# FDI and inequality in Sub-Saharan Africa: does democracy matter?

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#### Abstract

**Purpose** – This paper investigates whether democracy plays a mediating role in the relationship between foreign direct investment (FDI) and inequality in Sub-Saharan Africa (SSA).

**Design/methodology/approach** – The empirical analysis is conducted using fixed effects and system GMM (Generalised Method of Moments) on a panel of 38 Sub-Saharan African countries covering the period of 1990–2018.

**Findings** – The results find that FDI has no direct effect on inequality whereas democracy reduces inequality directly in both the short run and the long run. The sensitivity analyses find that democracy improves equality regardless of the magnitude of FDI, resource endowment or democratic deepening whereas FDI only reduces inequality once a moderate level of democracy has been achieved.

**Social implications** – The results discussed above thus have four policy implications. First, these results show that although democracy has inequality reducing benefits, SSA is unlikely to significantly reduce inequality unless the region purposefully diversifies its trade and FDI away from natural resources. Second, the region should continue to expand credit access to reduce inequality and attract FDI. Third, policymakers should undertake reforms that will reduce youth inequality. Lastly, the region should focus on long-run democratic reforms rather than on short-run democratization to improve governance and investor confidence. **Originality/value** – Although there are existing studies that examine the association between FDI and inequality, FDI and democracy and democracy and inequality, this is the first study to explicitly examine the effect of democracy on the association between FDI and inequality in SSA, and the first study to separately consider the possible varied effects of contemporaneous democratization versus the long-run accumulation of democratic capital. In addition, rather than measure inequality by income alone, this study uses the more appropriate Human Development Index to account for SSA's sociological, education and income disparities.

Keywords Democracy, Democratic capital, FDI, Inequality, Sub-Saharan Africa Paper type Research paper

### 1. Introduction

Over the last quarter century, foreign direct investment (FDI) to Sub-Saharan Africa (SSA) increased from \$1.2bn in 1990 to \$31bn in 2018 (World Bank, WDI Data) while the average Polity V democracy index improved from -5 to 3. Over the same period however, the average Human Development Index (HDI) only improved marginally from 0.40 to 0.53 and thus it appears that greater FDI inflows and deepening democracy have not substantially reduced inequality in SSA. A possible reason for this disappointing effect may be because many SSA countries remain commodity export dependent, which can "crowd out" FDI in non-resource industries (Okafor *et al.*, 2015) and increase the durability of authoritarian regimes (Wantchekon and Jensen, 2000; Asiedu and Lien, 2011). FDI commonly relies on skills-based development, but in resource dependent countries, FDI can increase inequality if it is dominated by resource-seeking FDI (Kaulihowa and Adjasi, 2017), which tends to be exploitative and has negative distributional effects. Hence, the type of FDI (greenfield versus mergers and acquisitions) and the nature of FDI (resource-seeking versus market-seeking) can worsen or mitigate inequality by the extent to which it widens skill and income inequality

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inequality in Sub-Saharan Africa

FDI and



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# (Feenstra and Hanson, 1996; Cornia, 1999; Reuveny and Li, 2003; Herzer and Nunnenkamp, 2011; Herzer *et al.*, 2014).

In addition to the effect of FDI on inequality, Acemoglu and Robinson (2000, 2006) posit that the pressure for redistribution can affect democratization depending on the level of intergroup inequality. Democracy attempts to balance the revolutionary redistributive pressure of citizens against the repressive power of the elites, and thus high levels of inequality can make revolution more attractive. Consequently, the threat of revolution can drive democratization to mitigate this threat by committing to future redistribution. Democracy should thus reduce inequality because citizens can vote for parties that represent their working/middle-class interests, which will shift political structures towards greater redistributive and more equitable policies (Lipset, 1959; Lenski, 1966; Gradstein and Milanovic, 2004).

With regard to SSA, Kapstein and Converse (2008) argue that because of the rampant clientelism and patronage networks, ethnolinguistic fragmentation and reliance on commodities. democratization is unlikely to lead to decreasing inequality because it will have little impact on the underlying conditions. Consequently, redistributive pressure is more likely to lead to wealth accumulation among political affiliates seeking to influence economic policy rather than to uplift the poor (Kapstein and Milanovic, 2003; Lederman and Lopez, 2006). This has the effect of eroding governance and social cohesion (Kumar, 2014), which reverses rather than stimulates democratization and worsens inequality (Fosu, 2018), Furthermore, in SSA's resource-dependent countries, the high levels of inter-group inequality arising from concentrated wealth hinders democratization and the possibility of redistribution because the elite are more likely to use repression than to democratize (Boix, 2003; Houle, 2009). Thus, Fayad et al. (2012) reports that resource-dependent SSA countries suffer from a democratic deficit while more diversified countries adhere to the Modernization Hypothesis (Lenski, 1966; Tsai, 1995). Bigsten (2016) and Shimeles and Nabassaga (2018) argue that inequality in SSA is shaped by ethnic fragmentation, colonial history and limited education opportunities, and thus Ibrahim et al. (2020) conclude that structural transformation worsens inequality in the region.

In addition to the effect of democratization on inequality, it has been argued that democratization also shapes the type of FDI that is attracted. On the one hand, it is posited that FDI will be attracted to more democratic countries because democratic institutions can enforce property rights, reduce corruption and provide a stable regulatory and policy environment (Li, 2009). Hence, the liberalization of economic markets through globalization is associated with the adoption of democracy (Bhagwati, 1992; Friedman, 1999; Fukuyama, 1992; Hayek, 1944), which could lessen inequality (Boix, 1998; Reuveny and Li, 2003) via knowledge and technological spillovers (Basu and Guariglia, 2007), the creation of low skilled employment (Deardorff and Stern, 1994) and the weakening of the predatory elite (North and Weingast, 1989; Acemoglu *et al.*, 2005). Critics counter however that FDI may be attracted to less democratic countries that can shield investors from wage, labour and tax demands; offer the opportunity to exploit their market dominance and to negotiate directly with the political elite (Resnick, 2001; Gelbach and Keefer, 2011). Hence, liberalized markets can constrain democracy when free market capitalism empowers multinational corporations to limit the actions of governments, labour markets and civil society, which will widen inequality in turn (Adams *et al.*, 1999; Falk, 1999; Mittelman, 2000).

#### 1.1 Theoretical foundation

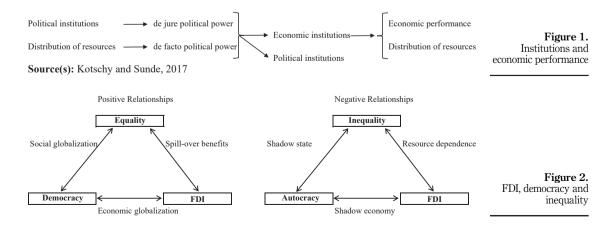
Acemoglu and Robinson (2008) and Acemoglu *et al.* (2013) posit that democratic pressure may be more related to the *de facto* power of the elites than to the redistributive pressure of the poor and middle classes. If the elites are weak and inequality is low, then democratic institutions can take root; whereas if the elites have high *de facto* power and inequality is high, then there is likely to be low institutional quality (Kotschy and Sunde, 2017) and thus a reversion to political instability and authoritarianism (Houle, 2009; Stiglitz, 2012) [1].

Mukherjee and Dutta (2018) however argue that the varied effects of FDI and democracy on inequality can be reconciled by considering the differences between economic and social globalization. Economic globalization, associated with trade and capital flows, impacts governance by exposing the regulatory authorities to international standards, promotes market orientated policies and heightens accountability while social globalization transforms and integrates culture and changes the social conditions of political institutions and governance of the state. Consequently, as countries globalize economically, governance should improve, which in turn, makes the country more attractive as a FDI destination. Thus, these theoretical relationships between FDI, democracy and inequality can be summarized by Figures 1 and 2.

While there are studies that examine the association between democracy and inequality in SSA, and between FDI and democracy in SSA, there is no study that examines the effect of democracy on the relationship between FDI and inequality in SSA, and no study that considers the effects of contemporaneous democratization versus the long-run accumulation of democratic capital. Hence, this study uses fixed effects and system GMM (Generalised Method of Moments) analysis to determine whether democracy plays a mediating role in the relationship between FDI and inequality in a panel of 38 SSA countries [2] over the period 1990–2018. The remainder of this study is structured as follows. Section 2 briefly reviews the empirical literature. Section 3 discusses the empirical methodology and the data utilized to conduct the analysis. The results are then presented in section 4, and the study concludes with a discussion of the key findings and policy implications in section 5.

#### 2. Literature review

There are two common theories that attempt to explain the effects of FDI on inequality. The first is the technological change hypothesis of Aghion and Howitt (1998, 2009) and Aghion and Commander (1999); which posits that inequality increases in the early phases of development as a result of the rapid demand for skilled labour that accompanies the adoption of new technologies and production processes. However, inequality then decreases over time because the supply of skilled labour meets demand as low-skilled workers seek to become more skilled and join the middle classes. The second theory is the North-South hypothesis of Feenstra and Hanson (1997), which argues that FDI worsens inequality because corporations in the more developed countries in the global North will invest in less developed unskilled countries in the global South so as to take advantage of low production costs. FDI thus widens inequality by increasing the demand for skills and higher wages among segments of society in poorer recipient countries in the South.



Despite the elegance of the two theories mentioned above, the recent empirical literature that investigates the relationship between FDI and inequality reports mixed results but can generally be classified into four strands. The first includes studies that find that FDI leads to worsening income inequality (Reuveny and Li, 2003; Choi, 2006; Basu and Guariglia, 2007; Herzer and Nunnenkamp, 2011; de Groot, 2014; Alili and Adnett, 2018; Khan et al., 2020). Possible reasons include financial globalization (Bornischer and Chase-Dunn, 1985; Milanovic, 2005; Azis and Shin, 2015; Furceri and Ostry, 2019) and wage inequality between skilled and unskilled labour (Prasad, 2002; Keane and Prasad, 2006; Figini and Gorg, 2011). In contrast, the second strand finds that FDI decreases inequality (Nunnenkamp, 2004; Lehnert et al., 2013) as a result of improved corporate and public sector governance (Hecht et al., 2002), heightened investment (UNDP, 2017) and higher savings (Beer, 2015). The third strand includes studies that find no significant association between FDI and inequality, whether in Deininger and Squire's (1998) cross-country study. Sylwester's (2006) investigation of East Asia, Latin American and Africa or Franco and Gerussi's (2013) study of former central and South-Eastern socialist countries. The last strand includes studies that find mixed results; for instances, Calvo and Hernandez (2006) study of Latin America finds that FDI only reduces inequality if the pre-requisite capital and labour conditions are conducive to spill-over effects, while Bhandari (2007) reports that FDI worsens wage inequality but improves capital inequality and Lee et al. (2020) find that the inequality reducing benefits of FDI weaken as countries become more financially developed.

With regard to the theoretical relationship between democracy and inequality, Modernization Theory posits that inequality increases in the early stages of economic development due to the emergence of a small, modernized, high income class (Tsai, 1995); but over time, as output shifts from primary activities into the industrial sector, declining labour costs and the deepening of political democracy result in a decrease in inequality (Lenski, 1966). Dependency Theory counters however that the reliance on FDI for economic development tends to create an elite pool of labour in international sectors with wages significantly above those in domestic sectors. This hampers efforts to improve broader redistribution (Evans, 1979), and tends to foster capital intensive rather than labour intensive development, which, over time, leads to higher unemployment and inequality (Reuveny and Li, 2003; Milanovic, 2005; Choi, 2006; Herzer and Nunnenkamp, 2011).

Empirical studies on the relationship between inequality and democracy similarly report varied results. Bollen and Jackman (1985), Li et al. (1998), Tavares and Wacziarg (2001), Reuveny and Li (2003). Timmons (2010) and Nikoloski (2015) find no significant evidence that democracy is associated with lower inequality. Muller (1988, 1995) however reports that there is an inverse causal association whereby a country that has high inequality at the start of democratization is more likely to revert to authoritarian rule, and thus democracy will only lower inequality if the country begins with low to intermediate levels of inequality. Boix (2003) and Houle (2009) however show that the reverse is not necessarily true because they find that inequality only weakly promotes democratization. Wong (2016) reports that although democracy increases FDI inflows, these inflows worsen income inequality in accordance with Dependency Theory while Islam (2016) reports that the relationship between political freedom and income inequality is a Kutznets curve (Kutznets, 1955). More recently, Trasberg and Bahamonde (2021) show that democracy combined with strong institutions leads to widening inequality through the channels of FDI and the financial sector. Lacroix et al. (2021) similarly argue that FDI is mainly attracted to consolidated democratic liberalizations, and that the higher political risk experienced in the early phases of liberalization offsets any positive inequality reducing benefits of FDI. Wong (2021) posits that these varied results can be explained by the differing effects of democratic contestation and inclusiveness, whereby contestation increases the pressure for redistribution, and therefore potentially decreases inequality; while inclusiveness could widen control by the political elite, thereby decreasing the redistributive pressure and widening inequality.

Studies that explore the relationship between democracy and FDI in SSA are similarly inconclusive. Onyeiwu and Shrestha (2004) find no significant relationship between FDI and political rights whereas Suliman and Mollick (2009) report that both civil liberties and political rights attract FDI. In contrast, Okafor *et al.* (2011) finds that as democracy deepens, FDI tends to decrease while Gangi and Abdulrazak (2012) argue that political stability is insignificant for FDI and is more significant for governance. Cleeve (2012) further reports that FDI is attracted by deepening democracy, improved socio-economic conditions and improved investment profiles whereas corruption and political instability are insignificant. Fiodendji (2014) finds a positive association between FDI and institutional quality whereas Aregbeshola (2014) reports that the institutions devoted to fiscal and monetary policies are more important for attracting FDI to SSA. Gossel (2017) further shows that FDI is affected by the long-run accumulation of democratic capital to a greater extent than by short-run democratic reforms or by the components of democracy (civil liberties and political rights) and Kunawotor *et al.* (2020) find that only the control of corruption and the rule of law reduce inequality while the other common measures of institutional quality are insignificant.

Lastly, in common with the international literature, the results of studies that examine the relationship between FDI and inequality in SSA are also mixed. Gohou and Soumare (2012) report that FDI has a greater welfare enhancing effect in poorer SSA countries than in wealthier countries, and in Central and East Africa than in North, South or West Africa. Batuo and Asongu (2015) find that FDI tends to have a lesser effect on reducing inequality than liberation of the financial system whereas Adams and Klobodu (2017) show that FDI unidirectionally increases income inequality in both the short and the long run. Kaulihowa and Adjasi (2017) report that although FDI is welfare enhancing, the effect varies across the dimensions of welfare, and Kaulihowa and Adjasi (2018) find that FDI does not have a significant effect on inequality in the short run but worsens inequality once the inflows exceed 2.8% of gross domestic product (GDP) and Xu *et al.* (2020) reports that as FDI increases inequality decreases.

#### 3. Data and methodology

The empirical estimations make use of one dependent factor, three factors of interest and six control factors.

#### 3.1 Dependent factor

There are numerous ways of measuring inequality but many of the common metrics are empirically and theoretically problematic when applied to SSA. Among the most common inequality index is the GINI coefficient, which is based on the Lorenz curve between the cumulative percentage of income held by society against the percentage of the population. The GINI coefficient is bounded between 100, representing perfect income inequality, and 0, representing perfect income equality. Despite its wide usage, the GINI index is an aggregate measure and is thus unable to differentiate between redistribution from the upper-income to middle-income, and an increase in the lower-income at the expensive of the middle-income class (Deininger and Squire, 1998).

An alternative to the GINI index is the Standardized World Income Inequality Database (SWIID), which is based on the WIID but with imputed data points (Solt, 2016). However, there are concerns about the quality of imputed data points owing to the lack of clarity regarding the imputation process, and in the case of SSA, the dataset is also significantly porous. Furthermore, as shown by Chisadza and Bittencourt (2019), measuring inequality by income alone is problematic in the case of SSA given the regions fraught colonial and post-colonial history. Hence, in accordance with recent studies (Gohou and Soumare, 2012; de

IJOEM Groot, 2014; Yi and Woo, 2015; Kaulihowa and Adjasi, 2017; Khan *et al.*, 2020), this study measures inequality using the HDI (UNDP, 1990; Sen, 1992), which takes account of SSA's significant sociological, education and income disparities rather than focussing only on income inequality as in the GINI or SWIID indices. The HDI ranges between 0 and 1, where a high HDI score represents a country with a long lifespan, high education level and wealthy GNI. The HDI is therefore interpreted as the opposite of the GINI index since the lower the HDI score, the worse the level of inequality.

#### 3.2 Independent factors of interest

In addition to the dependent factor, this study includes three independent factors of interest. The first is the stock of FDI inflows normalized by GDP in current USD (*FDI*) sourced from the World Bank Development Indicators (WDI). The second is the Polity2 modified version of the Polity V democracy index (Marshall *et al.*, 2020) (*Demo*), scaled from -10 to 10 with autocracy ranging between -10 and 0, and democracy between 0 and 10 [3]. This series is then normalized to lie between 0 and 1. While the Polity V index is widely used in the literature, it has been argued that the persistence of democracy is more important than contemporaneous democratization (Gerring *et al.*, 2005; Persson and Tabellini, 2009; Jeitschko *et al.*, 2014; Wong, 2016). Thus, the third factor of interest is the democratic capital index (*Demo\_Cap*), measured as the discounted sum of the country's Polity V regime index starting from either 1800 or the year of independence ( $\tau$ ) and ending in 2018 (*t*):

$$Democratic \ Capital = \frac{\sum_{\tau=1800}^{t=2018} \delta^{\tau} f_{1, t-\tau}}{D}$$
(1)

where  $f_{1, t-\tau}$  is the regime index (1 if democracy or 0 otherwise), in country *i* during period  $t - \tau$ ;  $\delta$  is a discount factor that is set to 0.94 and  $D = \sum_{\tau}^{t} \delta^{\tau}$  is used for normalization. The democratic capital indices derived from equation (1) thus ranges between 0 (no democratic capital) and 1 (high democratic capital). Hence, the Polity V index captures short-run contemporaneous democratization (*Demo*) while the democratic capital index accounts for the long-run accumulation of democratic capital (*Demo\_Cap*).

#### 3.3 Control factors

In addition to the dependent factor and three factors of interest, the analysis also includes six control factors. The data for the control factors was obtained from the World Bank's World Development Indicators. The first control factor is GDP growth (*GDPG*) measured as the percentage change in GDP. Economic growth is commonly associated with high FDI inflows (World Bank, 1997) and therefore potentially affects inequality (Basu and Guariglia, 2007). The second control factor is trade as a percentage of GDP (*Trade*), which is included as a measure of trade openness. Higher trade openness should lead to increased competitiveness and reduce the price of basic goods while also increasing labour productivity through increased competition, thus resulting in rising wages and decreased inequality (Birdsall, 1998). The third control factor is gross fixed capital formation as a percentage of GDP (*GFCF*), which consists of expenditure on fixed assets and net changes in inventories. High fixed capital investment is expected to be associated with greater FDI inflows (World Bank, 1993) and declining inequality (Lee, 2005).

The fourth control factor is inflation (*Inf*) measured by the annual change in the GDP deflator. Inflation is included as a proxy for policy stability. Low inflation may attract FDI (Mishkin, 2008) and stimulate credit extension, which may narrow inequality (IMF, 1998). However, higher inflation may also stimulate rising interest rates, which will be attractive to equity based FDI, but will limit credit extension and heighten debt distress. Hence, high inflation may attract FDI but may also widen inequality, especially if there are limited FDI spill-over effects. The fifth control factor is domestic credit extension to the private sector as a percentage of GDP (*Credit*), which is used as a proxy for financial development. The association between credit and inequality can be positive or negative depending on the level of financial sector depth (Kai and Hamori, 2009), financial development (Batuo *et al.*, 2010; Asongu, 2013) or education level (Tchamyou, 2018; Asongu *et al.*, 2020). The final control factor is population age structure as measured by the logarithm of the proportion of the population under 14 (*Pop\_U14*). A high proportion of youth population can increase or decrease inequality. On the one hand, high population growth can exacerbate inequality by increasing the proportion of the young population in low income groups (Bollen and Jackman, 1985), thus worsening intergenerational inequality (Muller, 1988). However, if a significant proportion of the youth population have access to education and entrylevel employment, then inequality will decline as household incomes and savings improve (Hassan *et al.*, 2011; IMF, 2015).

This study examines the effects of democracy on the relationship between FDI and inequality in 38 SSA countries over the period 1990–2018. In accordance with the relevant literature (Xu *et al.*, 2020; Khan *et al.*, 2020; Kunawotor *et al.*, 2020), the empirical estimations are conducted using fixed effects with robust standard errors, as well as two-step system GMM (Arellano and Bover, 1995; Blundel and Bond, 1998, 2000) including the xtabond2 function of Roodman (2009). The advantages of the system GMM technique are that it is applicable when the cross-sectional units (38) are higher than the time series (28), accounts for cross-country differences, controls for unobserved heterogeneity by taking account of time invariant omitted variables and uses internal instruments to account for reverse causality and endogeneity of the explanatory factors. In addition, two-step system GMM has the added advantages over difference GMM (Arellano and Bond, 1991) of assuming homoscedastic residuals in the first step before correcting for heteroscedasticity thereafter, and is more appropriate for unbalanced panels (Roodman, 2009).

The fixed effects model used to conduct the analysis can be represented by equation (2) while the GMM model is represented by equation (3):

$$Y_{i,t} = \alpha_0 + \beta D_{i,t} + \delta X_{i,t} + \mu_i + \mu_t + \varepsilon_{i,t}$$
<sup>(2)</sup>

$$Y_{i,t} = Y_{i,t-1} + \beta D_{i,t} + \delta X_{i,t} + \varepsilon_{i,t}$$
(3)

where  $Y_{i,t}$  denotes inequality for country *i* at time *t*;  $D_i$  represents the three factors of interest comprising net FDI inflows as a percentage of GDP, and the two democracy factors – contemporaneous democracy (*Demo*) and the accumulation of democratic capital (*Demo\_Cap*);  $X_i$  is a vector of six macroeconomic control factors comprising economic growth (*GDPG*), trade openness (*Trade*), credit extension (*Credit*), inflation (*Inf*), fixed investment (*GFCF*) and youth population (*Pop\_U14*);  $\mu_i$  is the time-invariant country effect;  $\mu_t$  is the common time effect and  $\varepsilon_{i,t}$  is the error term. In addition to the analysis using equations (2) and (3), the estimations also include two interaction terms (*FDI\*Demo* and *FDI\*Demo\_Cap*) to determine whether FDI's association with inequality is more closely associated with contemporaneous democracy or the accumulation of democratic capital.

The empirical estimations make use of the full sample and three sensitivity analyses. The first takes account of the non-homogeneity of FDI inflows to SSA (Okafor *et al.*, 2015) by excluding the six countries where the average of FDI inflows in USD exceeds 5% of total inflows over the sample period [4]. The second then accounts for SSA's high reliance on commodity exports (Jensen and Wantchekon, 2004; Asiedu and Lien, 2011) by excluding the nine SSA countries where the average of commodity exports or oil rents over the sample period exceeds 25% of merchandise exports or GDP respectively (IMF, 2012) [5]. The third uses a sub-sample to assess whether the level of democratization has an effect on the associations by excluding the 16 countries [6] where the average normalized Polity V score is below 0.5.

#### 4. Results IIOEM

This section discusses the results of the fixed effects and system GMM analyses of the relationship between democracy. FDI and inequality in 38 SSA countries over the period of 1990–2018. The discussion commences with the results of the full sample, before moving on to the outcomes of the sub-samples. Before applying the fixed effects and GMM analyses, a matrix of correlation coefficients was checked to ensure that there are no significant correlations among the factors. Thereafter, Levin–Lin–Chu (LLC) (2002) common unit root tests and augmented Dickey-Fuller-Fisher chi squared individual unit root tests (Maddala and Wu, 1999) were applied to ensure that none of the variables are second-difference stationary. The results of the correlations presented in Table 1 show that only contemporaneous democracy (Demo) and democratic capital (Demo Cab) have a significant correlation coefficient and thus the empirical estimations include these factors separately. The unit root test results summarized in Table 2 show that all the factors are level stationary, except for the HDI, credit extension (Credit) and the population under 14 (*Pop U14*) which are first-difference stationary.

The results of the full sample estimations are presented in Table 3 below. With regard to the control factors, economic growth (GDPG), fixed investment (GFCF) and inflation (Inf) significantly decrease inequality while credit extension (Credit) and youth population (Pop U14) widen inequality. In accordance with the Modernization Hypothesis, positive economic growth and fixed investment lessens inequality levels as a result of improved social mobility, employment and wealth accumulation. The positive coefficients of inflation (Inf) suggest that higher inflation leads to declining inequality, which can arise from reduced real debt service costs (Doepke and Schneider, 2006).

	HDI	FDI	Demo	Demo_Cap	GDPG	Trade	GFCF	Credit	Pop_U14
HDI	1	0.038	0.238	0.408	0.026	0.292	0.384	0.474	-0.701
FDI	0.038	1	0.086	0.094	0.064	0.293	0.275	-0.050	-0.007
Demo	0.238	0.086	1	0.750	0.137	-0.041	0.089	0.278	-0.306
Demo_Cap	0.408	0.094	0.750	1	0.072	0.042	0.095	0.400	-0.438
GDPG	0.026	0.064	0.137	0.072	1	0.025	0.111	-0.064	0.030
Trade	0.292	0.293	-0.041	0.042	0.025	1	0.374	-0.012	-0.297
GFCF	0.384	0.275	0.089	0.095	0.111	0.374	1	0.021	-0.158
Credit	0.474	-0.050	0.278	0.400	-0.064	-0.012	0.021	1	-1
Pop_U14	-0.701	-0.007	-0.306	-0.438	0.030	-0.297	-0.158	-0.611	1.000

Table 1.	
Correlation	matrix

**T** 11

		L	LC	ADF-1	Fisher
		I(0)	I(1)	I(0)	I(1)
	HDI	1.039	-7.738***	56.396	236.188***
	FDI Demo	$-8.059^{***}$ $-20.810^{***}$	$-34.828^{***}$ $-40.877^{***}$	228.881*** 464.809***	886.104*** 490.101***
	Demo_Cap GDPG	$-3.140^{***}$ $-19.309^{***}$	$-3.194^{***}$ $-31.785^{***}$	44.406 486.720***	91.183*** 839.268***
	Trade GFCF	-3.869*** -3.939***	$-21.699^{***}$ $-20.868^{***}$	139.971*** 130.569***	563.441*** 582.552***
	Credit Pop U14	0.166	-19.123*** -2.006**	81.425 107.930***	440.991*** 138.535***
Table 2.Unit root test results	1 =	0.210	on SIC. *** and ** repre		

	3-1	Fi 3–2	Fixed effects 3–3	3-4	3–5	3–6	3-7	System GMM 3-8	3-9	3-10
HDI <sub>f-1</sub> FDI <sub>f-1</sub> Demo <sub>t-1</sub> Demo_Cap <sub>t-1</sub> FDI*Demo_L	0.047 0.043	0.076*** 0.025	0.139*** 0.033	0.077 0.165 0.077**** 0.024 -0.059 0.207	0.028 0.105 0.141**** 0.033 0001_0002	0.915**** 0.035 -0.004 0.004	0.933**** 0.033 0.015*** 0.006	0.923**** 0.036 0.007 0.005	0.925**** 0.030 0.021 0.017 0.016*** 0.007 0.000 0.000	0.000 0.000 0.003 0.007 0.003 0.007
GDPG <sub>E1</sub> Trade <sub>E1</sub> GFCF <sub>E1</sub> Inf.	0.124**** 0.037 -0.009 0.015 0.235*** 0.066 0.000**** 0.000	0.089*** 0.039 -0.014 0.016 0.230**** 0.059 0.000**** 0.000	$\begin{array}{c} 0.075^{*} & 0.040 \\ -0.020 & 0.016 \\ 0.195^{***} & 0.050 \\ 0.000 & 0.000 \end{array}$	$\begin{array}{c} 0.090^{**} & 0.042 \\ -0.014 & 0.016 \\ 0.197^{*} & 0.116 \\ 0.213^{***} & 0.061 \end{array}$	-0.001 0.002 0.077* 0.042 -0.020 0.016 0.191**** 0.047 0.000 0.000	0.053**** 0.008 -0.009* 0.005 0.033**** 0.010 0.000**** 0.000	0.054**** 0.006 -0.004 0.004 0.023*** 0.009 0.000**** 0.000	0.057**** 0.007 -0.008 0.007 0.033**** 0.012 0.000**** 0.000	0.054**** 0.007 -0.007* 0.004 0.030**** 0.009 0.000**** 0.009	0.000 0.000 $0.057^{***} 0.008$ $-0.012^{*} 0.007$ $0.040^{***} 0.009$ $0.000^{***} 0.000$
Credit <sub>e1</sub> Pop_U14,1 C C R <sup>2</sup> within R <sup>2</sup> between R <sup>2</sup> overall	0.188 0.124 -0.973**** 0.306 0.800**** 0.137 0.390 0.486 0.492	0.197* 0.116 -0.733** 0.283 0.656*** 0.130 0.437 0.437 0.439	0.120 <i>0.092</i> -0.593** 0.296 0.618*** 0.127 0.551 0.392 0.424	0.000**** 0.000 -0.725*** 0.277 0.654**** 0.126 0.436 0.427 0.431	0.123 <i>0.095</i> -0.582* 0.299 0.613**** 0.128 0.548 0.387 0.418	$-0.043^{**}$ 0.021 $-0.351^{***}$ 0.077 $0.201^{***}$ 0.043	$-0.034^{*}$ 0.020 $-0.243^{****}$ 0.085 $0.134^{****}$ 0.045	-0.036* 0.019 -0.303**** 0.065 0.172**** 0.036	-0.029*** 0.015 -0.244**** 0.075 0.137**** 0.039	-0.029*** 0.014 -0.294**** 0.069 0.173**** 0.037
F-statistic AR(2) prob Hansen prob Instruments Observations	130.870*** 825	155.550**** 830	342.160**** 830	131.010**** 825	265.740**** 8.25	22.17*** 0.541 0.17 33 708	22.31**** 0.599 0.206 33	22.31*** 0.489 0.143 33 803	22.17**** 0.754 0.116 31 708	22.170**** 0.516 0.062 31 708
Observations 825 Note(s): Robust standard errors in	825 tandard errors in itali	830 ics. The FDI and cor	830 ntrol factor coefficien	825 ts and standard erro	830 $830$ $825$ $825$ $825$ $798$ $703$ $798$ $703$ $803$ $803$ $798$ $798$ $798$ italics. The FDI and control factor coefficients and standard errors have been multiplied by $100.$ ***, ** and * represent significance at the 1, 5 and $10%$ levels respectively	798 lied by 100. ***, ** a	803 and * represent signi	803 ificance at the 1, 5 an	798 id 10% ler	vels respec

The significant and negative GMM coefficients of credit reflects the region's poor financial access (Demirguc-Kunt and Klapper, 2012; Peer, 2013), unsophisticated financial systems (Beck *et al.*, 2004, 2007), limited financial depth (Kai and Hamori, 2009), inefficiency (Asongu, 2013) and limited digital access (Mose and Thomi, 2021), which widens income and gender inequality (Fuentes-Nieva and Galasso, 2014; Aslan *et al.*, 2017). The significant and negative coefficients of youth population ( $Pop\_U14$ ) indicate that a youthful population widens inequality, which accords with the literature (Rougoor and Charles, 2014, 2015). Furthermore, this result implies that the inequality reducing benefits associated with FDI and democracy do not reduce inequality among SSA's youth, which is further supported by the insignificant interaction coefficients (models 3–4 and 3–5) and the significant FDI and democracy coefficients in most of the estimations possibly reflects SSA's poor diversification status (Gui-Diby and Renard, 2015) and low-skilled commodity-based, rather than upskilled manufacturing-based, labour intensity (IMF, 2019), which limit the inequality reducing benefits associated with trade-led social mobility (Le *et al.*, 2020).

With regard to FDI, the insignificant coefficients (3–1, 3–4, 3–5 and 3–6, 3–9, 3–10) imply that FDI has no effect on inequality in SSA. This result differs from the SSA studies that generally find a positive effect (Gohou and Soumare, 2012; Kaulihowa and Adjasi, 2017; Xu *et al.*, 2020) or negative effect (Anyanwu, 2016; Adams and Klobodu, 2017; Kaulihowa and Adjasi, 2018) but this disparity may be because these studies measure inequality by income inequality only. The insignificance of FDI compared to the negative coefficients of youth population suggests that while improved education levels among the youth should increase FDI levels (Oketch, 2006; Gyimah-Brempong *et al.*, 2006; Suliman and Mollick, 2009) and decrease inequality from knowledge spill-overs (Perri and Peruffo, 2016), this apparently does not apply to SSA. Possible reasons for this disparity are because much of the profits earned from multinational corporations in SSA are repatriated rather than being invested domestically and the capital intensive processes only creates a small skilled labour pool, thus negating labour and knowledge spill-overs in the entry-level labour markets (Baran, 1973; Jenkins, 1996; Lall, 1974; Nafziger, 1997; Odusola *et al.*, 2018).

In the case of democracy, contemporaneous democratization (*Demo*) in both the fixed effects and GMM models are significant and positive (3–2, 3–4, 3–7, 3–9) whereas the accumulation of democratic capital (*Demo\_Cap*) coefficients are only significant in the fixed effects estimations (3–3, 3–5). Although this indicates that democracy reduces inequality in both the short run and the long run, the larger coefficients of democratic capital compared to those of contemporaneous democracy suggests that the inequality reducing benefits tend to accumulate in the long run. This may be because as democracy becomes entrenched, there is an associated erosion of patronage networks and ethnolinguistic fragmentation (Cheeseman, 2015), and strengthening of the rule of law and limitation of arbitrary government intervention (Globerman and Shapiro, 2002, 2003). This in turn leads to greater political competition, more efficient provision of public goods and services, less corruption, better education levels and higher redistributive policies (Kapstein and Converse, 2008). Hence, in accordance with Gossel (2018) and Kunawotor *et al.* (2020), these results suggest that it is not necessarily the electoral system of democracy that leads to a reduction in inequality, but rather the long run accompanying institutional reforms.

Lastly, the insignificance of the interaction coefficients (3–4, 3–5, 3–9 and 3–10) indicates that democracy does not play a mediating role in attracting inequality reducing FDI to SSA. This may be because democratization improves the prospects and living standards of the population whereas foreign investors can negotiate with the political elite directly regardless of the improvements in democratic institutions and investor protection legislation (Gehlbach and Keefer, 2011; Resnick, 2001), or because SSA's level of social globalization is still insufficient to facilitate the benefits of economic globalization and governance (Mukherjee and Dutta, 2018).

Having examined the full sample, the discussion next turns to the results of the subsamples. The estimations that exclude the six countries where the average of FDI inflows in USD exceeds 5% of total inflows are presented in Table 4. While most of the control factor results in Table 4 are similar to the full-sample results in Table 3, the noticeable changes are inflation and credit extension, which become insignificant in the GMM estimations. This is possibly because countries use FDI to stimulate financial sector development (Henry, 2000; Desai *et al.*, 2006; Amoh *et al.*, 2019), and thus the secondary FDI recipient countries may lack the financial depth and sophistication required to mitigate inequality.

With regard to FDI and democracy, the results presented in Table 4 are similar to those in Table 3, and thus suggests that the magnitude of FDI flows to SSA countries does not affect the associations presented in the full sample results. This may be because the amount of FDI to the secondary FDI SSA countries has not yet reached a level sufficient to affect labour markets (Mirza *et al.*, 2003) or to produce spill-over effects (Lesher and Miroudot, 2008).

The results of excluding the nine SSA countries where the average commodity exports or oil rents exceeds 25% of merchandise exports or GDP respectively are presented in Table 5. In contrast to the full sample results of Table 3, the control factor results in Table 5 are all less significant, particularly economic growth and fixed investment, which reflects SSA's reliance on natural resource exports (Wantchekon and Jensen, 2000; Asiedu and Lien, 2011). This result contrasts with Xu *et al.* (2020) but suggests that many SSA countries have not yet reached a level of trade diversification (further evidenced by the ongoing insignificance of the trade openness coefficients) where export-led growth has a beneficial effect on inequality.

In the case of the factors of interest, the FDI coefficients remain insignificant and thus the results in Tables 4 and 5 imply that secondary FDI and resource export dependent SSA countries cannot rely on FDI-led growth (de Mello, 1997, 1999) to reduce inequality. Contemporaneous democracy and democratic capital however maintain similar patterns of significance as in Table 3, except that contemporaneous democracy becomes less significant. Hence, these results indicate that, as argued by Wong (2016), democratic deepening more consistently lowers inequality by reforming institutions and reinforcing redistributive policies directly rather than indirectly via FDI's spill-over effects (Borensztein *et al.*, 1998).

The final sensitivity analysis is to assess whether the level of democracy affects the fullsample results. This is accomplished by excluding the 16 countries with average normalized Polity V scores below 0.5. The results presented in Table 6 show that in contrast to the previous sensitivity analyses, the level of democratization significantly affects the conclusions. With regard to the control factors, economic growth becomes insignificant in the fixed effects estimations, fixed investment and inflation become insignificant in the GMM estimations, and credit and youth population become insignificant in both the fixed effects and GMM estimations. Hence, these results suggest that, similar to the diversified SSA country results in Table 5, macroeconomic and financial development in more democratic SSA countries have not translated into reduced inequality. In addition, the ongoing insignificance of trade openness indicates that despite the inequality reducing promise of export-led growth (Pazim, 2009; Yee-Ee, 2016), trade in SSA does not significantly reduce inequality in more democratic SSA countries. A possible reason is that SSA's persistent patronage and incumbency (Bates et al., 2012; Diamond, 2015), corruption (Kapstein and Converse, 2008) and patrimonial and clientelist networks (Timamy, 2005; Keefer, 2007; Efobi, 2015) means that the benefits associated with globalization are more likely to accrue to the political elite than reduce inequality (Justesen and Bjornskov, 2014).

With regard to the factors of interest, the sign and significance of the democracy coefficients are relatively consistent with Table 3, suggesting that democracy consistently improves equality regardless of the magnitude of FDI, resource endowment or democratic deepening. However, FDI becomes positive and significant in the GMM estimation (6–6), which indicates that FDI only reduces inequality once SSA countries have achieved a

0.041\*\*\*\*0.009 0.000 0.002 -0.090 0.010 -0.297\*\*\* 0.094 0.190\*\*\* 0.053  $0.056^{***} 0.010$  $-0.012^{*} 0.007$ 0.875\*\*\* 0.046 -0.005 0.0120.000 0.000 0.001 0.009  $4^{-10}$ 21.940\*\*\* 0.680 0.427 Note(s): Robust standard errors in italics. The FDI and control factor coefficients and standard errors have been multiplied by 100. \*\*\*\*, \*\* and \* represent significance at the 1, 5 and 10% levels respectively 31 0.051\*\*\* 0.008 0.031\*\*\* 0.009  $-0.012 \ 0.011$ -0.269\*\*\* 0.0850.164\*\*\* 0.050 0.888\*\*\* 0.043 0.015\*\* 0.007 0.025 0.018 0.000 0.000 -0.008 \* 0.0050.000 0.002 4-9  $21.940^{***}$ 0.908 31 0.040\*\*\*\* 0.013 0.000 0.002 -0.011 0.010 -0.271\*\*\* 0.101 0.173\*\*\*\* 0.059 0.888\*\*\* 0.058 0.059\*\*\* 0.012 System GMM 4-8 -0.0110.0120.002 0.011 22.100\*\*\*0.732 0.222 85 25 0.032\*\*\*\* 0.011 0.032\*\*\*\* 0.011 -0.001 0.003 -0.012 0.013 -0.277\*\*\* 0.111 0.168\*\*\* 0.068 0.888\*\*\* 0.057 0.052\*\*\* 0.010 0.013\* 0.007 -0.008 0.008  $22.100^{***}$ 4-7  $0.743 \\ 0.175$ 25 885  $0.053^{***} 0.013$ -0.011 0.0070.853\*\*\* 0.058 -0.012 0.012 -0.012 -0.353\*\*\* 0.1210.039\*\*\* 0.012 0.226\*\*\* 0.075 -0.001 0.0030.000 0.007 4–6  $21.940^{***}$  $0.580 \\ 0.244$ 88 88 83 0.181\*\*\* 0.045 -0.019 0.016 0.209\* 0.124 0.714\*\*\* 0.157 0.551 0.389  $\begin{array}{c} -0.001 \ 0.003 \\ 0.101^{**} \ 0.042 \\ -0.015 \ 0.017 \end{array}$ 0.117\*\*\* 0.040  $-0.812^{**}$  0.349 0.042 0.119 0.44319.240\*\*\* 42 704 0.194\*\*\* 0.062 0.194\*\*\* 0.062 0.015 0.015 0.750\*\*\* 0.150 0.491  $0.111^{***} 0.039$ 0.069\*\* 0.027 0.273 \* 0.1400.089 0.158 -0.110 0.192-0.014 0.016 44 8.830\*\*\* 0.4450.491704 0.718\*\*\* 0.155 0.554 0.397 0.114\*\*\* 0.039  $0.188^{***} 0.048$  $\begin{array}{c} -0.019 \ 0.016 \\ 0.205* \ 0.122 \\ -0.821^{**} \ 0.346 \end{array}$ 0.096\*\* 0.037 Fixed effects -0.0140.017 $4^{-3}$ 0.45322.760\*\*\* 602 -0.946\*\*\* 0.322 0.756\*\*\* 0.152 0.493 0.455 0.500  $0.107^{***} 0.035$ -0.014 0.0160.208\*\*\* 0.059 0.066\*\* 0.028  $-0.023 \ 0.015$  $0.268* \ 0.138$  $^{4-2}$ 20.910\*\*\* 602 -1.153\*\*\*\* 0.359 0.878\*\*\*\* 0.169 0.454 0.503 0.564 18.380\*\*\* 0.137\*\*\* 0.037 0.218\*\*\* 0.065 -0.027 \* 0.0160.266 \* 0.1470.010 0.016 0.021 0.034 4 202 Demo<sub>t-1</sub> Demo\_cap<sub>t-1</sub> FDI\*Demo<sub>t-1</sub> FDI\*Demo\_cap<sub>t-1</sub> Observations Hansen prob R<sup>2</sup> within R<sup>2</sup> between instruments Inf<sub>t-1</sub> Credit<sub>t-1</sub> Pop\_U14<sub>t-1</sub> AR(2) prob R<sup>2</sup> overall <sup>7</sup>-statistic GFCF<sub>11</sub> GDPG<sub>t-1</sub> Trade<sub>t-1</sub> HDI+1 FDI<sub>t-1</sub>

**Table 4.** Excluding main FDI recipient countries sub-sample results

	5-1	5-2	Fixed effects 5–3	5-4	55	56	5-7	System GMM 5-8	5-9	5-10
HDI <sub>t-1</sub> FDI <sub>t-1</sub> Demo <sub>t-1</sub> Demo_t-1 FDI*Demo <sub>t-1</sub> FDI*Demo <sub>t-1</sub>	0.006 0.034	0.081*** 0.031	0.152*** 0.037	-0.105 0.297 0.080** 0.030 0.131 0.369	-0.043 0.116 0.152**** 0.038 0.002 0.120	0.912**** 0.034 0.003 0.003	$1.018^{***} 0.035$ $0.014^{*} 0.008$	1.026*** 0.026 0.002 0.007	1.016**** 0.025 0.045 0.096 0.012* 0.007 0.000 0.001	$\begin{array}{c} 1.026^{***} \ 0.031\\ 0.052 \ 0.056\\ 0.004 \ 0.006\\ -0.006 \ 0.112\end{array}$
GDPG <sub>t1</sub> Trade <sub>t1</sub> GFCF <sub>t1</sub> Inf.,	0.137**** 0.050 -0.023 0.017 0.217**** 0.074 0.000**** 0.000	0.085 0.052 -0.028 0.018 0.199**** 0.072 0.000**** 0.000	$0.068 \ 0.046$ - $0.026 \ 0.020$ $0.150^{*} \ 0.076$ $0.000 \ 0.000$	$\begin{array}{c} 0.083 \ 0.058 \\ -0.029 \ 0.018 \\ 0.128 \ 0.109 \\ 0.206^{***} \ 0.067 \end{array}$	$\begin{array}{c} 0.070 & 0.051 \\ -0.028 & 0.020 \\ 0.161 ^{**} & 0.071 \\ 0.000 & 0.000 \end{array}$	0.062**** 0.014 -0.007 0.005 0.023 0.015 0.000**** 0.000	$\begin{array}{c} 0.124 \ 0.090 \\ -0.003 \ 0.009 \\ 0.005 \ 0.011 \\ 0.000 \ 0.000 \end{array}$	$\begin{array}{c} 0.191^{***} \ 0.051\\ -0.003 \ 0.006\\ -0.007 \ 0.018\\ 0.000 \ 0.000\end{array}$	$\begin{array}{c} 0.154^{***} \ 0.066\\ -0.003 \ 0.004\\ -0.012 \ 0.022\\ 0.000 \ 0.000\end{array}$	0.177*** 0.038 -0.004 0.006 -0.013 0.019 0.000 0.000
Credit <sub>i-1</sub> Pop_U14 <sub>i-1</sub> C R <sup>2</sup> within R <sup>2</sup> between R <sup>2</sup> overall	0.115 0.117 -1.061 **** 0.338 0.870 **** 0.157 0.368 0.625 0.567	0.126 0.107 -0.781 *** 0.303 0.706**** 0.146 0.434 0.564 0.519	0.059 0.077 -0.525** 0.246 0.612*** 0.113 0.596 0.540 0.532	0.000**** 0.000 -0.755** 0.304 0.696*** 0.146 0.430 0.559 0.511	0.061 0.078 -0.510*** 0.250 0.606**** 0.115 0.533 0.536 0.525	-0.041*** 0.018 -0.360**** 0.018 0.206*** 0.048	-0.006 0.012 0.131* 0.074 -0.072**** 0.041	0.001 0.011 0.149** 0.071 -0.077** 0.037	-0.003 0.010 0.116* 0.058 -0.062* 0.031	0.004 0.010 0.155* 0.077 -0.079* 0.044
F-statistic AR(2) prob Hansen prob Instruments Observations	340.330**** 621	361.220*** 626	663.020**** 6.26	380.500*** 621	518.780**** 6.21	22.190**** 0.057 0.176 25 509	22.370*** 0.113 0.569 17 604	22.370*** 0.658 0.813 17 604	22.190*** 0.086 0.813 21 509	22.190**** 0.106 0.865 21 509
Note(s): Robust standard errors in		ics. The FDI and cor	italics. The FDI and control factor coefficients and standard errors have been multiplied by 100. ****, ** and * represent significance at the 1,5 and 10% levels respectively	ts and standard err	ors have been multip	lied by 100. ***, ** a	ud * represent signi	ficance at the 1, 5 an	id 10% levels respec	tively

Table 5.Excluding resource-dependent countriessub-sample results

 $\begin{array}{c} -0.090 \ 0.126 \\ 0.112^{***} \ 0.040 \\ 0.001 \ 0.005 \end{array}$ 0.969\*\*\* 0.027 0.011\*\* 0.005 -0.001 0.011 0.012 0.071 0.000 0.037 0.046 0.060 0.000 0.000 0.019 0.015 6-10 $21.670^{***}$ 0.101 0.164 Note(s): Robust standard errors in italics. The FDI and control factor coefficients and standard errors have been multiplied by 100. \*\*\*\*, \*\* and \* represent significance at the 1, 5 and 10% levels respectively 21 455 -0.0140.207 $0.012^{***}0.004$ 0.995\*\*\* 0.015 0.153\*\* 0.061 0.000 0.003 0.000 0.004 -0.007 0.017 0.000 0.000 -0.002 0.0110.058 0.079 -0.031 0.0416-9 21.670\*\*\* 0.3870.58052 F3 0.967\*\*\* 0.031 System GMM 0.110\*\* 0.051  $\begin{array}{c} 0.012 \ 0.009 \ 0.000 \ 0.000 \ 0.000 \ 0.000 \ 0.001 \ 1 \\ -0.009 \ 0.063 \ 0.063 \ 0.013 \ 0.034 \end{array}$ 0.000 0.007 0.008 0.008 21.900\*\*\* 0.207 0.099 6–8 17 0.977\*\*\* 0.016 0.011\*\*\* 0.003 0.142\*\* 0.066 0.001 0.004  $\begin{array}{c} 0.000 & 0.015 \\ 0.000 & 0.000 \\ -0.002 & 0.009 \\ 0.012 & 0.057 \\ -0.003 & 0.032 \end{array}$ 21.900\*\*\* 0.512 0.775 6-7 17 008\*\*\* 0.030 0.015\*\*\* 0.005 0.204\*\*\* 0.056 0.000 0.000 - 0.0000.039 0.083 - 0.019 0.047-0.001 0.003  $-0.012 \ 0.016$  $21.670^{***}$ 9-9 0.703 0.902 17 0.345\*\*\* 0.094 0.857 0.656 0.192\*\*\* 0.020 0.119\*\* 0.048  $\begin{array}{c} 0.000 \ 0.001 \\ -0.030 \ 0.026 \\ -0.001 \ 0.006 \end{array}$ 0.000 0.000 0.070 0.082 0.003 0.037 -0.059 0.2143114.940\*\*\* 6-5 0.631470 0.000 \*\*\* 0.000 0.078\*\*\* 0.024 0.267\*\*\* 0.087 0.472\*\*\* 0.180 0.517 0.097 0.196 -0.072 0.232 0.005 0.041 0.005 0.012 0.230 0.180  $-0.416\ 0.360$ 6-4 102.080\*\*\* 0.5620.591470 -0.00/ 0.259\*\*\* 0.094 0.359\*\*\* 0.094 0.652 0.652 0.638 3918.160\*\*\* -0.031 0.024 0.000 0.005 0.116\*\*\* 0.047 0.000 0.000 0.062 0.076 -0.087 0.214 0.191\*\*\* 0.021 Fixed effects 6-3 475  $0.290^{***} 0.080$  $0.000^{***} 0.000$ 0.473\*\*\* 0.183 0.518 0.599  $0.078^{***} 0.024$ 0.231 0.176 0.005 0.040 0.003 0.012 -0.423 0.36701.390 \*\*\* $6^{-2}$ 0.571 475 0.644\*\*\*\* 0.173 0.463 0.595 0.565  $0.298^{***} 0.090$  $0.000^{***} 0.000$  $0.220 \ 0.190 - 0.701^{*} \ 0.358$ 0.062 0.039 0.009 0.012 0.054 0.038 6-1 97.260\*\*\* 470 Demo<sub>t-1</sub> Demo\_cap<sub>t-1</sub> FDI\*Demo<sub>t-1</sub> FDI\*Demo\_cap<sub>t-1</sub> Observations Hansen prob Inf<sub>t-1</sub> Credit<sub>t-1</sub> Pop\_U14<sub>t-1</sub> R<sup>2</sup> within R<sup>2</sup> between instruments AR(2) prob R<sup>2</sup> overall <sup>7</sup>-statistic GFCF<sub>11</sub> GDPG<sub>1-1</sub> Trade<sub>t-1</sub> HDI+1 FDI<sub>t-1</sub>

Table 6.High democracy sub-sample results

moderate level of democracy, in accordance with Kapstein and Converse (2008). However, the insignificance of the interaction terms (6–4, 6–5, 6–9, 6–10) indicates that democracy does not act as a mediating factor in the relationship between FDI and inequality in more democratic SSA countries, possibly because more democratic SSA countries have already crossed the threshold of rule of law and control of corruption (Kunawotor *et al.*, 2020).

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#### 5. Conclusion

This study used fixed effects and system GMM analysis to examine whether democracy plays a mediating role in the relationship between FDI and inequality in a panel of 38 SSA countries over the period 1990–2018. The full sample results show that FDI has no effect on inequality in SSA whereas democracy reduces inequality in both the short run and the long run. The sensitivity analyses further show that democracy improves equality regardless of the magnitude of FDI, resource endowment or democratic deepening. Lastly, analysis of the more democracy has been achieved.

#### 5.1 Policy implications

The results discussed above thus have four policy implications. First, these results show that although democracy has inequality reducing benefits, SSA is unlikely to significantly reduce inequality unless the region purposefully diversifies its trade and FDI away from natural resources. Second, the region should continue to expand credit access to reduce inequality and attract FDI. Third, policymakers should undertake reforms that will reduce youth inequality. Lastly, the region should focus on long-run democratic reforms rather than on short-run democratization to improve governance and investor confidence.

#### Notes

- Piketty (2014) and Kotschy and Sunde (2017) however empirically find that high levels of inequality tend to erode democratic institutions rather than stimulate democratization while Savoia *et al.* (2009) reports that inequality leads to inefficient and exploitative institutions.
- 2. The countries are listed in Appendix.
- 3. Polity2 adjusts the standardized authority codes (-66, -77, -88) into conventional scores.
- 4. The six countries are the Democratic Republic of Congo, Ethiopia, Ghana, Mozambique, Nigeria and South Africa.
- 5. The countries are Angola, Central African Republic, Congo, Gabon, Guinea, Mozambique, Niger, Rwanda and Zambia.
- 6. The countries are indicated in Appendix.

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#### Appendix

#### List of Countries

Angola<sup>a, c</sup>, Benin, Botswana, Burkina Faso<sup>c</sup>, Burundi, Cameroon<sup>c</sup>, Central African Republic<sup>a</sup>, Chad<sup>c</sup>, Comoros, Congo<sup>a, c</sup>, Democratic Republic of Congo<sup>b</sup>, Ethiopia<sup>b, c</sup>, Gabon<sup>a, c</sup>, Gambia<sup>c</sup>, Ghana<sup>b</sup>, Guinea<sup>a, c</sup>, Guinea-Bissau, Ivory Coast<sup>c</sup>, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mozambique<sup>a, b</sup>, Namibia, Niger<sup>a</sup>, Nigeria<sup>b</sup>, Rwanda<sup>a, c</sup>, Senegal, Sierra Leone<sup>a</sup>, South Africa<sup>b</sup>, Swaziland<sup>c</sup>, Tanzania<sup>c</sup>, Togo<sup>c</sup>, Uganda<sup>c</sup>, Zambia<sup>a</sup>, Zimbabwe<sup>c</sup>

<sup>a</sup> represents resource-export dependent countries. <sup>b</sup> represents countries where the average of net FDI inflows exceeds 5% of total inflows. <sup>c</sup> represents countries where the average normalized Polity V score is below 0.5.

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