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Taxing Africa for Inclusive Human Development: The Mediating Role of Governance Quality

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Abstract

Given that the literature on the links between taxation and inclusive human development is ambiguous, it is important to investigate whether the mediating influence of governance in taxation for inclusive development exists. Thus, this study explores the linkages between the governance quality, taxation and inclusive human development (i.e., inequality-adjusted human development index) using the generalized method of moments (GMM) technique to establish the empirical findings on 52 African countries for the period 2010-2018. The following findings are established. *First*, there is an unconditional positive effect of taxation on inclusive human development. *Second*, the net effects of taxation on inclusive human development, associated with the interaction of the government revenue with governance quality variables, are positive for the most part. It is then evident that when taxation policies are combined with good governance initiatives, the ultimate impact of inclusive human development is likely to be enhanced.

Keywords: Government revenue, taxation, governance quality, Africa.

Introduction

The world and regional leaders were gathered in Rwanda (i.e., in the East African region) in 2016 for the World Economic Forum on Africa (WEF) summit. The main aim of the summit was centered on how taxes could be used to achieve Africa's economic and human developments (WEF, 2016). However, the unexpected COVID-19 pandemic has taken a toll on economic and social activities, which negatively impact Sub-Saharan Africa (SSA). For example, Sub-Saharan Africa's growth prediction for 2019 is 3.2 percent, with a forecast of 3.6 percent for 2020; but, owing to the COVID-19 pandemic epidemic, which contracted to -1.6 percent, the region fails to meet the forecast (International Monetary Fund, 2020). If mismanaged, the COVID-19 pandemic, according to the International Monetary Fund (2020), may accelerate regional development advancement. Therefore, African countries need policies to mitigate this tragedy for inclusive development. In essence, the post-2015 global agenda has made it imperative for Africa to accelerate sustainable and inclusive human developments (Asongu & Odhiambo, 2019; Asongu & Nnanna, 2020). Many scholars have described SSA as a continent with vast opportunities but that the sub-region is yet to harness its potentials to develop its resources and people (Asongu & Nwachukwu, 2016; Moore, Prichard & Fjeldstad, 2018; Asongu & Nnanna, 2020). It is believed that revenue generated through taxes can enhance the lives of citizens by financing critical infrastructures which positively impact human development.

Recent studies have revealed that, on average, African countries exhibit high levels of inequality, increased risk of greenhouse gas emissions beyond acceptable thresholds, high mortality rate, and increase in poverty levels, low per capita income and gross under-development of critical infrastructures (Asongu & Kodila-Tedika, 2015; UNDP, 2015; Chithambo & Tauringana, 2017; Hopper, Lassou, & Soobaroyen, 2017; IMF, 2018). All these problems have hampered human development in Africa. The situation is particularly acute in several countries in SSA where access to basic services such as education, health and infrastructure lacks a large proportion. There is a need for countries to fund increased public spending on critical development, particularly human capital and infrastructure. Although aid inflows, borrowing, and rentals from the exploitation of natural resources may provide much-needed financing, governments do need to reform their tax structures to raise revenue and diversify the base of

revenues (Eubank, 2012; Asongu & Jellal, 2013; Asongu, 2015; Asongu & Odhiambo, 2020).

Gill & Karakulah (2018) state that Africa's three deadly deficits are: education, electricity and taxes. There is no high-income economy with a low level of taxes. The backbone of sustained and inclusive development in Africa is domestic revenue mobilization. According to the International Monetary Fund (IMF), Africa gets about $40 billion in foreign aid every year, higher than the GDP of 41 countries within the region (IMF, 2018). The effect of foreign aid does not seem to positively change the continent (Knack, 2001; Brautigam & Knack, 2004; Obeng-Odoom, 2013; Asongu, 2016; Asongu & Nwachukwu, 2016; Efobi, Asongu, Okafor, Tchamyou & Tanankem, 2019). The reasons adduced for this less impact of aid include weak institutions, lack of accountability and engrossed corruption (Mosley, Hudson & Verschoor, 2004; Prichard, 2009; Wamboye, Adekola & Sergi, 2013). For achieving sustainable and inclusive development in Africa, more incentives should be directed to domestic revenue mobilization. Over-reliance on foreign aids stiffens long-term investment, innovation, accountability and depressed domestic resource mobilization (Okada & Samreth, 2012; Ravallion, 2013; Ssozi & Asongu, 2016; Meniago & Asongu, 2018).

The report of the World Bank in 2018 shows that about 31 African countries have a tax revenue-to-GDP ratio of less than 15 percent, while six countries have ratios higher than 25 percent. This calls for critical tax revenue mobilization if Africa is to achieve sustainable and inclusive developments in future. Many scholars (Alesina & Dollar, 2000; Moore, 2013; Carter, 2013; Mascagni, Moore & Mccluskey, 2014) affirm that tax revenue mobilization has been woeful compared to what is needed to achieve inclusive development in Africa. The study of Gibson, Hoffman and Jablonski (2014) reveals that SSA underperforms tax revenue mobilization compared to other regions. The inability to mobilize enough domestic tax revenue is both a symptom and cause of underdevelopment. Even though Africa's tax system and structure are characterized by informal activities and extractive industries and smallholder agriculture are difficult to tax (Moore, 2013; De Magalhães & Santaeulàlia-Llopis, 2018; Asongu & Leke, 2019; Asongu & Odhiambo, 2020); however, strong institutions, accountability and public transparency will engender positive responses from stakeholders to broaden the tax base.

Building on the highlighted literature, it is apparent that countries in the sub-region should not depend exclusively on taxation for internal resource mobilization but that such resource mobilization should be contingent on effective political, economic and institutional governance policies. Accordingly, the intuition for the role of governance in modulating the effect of taxation on inclusive human development is simple to follow: (i) without effective political governance (entailing political stability and 'voice & accountability), the conducive environment for the collection of taxes may not be apparent owing to, *among other things*, political instability, violence, terrorism and the election of corrupt elites as political leaders. (ii) The lack of effective economic governance (encompassing regulatory quality and government effectiveness) implies that tax income generation is not associated with the formulation and implementation of appropriate policies that deliver public commodities (e.g., education and health amenities) relevant to promoting inclusive human development. (iii) Effective institutional governance (consisting of corruption-control and the rule of law) is also worthwhile because both the State and citizens must respect institutions that govern interactions between them to taxation officers not to siphon tax income and for corruption taxation officers to be sanctioned by rules in place. From a conceptual governance standpoint, the underlying intuition for the nexuses between governance, taxation and inclusive human development is consistent with the attendant governance and inclusive development literature (Anyanwu & Erhijakpor, 2014; Asongu & Nwachukwu, 2016a, 2016b).

Given the ambiguity in the literature on the connections between taxation and inclusive human growth, it is critical to determine whether governance plays a mediating role in taxation for inclusive development. As a result, we contribute to body of knowledge by addressing how governance is relevant in moderating the effect of taxation on inclusive human development. Stemming from the background of this study, the pertinent research questions include: (i) does tax revenue foster inclusive human development in Sub-Saharan Africa? (ii) Does governance quality play a significant role in the incidence of tax revenue in enhancing inclusive human development in Sub-Saharan Africa? To achieve the objective of this study, five government revenue indicators are used, notably, (i) total government revenue collection excluding social contributions and grants as a share of GDP, (ii) total tax

revenue collection as a share of GDP, (iii) total direct tax revenue collection as a share of tax revenue, (iv) total indirect tax revenue collection as a share of tax revenue and (v) total non-tax revenue collection as a share of GDP. Moreover, six governance indicators are taken on board as clarified in the previous paragraph substantiating the intuition for the nexuses to be examined, namely: political stability/no violence, 'voice & accountability, regulatory quality, government effectiveness, the rule of law and corruption-control.

The rest of the study is structured as follows. Section 2 deals with the theoretical foundation and hypotheses development. The data and methodology are covered in Section 3, while Section 4 presents the empirical results. Section 5 concludes with implications and future research directions.

2. Theoretical Foundation and Hypotheses Development

The Social Contract Theory (SCT) has been a contending issue in developmental economics discourse, especially within taxation and governance (Bird, 2015; Kangave, Nakato, Waiswa, & Zzimbe, 2016; McCluskey, 2016). Modern contemporary scholars argue that the SCT can only thrive in a situation where the government is accountable to the citizens with a clear manifestation of delivery of public and economic resources (Prichard, 2010; Joshi, Prichard & Heady, 2014).Proponents of SCT believe that citizens pay taxes in return for sharing or enjoying governance benefits (Ivanyna & Haldenwang, 2013; Besley & Persson, 2014). Conversely, some scholars view the SCT as mere mythology in countries characterized by gross corruption, lack of public accountability and mismanagement of public funds (Braithwaite, Murphy & Reinhart, 2007; Wikstrom, Tseloni & Karlis, 2011; Erin & Asiriuwa, 2019). In developing countries, especially African countries, the inability of governments to generate sufficient tax revenue has been linked to poor tax transparency and accountability, which negate the postulation of SCT (Kirchler, Hoelzl, Leder & Manneti, 2008; Muldoon, 2017).

Within the framework of SCT, government responsiveness, quality of governance, accountability encompass strong tax bargaining processes through which citizens engage the state actors (Quak, 2019). Prichard (2015) states that citizens can use tax bargaining and tax resistance to compel state institutions to fulfil their part of the social

contract agreement. This is achieved by strengthening the voice of taxpayers and mobilizing civil society groups, business associations and international non-governmental organizations (NGOs) to push for government responsiveness and accountability. Extant literature affirms a strong link between tax and governance that supports SCT (Joshi, Prichard & Heady, 2014; Baskaran, 2014; Asongu, 2015). Good governance is a key factor for increasing citizens' trust in government, which will invariably engender increases in tax revenue through tax compliance from taxpayers (Flores-Macias, 2016; Goodfellow & Olly, 2018). Studies have shown that taxpayers react differently when governance expectations are met (Bahl & Bird, 2008; Aiko & Logan, 2014; Moore et al., 2018), and these expectations tend to increase tax compliance. Based on the social contract theory, we develop our hypotheses as:

H_1: Taxes are positively related to inclusive human development in SSA.

H_2: Governance quality modulates taxes for an overall positive incidence on to inclusive human development in SSA.

3. Data and Methodology

3.1 Data

This study assesses a panel of 52 African countries with data from the United Nations Development Programme Database, the International Centre for Tax and Development (ICTD)/United Nations University World Institute for Development Economic Research (UNU-WIDER) Government Revenue Database, World Governance Indicators and World Development Indicators of the World Bank for the period 2010-2018.[1] The countries analyzed, and the data access limitations restrict periodicity.

Following attendant inclusive development literature (Asongu & Nwachukwu, 2016a; Asongu & Odhiambo, 2019b; Ojeka et al., 2019), inclusive human development is proxied by inequality-adjusted human development index. The human development index reflects a country-specific composite of milestones in three essential dimensions:

[1] The 52 African countries include "Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Djibouti, Egypt, Ethiopia, Equatorial Guinea Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Somalia, South Sudan, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, and Zambia"

health and longevity, a decent standard of living, and knowledge. Inequality-adjusted human development is an extension of the human development index. The inequality-adjustment human development recognizes the distribution of the national populace's achievements and further discounts for each dimension's average value (i.e., health and long-life, decent standard of living and knowledge) to its inequality level.

This study builds on the ICTD/UNU-WIDER GRD, which increases the data availability and quality across the developing countries compared to other data sources (i.e., International Monetary Fund Database and World Bank Database). In Prichard, Cobham and Goodall (2014), these substantive improvements in the tax dataset provided by ICTD/UNU-WIDER GRD are discussed in details. In summary, the database increases data reliability by the aggregation of mutually acceptable data from different external sources such as International Monetary Finance Statistics (GFS), country-level IMF IV reports and other regional sources. In addition, the ICTD/UNU-WIDER GRD increases the quality of data by regularly distinguishing between natural resources taxes and non-resource taxes on domestic corporations and residents. To provide for policy ramifications, five government revenue indicators are used, notably, total government revenue collection excluding social contributions and grants as a share of GDP, total tax revenue collection as a share of GDP, total direct tax revenue collection as a share of GDP, total indirect tax revenue collection as a share of GDP and total non-tax revenue collection as a share of GDP. These adopted proxies are consistent with the recent taxation literature (Asongu et al., 2021; Martorano, 2018; Mcnabb & Lemay-boucher, 2014; Morrissey et al., 2014; Prichard, Salardi, et al., 2014).

Per recent governance literature (Asongu & Odhiambo, 2019b, 2019d), for policy concerns, this study employs six governance measurements derived from three principal categories, notably, political governance (i.e. voice & accountability; and political stability & absence of violence/terrorism); economic governance (i.e. regulatory quality; and government effectiveness); and institutional governance (i.e. the rule of law and control of corruption). It is worth noting that the measurement of governance variables is perception-based and may be distorted by media publicity (Asongu & Nwachukwu, 2016a).

Three conditioning information is adopted: GDP per capita growth, foreign direct investment, and personal remittances. Following the prior studies (Anand et al., 2012;

Mlachila et al., 2014), we anticipate a positive relationship between the covariates and inclusive human development. Notably, previous studies establish that economic growth per capita and foreign direct investment are required for private expenditure in enhancing human development, while remittances largely for consumption purposes often improve human development (Mlachila et al., 2014). More clearly, remittances may reflect migration patterns in prior periods, which may point to lower (perceived) human development outcomes in remittances recipient countries (people migrate in search of better living conditions and opportunities) compared to remittances sending countries.

Appendix 1 presents the definitions and sources of the adopted variables, whereas the summary statistics are provided in Appendix 2. Appendix 3 discloses the corresponding correlation matrix. It is apparent from the information disclosed by the summary statistics that the study has comparable means in the variables, and the corresponding standard deviations show a possibility of reasonably estimated relationships. It is also worth mentioning that the essence of the correlation matrix is to identify potential multicollinearity concerns that could significantly bias the estimated coefficients. Prior studies discuss the imperative to unbundle and bundle governance dynamics while precedence over the degree of substitution takes conceptual priority(Asongu & Nwachukwu, 2016a, 2016b). Thus, this present study follows the procedure of substitution (i.e., employing the six governance indicators independently in discrete specifications) to curb multicollinearity issues apparent in the governance dynamics.

3.2 Methodology

Prior GMM-centric literature has established five basic justifications for adopting GMM estimator in the literature (Asongu, 2019; Asongu, Adegboye, & Nnanna, 2021; Asongu, Adegboye, Ejemeyovwi, et al., 2021). These factors are discussed with no priority: (i) The number of cross-sections (i.e., N) must exceed the number of corresponding periods. As this study considers 52 African countries for nine years (i.e. 2010-2018), the GMM estimation requirement for N>T is met. (ii) Data behaviour must retain a degree of persistence. This procedure is followed because the government revenue indicators

adopted in this study are persistent, and this is apparent since the correlations between their respective levels and first lag values are consistently greater than the thumb rule of 0.800 (Tchamyou, 2019, 2020b). (iii) With regard to the data structure and the nature of the panel data, it is evident that the empirical analysis reflects cross-country differences in the estimation strategy. (iv) The system GMM estimator acknowledges the biases inherent in the difference GMM approach. (v) The study tackles the endogeneity problem via the inclusion of internal instrumentation and the application of time-invariant omitted indicators.

Among the existing GMM approaches, this study follows the Roodman (2009a, 2009b) approach, an enhancement of the Arellano and Bover techniques (1995), which limits the proliferation of instruments (Asongu & Odhiambo, 2019).

This study uses the *two-step* approach, which deals with issues of the heteroscedasticity as against instead the *one-step* procedure, which solely addresses the homoscedasticity concerns. The following equations in level (1) and first difference (2) summarize the standard system GMM estimation technique.

$$IHDI_{i,t} = \sigma_0 + \sigma_1 IHDI_{i,t-\tau} + \sigma_2 GR_{i,t} + \sigma_3 Gov_{i,t} + \sigma_4 GRGov_{i,t} + \sum_{h=1}^{3} \delta_h W_{h,i,t-\tau} + \eta_i + \xi_t + \varepsilon_{i,t} \quad (1)$$

$$IHDI_{i,t} - IHDI_{i,t-\tau} = \sigma_1 (IHDI_{i,t-\tau} - IHDI_{i,t-2\tau}) + \sigma_2 (GR_{i,t} - GR_{i,t-\tau}) + \sigma_3 (Gov_{i,t} - Gov_{i,t-\tau}) + \sigma_4 (GRGov_{i,t} - GRGov_{i,t-\tau}) + \sum_{h=1}^{3} \delta_h (W_{h,i,t-\tau} - W_{h,i,t-2\tau}) + (\xi_t - \xi_{t-\tau}) + (\varepsilon_{i,t} - \varepsilon_{i,t-\tau}) \quad (2)$$

where $IHDI_{i,t}$ is the inclusive human development measure (i.e. inequality-adjusted human development index) of country i in period t, σ_0 is a constant, *GR* represents the government revenue proxies (i.e. total government revenue collection excluding social contributions and grants as a share of GDP; total tax revenue collection as a share of GDP; total direct tax revenue collection as a share of tax revenue ; total indirect tax revenue collection as a share of tax revenue and total non-tax revenue collection as a share of GDP), *Gov* reflects the governance quality measures (i.e. voice & accountability; political stability & absence of violence/terrorism;. regulatory quality; government effectiveness; rule of law and control of corruption), *GRGov* denotes the interactions between the government revenue indicators and governance quality variables, *W* is the vector of control variables (GDP per capita growth, foreign direct

investment and personal remittances), τ denotes the coefficient of autoregression that is one within the framework of this study because a year lag is capable of capturing past information, ξ_t is the time-specific constant, η_t is the country-specific effect and $\varepsilon_{i,t}$ is the error term.

3.2.2 Identification and exclusion restrictions

The identification and exclusion restrictions are important for a reliable GMM estimate. This is compatible with existing research, which validates "years" as being purely exogenous while both explanatory variables (i.e. government revenue indicators, a proxy of governance quality and the control variables) are known as predicted and presumed endogenous (Asongu et al., 2020b; Asongu & Nwachukwu, 2016; Tchamyou, 2020b). This identification procedure is compatible with Roodman (2009b) and Meniago and Asongu (2018), who claims that after the first difference, "years" are unlikely to prove endogenous.[2]

According to the above assertions, years impact the dynamics of inclusive human development solely through the predetermined and endogenous variables. In specific, the Difference in Hansen Test (DHT) is used to determine the statistical validity of the procedure for exclusion constraints. Therefore, the corresponding exclusion hypothesis persists when DHT's null hypothesis is not dismissed. It then means that the presumption of exclusion restrictions would be justified such that the DHT's alternate hypothesis about instrumental variables (IV) (year, eq(diff)) is rejected. The validity criteria for the identification procedure and the exclusion constraints are in accordance with the typical instrumental variable Sargan Overidentifying Restrictions (OIR) test. This suggests that the purely exogenous variables affect inclusive human development only by the exogenous components of the taxation variables (Asongu & Nwachukwu, 2016; Tchamyou & Asongu, 2017).

4. Results

[2]Hence, the procedure for treating ivstyle (years) is "iv (years, eq [diff])" whereas the gmmstyle is employed for predetermined variables.

This section presents the findings established in Tables 1-5. The linkage in Table 1 presents the role of governance quality in modulating the effect of total revenue on inclusive human development, whereas Table 2 reports the nexuses between the governance, the tax revenue and the inclusive human index. In Table 3, the relationship between governance, direct tax revenue and the inclusive human index, while Table 4 relates to the association between governance, indirect tax revenue and inclusive human development. Table 5 discloses the governance, non-tax revenue and inclusive human development nexuses. Notably, each table has six main specifications in consonance with the six governance variables of interest (i.e., voice &accountability; political stability & absence of violence/terrorism; regulatory quality; government effectiveness; the rule of law and control of corruption). In addition, four information procedures are properly employed to determine the validity of the estimated models.[3] In this context, the approximate models are overwhelmingly valid without any exception from the established information procedures.

Following recent research based on interactive regressions (Asongu & Nwachukwu, 2018; Asongu & Odhiambo, 2019a), the study computes the net effects to assess the incidence of governance quality in modulating the effect of government revenue on inclusive human development. For instance, in the first column of Table 1, the net effect of voice and accountability in modulating the effect of total government revenue on inclusive human development is **0.018 ([-0.59 x 0.0328] + [0.0371]).** In this computation, -0.59 is the mean value of voice and accountability, 0.0328 is the conditional effect from the interaction between voice & accountability and total government revenue, while 0.0371 is the unconditional effect of the total government revenue.

From Table 1, the following findings are established. *First*, except for the specification relating to the modulating effect of the rule of law, the unconditional effect of total government revenue remains positives on inclusive human development. *Second*, the interactions between total government revenue and (i) voice and accountability, (ii)

[3] "First, the null hypothesis of the second-order Arellano and Bond autocorrelation test (AR (2)) in difference for the absence of autocorrelation in the residuals should not be rejected. Second the Sargan and Hansen over-identification restrictions (OIR) tests should not be significant because their null hypotheses are the positions that instruments are valid or not correlated with the error terms. In essence, while the Sargan OIR test is not robust but not weakened by instruments, the Hansen OIR is robust but weakened by instruments. In order to restrict identification or limit the proliferation of instruments, we have ensured that instruments are lower than the number of cross-sections in most specifications. Third, the Difference in Hansen Test (DHT) for exogeneity of instruments is also employed to assess the validity of results from the Hansen OIR test. Fourth, a Fisher test for the joint validity of estimated coefficients is also provided'' (Asongu et al., 2020) p.177)

political stability, (iii) government effectiveness have positive marginal effects on the inclusive human capital while (iv) the rule of law has negative marginal effects on the inclusive human development. *Third*, the corresponding net effects are positive except for the interaction relating to total revenue and the rule of law, leading to an overall negative effect.

The following findings are documented in Table 2. *First*, the unconditional effect of tax revenue is consistently positive on inclusive human development. *Second*, the marginal consequences of the relationship between tax revenue and (i) political stability, (ii) regulatory quality and (iii) government effectiveness on inclusive human development are positive with the exception of the rule of law and control of control that has negative marginal effects on inclusive human development. *Third*, the associated net effects are positive.

From Table 3 on the linkage between governance, direct tax revenue and inclusive human development: *First*, the unconditional effect of direct tax revenue is positive consistently on inclusive human development. *Second*, conditional effects from interactions of direct tax revenue with regulatory quality and the rule of law are negative, while the interaction effect with control of corruption is positive. Furthermore, Table 4 reveals that (i) the corresponding unconditional effect of indirect tax revenue is positive on inclusive human development but with the exception for the specification relating to the modulating effect of the rule of law; (ii) the conditional or marginal effects from interactions with government effectiveness are positive, and that associated with the rule of law in the inclusive human development regression is eventually negative and (iii) the corresponding net effects are positive.

The evidence from Table 5 pertaining to the governance, non-tax revenue and inclusive human development nexus is established thus: *First*, except for specification relating to the modulating effect of the rule of law, the corresponding unconditional effect of non-tax revenue is positive on inclusive human development. *Second*, the marginal effects from interactions with voice & accountability and political stability are positive, while the condition from the rule of law in the inclusive human development regression remains negative. *Third*, while the net effects that assess the incidence of voice & accountability in modulating the effect of non-tax revenue on inclusive human

development, the corresponding net effects for governance (i.e., political stability and the rule of law, respectively) and non-tax revenue are negative.

Overall, some of the significant conditioning information have expected signs. The unexpected signs are consistent with contemporary trends on the attendant nexuses in scholarly and policy literature. First, remittances have been established not to be pro-poor in contemporary inclusive development literature because most people that migrate abroad and later remit funds are from the richer fraction of the population, and by extension, remittances increase the wealth of the rich compared to the poor (Meniago & Asongu, 2018; Tchamyou, Erreygers&Cassimon, 2019). Second, over the past decade, the fruits of economic growth have not been equitably distributed across the African population, and hence, such immiserizing growth has been detrimental to inclusive development (Tchamyou, 2019, 2020).

5. Concluding implications and future research directions

This study has assessed how governance quality (i.e. voice & accountability; political stability & absence of violence/terrorism; regulatory quality; government effectiveness; the rule of law and control of corruption) modulates taxation (i.e. total government revenue, total tax revenue, direct tax, indirect tax and non-tax revenue) for inclusive human development (i.e. inequality-adjusted human development index) in 52 African countries for the period 2010-2018. For this purpose, this study employs the Generalized Method of Moments (GMM) with forward orthogonal deviations. The following findings are documented. *First*, there is an unconditional positive effect of taxation on inclusive human development. *Second*, the net effects of taxation on inclusive human development, associated with the interaction of the government revenue with governance quality variables, are positive for the most part.

As the main policy implication, whereas taxation dynamics largely have a favourable incidence in promoting inclusive human development, when such taxation measures are complemented with good governance initiatives, the overall impact of inclusive human development is also likely to be positive. It follows that policies designed to promote political, economic and institutional governance should be implemented in tandem, which policies designed to boost tax performance in the sampled countries. The findings can also be understood from the perspectives that inclusive human

development is likely to be boosted when taxation measures are complemented with: (i) the free and fair election and replacement of political leaders (i.e. political governance); (ii) the formulation and implementation of inclusive policies for the delivery of public goods (i.e. economic governance) and (iii) the respect by citizens and the State of institutions that govern interactions between them (i.e. institutional governance).

Future studies can assess how the established findings withstand empirical relevance within the framework of other developing regions such as Latin America and Asia. By extension, other variables that can be leveraged to modulate taxation in the light of promoting inclusive human development is worthwhile. technology variables could also be considered. In addition, this study is limited as it failsto comprehensively address unobserved heterogeneity. Future studies can comprehensively deal with the unobserved heterogeneity concern by considering smaller groups of countries by levels of: (i) GDP per capita (income levels); and (ii) level of dependence on natural resources. In addition, future studies can employ a novel measure of governance, improvised from the World Bank Enterprise survey data, as a country level average measure of firm level corruption/bribery.

Table 1: Governance, Total Revenue and Inclusive Human Development

VARIABLES	Dependent Variable: Inclusive Human Development Index (IHDI)					
	Political Governance		Economic Governance		Institutional Governance	
	VA	Pol	RQ	GE	RL	CC
IHDI (-1)	**1.008*** **	**1.010*** **	**1.012*** **	**1.022*** **	**1.069*** **	**1.046*** **
	(0.0156)	**(0.0199)**	**(0.0214)**	**(0.0304)**	**(0.0224)**	**(0.0303)**
TR	**0.0371***	0.0144	0.00596	**0.0601** **	**-0.0330** **	**0.0455** **
	(0.0194)	(0.0120)	(0.0181)	(0.0284)	(0.0139)	**(0.0170)**
VA	**-0.0147*** **					
	(0.00284)					
POL		**-0.00509***				
		(0.00297)				
RQ			-0.00417			
			(0.00695)			
GE				-0.0124		
				(0.0106)		
RL					-0.000762	
					(0.00552)	

CC						-0.00156
						(0.00529)
TR x VA	**0.0328****					
	(0.0130)					
TR x POL		**0.0314*****				
		(0.0116)				
TR x RQ			-0.00585			
			(0.0242)			
TR x GE				**0.0734***		
				(0.0410)		
TR x RL					**-0.0356***	
					(0.0196)	
TR x CC						0.0108
						(0.0153)
GDP	0.0000816	-0.000160	0.0000733	-0.000193	0.000196	-0.000177
	(0.000154)	(0.000133)	(0.000160)	(0.000164)	(0.000156)	(0.000189)
FDI	0.000049	**0.0000959****	**0.0000677***	**0.000149*****	0.0000207	**0.0000955*****
	(0.0000339)	**(0.0000464)**	**(0.0000399)**	**(0.0000448)**	(0.000046)	**(0.0000327)**
Remittance	**0.000445****	**-0.000438****	-0.000251	**-0.000582****	-0.0000996	-0.000122
	(0.000220)	**(0.000195)**	(0.000219)	**(0.000248)**	(0.000174)	(0.000159)
Time Effect	Yes	Yes	**Yes**	Yes	**Yes**	**Yes**
Net Effects of TR	0.018	**na**	na	0.003	-0.008	na
AR(1)_P-value	[0.002]	[0.002]	[0.001]	[0.001]	[0.001]	[0.001]
AR(2)_P-value	**[0.230]**	**[0.235]**	**[0.235]**	**[0.266]**	**[0.224]**	**[0.230]**
Sargan Prob	**[0.217]**	**[0.497]**	**[0.109]**	**[0.285]**	**[0.204]**	**[0.714]**
Hansen Prob	**[0.429]**	**[0.694]**	**[0.220]**	**[0.361]**	**[0.160]**	**[0.706]**
DHT for instruments						
(a)Instruments in levels						
H excluding group	**[0.185]**	**[0.127]**	**[0.407]**	**[0.487]**	**[0.677]**	**[0.436]**
Dif (null, H=exogenous)	**[0.597]**	**[0.928]**	**[0.193]**	**[0.306]**	[0.087]	**[0.722]**
(b) IV (years, eq(diff))						
H excluding group	**[0.806]**	**[0.520]**	**[0.141]**	**[0.135]**	**[0.124]**	**[0.340]**
Dif (null, H=exogenous)	**[0.128]**	**[0.721]**	**[0.497]**	**[0.831]**	**[0.386]**	**[0.947]**
Fisher	**1981*****	**1631*****	**1916*****	**2107*****	**2485*****	**870.8*****
No. of Instruments	34	34	34	34	34	34
Number of Country	43	43	43	43	43	43
Observations	277	277	277	277	277	277

***, **, *: significance levels at 1%, 5% and 10% respectively. Abbreviation: IHDI, Inclusive human development; TR, total government revenue; CC, Control of corruption; GE, Government effectiveness; PS, Political stability; RQ, Regulatory quality; RL, Rule of law; VA, Voice and accountability. GDP: GDP growth. FDI: foreign direct investment: Remittance, personal remittance; DHT, Difference in Hansen Test for Exogeneity of Instruments Subsets. Dif: Difference. OIR: Over-identifying Restrictions Test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Fisher statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(1) & AR(2) tests and; b) the validity of the instruments in the Sargan and Hansen tests. Constants are included in all regressions. ( ) for standard errors of estimated coefficients and [ ] for p-values of all other tests with the exception of the Fisher test. na: not applicable because at least one estimated coefficient needed for the computation of net effects or thresholds is not significant. Mean value of: (i) Voice and accountability is -0.59 (ii) Government effectiveness is -0.78 and (iii) Rule of law is -0.694.

Table 2: Governance, Tax Revenue and Inclusive Human Development

VARIABLES	Dependent Variable: Inclusive Human Development Index (IHDI)					
	Political Governance		**Economic Governance**		**Institutional Governance**	
	VA	Pol	RQ	GE	RL	CC
IHDI (-1)	**1.010*** **	**1.003*** **	**1.002*** **	**0.958*** **	**1.036*** **	**0.998*** **
	(0.0142)	**(0.0284)**	**(0.0217)**	**(0.0283)**	**(0.0172)**	**(0.0252)**
TTAX	0.0227	0.0209	**0.0741*** **	**0.0650*** **	-0.0208	**0.0459*** **
	(0.0173)	(0.0127)	**(0.0205)**	**(0.0182)**	(0.0138)	**(0.0142)**
VA	-0.00554					
	(0.00441)					
POL		-0.00131				
		(0.00460)				
RQ			**-0.0132** **			
			(0.00516)			
GE				-0.000126		
				(0.00458)		
RL					**0.0114*** **	
					(0.00331)	
CC						**0.00796** **
						(0.00365)
TTAX x VA	-0.0230					
	(0.0238)					
TTAX x POL		**0.0276***				
		(0.0149)				
TTAX x RQ			**0.0692*** **			
			(0.0233)			
TTAX x GE				**0.0643** **		
				(0.0303)		
TTAX x RL					**-0.0784*** **	
					(0.0156)	
TTAX x CC						**-0.0343** **
						(0.0153)
GDP	0.0000538	**-0.000272** **	0.000181	-0.000238	0.000107	-0.000225
	(0.000137)	**(0.000132)**	(0.000197)	(0.000144)	(0.000141)	(0.000183)
FDI	0.0000119	**0.000119** **	-0.0000511	**0.0000721***	0.0000173	0.0000494
	(0.0000384)	**(0.000058)**	(0.0000457)	**(0.0000363)**	(0.0000522)	(0.0000448)
Remittance	**0.000479***	-0.000361	0.000114	-0.0000252	-0.000047	-0.00000324
	(0.000251)	(0.000244)	(0.000183)	(0.000169)	(0.000172)	(0.000196)
Time Effect	Yes	Yes	**Yes**	Yes	**Yes**	**Yes**
Net Effects of TTAX	na	na	0.025	0.015	na	0.068
AR(1)_P-value	[0.002]	[0.002]	[0.002]	[0.001]	[0.002]	[0.001]
AR(2)_P-value	**[0.167]**	**[0.161]**	**[0.199]**	**[0.161]**	**[0.173]**	**[0.149]**
Sargan Prob	**[0.166]**	**[0.170]**	[0.068]	[0.015]	[0.067]	**[0.493]**
Hansen Prob	**[0.144]**	**[0.541]**	**[0.223]**	**[0.136]**	**[0.188]**	**[0.535]**
DHT for instruments						
(a)Instruments in levels						
H excluding group	[0.020]	[0.057]	[0.022]	[0.020]	[0.050]	**[0.306]**
Dif (null, H=exogenous)	**[0.569]**	**[0.922]**	**[0.727]**	**[0.550]**	**[0.495]**	**[0.609]**
(b) IV (years, eq(diff))						
H excluding group	**[0.522]**	**[0.478]**	**[0.342]**	**[0.379]**	**[0.298]**	**[0.436]**
Dif (null, H=exogenous)	[0.050]	**[0.520]**	**[0.196]**	[0.080]	**[0.183]**	**[0.564]**
Fisher	**7025*** **	**1466*** **	**3889*** **	**1803*** **	**2451*** **	**1834*** **
No. of Instruments	34	34	34	34	34	34
Number of Country	41	41	41	41	41	41

Observations	266	266	266	266	266	266

Table 1 footnote is applicable. Mean value of: (i) Government effectiveness is -0.78 (ii) Regulatory quality is -0.704 and (iii) Control of corruption is -0.653

Table 3: Governance, Direct Tax Revenue and Inclusive Human Development

VARIABLES	Dependent Variable: Inclusive Human Development Index (IHDI)					
	Political Governance		**Economic Governance**		**Institutional Governance**	
	VA	Pol	RQ	GE	RL	CC
IHDI (-1)	**0.900*** **	**1.018*** **	**0.956*** **	**0.955*** **	**0.954*** **	**0.953*** **
	(0.0198)	**(0.0196)**	**(0.0118)**	**(0.0104)**	**(0.0187)**	**(0.0144)**
DT	**0.139*** **	0.0125	-0.0139	**0.119** **	-0.0395	**0.121***
	(0.0264)	(0.0386)	(0.0336)	**(0.0559)**	(0.0366)	**(0.0602)**
VA	-0.00248					
	(0.00396)					
POL		0.000359				
		(0.00611)				
RQ			**0.00923***			
			(0.00459)			
GE				-0.000668		
				(0.00443)		
RL					**0.01000***	
					(0.00547)	
CC						-0.00560
						(0.00437)
DT x VA	0.0384					
	(0.0653)					
DT x POL		0.0538				
		(0.0581)				
DT x RQ			**-0.108** **			
			(0.0499)			
DT x GE				0.0970		
				(0.0700)		
DT x RL					**-0.0780***	
					(0.0389)	
DT x CC						**0.116***
						(0.0646)
GDP	**-0.000465*** **	0.0000186	-0.000170	**-0.000219** **	0.00000546	**-0.000307*** **
	(0.0000928)	(0.0000968)	(0.000110)	**(0.000100)**	(0.000071)	**(0.000107)**
FDI	0.0000652	**0.000336*** **	0.0000328	**0.000139***	0.0000269	0.0000857
	(0.0000541)	**(0.000122)**	(0.0000658)	**(0.0000743)**	(0.000103)	(0.0000785)
Remittance	**0.000672** **	**-0.000676***	**-0.000597*** **	**-0.000515** **	-0.000361	0.0000483
	(0.000288)	**(0.000358)**	**(0.000156)**	**(0.000198)**	(0.000372)	(0.000325)
Time Effect	Yes	Yes	**Yes**	Yes	**Yes**	**Yes**
Net Effects of DT	na	na	na	na	na	0.045
AR(1)_P-value	[0.011]	[0.013]	[0.011]	[0.008]	[0.010]	[0.010]
AR(2)_P-value	**[0.291]**	**[0.401]**	**[0.393]**	**[0.329]**	**[0.391]**	**[0.309]**
Sargan Prob	**[0.315]**	**[0.661]**	**[0.606]**	**[0.646]**	**[0.455]**	**[0.766]**
Hansen Prob	**[0.252]**	**[0.351]**	**[0.271]**	**[0.134]**	**[0.293]**	**[0.306]**

DHT for instruments						
(a)Instruments in levels						
H excluding group	[0.082]	[0.079]	**[0.115]**	**[0.186]**	**[0.167]**	**[0.201]**
Dif (null, H=exogenous)	**[0.513]**	**[0.675]**	**[0.475]**	**[0.186]**	**[0.435]**	**[0.415]**
(b) IV (years, eq(diff))						
H excluding group	**[0.819]**	**[0.581]**	**[0.108]**	**[0.237]**	**[0.282]**	**[0.302]**
Dif (null, H=exogenous)	[0.043]	**[0.182]**	**[0.740]**	**[0.152]**	**[0.371]**	**[0.364]**
Fisher	**7093*** **	**2187*** **	**2978*** **	**268406*** **	**200738*** **	**1580*** **
No. of Instruments	34	34	34	34	34	34
Number of Country	37	37	37	37	37	37
Observations	216	216	216	216	216	216

Table 1 footnote is applicable. Mean value of: (i) Control of corruption is -0.653.

Table 4: Governance, Indirect Tax Revenue and Inclusive Human Development

VARIABLES	Dependent Variable: Inclusive Human Development Index (IHDI)					
	Political Governance		**Economic Governance**		**Institutional Governance**	
	VA	Pol	RQ	GE	RL	CC
IHDI (-1)	**1.007*** **	**0.999*** **	**0.976*** **	**0.991*** **	**0.989*** **	**0.997*** **
	(0.0143)	**(0.0199)**	**(0.00977)**	**(0.0146)**	**(0.0143)**	**(0.0145)**
IDT	**0.0334** **	-0.000771	0.0134	**0.0428** **	**-0.0363*** **	0.00835
	(0.0150)	(0.0150)	(0.0176)	**(0.0190)**	**(0.00926)**	(0.0120)
VA	**-0.00571***					
	(0.00316)					
POL		0.00719				
		(0.00467)				
RQ			0.000259			
			(0.00372)			
GE				-0.00342		
				(0.00316)		
RL					**0.00963*** **	
					(0.00315)	
CC						-0.000403
						(0.00310)
IDT x VA	-0.0188					
	(0.0219)					
IDT x POL		0.00238				
		(0.0228)				
IDT x RQ			0.00702			
			(0.0361)			
IDT x GE				**0.0549***		
				(0.0297)		
IDT x RL					**-0.0824** **	
					(0.0325)	
IDT x CC						-0.00915
						(0.0312)
GDP	**-0.000255** **	**-0.000176***	-0.0000673	-0.000178	0.0000494	-0.000166
	(0.000114)	**(0.0000962)**	(0.000115)	(0.000111)	(0.0000881)	(0.000139)
FDI	**0.000095*** **	**0.000138*** **	**0.0000625** **	**0.000120*** **	0.0000177	**0.0000539***
	(0.0000268)	**(0.0000485)**	**(0.0000242)**	**(0.0000278)**	(0.0000334)	**(0.0000297)**

Remittance	**0.000559*** (0.000181)**	**-0.000345* (0.000180)**	-0.0000503 (0.000153)	0.0000447 (0.000183)	-0.000100 (0.000134)	**0.000216* (0.000125)**
Time Effect	Yes	Yes	**Yes**	Yes	**Yes**	**Yes**
Net Effects of IDT	**na**	**na**	na	0.000	0.021	**na**
AR(1)_P-value	[0.004]	[0.007]	[0.006]	[0.005]	[0.006]	[0.007]
AR(2)_P-value	**[0.336]**	**[0.363]**	**[0.382]**	**[0.381]**	**[0.356]**	**[0.378]**
Sargan Prob	**[0.273]**	**[0.653]**	**[0.184]**	**[0.079]**	**[0.101]**	**[0.200]**
Hansen Prob	**[0.091]**	**[0.525]**	**[0.247]**	**[0.272]**	**[0.229]**	**[0.126]**
DHT for instruments						
(a)Instruments in levels						
H excluding group	[0.067]	**[0.176]**	**[0.120]**	**[0.022]**	[0.039]	[0.080]
Dif (null, H=exogenous)	[**0.228]**	**[0.722]**	**[0.430]**	**[0.799]**	**[0.625]**	**[0.281]**
(b) IV (years, eq(diff))						
H excluding group	[0.049]	**[0.540]**	[0.075]	[0.070]	[0.048]	[0.062]
Dif (null, H=exogenous)	**[0.446]**	**[0.422]**	**[0.826]**	**[0.902]**	**[0.927]**	**[0.524]**
Fisher	4618***	4737***	10750***	171566***	18784***	224988***
No. of Instruments	34	34	34	34	34	34
Observations	229	229	229	229	229	229
Number of Country	38	38	38	38	38	38

Table 1 footnote is applicable. Mean value of: (i) Government effectiveness is -0.78 and (ii) Rule of law is -0.6

Table 5: Governance, Non-tax Revenue and Inclusive Human Development

VARIABLES	**Dependent Variable: Inclusive Human Development Index (IHDI)**					
	Political Governance		**Economic Governance**		**Institutional Governance**	
	VA	Pol	RQ	GE	RL	CC
IHDI (-1)	**0.994*** (0.0157)**	**1.031*** (0.0200)**	**0.966*** (0.0178)**	**1.024*** (0.0157)**	**1.024*** (0.0141)**	**1.028*** (0.0192)**
NTR	**0.128* (0.0706)**	**0.0830** (0.0326)**	0.208 (0.125)	0.115 (0.0950)	**-0.103* (0.0567)**	0.0244 (0.0666)
VA	**-0.00405* (0.00227)**					
POL		0.00522 (0.00401)				
RQ			-0.00492 (0.00314)			
GE				0.00419 (0.00286)		
RL					0.000716 (0.00273)	
CC						**0.00557** (0.00218)**
NTR x VA	**0.113* (0.0623)**					
NTR x POL		**0.157***				

		(0.0782)				
NTR x RQ			0.144			
			(0.0910)			
NTR x GE				0.0849		
				(0.0794)		
NTR x RL					**-0.0885***	
					(0.0493)	
NTR x CC						0.00569
						(0.0572)
GDP	-0.0000783	-0.000214	6.10e-05	-0.000127	0.0000285	-0.000133
	(0.000127)	(0.000150)	(0.000134)	(0.000126)	(0.000137)	(0.000178)
FDI	**0.0000895*** **	**0.000121*** **	**0.000138*** **	**0.000123*** **	**0.0000926*** **	**0.000119*** **
	(0.0000265)	**(0.0000347)**	**(0.0000236)**	**(0.0000256)**	**(0.0000324)**	**(0.0000303)**
Remittance	-0.000068	-0.000150	**-0.000704*** **	-0.0000842	**-0.000413*** **	**-0.000283***
	(0.000178)	(0.000227)	**(0.000162)**	(0.000189)	**(0.000119)**	**(0.000153)**
Time Effect	Yes	Yes	**Yes**	Yes	**Yes**	**Yes**
Net Effects of NTR	0.061	-0.017	na	na	-0.042	na
AR(1)_P-value	[0.001]	[0.002]	[0.001]	[0.001]	[0.001]	[0.002]
AR(2)_P-value	**[0.205]**	**[0.201]**	**[0.208]**	**[0.182]**	**[0.188]**	**[0.205]**
Sargan Prob	**[0.624]**	**[0.903]**	**[0.389]**	**[0.782]**	**[0.164]**	**[0.836]**
Hansen Prob	**[0.501]**	**[0.941]**	**[0.228]**	**[0.734]**	**[0.150]**	**[0.735]**
DHT for instruments						
(a)Instruments in levels						
H excluding group	[0.062]	**[0.277]**	**[0.040]**	**[0.165]**	[0.057]	**[0.178]**
Dif (null, H=exogenous)	**[0.882]**	**[0.992]**	**[0.618]**	**[0.925]**	**[0.386]**	**[0.917]**
(b) IV (years, eq(diff))						
H excluding group	**[0.702]**	**[0.881]**	**[0.544]**	**[0.759]**	[0.081]	**[0.539]**
Dif (null, H=exogenous)	**[0.247]**	**[0.800]**	[0.098]	**[0.495]**	**[0.509]**	**[0.771]**
Fisher	1901***	1182***	3169***	99224***	9216***	2702***
No. of Instruments	34	34	34	34	34	34
Number of Country	43	43	43	43	43	43
Observations	279	279	279	279	279	279

Table 1 footnote is applicable. Mean value of (i) Voice and accountability is -0.59, (ii) Political stability is -0.635, and (iii) Government effectiveness is -0.78.

Conflict of Interest

There is no conflict of interest among the authors.

Appendices

Appendix 1: Definitions and Sources of Variables

Acronyms	Variables	Description	Sources
IHDI	Inclusive human development	Inequality-adjusted human development index	United Nations Development Program (UNDP)
TR	Total government revenue	Government revenue excluding grants, % of GDP	ICTD database

TTAX	Total tax revenue	Tax revenue, % of GDP	ICTD database
DT	Direct tax	Direct taxes (% of tax revenue)	ICTD database
IDT	Indirect tax	Indirect taxes (% of tax revenue)	ICTD database
NTR	Non-tax revenue	Non-tax revenue, % of GDP	ICTD database
CC	Control of Corruption	Control of corruption (estimate)	World Governance Indicators (WGI)
GE	Government Effectiveness	Government effectiveness (estimate)	World Governance Indicators (WGI)
POL	Political stability	Political stability/no violence (estimate)	World Governance Indicators (WGI)
RQ	Regulation Quality	Regulation quality (estimate)	World Governance Indicators (WGI)
RL	Rule of Law	Rule of law (estimate)	World Governance Indicators (WGI)
VA	Voice and Accountability	Voice and accountability (estimate)	World Governance Indicators (WGI)
GDP	GDP growth	Gross Domestic Product (GDP) growth (annual %)	World Bank, World Development Indicators (WDI)
Remittance	Personal remittance	Remittance inflows (% of GDP)	World Bank, World Development Indicators (WDI)
FDI	Foreign direct investment	Foreign Direct Investment net inflows (% of GDP)	World Bank, World Development Indicators (WDI)

Note: International Center of Tax and Development

Appendix 2: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
IHDI	378	.355	.094	.201	.688
TR	428	.198	.102	.013	.742
TTAX	396	.154	.076	.012	.491
DT	312	.059	.034	.005	.17
IDT	347	.096	.05	.006	.375
NTR	426	.038	.069	.001	.731
CC	468	-.653	.643	-1.826	1.027
GE	467	-.78	.654	-2.484	1.057
POL	467	-.635	.898	-3.131	1.104
RQ	467	-.704	.616	-2.388	1.127
RL	467	-.694	.638	-2.423	.975
VA	467	-.59	.73	-2.197	.998
GDP	456	1.719	8.183	-62.378	121.78
Remittance	407	4.089	4.83	0	26.883
FDI	454	5.091	10.142	-6.37	103.337

Abbreviation: IHDI, Inclusive human development; TR, total government revenue; TTAX, total tax revenue; DT, direct tax; IDT, indirect tax; NTR, non-tax revenue; CC, Control of corruption; GE, Government effectiveness; PS, Political stability; RQ, Regulatory quality; RL, Rule of law; VA, Voice and accountability. GDP: GDP growth. FDI: foreign direct investment: Remittance, personal remittance

Appendix 3: Correlation Matrix

	IHDI	TR	TTAX	DT	IDT	NTR	CC	GE	POL	RQ	RL	VA	GDP	Remittance
IHDI	1													
TR	0.312***	1												
TTAX	0.251***	0.863***	1											
DT	0.269***	0.769***	0.824***	1										
IDT	0.193**	0.763***	0.929***	0.556***	1									
NTR	0.222***	0.602***	0.115	0.212***	0.0310	1								
CC	0.430***	0.445***	0.521***	0.445***	0.475***	0.0498	1							
GE	0.645***	0.376***	0.443***	0.454***	0.355***	0.0373	0.821***	1						
POL	0.312***	0.380***	0.422***	0.323***	0.408***	0.0741	0.671***	0.618***	1					
RQ	0.508***	0.218***	0.315***	0.285***	0.277***	-0.0709	0.741***	0.878***	0.616***	1				
RL	0.601***	0.343***	0.427***	0.369***	0.386***	- 0.000894	0.861***	0.920***	0.693***	0.881***	1			
VA	0.332***	0.256***	0.338***	0.335***	0.278***	-0.0324	0.565***	0.599***	0.652***	0.672***	0.681***	1		
GDP	-0.145*	- 0.0926	- 0.0559	- 0.0870	- 0.0250	-0.0947	- 0.0313	- 0.0140	- 0.0439	- 0.0751	- 0.0855	- 0.129*	1	
Remittance	- 0.0317	0.270***	0.336***	0.102	0.426***	-0.00438	0.0894	-0.132*	0.0386	-0.142*	- 0.0217	0.0349	0.0131	1
FDI	- 0.187**	- 0.0484	- 0.0796	- 0.0184	-0.104	0.0313	- 0.0674	- 0.176**	0.0630	-0.130*	-0.146*	0.0607	0.0882	0.126*

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

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