002	-0.0002	-0.001***	-0.000	-0.001***	-0.001***	-0.0002	0.0003
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Financial deepening	-0.003***	-0.001***	-0.010***	-0.003***	-0.007***	-0.006***	-0.002***	-0.006***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.002)	(0.000)
Inflation	-0.000***	-0.001***	0.0005***	-0.0003***	-0.001***	-0.001***	-0.0002***	0.0001***	-0.0004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Government expenditure	-0.002***	0.001	-0.003**	-0.002***	-0.002**	-0.003***	-0.001***	0.001	-0.053***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.002)
Tariff		-0.014***							
		(0.001)							
Trade openness			-0.002***						
			(0.000)						
Foreign direct investment				0.003					
				(0.000)					
Kof. economic globalisation					-0.003***	-0.002***	-0.002***	-0.003***	0.014***
					(0.000)	(0.001)	(0.000)	(0.001)	(0.001)
Social inclusion						-0.130***			
						(0.018)			
Social protection							-0.026***		
							(0.009)		
Kof. economic glob*fin. deep								-0.0001***	
								(0.000)	
Kof. economic glob*gov. expend									-0.001***
									(0.000)
Constant	-0.118**	0.326***	1.075***	-0.058*	-0.353***	-0.549***	0.042	0.426***	-0.668***
	(0.047)	(0.012)	(0.064)	(0.030)	(0.080)	(0.093)	(0.062)	(0.049)	(0.067)
Observations	153	144	149	153	153	153	153	153	153
Number of groups	41	41	40	41	41	41	41	41	41
Net-effect	–	–	–	–	–	–	–	-0.010	-0.093
Joint-Significance Test	–	–	–	–	–	–	–	15.71	16.95
[p-value]	–	–	–	–	–	–	–	0.000	0.000
Hansen P-Value	0.341	0.336	0.631	0.383	0.296	0.347	0.369	0.540	0.354
AR(2)	0.314	0.317	0.245	0.315	0.303	0.309	0.316	0.318	0.313
Wald X^2	6300	2500	2700	2540	5290	3920	6290	1580	3480
[p-value]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1*
*Kof. economic globalisation*gov. expend is interaction term for government expenditure and economic globalisation*
*Kof. economic globalisation*fin. deep is interaction term for financial deepening and economic globalisation*

Table 5 shows empirical evidence of pro-poor growth for tariff, trade openness and economic globalisation. There is strong empirical evidence that relaxing trade policy is more potent in enhancing inclusive growth (0.01%) as compare to trade openness (0.002%). Also, the results show that irrespective of the type of model specification, economic integration enhances inclusive growth by at least 0.01 per cent (see column 9). Albeit not statistically significant, foreign direct investment inflow into SSA is not pro-poor, providing support for the Cornia and Martorano (2012) and UNCTAD (2019) that such inflows have largely been in the less inclusive areas of telecommunication, tourism and mining. The evidence I provide points to a case of cautious optimism in terms of the power of globalisation in propelling the SSA towards a sustainable pro-poor growth. This is in relation to the relative higher inclusivity effects of social protection and social inclusion. In respective terms, the results show that strengthening social inclusion and social protection policies and institutions result in 0.13 per cent and 0.02 per cent increase in pro-poor growth (i.e., reduction in Palma ratio). This corroborates the findings by Lustig *et al.* (2012) in the case of LAC that social equity is crucial for building shared opportunities.

Also, the hypothesized higher joint effects of resource allocation on inclusive growth through economic integration are evident. Contrary to the results on the main inclusive growth measure in Table 4, the net effects show that government expenditure is rather more effective in spurring pro-poor growth. In specifics, for every 1 per cent increase in government expenditure in line with economic integration, the Palma ratio reduces by 0.09 per cent as compared to 0.01 per cent for the same increase in financial deepening. The net-effect for economic globalisation and government expenditure is computed as:

$\frac{\partial ln(palmaratio)}{\partial ln(gov)} = -0.053 + \left(-0.001 * \overline{ecoglob}\right)$, from the summary statistics in Table 2, the mean of economic globalisation ($\overline{ecoglob}$) $= 40.621$

$$\frac{\partial ln(palmaratio)}{\partial ln(gov)} = -0.053 + (-0.001 * 40.621) = -0.0936$$

Likewise, the overall effect of enhancing financial deepening in the presence of economic globalisation is calculated as:

$$\frac{\partial ln(palmarat\%)}{\partial ln(findep)} = -0.006 + \left(-0.0001 * \overline{ecoglob}\right)$$

$$\frac{\partial ln(palmaratio)}{\partial ln(findep)} = -0.006 + (-0.0001 * 40.621) = -0.0101$$

The result suggests that in the SSA, increasing the growth of incomes of the poor relative to that of the rich is enhanced greatly by the discretional redistribution or resource allocation as compared to financial deepening which may be polarized due to high cost of borrowing. The auxiliary findings also show that human capital is pro-poor while vulnerable employment hampers pro-poor growth. Last, the effect of the lag of Palma ratio is remarkable, signifying that reducing income inequality is also important for building shared prosperity in the SSA.

4.4.2 Robustness check 2

In this section, the results in Table 4 are checked using GDP per capita growth as the independent variable (see results in Table 6).

Table 6: GMM System results on effects of social and economic integration on inclusive growth in SSA (Dependent variable: Real GDP per capita growth)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lag of GDP per capita growth	0.351***	0.362***	0.462***	0.350***	0.293***	0.309***	0.316***	0.335***	0.306***
	(0.020)	(0.035)	(0.026)	(0.026)	(0.029)	(0.025)	(0.026)	(0.025)	(0.026)

Vulnerable employment	-0.014	-0.103***	0.168***	-0.011	-0.073***	-0.030*	-0.042**	0.002	-0.043*
	(0.020)	(0.019)	(0.019)	(0.018)	(0.012)	(0.016)	(0.021)	(0.019)	(0.025)
Human capital	0.004	0.035***	0.031***	0.021	0.015***	0.019	0.018	0.011	0.018*
	(0.004)	(0.005)	(0.011)	(0.015)	(0.004)	(0.012)	(0.014)	(0.012)	(0.010)
Financial deepening	0.019	0.145***	0.180***	0.034*	0.107***	0.039	0.054*	0.020	0.055**
	(0.023)	(0.024)	(0.015)	(0.020)	(0.016)	(0.025)	(0.028)	(0.017)	(0.025)
Inflation	-0.008***	-0.008***	-0.005***	-0.008***	-0.007***	-0.009***	-0.009***	-0.007***	-0.008***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Government expenditure	0.053**	0.009	0.086*	0.019	0.044**	0.098**	0.076	0.062**	0.023
	(0.020)	(0.035)	(0.043)	(0.042)	(0.021)	(0.042)	(0.055)	(0.030)	(0.219)
Tariff		-0.296***							
		(0.042)							
Trade openness			0.044***						
			(0.005)						
Foreign direct investment				0.030					
				(0.025)					
Kof. economic globalisation					0.095***	0.060***	0.065**	0.055***	0.102
					(0.014)	(0.021)	(0.027)	(0.018)	(0.077)
Social protection						1.032***			
						(0.308)			
Social inclusion							0.647		
							(0.496)		
Kof. economic glob*fin. deep								0.0004	
								(0.000)	
Kof. economic glob*gov. expend									0.002
									(0.005)
Constant	3.994**	14.000***	-14.442***	2.448	7.013***	1.684	3.666	0.963	3.906
	(1.617)	(2.073)	(1.744)	(2.153)	(1.354)	(2.578)	(4.350)	(2.951)	(5.102)
Observations	188	172	184	188	187	187	187	187	187
Number of groups	41	41	41	41	41	41	41	41	41
Hansen P-Value	0.627	0.494	0.629	0.646	0.459	0.586	0.442	0.483	0.532
AR(2)	0.326	0.615	0.302	0.304	0.459	0.336	0.344	0.313	0.383
Wald X^2	11928.3	1594.84	3927.01	5060.78	1244.71	477.07	2575.71	671.23	2163.44
[p-value]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1*
*Kof. economic globalisation*gov. expend is interaction term for government expenditure and economic globalisation*
*Kof. economic globalisation*fin. deep is interaction term for financial deepening and economic globalisation*

The results show that trade openness enhances inclusive growth in absolute terms (column 3), corroborating the findings by Anand *et al.* (2013). Again, economic integration as measured by the Kof. economic globalisation index is positive and statistically significant in all the models while foreign direct investment is also associated with higher pro-poor growth though not statistically significant. Markedly, the results provide support of greater inclusive growth effect of trade policy as compared to trade flow. Again, like in the earlier findings, the results show that enhancing social inclusion and social protection is rather remarkable in propelling the SSA towards a shared and sustainable growth path thought the latter is not statistically significant. Albeit not statistically significant, the results on the joint effect of resource allocation and economic integration on real GDP per capita growth are as expected a priori. The results on the controls show that macroeconomic instability disrupts pro-poor growth in absolute terms. Also, human capital is modest in enhancing real GDP per capita growth (see e.g., column 9) plausibly because of limited opportunities for the growing educated populace in the SSA. Finally, the lag of real GDP per capita growth is also significant irrespective of model specification type. The reliability or appropriateness of the system GMM estimates lies in the satisfaction of a number of diagnostic tests, particularly on the instrument used for the correction of endogeneity (see Sargan P-values) and the absence of serial correlation (see AR (2) statistics).

5.0 Conclusion and policy recommendations

The study sought to contribute to the debate and policy discourse on how policymakers in the SSA can achieve sustainable and equitable growth post COVID-19. The gap in the literature has been the lack of empirical work(s) exploring the: (1) possible joint effect of economic integration and resource allocation on inclusive growth in SSA, and (2) effect of social equity policies on inclusive growth in SSA. The study contributes to knowledge in this regard by exploring the inclusive growth effects of economic integration and social equity policies in 43 SSA countries[13]. Using data for the period 1980 – 2019, I provide evidence, robust to several specifications to show that though economic integration enhances inclusive growth in

[13] Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, DR., Congo, Cote d'Ivoire, Ethiopia, Eswatini, Gabon, The Gambia, Guinea, Ghana, Guinea Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Sudan, South Africa, Tanzania, Togo, Uganda, Zambia.

the SSA, its impact is more remarkable if jointly tackled with efficient resource allocation. Further, relative to economic integration, social equity policies are more effective in spurring pro-poor growth, clearly signifying the need for policymakers in SSA to strategize beyond the AfCFTA if inclusiveness is to be achieved. The recommendations are that, first, for growth to be sustainable and equitable, policymakers should focus even more on building institutions and policies of social protection and inclusion. Additionally, crucial to the enhancement of equitable growth and shared prosperity is the channeling of resources that foster greater participation in intra-regional trade— through greater access to credit, and the building of infrastructure to reduce the cost of trade. Against the background that few countries in the region are not included in this study on the grounds of data availability, the inclusive growth pathways explored in this paper can be re-explored given data availability. Finally, in line with the rise in digital infrastructure of the region, future works can possibly look at the joint effect of ICT diffusion and economic integration on inclusive growth.

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Appendix A

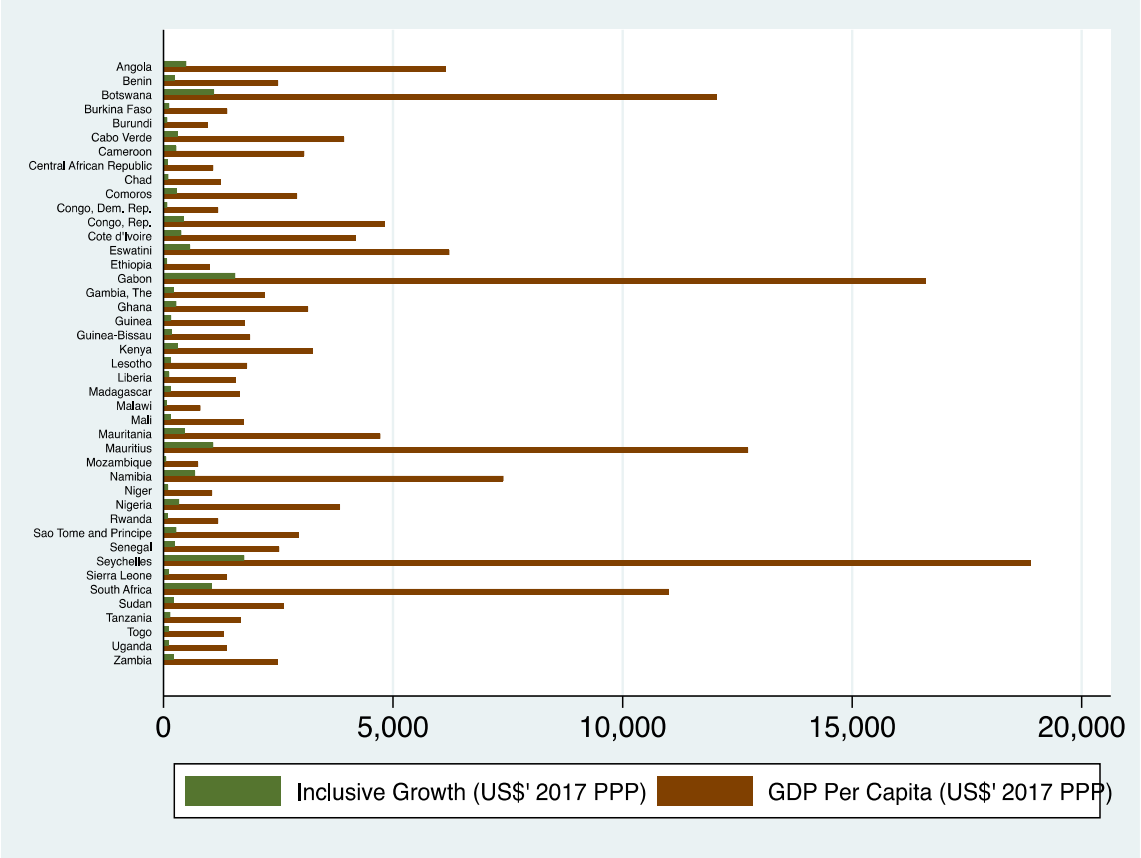

Figure A1: Average Inclusive Growth and GDP Per Capita In Sub-Saharan Africa, 1990 – 2019.

Appendix B

Measurement of Inclusive Growth by Anand *et al.* (2013)

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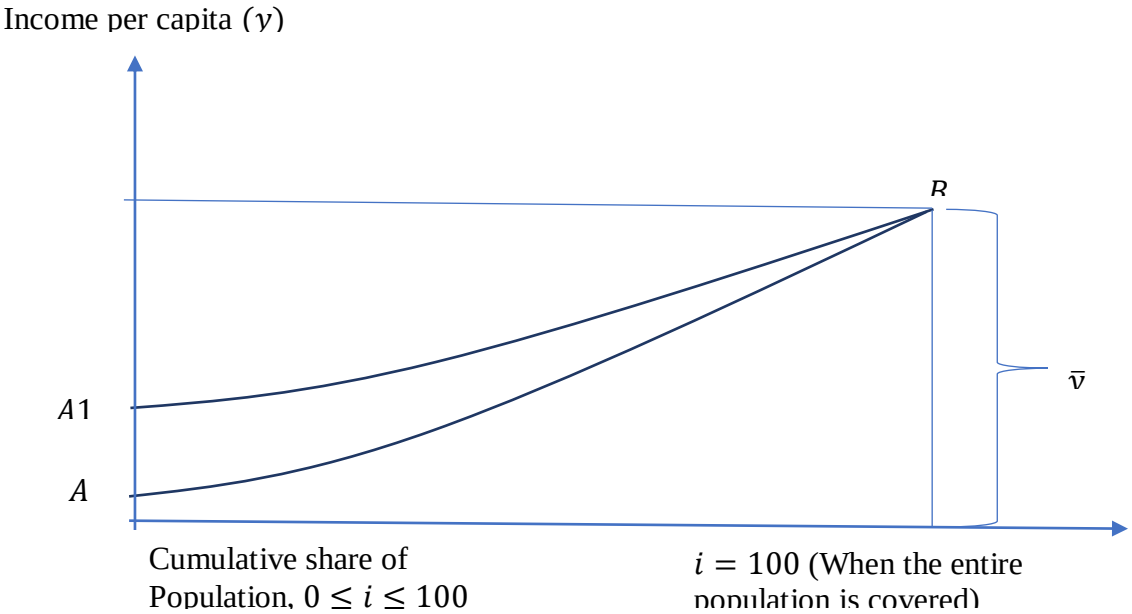
To integrate equity and growth in a unified measure, Anand, Mishra and Peiris (2013) proposed a measure of inclusive growth based on a utilitarian social welfare function drawn from consumer choice literature, where inclusive growth depends on two factors: (i) income growth; and (ii) income distribution. Similar to the consumer theory where the indifference curves represent the changes over time in aggregate demand, Anand, Mishra and Peiris (2013) decomposed the income and substitution effect into growth and distributional components. The underlying social welfare function must satisfy two properties to capture these features: (i) it is increasing in its argument (to capture growth dimension) and (ii) it satisfies the transfer property – any transfer of income from a poor person to a richer person reduces the value of the function (to capture distributional dimension).

A measure of inclusiveness is based on the concept of a concentration curve. Following Ali and Son (2007), Anand, Mishra and Peiris (2013) defined a generalized concentration curve, which they called social mobility curve, S^c, such that:

$$S^c \approx \left(y_1, \frac{y_1 + y_2}{2}, \dots\dots\dots, \frac{y_1 + y_2 + \cdots + y_n}{n}\right)$$

Where n is the number of persons in the population with incomes $y_1, y_2, \dots\dots, y_n$, where $y_1$is the poorest person and y_n is the richest person. This generalized concentration curve is basically a cumulative distribution of a social mobility vector $S \approx (y_1, y_2, \dots\dots\dots, y_n)$ with an underlying function $W = W(y_1, y_2, \dots\dots\dots, y_n)$ satisfying the two properties mentioned above to capture growth and distribution dimensions. Since S^c satisfies the transfer property, a superior income distribution will always have a higher generalized concentration curve. Similarly, since it is increasing in its argument, higher-income will also have a higher generalized concentration curve. As in Ali and Son (2007), the generalized concentration curves can be presented in continuous time to be more amendable to econometric analysis. The population is arranged in the ascending order of their income. Let $\overline{y_i}$ is the average income of the bottom i per cent of the population, where i varies from 0 to 100 and y_{μ} is the mean income. Anand, Mishra and Peiris (2013) plotted $\overline{y_i}$ for different values of i (curve AB

in Appendix A below). Curve AB represents a social mobility curve discussed above. Since a higher curve implies greater social mobility, growth is inclusive if the social mobility curve moves upward at all points. However, there may be degrees of inclusive growth depending on: (i) how much the curve moves up (growth); and (ii) how the distribution of income changes (equity). This feature of the social mobility curve is the basis of our integrated measure of inclusive growth. Thus, if two generalized concentration curves do not intersect, they could be ranked on social mobility (i.e. inclusiveness of growth). To illustrate the point made above, Appendix A depicts two social mobility curves with the same average income ($\bar{y}$) but different degrees of inclusiveness (i.e. different income distribution). Social mobility curve (A1B) is more inclusive than the social mobility curve AB, as the average income of the bottom segment of the society is higher.



Source: Anand et al. (2013)

To capture the magnitude of the change in income distribution, Anand, Mishra and Peiris (2013) used a simple form of the social mobility function by calculating an index (or social mobility index) from the area under the social mobility curve:

$$\bar{y}^* = \int_0^{100} \bar{y}_i \, di$$

The greater the $\bar{y}^*$, the greater is the income. If the income of everyone in the population is the same (i.e. if income distribution is completely equitable) then $\bar{y}^*$ will be equal to $\bar{y}$. If $\bar{y}^*$ is lower than $\bar{y}$, it implies that the distribution of income is inequitable. So, the deviation of

$\bar{y}^*$ from $\bar{y}$ is an indication of inequality in income distribution. Ali and Son (2007) use this feature of $\bar{y}^*$ and propose an income equity index (IEI) as:

$$\omega = \frac{\bar{y}^*}{\bar{y}}$$

For a completely equitable society, $\omega = 1$. Thus, a higher value of ω (closer to one) represents higher income equality. Rearranging,

$$\bar{y}^* = \omega * \bar{y}$$

Inclusive growth requires increasing $\bar{y}^*$, which could be achieved by: (i) increasing $\bar{y}$, that is increasing average income through growth; (ii) increasing the equity index of income, ω, through increasing equity; or (iii) a combination of (i) and (ii). Differentiating the above equation:

$$d\bar{y}^* = \omega * d\bar{y} + d\omega * \bar{y}$$

Where $d\bar{y}^*$ is the change in the degree of inclusive growth. Growth is more inclusive if $d\bar{y}^* > 0$. It also allows us to decompose inclusive growth into income growth and change in equity. The first term is the contribution of an increase in average income (keeping income distribution constant) while the second term is the contribution of changes in the income distribution (keeping the average income unchanged). Inclusive growth depends on the sign and the magnitude of the two terms.

Appendix C

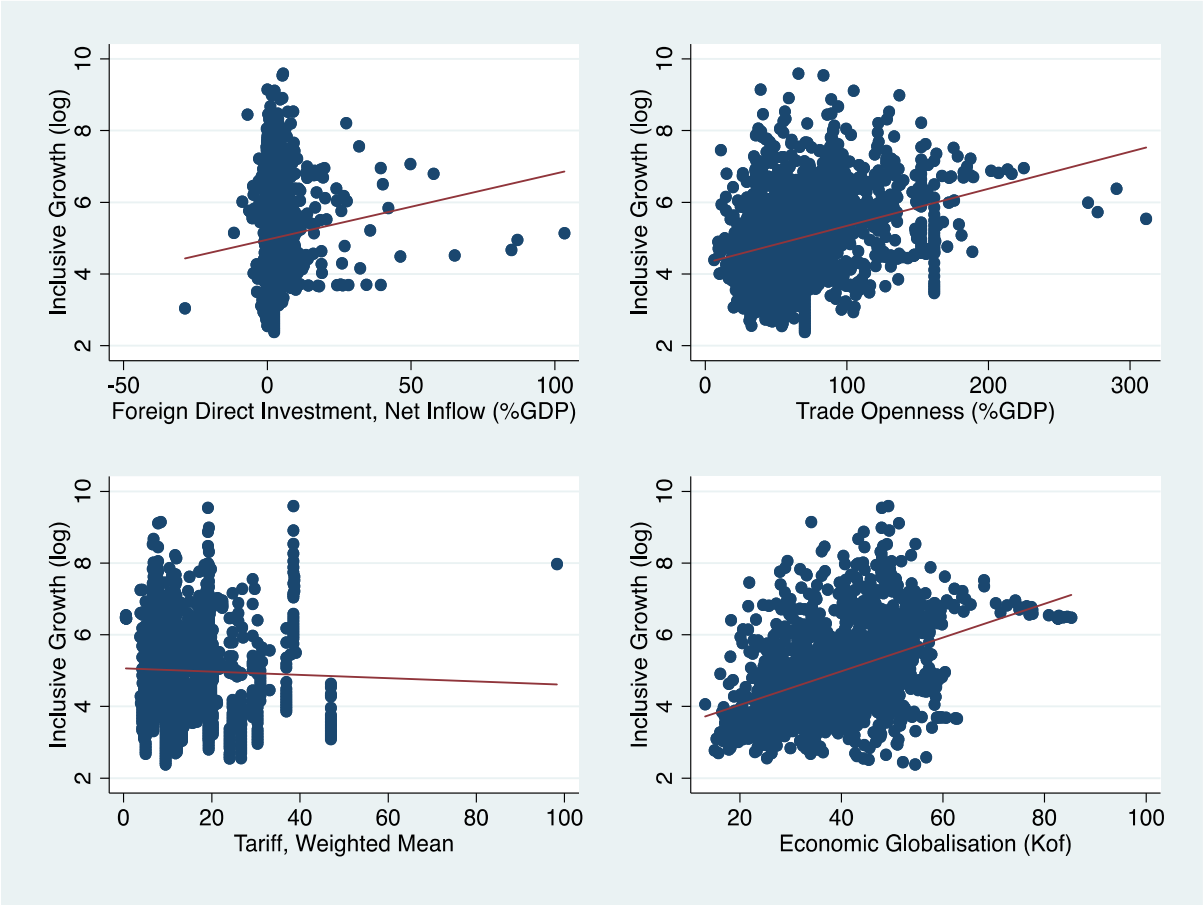


Figure A2: Inclusive Growth – Economic Integration Nexus In Sub-Saharan Africa

Appendix D

Table A1: Pairwise Correlation Matrix

	Inclusive Growth	Inflation	Vulnerable Employment	Trade Openness	Tariff	Human Capital	Government Expenditure	GDP Per Capita Growth	Foreign Direct Investment	Financial Deepening	Social Protection Score	Social Inclusion Score	Kof. Glob	Adult Literacy
Inclusive Growth	1													
Inflation	-0.142	1												
Vulnerable Employment	-0.319***	-0.098	1											
Trade Openness	0.256***	-0.076	-0.352***	1										
Tariff	0.247**	-0.142	0.362***	0.037	1									
Human Capital	0.262***	0.097	-0.668***	0.347***	-0.101	1								
Government Expenditure	0.195*	-0.109	-0.369***	0.338***	0.0329	0.287***	1							
GDP Per Capita Growth	0.003	-0.054	-0.055	0.163*	-0.177*	0.021	-0.037	1						
Foreign Direct Investment	-0.001	0.053	0.073	0.485***	0.0711	0.211**	0.103	0.140	1					
Financial Deepening	0.171*	0.072	-0.760***	0.132	-0.422***	0.535***	0.295***	-0.013	-0.072	1				
Social Protection Score	0.073	-0.063	0.245**	-0.0795	0.123	-0.112	-0.048	0.148	0.017	-0.382***	1			
Social Inclusion Score	0.092	-0.066	0.204**	-0.120	0.079	-0.057	-0.027	0.170*	-0.061	-0.356***	0.867***	1		
Kof. Glob	0.202**	0.119	-0.588***	0.583***	-0.293***	0.679***	0.278***	0.100	0.345***	0.540***	-0.119	-0.058	1	
Adult Literacy	0.674**	-0.526*	-0.805***	0.768***	-0.175	0.768***	0.509*	0.054	0.102	0.103	0.541*	0.527*	0.032	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$