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Business Environment and Inclusive Growth Nexus: Evidence from African Countries

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Abstract

It is increasingly recognized that economic growth alone is not enough to guarantee the well-being of all. This is why the current debates on sustainable development are highlighting the need to promote inclusive growth in the world's countries in general, and in developing countries in particular. And one way to achieve inclusive growth would be an improved business environment through better business regulations. This paper aims to analyze the relationship between business environment and inclusive growth in a sample of African countries over the period 2010-2018. The business environment is measured by the World Bank's Ease of Doing Business index. Inclusive growth is measured by two proxies: 1) GDP per person employed and 2) an inclusive growth index constructed using Principal Component Analysis (PCA) method. In addition, we analyzed the above relationship in a static and dynamic framework. In the static framework, the business environment-inclusive growth relationship was analyzed by estimating a Panel Corrected Standard Error (PCSE) model as the baseline model and several other estimation models such as random-effects, fixed-effect Driscoll-Kraay, and pooled Ordinary Least Squares (pooled OLS). As for the dynamic framework, the study used the Generalized Method of Moments in system (System-GMM) estimation technique. The results show a positive and significant effect of business environment on inclusive growth. This result remains robust to the different estimation techniques used on the one hand and regardless of the measure of inclusive growth used on the other hand and suggests that a regulatory environment conducive to business activities is one way for African countries to achieve inclusive growth. From this result, policy recommendations have been formulated accordingly.

Keywords

Business Environment, Ease of Doing Business, Inclusive Growth, Africa

1. Introduction

From recent debates on sustainable and inclusive development, it emerges the need for countries to promote inclusive growth (AfDB, 2013; Ali & Son, 2007; Commission on Growth and Development, 2008; UNDP, 2017; World Bank, 2009; Europe 2020 Strategy). Indeed, economic growth alone does not guarantee the improvement of the well-being of all (AfDB, 2013). Specifically for African countries, which we focus in this study, the data show that over the period 2014-2019, Africa has averaged economic growth of about 3%, although statistics show that this has slowed down compared to the period 2000-2014, when it was about 5% (AfDB, 2020). It is noted that this economic growth has been no less inclusive, as high inequality and poverty persist (AfDB, 2020). In fact, according to the AfDB (2020), only one-third (i.e., 18 out of 48) of African countries have achieved inclusive growth. Over the period 2000-2017, these countries had an average pro-poor growth rate of 3.6% per year, compared to 1.2% for the average population, leading to a reduction in poverty of 0.7% per year and inequality of 0.5% per year (AfDB, 2020). Despite this economic performance, it is clear that it has not enabled most African countries to significantly reduce extreme poverty and inequality. In comparison with other world regions, Africa is presented as the region with the highest extreme poverty and inequality (Figure A1).

It is for these reasons that recommendations to go beyond economic growth are increasingly being made. Therefore, expectations for inclusive growth are focused on the quality of this growth, its sustainability, and its capacity to benefit all (AfDB, 2013). Although the debates are consenting for the inclusive growth of economies, there is not yet a consensus on the definition of the concept of inclusive growth. Indeed, the point of contention is the "inclusive" character of growth, leading several authors and international institutions to argue that the concept of growth is not yet well understood (AfDB, 2013). This has led several authors and international institutions to define this concept. Later in this study, we present some of these definitions. In general, these definitions approach the concept of inclusive growth in terms of reducing poverty, reducing income inequality and creating new economic opportunities or productive employment. Defining this concept, we focus on the definition given by the World Bank (2009). According to this institution, growth is inclusive when it increases the wealth of the economy at a rapid rate and creates opportunities for productive employment for different groups of people. Indeed, job creation would contribute to the reduction of poverty and income inequality through the income it provides to individuals (Matten & Crane, 2005; Peredo & Chrisman, 2006). Moreover, given that growth inclusiveness relates to several aspects of well-being, namely income growth, low levels of poverty and income inequality, access to basic social infrastructure, etc., we also adopt a definition related to the multidimensionality of the concept of inclusive economic growth, such as Ofori & Asongu (2021) and Fe & Kouton (2022). That said, strategies that lead to an increase in the size of the economy, foster entrepreneurship and the creation of productive jobs, re-

duce income inequality and poverty, etc., must be considered in order to ultimately achieve sustainable inclusive growth in African countries.

From this perspective, one of the strategies for achieving inclusive growth in Africa could be strategies that advocate for a better business environment (Asongu & Odhiambo, 2019a; Canare, 2018; De Mello & Dutz, 2012; Deighton-Smith et al., 2016; Kouton, 2019). First, the challenge for African countries to energize and develop their private sector remains in improving the business environment through better regulatory reforms (World Bank, 2019a). Second, a vibrant private sector is likely to promote entrepreneurship and job creation, (World Bank, 2019a), and thus contribute to a significant reduction in poverty and income inequality (Commission on Growth and Development, 2008; Djankov et al., 2019; Gwartney & Connors, 2010; Mensah & Benedict, 2010). This is why, for example, countries are implementing regulatory reforms to streamline and reduce the costs of starting a business (Klapper & Love, 2010), to stimulate competitiveness and innovation, which are important channels for inclusiveness (Aghion et al., 2021b). Thus, a policy tool for inclusive growth in Africa would be a streamlined regulatory environment, and efficient and transparent policy reforms that are less burdensome for private sector development.

Furthermore, the relationship between business environment and inclusive growth has been discussed in the economic literature. Measured in several ways, it emerges that a better business climate[1] is beneficial for inclusive growth. Indeed, several indicators are proposed by international institutions to approach the business environment. These include the World Bank's Doing Business indicators, the Fraser Institute and Heritage Foundation's economic freedom indices, the Business Monitor Index (BMI), the International Country Risk Guide (ICRG), etc. (United Nations, 2014; World Bank, 2004). For the most widely used measures of the business environment, namely the Doing Business indicators and the economic freedom indices, the results of several studies show that the business environment promotes inclusive growth. On the one hand, a better business environment promotes job creation as a component of inclusive growth (Fonseca et al., 2001; Garrett & Rhine, 2010; Kouton, 2019; World Bank, 2018). On the other hand, a better business environment is negatively associated with poverty reduction (Djankov et al., 2019; Zaman et al., 2011) and reduced income inequality (Ashby & Sobel, 2008; Bennett & Vedder, 2013; Chambers & O'Reilly, 2019; Zaman et al., 2011). In addition to these findings, the business environment is proven to encourage entrepreneurship (Canare, 2018; Fonseca et al., 2001; Van Stel et al., 2007) and boosts economic growth (De Haan & Sturm, 2000; Djankov et al., 2006; Doucouliagos & Ulubasoglu, 2006; Haidar, 2012).

This literature on the relationship between business environment and inclusive growth supports the idea that a regulatory environment conducive to business activity is one way for African countries to achieve inclusive growth.

[1]In this paper, business environment and business climate are used interchangeably.

If very few countries have so far achieved inclusive growth as mentioned in the African Economic Outlook report, it may be because the regulatory environment is not more conducive to business activity (AfDB, 2020). As evidence, the World Bank's Ease of Doing Business data and The Heritage Foundation and The Fraser Institute's economic freedom data show that African countries are the lowest ranked compared to other regions of the world in terms of business environment.

In 2018, Sub-Saharan Africa is the continent with the lowest average index of the Ease of Doing Business behind South Asia and MENA countries (Figure 1).

Even with data from The Heritage Foundation and The Fraser Institute, it emerges that African countries are the least economically free (Figure 2 and Figure 3).

As a result, Africa's lag in many economic development indicators may be a function of the inherent challenges for African countries to carry out reforms that lead to a cleaner business environment conducive to investment and economic prosperity (Asongu & Odhiambo, 2019a; Tchamyou, 2017). In this study, we focus on measuring the business environment in the World Bank way. First, the World Bank's Doing Business indicators have been widely used to examine the relationship between the quality of the business environment and economic growth (Adepoju, 2017; Ani, 2015; Głodowska, 2017; Hanusch, 2012; Mehrabani et al., 2016; Nainggolan et al., 2020) on the one hand, and to assess its impact on job creation (World Bank, 2018), entrepreneurship (Canare, 2018), income
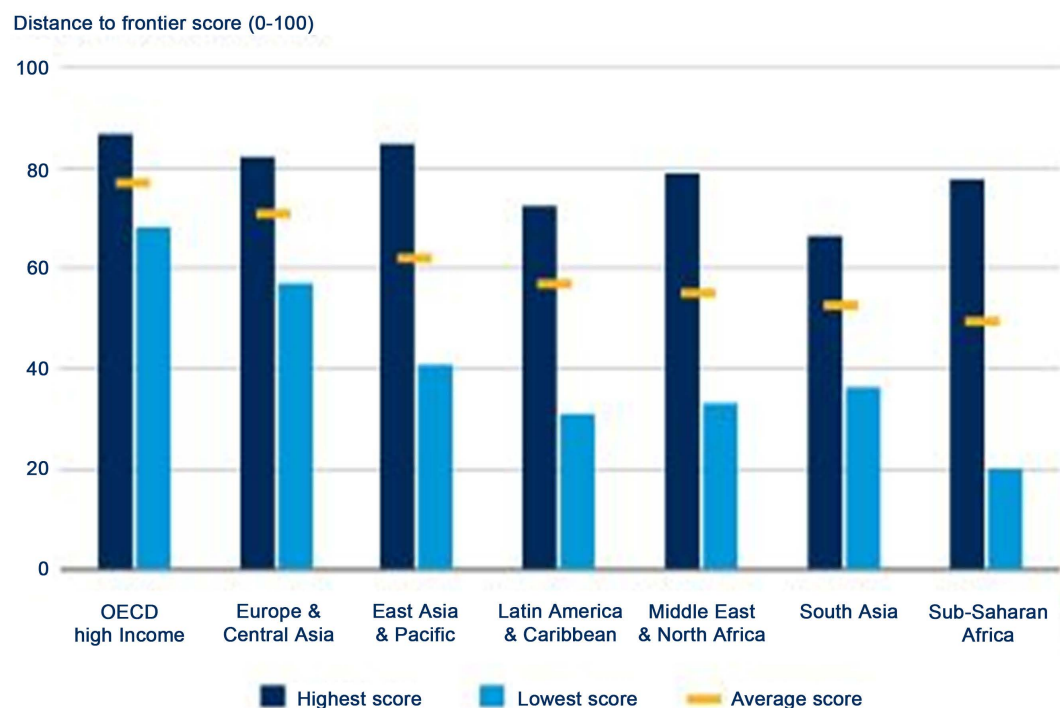

Figure 1. Ease of Doing Business by region in 2018. Source: World Bank.
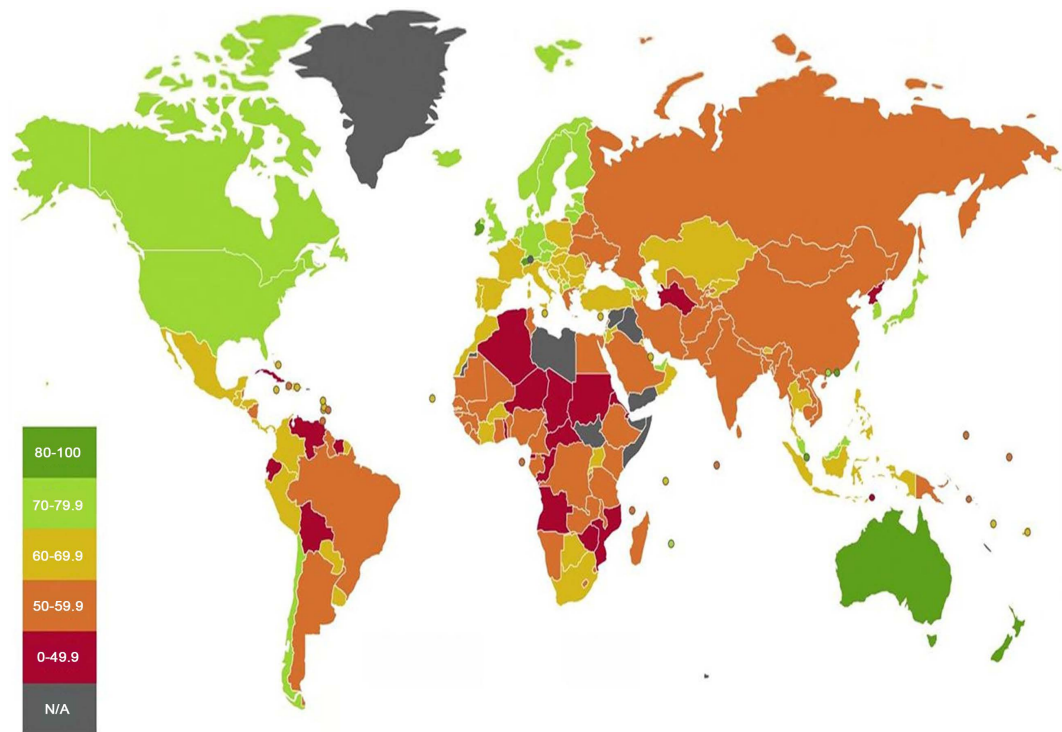
Figure 2. Economic freedom index in 2018. Source: The Heritage Foundation.
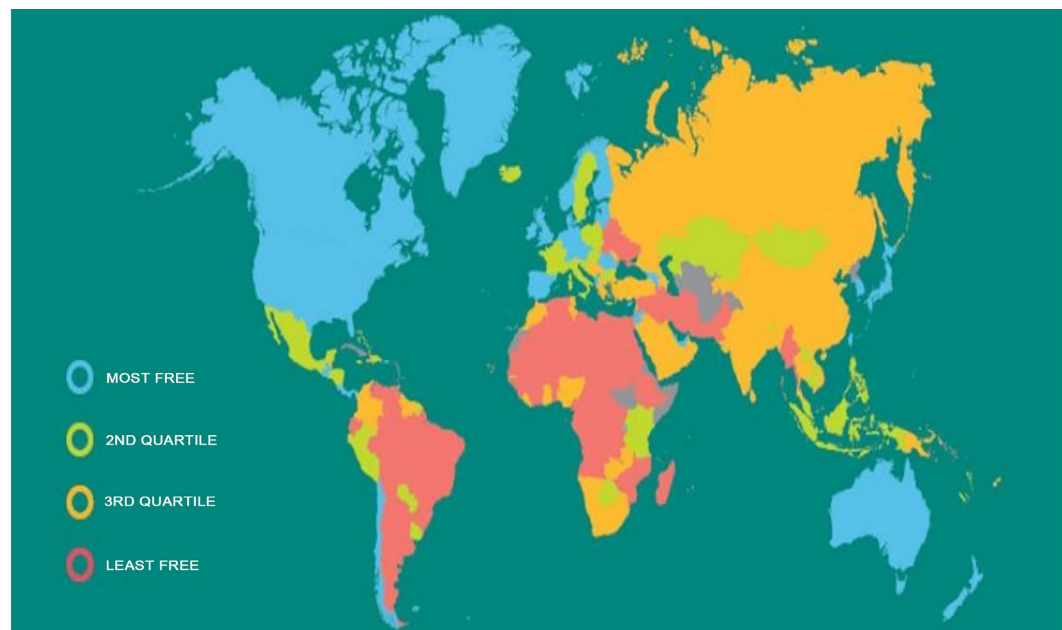
Figure 3. Economic freedom index in 2018. Source: Fraser Institute.

inequality and poverty, etc. on the other hand. This provides a basis for testing the effect of the Ease of Doing Business on inclusive growth through its components. Second, the Ease of Doing Business index is used for the following reasons: 1) it is constructed from evidence-based reform data and not from expert opinion data as is the case with other business environment indicators (Haidar,

2012); 2) it assesses laws, regulations, courts, credit registers, and the business register, unlike other business environment indicators (World Bank, 2004). Third, this study not only contributes to the debate on the relationship between business environment and inclusive growth but is also, to the best of our knowledge, the first study that examines this relationship using the World Bank's Ease of Doing Business index. We use this measure of the quality of the business environment to show that the benefit of a better environment could go beyond economic growth. Thus, the results of this study could serve as a compass for policymakers in African countries to better guide their economic policy strategies to stimulate inclusive economic growth in Africa.

The objective of this study is to examine the impact of business environment on inclusive growth in Africa. In this perspective, we use a sample of African countries over the period 2010-2018. On the one hand, we measure the business environment by the World Bank's Ease of Doing Business index. On the other hand, GDP per person employed and a constructed inclusive growth index were used as a proxy for inclusive growth. In addition, we estimated the relationship between the business environment and inclusive growth in a static framework on the one hand and in a dynamic framework on the other hand. In the static framework, the study starts with a basic estimate based on a Panel Corrected Standard Error (PCSE) model proposed by Beck & Katz (1995). This is a reliable estimation technique in the presence of heteroscedasticity and autocorrelation of the residuals and the existence of cross-sectional dependence among countries. In addition, we estimated the under-study relationship using the random effects, fixed effects with Driscoll & Kraay (1998) standard error (DKSE) and pooled Ordinary Least Squares (pooled OLS). For the analysis of the relationship under study in the dynamic framework, we used the Generalized Method of Moments in system (System-GMM) estimation technique. The estimation results showed a positive and significant effect of business environment on inclusive growth, indicating that a better business environment is beneficial for inclusive growth in Africa. This result is robust to the exclusion of outliers, and to the different estimation techniques used (i.e., random-effects, fixed-effects DKSE, pooled OLS, and System-GMM), which made to formulate policy recommendations accordingly.

The remainder of this article is structured as follows. Section 2 presents the conceptual framework on inclusive growth and business environment. Section 3 discusses the literature review, both theoretical and empirical. Section 4 describes the data and discusses the methodological framework. Section 5 presents and discusses the results. The conclusion and policy recommendations are presented in Section 6.

2. Conceptual Review on Inclusive Growth and Business Environment

In this section, a review of the concepts of inclusive growth and business climate

is presented, as well as the different indicators used to measure these two (2) concepts in this study.

2.1. Inclusive Growth

Recent debates on economic development seem to show that economic growth is a necessary, but not sufficient condition for sustainable increases in well-being (OECD, 2014). This is why, increasingly, the prospects for economic development, especially in developing countries, advocate inclusive growth. Indeed, inclusive growth is intended to be a sustainable economic growth involving a wide range of sectors and integrating a larger active population of a country to take part in the development process (Ianchovichina & Lundström, 2009), allowing the reduction of inequalities by promoting equal access to opportunities (Ali & Son, 2007; Ali & Zhuang, 2007) and promoting job creation (Europe 2020 Strategy). Consequently, the definition of inclusive growth is not unanimous in the literature. Several authors, such as Ali & Zhuang (2007), Rauniyar & Kanbur (2010), Ali & Son (2007) as well as several international organizations such as the AfDB (2012), the World Bank (2009), the UNDP (2017), among others, each have their own definition of the concept of inclusive growth.

According to Ali & Son (2007), inclusive growth is growth that not only creates new economic opportunities but also ensures equal access to these opportunities for all segments of society, especially the poor. According to the AfDB (2012), inclusive growth is economic growth that results in more sustainable socio-economic development opportunities for the greatest number of people in a region or country, while protecting vulnerable groups, all in an environment of equity, equal justice, and political plurality. In other words, inclusive growth can be linked to the concepts of broad-based growth, shared growth and pro-poor growth (AfDB, 2012). The two (2) definitional approaches to the concept of inclusive growth according to Ali & Son (2007) and the AfDB (2012) appear to be similar. They refer to growth that integrates a wider range of sectors, promotes equal opportunities for all people and protects the poor. In contrast, the definition given by Rauniyar & Kanbur (2010) seems to emphasize the reduction of inequalities in access to opportunities. In fact, according to these authors, inclusive growth is growth that is accompanied by a reduction in inequalities in access to opportunities. Also, the definition of Ali & Son (2007) also evokes the concepts of the creation of new economic opportunities, equal access to these opportunities and accessibility to all segments of society, including the poor. In addition to the aspects already mentioned in the definition of inclusive growth by previous authors and institutions, the definition of the World Bank (2009), UNDP (2017) and Europe 2020 Strategy emphasize other aspects related to inclusive growth, namely 1) a rapid pace of economic growth and creation of productive jobs for different groups of people (World Bank, 2009); 2) the UNDP (2017) emphasizes that inclusive growth is not just an outcome but a process and 3) Europe 2020 Strategy links inclusive growth to increased investment and modernization of

the labor market.

In light of these definitions, it is clear that growth inclusiveness is linked to economic growth, which is fundamentally accompanied by job creation, presented as an essential component of inclusive growth (World Bank, 2009). Thus, it is the first definition that we retain in this study. Indeed, the creation of so-called productive jobs reduces unemployment and contributes to income growth, which in turn contributes to reduce income inequality and poverty, etc. (World Bank, 2009). These aspects seem to give the concept of inclusive growth a multidimensional character in terms of the components that define it (Fe & Kouton, 2022; Ofori & Asongu, 2021). Indeed, Fe & Kouton (2022) and Ofori & Asongu (2021) have constructed an index to take into account the multidimensionality of this concept of inclusiveness. We also adopt this definition which attempts to define inclusive growth by several aspects or dimensions of inclusiveness.

2.2. Business Environment

The business environment, or investment climate, can be defined as "*the set of location-specific factors that influence market opportunities or the willingness of firms to invest productively, create jobs, and expand their operations*" (World Bank, 2005). According to the United Nations (2014), the business climate is "*the political, economic, institutional and behavioral environment, present and future, that affects the profitability and risks associated with investments.*" For her, the concept of business climate refers to factors that can create an enabling environment and encourage firms to invest, create jobs and grow. Therefore, it identifies three (3) dimensions that are attributable to the business climate. These are the macroeconomic, institutional and governance, and infrastructure dimensions. The macroeconomic dimension accounts for the stability of the macroeconomic framework in which businesses operate, with a capacity for resilience to endogenous and exogenous shocks. The institutional and governance dimension takes into account the existence of laws and regulations that promote the protection of property rights, which is essential for the emergence and development of a dynamic private sector. The infrastructure dimension includes access to physical (water, energy, roads, etc.), financial and technological infrastructure that facilitates the economic activities of businesses.

As for its measurement, indicators constructed by several international institutions are available. Using a variety of methods and approaches, these institutions assess the quality of the business environment in which the private sector operates by publishing annual reports on a large sample of countries around the world. The literature distinguishes the following business climate indicators: the World Bank's Doing Business index; the Fraser Institute and the Heritage Foundation's index of economic freedom; the Business Monitor index; Transparency International's Corruption Perceptions Index; the Kearney and Foreign Affairs FDI Globalization or Confidence index; the International Institute for Management Development's Global Competitiveness index; the PRS Group's Interna-

tional Country Risk Guide Index; and the World Economic Forum's Global Multidimensional Competitiveness Indicator (United Nations, 2014; World Bank, 2004). In addition to these indicators, there is the Ibrahim Mo index specific to African countries. These are aggregate quantitative indices of the business climate resulting from several dimensions, which are specific to the methodology of each institution.

With regard to the existing literature on business environment, two (2) indicators are commonly used. These are the World Bank's Doing Business index and the Fraser Institute's or Heritage Foundation's index of economic freedom. These indicators are generally used to show that a better business environment induced by good business regulatory reforms contributes to inclusiveness through its main components. For example, the empirical literature has found a strong correlation between the regulatory environment for business and inclusive growth through employment (Branstetter et al., 2014; World Bank, 2018), income inequality (Chambers et al., 2018; Chambers & O'Reilly, 2019), poverty (Djankov et al., 2019; Dwumfour, 2020), economic growth (Djankov et al., 2006; Haidar, 2012), etc. At the same time, the business climate measured with the concept of economic freedom 1) is beneficial for productive employment (Garrett & Rhine, 2010); 2) contributes to reducing poverty and income inequality (Bennett & Vedder, 2013; Hur, 2014; Zaman et al., 2011) and 3) is good for inclusive economic growth (Kouton, 2019), etc.

In this study, we use the World Bank's own concept of the business environment. We have chosen this approach for the following reasons. First, it is to fill the gap in the quantitative analysis of the relationship between the business environment as approached by the Ease of Doing Business index and inclusive growth in a rigorous econometric framework. In addition, the Ease of Doing Business index is derived from evidence-based reform data, whereas the economic freedom index is constructed from data based on expert opinion (Haidar, 2012). In addition, the World Bank's approach to measuring the business environment includes assessing specific laws and regulations that promote or hinder business activity, as well as courts, credit registries, and business registries, unlike the other business environment indicators (World Bank, 2004).

3. Literature Review

3.1. Theoretical Background

Theoretically, economic regulation serves as a framework to explain the relationship between business regulation and inclusive growth (Daude, 2016; Deighton-Smith et al., 2016; Lin, 2004). Indeed, according to the theoretical literature, economic regulation affects inclusiveness through competition and innovation (Aghion et al., 2021b; Dutz et al., 2011). These affect inclusive growth through income inequality, poverty, employment, economic growth, etc.

First, economic regulation theory supporting government intervention to re-

solve market failures[2] is known to have effects on competition (Fischer & Pfeil, 2003; Friske & Zachary, 2017; Zhao et al., 2010) and innovation (Aghion et al., 2021a, 2005; Blind, 2016). First, Friske & Zachary (2017) are based on the Resource-Advantage Theory and show that the competitive environment could be shaped by regulatory reforms. For example, competition would be affected as a result of reforms on taxes, tax credits and sales restrictions. This theory argues that regulation can positively—when barriers to market entry by new firms are reduced—or negatively—when conditions for market entry by new firms are very restrictive—impact competition (Hunt, 1999). Good business regulatory reforms are therefore a way to fight anti-competitive behavior and stimulate competition (Kitzmuller & Licetti, 2013; Martinez Licetti et al., 2017). In the same vein, reducing or phasing out rules that burden business activity—with the aim of reducing regulatory costs—is likely to promote competition. This is argued by Zhao et al. (2010) when they show that deregulation is pro-competitive in the banking and financial sector provided that it contributes to reducing business regulatory costs. Second, there is evidence that innovation is affected by regulation and that the way it is affected depends on the type of regulation, the magnitude of the cost of compliance and the incentive effect, etc. (Aghion et al., 2021a; Blind, 2012, 2016). Based on the theoretical considerations of Carlin & Soskice (2005), Blind (2012) shows through a new theoretical model that he has developed that regulation can have two (2) effects on innovation: 1) reduce investment in Research and Development (R & D) because compliance with regulations (e.g., a regulation on tax increases) would reduce available resources, and thus decrease capital intensity, the level of technical progress and innovation; 2) change incentives to invest in R & D (e.g., patent protection to boost investment in R & D). At the same time, perverse effects on innovation may result from regulations on price restrictions and product market rules (Crafts, 2006). According to Blind (2012), the effect on innovation would be positive if compliance costs are low or even zero and incentives are positive. Conversely, the effect would be negative if compliance costs are high and incentives for innovation are low or negative. As for the types of regulation, three (03) types of regulation are distinguished, namely economic regulation, social regulation and institutional regulation (Blind, 2012). The way each regulation affects innovation differs[3]. But, specifically to economic regulation, which interests us in this study, it emerges that the regulatory instruments that affect innovation are among others, competition policies, price regulation, regulations on market entry, and the regulation of natural monopolies and public services (Blind, 2012).

Second, competition and innovation are shown to be important determinants of inclusive growth (Aghion et al., 2021b; Dutz et al., 2011). Based on a Schumpeterian growth model constructed by Aghion et al. (2019), Aghion et al. (2021b) show what effect innovation can have on income inequality, a component of in-

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[2]These include imperfect competition, unstable markets, missing markets or undesirable market outcomes (Hertog, 2010).

[3]The reader interested in this detail can refer to the study by Blind (2012).

clusive growth. Basing their predictions on this model, they argue that theoretically, innovation by entrants increases top income inequality without affecting a broader measure of income inequality such as the Gini index, but rather improves the wages of workers in productive (i.e., innovative) firms. At the same time, they predict that barriers to entry (strict regulations on market entry by new entrants) mitigate the positive effect of entrant innovation on top income inequality. Better still, applied to the United States data, the model shows that innovation makes growth more inclusive. As for poverty, which is also an important component of inclusive growth, the channel of economic growth based on Schumpeterian creative destruction and innovation allows its reduction. This is why Dutz et al. (2011) argue that innovation contributes to inclusive growth through the expansion of the firm's production, which requires more skilled and unskilled labor, and thus generates employment. This makes it possible to link innovation and entrepreneurship. In fact, Aghion et al. (2019) argue that the entrepreneurial share of income is increased in the presence of higher innovation. Better still, entrepreneurship and innovation are linked and have their origin in the theory of Schumpeter (1934). According to one of the theories of the economics of innovation, i.e., the entrepreneurial paradigm evoked by Sundbo (1998), innovation is the source of entrepreneurship, and the role of the entrepreneur is emphasized in the innovation process (Zhao, 2005). And, in addition to the fact that innovation and entrepreneurship do not occur simultaneously, it has been shown that there is an overlap between them or that they are complementary (Sundbo, 1998; Zhao, 2005).

At the same time, competition also affects income inequality (Comanor & Smiley, 1975; Ennis et al., 2019) and poverty (Rodríguez-Castelán, 2015). The mechanism by which competition affects income inequality has been elucidated by the pioneering Comanor & Smiley' (1975) work. It was then taken up in the theoretical model developed by Ennis et al. (2019). According to these authors, the absence of competition (or the strong presence of a monopoly) leads to a price increase in relation to marginal costs because of the market power and the rent-seeking behavior of firms (due to firms' profit-seeking behavior). As a result, consumers pay higher prices than they would have if competition prevailed, leading to a disproportionate redistribution of income that benefits business owners and harms consumers. Ultimately, this leads to income inequality. Concerning the poverty component, Rodríguez-Castelán (2015) develops a theoretical model to examine the extent to which market power affects poverty. Theoretically, he argues that increased market power due to the preponderance of oligopolies does not benefit poverty because it increases the prices of goods and services in the economy, thereby reducing the relative incomes of households in general and the poor in particular. Thus, policy reforms that promote competition would be a way to avoid market concentration, which harms the poorest households and also does not improve income distribution, and thus runs counter to inclusiveness (Begazo & Nyman, 2016).

Finally, regarding the economic growth component, which is, along with in-

come inequality, poverty, job creation, etc., an essential component of inclusive growth, business regulatory reforms and endogenous growth theory provide a theoretical framework for showing that business regulation affects economic growth (Dawson & Seater, 2013; Friske & Zachary, 2017). Friske & Zachary (2017) use the Resource-Advantage Theory to show that regulatory reforms impact economic growth through the competition channel. Dawson & Seater (2013) use the Paretto theoretical model and adapt it to the case of tax reform to show that regulation affects economic growth. They argue that business regulatory reforms impact physical capital, human capital and innovation, and thus economic growth. Indeed, from the perspective of neoclassical growth theory (Lucas, 1988; Romer, 1986), these factors are the important determinants of economic growth. However, they point out that the net effect of regulation on capital (human and physical), innovation and economic activity is ambiguous (can be positive or negative). These works are based on the assumption that economic regulation is an endogenous factor in the endogenous growth theory supported by North & Thomas (1973).

Finally, we conclude that there is a theoretical link between government business regulation and inclusive growth. In addition to finding that this link appears to be indirect, we have come to the conclusion that competition and innovation are the channels through which economic regulation affects inclusive growth in a theoretical way.

3.2. Empirical Literature Review

Private sector development strategies require improving the quality of the business environment. Indeed, improving the business environment makes the private sector more dynamic (United Nations, 2014) and promotes its development (World Bank, 2019a). According to the United Nations (2014), a dynamic private sector, in addition to being a source of economic growth for countries, allows the reduction of poverty and income inequality on the one hand and promotes job creation, etc. on the other hand. Thus, a better business climate would be conducive to inclusive economic growth. The remainder of this section examines the relationship between the business environment and inclusive growth, considering concepts of the business environment related to the World Bank's Doing Business indicators and the Heritage Foundation's and Fraser Institute's economic freedom indicators.

3.2.1. Ease of Doing Business and Inclusive Growth

In considering the job creation component of inclusive growth, the World Bank (2018) argues that the business climate is strongly correlated with inclusive growth. According to this institution, a business climate that allows firms to invest, grow and create new jobs requires the better regulatory reforms that facilitate firms' business activities. The case of Portugal is an illustrative example. Indeed, reducing the time and cost of formalizing businesses in this country has

contributed to a 17% increase in the number of business start-ups and the creation of seven (7) new jobs per 100,000 inhabitants per month (Branstetter et al., 2014; World Bank, 2018). To reach this conclusion, Branstetter et al. (2014) conducted the study using a sample of about 227,000 firms and an estimated average of about 2 million employees per year from virtually all enterprises in the Portuguese private sector. In contrast, when the business environment is restrictive, the employment divide increases (Fonseca et al., 2001). Indeed, using data from Organization for Economic Co-operation and Development (OECD) economies and a theoretical model[4] that they designed, these authors analyzed the business environment effects on job creation costs. The results show that higher start-up costs discourage entrepreneurship and increase the divide in the population becoming workers. As a reminder, the creation of new economic opportunities through entrepreneurship that promotes the employment of skilled and unskilled labor is also a channel to inclusiveness (Ali & Son, 2007). Indeed, the entrepreneurial spirit fostered by a better business environment allows for the reduction of poverty (Matten & Crane, 2005; Peredo & Chrisman, 2006).

Turning to the income inequality and poverty components, several empirical works have found that the business environment affects income inequality and poverty. Chambers et al. (2018) argue that countries with stricter entry regulations tend to have more persistent income inequality. These authors measure entry regulations by the number of procedures required to start a new business and income inequality by the Gini coefficient. They conducted the study on a panel of 115 countries covering the period 2004-2013 and used two (2) estimation techniques, namely OLS and two-step OLS (2SLS). Also, Chambers & O'Reilly (2019) showed that a barrier to entry for new firms measured by the cost of starting a new business is positively associated with income inequality in OECD countries. Indeed, the results show that a one percentage point increase in entry costs is associated with an increase of just over 3% in regional inequality measured by the 80/20 income percentile ratio. As for the poverty component, Djankov et al. (2019), and Dwumfour (2020) have shown that good performance on the Doing Business indicators contributes to poverty reduction in countries that work toward business-friendly regulations (Djankov et al., 2019). To achieve this result, the authors use the aggregate Ease of Doing Business index and four (04) Ease of Doing Business sub-indices: starting a business, getting a building permit, getting credit, and enforcing contracts. They use a sample of 189 countries over the period 2005-2013 and use the poverty rate at $1.90 (in Purchasing Power Parity and as % of the population) as a measure of poverty. According to them, the regulatory reforms toward poverty reduction are the creation of new enterprises that generate jobs and economic opportunities for the poor. Unlike Djankov et al. (2019), Dwumfour (2020) uses a dynamic-GMM framework,

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[4]The model explains how the higher cost of starting a business discourages potential entrepreneurs from starting businesses and choosing instead to become employees. See Fonseca et al. (2001) for more details.

measures poverty by the Human Development Index (HDI) and real GDP per capita and uses all indices of the Ease of Doing Business dimensions to examine the impact on poverty. The results show that business regulatory reforms improve welfare in terms of poverty reduction, conditional on a healthy business environment.

Finally, the analysis of the relationship between business regulation and economic growth has also received special attention from academics and researchers in recent years. From what emerges, the Ease of Doing Business is good for economic growth. For evidence, Djankov et al. (2006) use a sample of 135 countries around the world and show that business regulation measured by a simple average of countries' ranks in seven (07) dimensions of Ease of Doing Business positively and significantly impacts economic growth. Also, Haidar (2012), Hanusch (2012), among others, arrived at the same result with the difference that Haidar (2012) approached the aggregate Ease of Doing Business index differently. Unlike the previous authors who used a simple average of the ranks in each Doing Business dimension, he counts positive reforms in each year and in each Doing Business dimension by designating a positive reform as 1 and 0 otherwise. While studies that use the aggregate index are unanimous that the Ease of Doing Business boosts economic growth, those that focus on the determinants of economic growth have mixed results. For example, Ani (2015), conducting his study on a sample of Asian countries and using data for the year 2014, finds that the determinants of economic growth in Asian countries include obtaining a building permit, getting credit, registering property, and trading across borders. At the same time, Mehrabani et al. (2016) find that only the dimensions of starting a business, obtaining a building permit, registering property, obtaining credit and enforcing contracts are those for which they obtain positive effects. Several other studies support these mixed results (Bonga & Mahuni, 2018; Głodowska, 2017; Sebayang & Febrina, 2021). This difference in results is partly explained by the heterogeneity of the samples considered, the time period of the data, the econometric approach, the different structures of the economies, etc.

3.2.2. Economic Freedom and Inclusive Growth

Like the Ease of Doing Business, the quality of the business environment, measured by the index of economic freedom is empirically recognized for its impact on employment, income inequality, poverty, economic growth, etc., and thus on inclusive growth. Economic freedom is linked to market-oriented reforms to create an enabling environment for trade. From this perspective, it is shown to influence inclusiveness through its components as well as the Ease of Doing Business. Indeed, economic freedom is beneficial for employment growth (Bennett, 2019; Garrett & Rhine, 2010; Lucas & Boudreaux, 2018). It contributes to poverty reduction (Zaman et al., 2011) and it allows for the reduction of income inequality (Ashby & Sobel, 2008; Bennett & Vedder, 2013; Zaman et al., 2011).

With respect to the employment component, analysis of the relationship between economic freedom and employment growth in the United States has allowed Garrett & Rhine (2010) to argue that economic freedom defined by private property protection and the private market promotes productive employment. But the results show that the impact of the labor market on employment growth is greater than the impact of less government interference. Theoretically, Bennett (2019) shows that economic freedom can affect job creation either downward or upward depending on the degree of economic liberalization of economies. He argues that policies that promote economic freedom are conducive to the creation of new opportunities. New opportunities are conducive to the entrepreneurship and productivity of existing firms, which in turn allows for job creation through the entry of new firms and the expansion of existing firms. Conversely, he shows that a low degree of economic freedom inhibits the creation of new opportunities, which makes existing firms less productive, thus creating their contraction and exit due to the absence of corrections of market failures. Ultimately, this situation results in job destruction. Empirically, Bennett (2019) tests the effect of economic freedom on business and job creation using a sample of nearly 300 United States cities from 1972 to 2012. The results of his study show that economic freedom increases business and job creation in America. In contrast, he finds no effect of economic freedom on business and job destruction. According to him, economic freedom acts as a catalyst that reduces barriers to entry and transaction costs by promoting business and job creation. As a prelude to the study by Bennett (2019), Lucas & Boudreaux (2018) examined whether economic freedom modulates the effect of regulation on entrepreneurship and job creation in the United States. Their results show that: 1) regulation is associated with fewer jobs created; 2) economic freedom is positively associated with job creation; and 3) when economic freedom is associated with regulation, the negative effect of regulation on job destruction decreases as economic freedom increases, reflecting jobs gains for economies (i.e., fewer job destroyed).

Regarding the poverty component, several empirical studies have examined the economic freedom effect on poverty (Doran & Stratmann, 2021; Gwartney & Connors, 2010; Norton & Gwartney, 2008; Zaman et al., 2011). The study conducted by Zaman et al. (2011) on the Pakistani economy with data covering the period 1995-2010, shows that economic freedom has a negative and significant effect on poverty, suggesting that economic freedom contributes to poverty reduction in Pakistan. On a larger sample of countries around the world, Norton & Gwartney (2008) argue that favorable changes in economic freedom decrease poverty rates. According to these authors, a continued increase in the level of economic freedom combined with persistent rapid economic growth would reduce poverty rates, which would decline further over time. They find that the most economically free countries over time are those with the lowest poverty rates over time. Gwartney & Connors (2010) support the same result. Indeed, the results of their study show that the countries with the highest levels of eco-

nomic freedom between 1980 and 2005 are those that had the lowest extreme (person living on less than $1.25 per day) and moderate (person living on less than $2 per day.) poverty rates in 2005. Furthermore, they argue that the countries that were the most economically free in 1980 and that managed to significantly improve their level of economic freedom during 1980-1990 benefited the most from the reduction in their poverty rates compared to the least economically free countries. From these results, they believe that the increase in economic freedom has played an important role in reducing extreme and moderate poverty. In fact, extreme poverty fell from 58.3% in 1980 to 25.1% in 2005, while moderate poverty fell from 75.3% to 45.6% over the same period. More recently, as well as Norton & Gwartney (2008), Doran & Stratmann (2021) use a sample of 151 countries around the world over the period 1995-2015. They measure changes in economic freedom according to the Heritage Foundation concept and approximate poverty by the World Bank poverty rates of people living on less than $1.90 per day, $3.20 per day and $5.50 per day. Similar to the previous authors, the results also show that economic freedom has a negative and significant impact on poverty, indicating that improved economic freedom is associated with lower poverty rates.

As for income inequality, although the economic freedom effect on income inequality is mixed in the empirical literature, there are studies arguing that economic freedom negatively influences income inequality (Apergis & Cooray, 2015; Berggren, 1999; Webster, 2013) and to some extent Scully (2002) and Ashby & Sobel (2008). On the one hand, lower inequality would be observed in countries with high economic freedom, as argued by Webster (2013), focusing on the case of the United States. The results of his work mobilized data from the Fraser Institute for the period from 2001 to 2010 on the one hand, and different linear regression models (simple and multiple OLS regressions) on the other hand. According to Webster (2013), economic freedom leads to an increase in equality by eliminating economic restrictions and constraints. This negative relationship between economic freedom and income inequality has also been supported by several other authors such as Berggren (1999), Apergis & Cooray (2015), Apergis (2015), Ashby & Sobel (2008), Scully (2002), among others. Apergis & Cooray (2015) and Apergis (2015) have been of interest for an analysis of the short- and long-run dynamics. The long-run results indicate a negative association between economic freedom and income inequality. According to the results of Apergis (2015), in the long-run, the economic freedom-income inequality relationship is negative and significant. Better still, he finds that an improvement in the level of economic freedom by one unit of the economic freedom index reduces income inequality by about 0.128. Similarly, Apergis (2015), Apergis & Cooray (2015) argued a negative effect of economic freedom on income inequality in both the short- and long-run on data from the United States of America. On the other hand, the literature suggests trade-offs of economic freedom on income inequality. Indeed, in contrast to previous studies, the empirical literature points to evidence supporting a positive relationship between economic freedom and in-

come inequality. Lemieux & Moreau (2018) qualify this opposite effect as "negative externalities", which are objections that deny the principle of economic freedom on economic and social development. Expecting therefore that economic freedom will cause the destruction of all class barriers, Karakotsios et al. (2020) find that certain government interventions contribute more to inequality, including anti-competitive privileges (such as protectionism and excessive intellectual property protection) and corporate subsidies that would benefit the rich more. Several other studies have also found that economic freedom is associated with greater income inequality. This is evidenced by the studies by Bergh & Nilsson (2010) and Pérez-Moreno & Angulo-Guerrero (2016) which support a positive and significant effect of economic freedom on income inequality in a sample of 80 world countries and 28 European Union countries respectively.

Finally, the literature seems unanimous that economic freedom is positively associated with economic growth. De Haan & Sturm (2000), after discussing differences in measures of economic freedom, examine the effect of economic freedom on the annual per capita GDP growth rate on data from 80 countries around the world for the period from 1975 to 1990. The results show that despite differences in the measurement of economic freedom (i.e., Fraser Institute and Heritage Foundation), it is conducive to the economic growth of countries. According to these authors, greater economic freedom improves the level of economic growth of countries by bringing it to a stable level if it was below this level. On the other hand, they argue that the steady-state growth level is not affected by the level of economic freedom. As a prelude to this study, the one conducted by De Haan & Siermann (1998) shows that the relationship between economic freedom and economic growth depends on the indicator of economic freedom used. Doucouliagos & Ulubasoglu (2006) use a meta-regression analysis approach and a transmission channel analysis (via physical capital) to examine the direct and indirect effects of economic freedom on economic growth. The meta-regression analysis indicates that there is a positive and statistically significant effect of economic freedom on economic growth and that this effect is robust. Furthermore, they also support the existence of an indirect positive effect of economic freedom on economic growth via the physical capital channel. Unlike previous studies, the study by Akin et al. (2014) investigates the effect of economic freedom on economic growth across different income groups. The authors use data from 94 countries belonging to five (5) income groups (high-income OECD countries, high-income non-OECD countries, upper-middle-income countries, lower-middle-income countries, and low-income countries) between 2000 and 2010 and measure economic freedom by the index and subindices of economic freedom proposed by the Fraser Institute. Regardless of income group, they find that the aggregate index of economic freedom is positively and significantly associated with GDP. Furthermore, they find that the effects of the subcomponents of the economic freedom index vary across income groups. Several other works on the economic freedom-economic growth relationship report similar results, except that it is the sample of countries considered, the

period covered by the data and the econometric approach that differ (Coetzee & Kleynhans, 2017; Pattanaik & Nayak, 2014; Piątek et al., 2013; among others).

The literature review presented empirical results from a few studies that explored the effect of the business climate as measured by indicators from internationally recognized institutions (World Bank, Heritage Foundation and Fraser Institute) on inclusive growth. In general, the results show that a good business environment has a positive impact on inclusive growth. In light of this literature, there is almost no work that has examined the relationship between the business environment and inclusive growth using the World Bank's Ease of Doing Business. This study fills this gap.

4. Data and Methodology

4.1. Data

We start from a panel of 46 African countries[5] over the period 2010-2018 depending on data availability. The data used comes mainly from three (3) sources. Indeed, the data on the Ease of Doing Business is from the World Bank's Doing Business 2020 database. Data on GDP per person employed, value added in industry and life expectancy at birth are from the World Bank's World Development Indicator (WDI). Data on investment rates and inflation are from the International Monetary Fund's (IMF) World Economic Outlook database.

4.1.1. Variable of interest

In the study, the variable of interest represents the quality of the business environment, measured by the World Bank's Ease of Doing Business index. This index is calculated as a simple arithmetic average of ten (10) sub-indices relating to the dimensions of starting a business, obtaining a building permit, getting electricity, transferring property, getting credit, protecting minority investors, paying taxes, engaging in international trade, enforcing contracts, and resolving insolvency. The index compares the regulatory framework that applies to businesses in economies over time and across the globe. The index[6] ranges from 0 to 100, with 100 representing an economy in which the regulatory environment is fully supportive of business activities.

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[5]The sample of 46 African countries includes: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, Cote d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Tunisia, Uganda, and Zambia.

[6]The methodology for calculating the aggregate index has evolved so that in 2014 there are two index values. One was calculated according to the Doing Business 2004-2014 methodology and the other according to the Doing Business 2015 methodology. We considered the ease of doing business index obtained according to the Doing Business 2004-2014 methodology. The two values do not differ significantly and achieve the same objectives of this study. Thus, only the results with the index obtained in 2014 according to the Doing Business 2004-2014 methodology have been presented for space reasons.

4.1.2. Dependent Variable

As a measure of inclusive growth, we use Gross Domestic Product (GDP) per person employed (in Purchasing Power Parity) and construct an inclusive growth index using Principal Component Analysis (PCA) method. On the one hand, according to the recent literature, GDP per person employed has been used as a proxy for inclusive growth by several authors such as Kouton (2019), Raheem et al. (2018), Kouton & Amonle (2021), among others. Several reasons justify the use of this variable as a proxy for inclusive growth: 1) employment is one of the main outcomes of inclusiveness (Raheem et al., 2018); 2) inclusive growth depends on the creation of decent jobs. This is why, the United Nations supports the idea that policymakers must focus on the employment component to achieve inclusive growth; 3) Ease of Doing Business is conducive to inclusive growth in terms of enterprise creation and new jobs (World Bank, 2018); 4) monitoring of Goal 8 of the Sustainable Development Goals (SDGs) "Promote sustained, shared and sustainable economic growth, full and productive employment and decent work for all" is done through the annual growth rate of GDP per person employed; and 5) GDP per person employed takes into account both economic growth through GDP and the inclusiveness of economic growth through the "number of people employed" factor (Kouton, 2019). In addition, employment is a channel through which people have income, which lifts them out of poverty and reduces income inequality to some extent (when employment is decent).

To better reflect reality and take into account its multidimensional aspect, we construct an inclusive growth index from several variables, in line with the literature on inclusive growth (Asian Development Bank, 2013). Following Ofori & Asongu (2021), we perform a PCA method on fifteen (15) selected variables (Table 1). PCA is used for its advantage of reducing a large number of variables not necessarily related into a small number of "dimensions or components" while retaining a better proportion of the variability in the original dataset (Wold et al., 1987). The identification of the principal components (dimensions) is such that 1) the eigenvalues are greater than 1 and 2) the cumulative contribution to the total inertia is greater than 60%. Once the principal components are known, the index of inclusive growth is obtained by taking a weighted average of the scores of each factorial axis by the eigenvalues of the factorial axes.

The results of the PCA are presented in Table 2. Based on the criteria of the eigenvalues of the principal axes and the cumulative contribution to the inertia, five (5) factorial axes were retained. The index of inclusive growth is obtained by a weighted average of the scores on each of the factorial axes by their eigenvalues.

4.1.3. Control Variables

Four (4) control variables were used in line with the recent literature on the determinants of inclusive growth. These variables are investment rate, industry value added, life expectancy at birth and the inflation rate (Fe & Kouton, 2022; Kouton, 2019).

Table 1. Variables used to construct the inclusive growth index.

Variable	Variable definition	Source
Fuels	Access to clean fuels and technologies for cooking (% of the population)	WDI
Electricity	Access to electricity (% of the population)	WDI
Health	Domestic general government health expenditure (% of GDP)	WDI
GDP per capita	GDP per capita, PPP (constant 2017 international $)	WDI
Income inequality	Gini index (World Bank estimate)	WDI
Education	Government expenditure on education, total (% of GDP)	WDI
HCI	Human capital index (HCI) (scale 0 - 1)	WDI
Labor force	Labor force participation rate, total (% of total population ages 15 - 64) (modeled ILO estimate)	WDI
Sanitation	People using at least basic sanitation services (% of the population)	WDI
Women seats	The proportion of seats held by women in national parliaments (%)	WDI
Social inclusion	Effectiveness of institutions for social inclusion rating (1 = low to 6 = high)	CPIA
Social protection	Effectiveness of institutions for social protection rating (1 = low to 6 = high)	CPIA
Rule of law	Rule of Law	WGI
Voice accountability	Freedom of the media and general public in terms of association, expression, and institutions of public governments	WGI
Poverty	Poverty headcount (US$1.90)	PED

Notes: CPIA = Country Policy and Institutional Assessment database; PED = Poverty and Equity database; WGI = Worldwide Governance Indicators database and WDI = World Development Indicators database.

Table 2. Eigenvalues of the main components of the inclusive growth index (IGI).

Components	Eigenvalue	Difference	Proportion	Cumulative
PC1	**4.58733**	**1.93068**	**0.3058**	**0.3058**
PC2	**2.65666**	**1.29357**	**0.1771**	**0.4829**
PC3	**1.36309**	**0.119993**	**0.0909**	**0.5738**
PC4	**1.24309**	**0.164828**	**0.0829**	**0.6567**
PC5	**1.07827**	**0.108192**	**0.0719**	**0.7286**
PC6	0.970073	0.175775	0.0647	0.7932
PC7	0.794298	0.260708	0.0530	0.8462

Continued

PC8	0.53359	0.0368016	0.0356	0.8818
PC9	0.496788	0.124714	0.0331	0.9149
PC10	0.372075	0.0261163	0.0248	0.9397
PC11	0.345958	0.140762	0.0231	0.9627
PC12	0.205197	0.0502286	0.0137	0.9764
PC13	0.154968	0.0527425	0.0103	0.9868
PC14	0.102226	0.00583375	0.0068	0.9936
PC15	0.096392		0.0064	1.0000

Note PC = Principal component. Source: Author's calculations.

In developing countries, strategies to encourage inclusive growth advocate for investments (Hur, 2014). Indeed, the creation of jobs and the increase of more inclusive growth could result in a direct or indirect way to sustainable investment policies. And so, one channel of transmission would be the financing of infrastructure projects at the macroeconomic level capable of generating additional jobs for the states.

Inflation could be a source of macroeconomic instability when it is high, thus not benefiting inclusive growth because high inflation would reduce the purchasing power of households and risk impoverishing them. Indeed, countries with low inflation volatility, thanks to appropriate macroeconomic policies, have inclusive economic growth (Kumah & Sandy, 2013).

Like Raheem et al. (2018) and Kouton (2019), we introduce industry value added as a control variable in our specifications. Indeed, this variable allows us to account for the level of structural transformation of economies as a determinant of inclusive growth. This is why international institutions such as the World Bank, encourage developing countries to structurally transform their economies to achieve inclusive growth. Furthermore, the rationale for using industry value added as a proxy for structural transformation has been discussed by Greenwald & Stiglitz (2013) and Mbate (2016). These are: 1) the implementation of policies leading to structuring the economy at the industrial level by taking initiatives on public investments in education, technology and infrastructure by policymakers (Greenwald & Stiglitz, 2013); 2) the reallocation of human, physical, and financial resources to the high value-added sectors of the economy that good industrial policies allow for the promotion of broad-based growth (Mbate, 2016).

Finally, the introduction of life expectancy at birth as a proxy for human capital is motivated by the following reasons: 1) human capital formation is essential in achieving inclusive growth (Dinda, 2014); 2) human capital formation approximated by health plays an important role in measuring the country's development (Weil, 2014) insofar as according to Weil (2014), it can contribute to lifting people out of poverty or, on the contrary, plunging them into poverty;

and 3) low-quality human capital is likely to limit access to employment opportunities.

Table 3 and Table 4 provide information on some summary statistics for the variables and the correlation matrix between the variables under study, respectively. Table 3 shows that over all the countries in the sample and the study period considered, the Ease of Doing Business was average (50.442) and the GDP per person employed is estimated at 16522.941 (in Purchasing Power Parity). There is a positive correlation between inclusive growth and most of the variables, except for the inflation rate variable. At the conventional 5% level, the results of the correlation matrix (Table 4) indicate that these correlations are significant, except for the one with inflation. Moreover, the correlation coefficients between the independent variables under study are less than 0.6 in absolute value, reflecting an absence of multicollinearity between the variables. Finally, regarding the relationship between business environment and inclusive growth, the results show a positive relationship between these variables (Figure 4). This is the first intuition that a better business environment is beneficial for inclusive growth in Africa. However, multivariate analysis in an econometric framework is needed to validate this relationship.

One aspect that the econometric framework should not ignore is to test for the presence of outliers in the study sample and to take them into account in testing the robustness of our estimation results. Indeed, Figure 4(a) suggests the presence of outliers for the variable of GDP per person employed.

4.2. Econometric Framework

4.2.1. Empirical Specification of the Model

Based on the analytical presentation of Ianchovichina & Lundström (2009) and the empirical specification of Kouton (2019), we empirically specify the relationship between business environment and inclusive growth. In the analytical framework of inclusive growth, Ianchovichina & Lundström (2009) conduct a disaggregated analysis to identify the drivers of inclusiveness and show that the

**Table 3.** Summary statistics of the variables under study.

Variable	Obs	Mean	Std. Dev.	Min	Max	Median
GDP per person employed	414	16522.941	17705.888	1790.698	103168.78	9112.616
Ease of Doing Business	414	50.442	10.016	26.9	78.9	48.8
Investment	414	25.28	10.65	0.098	78.301	23.931
Industry added value	414	25.844	13.351	4.556	78.065	24.096
Life expectancy	414	61.61	6.651	45.1	76.693	60.934
Inflation	414	5.739	5.815	−2.767	35.787	4.638

Notes: Obs = Observation; Std.Dev = Standard deviation; Min = Minimum; Max = Maximum. Source: Author's calculations.

Table 4. Correlation matrix between the variables under study.

Panel A: Correlation matrix of the model with the dependent variable GDP per person employed						
Variables	Inclusive growth	Ease of Doing Business	Investment	Industry value added	Life expectancy at birth	Inflation
GDP per person employed	1.000					
Ease of Doing Business	0.369***	1.000				
Investment	0.104**	0.060	1.000			
Industry added value	0.589***	−0.068	0.303***	1.000		
Life expectancy	0.315***	0.499***	0.253***	0.025	1.000	
Inflation	−0.091*	−0.043	−0.100**	0.043	−0.068	1.000
Panel B: Correlation matrix of the model with the inclusive growth index as the dependent variable						
Inclusive growth Index	Inclusive growth Index	Ease of Doing Business	Investment	Industry value added	Life expectancy at birth	Inflation
Ease of Doing Business	0.741***	1.000				
Investment	0.309***	0.175***	1.000			
Industry added value	−0.043	−0.168***	0.341***	1.000		
Life expectancy	0.484***	0.382***	0.229***	−0.065	1.000	
Inflation	0.074	0.007	−0.072	0.122**	−0.039	1.000

Notes: *, **, ***: significance at the 10%, 5% and 1% level respectively. Source: Author's calculations.
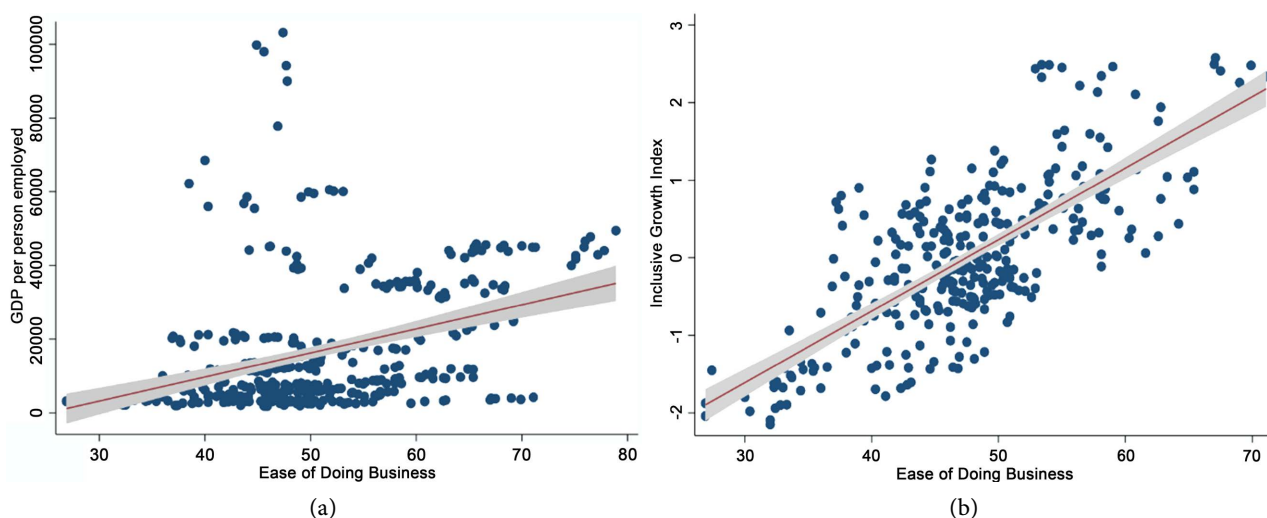
Figure 4. Inclusive growth and business environment. Source: Author's representation.

business environment is one insofar as it can affect income growth through productive employment and reduce poverty. Furthermore, given that economic freedom and Ease of Doing Business are all ways of approaching the business environment, adopting the empirical model of Kouton (2019) with a different measure of the business environment, we can obtain the following empirical specifications in the static and dynamic frameworks:

$$IG_{it} = \alpha_0 + \alpha_1 EODB_{it} + \alpha_2 INV_{it} + \alpha_3 IAV_{it} + \alpha_4 LE_{it} + \alpha_5 INF_{it} + \varepsilon_{it} \quad (1)$$

$$IG_{it} = \beta_0 + \beta_1 IG_{i(t-1)} + \beta_2 EODB_{it} + \beta_3 INV_{it} + \beta_4 IAV_{it} + \beta_5 LE_{it} + \beta_6 INF_{it} + \mu_i + \eta_{it}$$
$$(2)$$

With IG_{it} the inclusive growth (i.e., GDP per person employed (in Purchasing Power Parity) or the constructed inclusive growth index); $IG_{i(t-1)}$ the one period lagged-value of inclusive growth; $EODB_{it}$ the Ease of Doing Business index as a measure of the business environment; INF_{it} the investment rate (in %); INV_{it} the industry value added (% of GDP); LE_{it} the life expectancy at birth (in years); INF_{it} the inflation rate (in %); α_0 and β_0 the model constants; μ_i the country-specific effect; ε_{it} and η_{it} the error terms; $i = 1, 2, \cdots, N$ the number of countries, and $t = 1, 2, \cdots, T$ the period.

In the remainder of this paper, we refer to Model A and Model B as the specifications with GDP per person employed and the inclusive growth index as the inclusive growth variable respectively.

4.2.2. Econometric Approach

Estimation procedure *in the static framework*

First, we performed a Chow poolability test to choose between a panel data structure and the pooled data structure. The null hypothesis of this test is the similarity between the intercepts, i.e., a pooled model. The rejection of the null hypothesis reflects that a panel structure fits our sample data and leads us to perform the Hausman test to decide between a fixed-effects model and a random-effects model. The Hausman test is based on the null hypothesis of random effects.

Next, when the Hausman test shows that the fixed-effects model fits the structure of the study sample data, we test heteroscedasticity and serial correlation between the residuals of this model and cross-sectional dependence. In the presence of cross-sectional dependence, and the existence of heteroscedasticity and correlation between error terms, the standard error estimate is not accurate, and thus the statistical inferences are not valid (Petersen, 2009). Indeed, in the presence of heteroskedasticity, the unbiased and consistent OLS estimators of the fixed effects remain unchanged but are not efficient (i.e., do not have minimum variance). Consequently, the confidence intervals are not reliable, and thus, the estimators from the panel fixed-effects model are not appropriate.

Therefore, in this study, we use the PCSE model proposed by Beck & Katz (1995). This is a model that circumvents the problems of heteroskedasticity, serial correlation of residuals and cross-sectional dependence. The PCSE model involves two-step (02) in the estimation of the equation Equation (1). In the first step, the serial correlation is eliminated through a data transformation. In the second step, to the transformed data, the OLS is applied, and the standard errors are corrected for autocorrelation, cross-sectional dependence and heteroskedasticity to improve the efficiency of the model's parameters. An alternative would have been to use Feasible Generalized Least Squares (FGLS). But the advantage

of the PSCE model over FGLS is that it provides efficient estimates when T is less than N (Hoechle, 2007). In this study, T = 9 and N = 46 (or at least 35). Thus, the PSCE model of Beck & Katz (1995) would provide more reliable estimates compared to FGLS. Several authors have used this model in their study to circumvent the problems of heteroscedasticity and autocorrelation of residuals (Adekoya et al., 2019; Ikpesu et al., 2019; Rana et al., 2019; Sundjo & Aziseh, 2018; Zolfaghari et al., 2020; Sunge & Ngepah, 2022; among others).

Estimation procedure in the dynamic framework

Like several macroeconomic variables (i.e., GDP, poverty, income inequality, etc.), inclusive growth would be a persistent variable as long as it is constructed from macroeconomic variables that are generally considered persistent in the literature (Haftu, 2019). We take this persistence into account by estimating Equation (2) using the System-GMM. We present the subtleties related to identification, simultaneity and exclusion restrictions in the System-GMM estimation procedure.

First, the preference for this estimation technique is that the System-GMM estimator of Arellano & Bover (1995) has more efficient properties than the difference-GMM estimator of Arellano & Bond (1991). This is why Arellano & Bover' (1995) extension of Roodman (2009a, 2009b) is adopted because it has the advantage of reducing the proliferation of instruments that may bias the corresponding estimates (Baltagi, 2008; Love & Zicchino, 2006). As a result, the improved estimation technique uses orthogonal forward differences instead of first differences. Indeed, the forward orthogonal deviations method consists of subtracting the mean of all available future values for the variable concerned and guarantees the non-autocorrelation of the transformed errors[7]. Furthermore, in the specification, we use the two-step procedures. It controls for heteroscedasticity compared to the one-step procedure that accounts for homoscedasticity.

Second, the identification approach used in this study is consistent with that of Asongu & Odhiambo (2019b). All independent variables are suspected to be endogenous or predetermined while only time-invariant indicators are recognized as having strict exogeneity. Indeed, according to Roodman (2009a, 2009b), it is unlikely that omitted time-invariant variables will become endogenous after the first difference. Therefore, in the GMM specification, the procedure used for time-invariant omitted indicators (i.e., ivstyle) is "$iv(Year, eq(diff))$" while the procedure for examining predetermined variables is gmmstyle.

Third, unlike direct difference measures, the simultaneity problem is solved with lagged explanatory variables as instruments. Because fixed effects are correlated with the error terms, Helmet conversions are used to remove these fixed effects to avoid biased estimates (Arellano & Bover, 1995; Love & Zicchino, 2006). The transformation, which differs from the procedure of subtracting prior observations from current observations, encompasses the use of expected mean-

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[7]Given the variable X, the transformation yields to: $X_{it}^* = \sqrt{\dfrac{T-t}{T-t+1}}\left[X_{it} - \dfrac{1}{T-t}\left(X_{i(t+1)} + \ldots + X_{iT} \right) \right]$.

variations. These transformations involve parallel and orthogonal conditions between lagged values and forward differenced indicators. Regardless of the number of lags, to minimize data loss, the underlying transformations are performed for all observations except the last observation for each country.

Fourth, with respect to exclusionary restrictions, the strictly exogenous variables adopted (time-invariant indicators) have an effect on the dependent variable exclusively through the suspected endogenous variables. In addition, the statistical validity related to the exclusion restrictions is examined with the Hansen difference test for instrument relevance. In theory, the null hypothesis should not be rejected for variables with strict exogeneity to explain the dependent variable exclusively through the endogenous explanatory variables. It is essential to note that in the instrumental variables approach, when the null hypothesis of the Sargan over-identifying restrictions (OIR) test is rejected, it implies that the dependent variable is not exclusively explained by the instruments via the predetermined variables (Beck et al., 2003). However, Hansen's difference test (DHT) is the information criterion needed to determine whether the time-invariant variables are strictly exogenous in the GMM estimation technique with orthogonal forward deviations. Therefore, for such a strict exogeneity assumption to hold, the alternative Hansen difference assumption associated with the instrumental variable "*iv*(*Year*, *eq*(*diff*))" is rejected.

4.2.3. Robustness Check

We test the robustness of the effect of the business environment on inclusive growth in two ways. The first way was to exclude outliers from the sample after the test for the presence of outliers was checked for the model with GDP per person employed as the inclusive growth variable. We implement the outlier detection test of Hadi (1992, 1994) and also test for the presence of outliers on individual variables. The Hadi's (1992, 1994) test is an outlier detection test in a multivariate setting. The test consists in separating the outliers from the non-outliers by considering a 15% percentile as a threshold, corresponding to the percentile of the Chi-square distribution. We re-estimate the Model A (i.e., equation with GDP per person employed as the dependent variable) using not only the PCSE, but also three (3) other estimation techniques such as Rana et al. (2019). These are the fixed-effects with Driscoll & Kraay (1998) standard errors (DKSE) model, a random-effects model and a pooled OLS model. To estimate the fixed-effects DKSE model, we assume a moving average type of autocorrelation where the lag length is obtained using the following expression:

$$m(T) = \text{floor}\left[4*\left(\frac{T}{100}\right)^{2/9}\right] \tag{3}$$

where $m(T)$ is the lag length up to which the residuals are correlated (Hoechle, 2007) and T is the time period.

The second way to test the robustness of the business environment effect on the inclusive growth was to repeat all the previous estimates but with the inclu-

sive growth index constructed through PCA method.

5. Empirical Results and Discussions

Table 5 presents the results of the Chow poolability, Hausman, heteroskedasticity, autocorrelation and cross-sectional dependence tests for Models A and B.

First, the poolability test was used to decide on the appropriate structure for the sample data. It is in fact a test to choose between a panel data structure and the pooled data method. The results of this test suggest a panel data structure. Indeed, the p-value associated with the test is equal to 0, which is below the conventional level (5%). This allows us to reject the null hypothesis of the similarity of the intercepts corresponding to the pooled data method.

Next, we performed the Hausman test to choose between the specification of a fixed-effects model and a random-effects model. The results of the Hausman test indicate that the p-value associated with this test is 0, thus below the 5% level. The null hypothesis of a random-effects model specification is therefore rejected in favor of a fixed-effects model for all models. After Hausman test, we test the cross-sectional dependence among countries using Pesaran's (2004) CD test with null hypothesis of no cross-sectional dependence among variables within panel data. We rejected the null hypothesis of no cross-sectional dependence because Pesaran's (2004) CD tests statistics are significant at a 1% error level for all models, involving the existence of cross-sectional dependence among the countries.

Finally, we test homoscedasticity and autocorrelation of the models' residuals. Indeed, in the presence of heteroscedasticity, serial correlation of the residuals and cross-sectional dependence, the estimation of a fixed-effects model is not appropriate because the estimators are not of minimum variance, thus not efficient (Zolfaghari et al., 2020). The results show that there is heteroscedasticity and autocorrelation of the residuals. Indeed, the null hypotheses of heteroscedasticity and autocorrelation of the residuals are accepted because the p-values are all equal to 0, and lower than the conventional level of 5%.

Table 5. Poolability, Hausman, Pesaran's (2004) CD, heteroscedasticity, and serial correlation tests.

Tests	Model A		Model B	
	Test Statistic	P-value	Test Statistic	P-value
Poolability	892.10	0.000	58.07	0.000
Hausman	36.78	0.000	46.51	0.000
Pesaran cross-section dependence	6.128	0.000	8.558	0.000
Heteroskedasticity	12944.76	0.000	248.60	0.000
Serial correlation	43.067	0.000	28.962	0.000

Note: Model A and Model B are the specifications with GDP per person employed and the inclusive growth index as the inclusive growth variable, respectively.

To circumvent the heteroscedasticity and serial correlation of the residuals and cross-sectional dependence among countries in order to obtain reliable results, we used Beck & Katz (1995) PCSE model. The baseline estimation result is presented in Table 6, column 1. We also used other estimation techniques, namely random-effects, fixed-effects DKSE, pooled OLS, and System-GMM methods, respectively, and presented in Table 6, columns (2) - (5).

Regarding the System-GMM, four (4) main information criteria are used to investigate the validity of its estimation results. First, the null hypothesis of the Arellano & Bond (1991) second-order autocorrelation test (i.e., AR(2)) for the absence of autocorrelation in the residuals should not be rejected. Second, the Sargan and Hansen over identifying restriction (OIR) tests should not be significant because their null hypotheses are the positions on which the instruments are valid or uncorrelated with the error term. In essence, while the Sargan OIR test is not robust but not weakened by instruments, the Hansen OIR is robust but weakened by instruments. We preferred the Hansen test on the one hand and to restrict the identification or limit proliferation of instruments, we ensured that the instruments were less than the number of cross sections in all our specifications on the other hand. Thirdly, the difference in Hansen's test (DHT) for instrument exogeneity is also used to assess the validity of the Hansen OIR test results. Fourth, a Fischer test for joint validity of the estimated coefficients is also provided and validates the estimated coefficients if the p-value associated with the test is significant. With respect to these criteria, all models are found to be valid, and the results obtained with System-GMM are reliable.

For each of the estimates, the results show a positive and significant effect of the business environment measured by the Ease of Doing Business index on inclusive growth approximated by GDP per person employed. This is initial evidence to support the idea that a better business environment is beneficial for inclusive growth in Africa. This result is consistent with the results of Kouton (2019) who find that a better business environment measured by economic freedom is conducive to inclusive growth in Africa. Furthermore, to some extent, our results concur with the opinion of Daude (2016), Deighton-Smith et al. (2016), Ianchovichina & Lundström (2009), Charlier & N'Cho-Oguie (2009), among others, who argue that better government reforms boost inclusive economic growth in Greece, OECD countries, and Cameroon. The mechanism by which business regulatory reforms could foster inclusive growth can be explained as follows.

First, government business reforms that promote a better environmental framework for business would be pro-competitive on the one hand (Fischer & Pfeil, 2003; Friske & Zachary, 2017; Zhao et al., 2010) and innovation on the other hand (Aghion et al., 2021a; Aghion et al., 2005; Blind, 2016; Blind, 2012). In fact, an enabling business environment induced by public interest reforms (reduced costs and barriers to business entry, a less restrictive tax system, ease of obtaining building permits, etc.). Moreover, a better business environment is positively associated with innovation through the reduction of compliance costs,

Table 6. Estimation results of the business environment on inclusive growth (GDP per person employed).

	Estimates with outliers					Estimates without outliers				
	Dependent variable: GDP per person employed									
Variables	PCSE	Random effects	Fixed effects DKSE	Pooled OLS	GMM	PCSE	Random effects	Fixed effects DKSE	Pooled OLS	GMM
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GDP per person employed (−1)					0.891***					0.968***
					(0.043)					(0.018)
Ease of Doing Business	0.592***	0.385***	0.368***	1.691***	0.152**	0.577***	0.259***	0.242***	1.405***	0.111***
	(0.190)	(0.065)	(0.083)	(0.207)	(0.076)	(0.184)	(0.069)	(0.056)	(0.223)	(0.038)
Investment	0.019*	0.025**	0.025*	−0.236***	0.015	0.028	0.023	0.023**	−0.347***	0.013
	(0.011)	(0.011)	(0.013)	(0.068)	(0.029)	(0.032)	(0.019)	(0.008)	(0.096)	(0.029)
Industry value added	0.439***	0.166***	0.153***	1.100***	0.237**	0.348***	0.085***	0.074*	0.973***	0.002
	(0.089)	(0.025)	(0.019)	(0.093)	(0.121)	(0.068)	(0.027)	(0.035)	(0.097)	(0.042)
Life expectancy at birth	2.139***	0.770***	0.736***	1.934***	0.374	2.168***	0.863***	0.831***	2.284***	−0.046
	(0.370)	(0.133)	(0.105)	(0.334)	(0.243)	(0.356)	(0.140)	(0.076)	(0.364)	(0.089)
Inflation	−0.000	−0.001	−0.001	−0.021***	0.001	0.001	−0.001	−0.001	−0.009	0.002
	(0.002)	(0.001)	(0.001)	(0.006)	(0.001)	(0.002)	(0.001)	(0.002)	(0.008)	(0.002)
Constant	−3.309**	3.960***	4.207***	−7.924***	−1.911**	−3.164**	4.265***	4.499***	−7.590***	−0.001
	(1.678)	(0.533)	(0.150)	(1.152)	(0.965)	(1.522)	(0.548)	(0.156)	(1.291)	(0.311)
Observations	414	414	414	414	368	333	333	333	333	296
R-squared	0.979			0.523		0.982			0.502	
Number of countries	46	46	46		46	37	37	37		37
Number of instruments					14					31
AR(1) p value					0.267					0.107
AR(2) p value					0.222					0.123
Sargan OIR p value					0.034					0.476
Hansen OIR p value					0.666					0.686
DHT for instruments										
(a) Instruments in levels										
H excluding group p value					0.202					0.905
Dif (null, H = exogenous) p value					0.767					0.375
(b) IV (Year, eq (diff))										
H excluding group p value					0.556					0.636
Dif (null, H = exogenous) *p* value					0.831					0.755
Wald test statistic					3301.55***					10010.80***

*, **, and *** represent significance at 10%, 5%, and 1% respectively. Values in parentheses are standard deviations. All the variables are taken in the natural logarithm except inflation. AR(1) = first-order serial correlation test; AR(2) = second-order serial correlation test; OIR = Overidentifying Restrictions; DHT = Difference in Hansen Test. Source: Author's calculations.

which favors an increase in available resources and capital intensity for invest-ment in R & D, as highlighted by Blind (2012).

Second, our results would reflect that the duality of competition and innova-tion allowed by the business environment in recent years would have favored the reduction of income inequality and poverty in Africa. This is consistent with several studies in the literature. For example, Aghion et al. (2019) argue that in-novation makes growth more inclusive. According to these authors, innovation by entrants improves the wages of workers in innovative firms. For Dutz et al. (2011), innovation contributes to inclusive growth through the expansion of firms' output (i.e., production). According to them, the expansion of the firm's production leads to a demand for additional skilled and unskilled labor by firms to meet the demand of its customers, which results in job creation by firms. The jobs created reduce income inequality and poverty among the population.

Furthermore, our results would suggest that the degree of business regulation that has prevailed over the last decade in Africa has been in favor of reducing market power, which has been shown to be detrimental to reducing income in-equality and poverty in the case of market concentration. Thus, competition would have led to lower prices relative to marginal costs in the absence of mar-ket power. Consumers would have paid reasonable prices, which would have preserved household purchasing power and improved welfare in terms of po-verty and income inequality among populations. The absence of competition would have had adverse effects on inclusiveness. This is shown by Ennis et al. (2019). Indeed, they find that market power increases the wealth of the richest 10% by 12% - 21% and reduces the income of the poorest 20% by 11% or more. Rodríguez-Castelán (2015) agrees with this point of view because he shows that increased market power does not benefit poverty as it increases the prices of goods and services in the economy. This leads to a reduction in the relative in-comes of households in general and the poor in particular.

Finally, our results would suggest that competition and innovation would have been beneficial for economic growth. Competition and innovation have the ability to make the private sector dynamic through the ease of entry and exit of firms and the development of new innovative production processes. Several stu-dies recognize competitiveness and innovation as instruments of economic growth (Aghion & Griffith, 2008; Friske & Zachary, 2017; Pece et al., 2015; Sa-viotti & Pyka, 2008; Ulku, 2004).

Therefore, we conclude that a better business environment positively and sig-nificantly impacts inclusive growth in African countries. From the above, a business environment induced by better business regulatory reforms is condu-cive to inclusive economic growth through competition and innovation chan-nels. Moreover, there is sufficient evidence to argue that the business environ-ment enables inclusiveness through its components. Indeed, the business envi-ronment measured by economic freedom and the Ease of Doing Business boosts economic growth (Akin et al., 2014; De Haan & Sturm, 2000; Djankov et al., 2006; Doucouliagos & Ulubasoglu, 2006; Haidar, 2012; Hanusch, 2012), promote

job creation and reduces income inequality (Bennett, 2019; Branstetter et al., 2014; World Bank, 2018; Apergis, 2015; Ashby & Sobel, 2008; Webster, 2013) and poverty (Djankov et al., 2019; Doran & Stratmann, 2021; Norton & Gwartney, 2008; Zaman et al., 2011).

The results of this study thus present the business environment or business regulation as an instrument for inclusive growth in Africa. Achieving inclusiveness would require the implementation of better regulatory reforms that would stimulate competition on the one hand and innovation on the other hand. For this reason, it would be important for economic reforms to focus on both regulations and government actions that aim to prevent the rise of market power and that aim to incentivize investment in R & D.

We re-examine the business environment-inclusive growth relationship by testing the robustness of the baseline estimation results obtained previously. According to the first approach to robustness testing, our results will be said to be robust when the previously obtained effects remain unchanged by re-estimating Model A after excluding outliers as discussed in the robustness section 4.2.3. First, we test for the presence of outliers in a multivariate framework using the test of Hadi (1992, 1994). The results of the test confirmed the presence of outliers for Angola, Djibouti, Democratic Republic of Congo and Ethiopia. Next, we performed the test on the individual variables using the box plots. The outlier detection results are presented in Figure 5. For four (4) of the variables, we found the presence of outliers. These are inclusive growth[8], investment rate[9], industry value added[10] and inflation rate[11]. To sum up, nine (9) countries were identified as outliers in the study sample. These are Angola, Djibouti, Democratic Republic of Congo, Ethiopia, Gabon, Mauritius, Equatorial Guinea, Republic of Congo and Malawi. After removing the outliers, the box plots were repeated for the variables that had them. These are shown in Figure 6.

After removing outliers, the estimation of Model A with PSCE, random-effects, fixed-effects DKSE, pooled OLS and System-GMM estimation approaches were repeated on a sample of 37 African countries over the period 2010-2018. The estimation results are reported in Table 6, columns (6) - (10). The results show that the positive and significant effect of the business environment on inclusive growth is again confirmed. However, the effect size decreased slightly for all estimation techniques. In fact, the effect decreased from 0.592 to 0.577, from 0.385 to 0.259, from 0.368 to 0.242, from 1.691 to 1.405, and from 0.152 to 0.111 for PCSE, random-effects, fixed-effects DKSE, pooled OLS and System-GMM models respectively. This result disagrees with the view of Kouton (2019) who found that excluding outliers increased the effect of economic freedom on inclusive growth.

[8]For the inclusive growth variable, outliers were recorded for Gabon, Mauritius, and Equatorial Guinea.

[9]The outlier was the Republic of Congo.

[10]The outliers are for investment, Gabon, Equatorial Guinea, and the Republic of Congo.

[11]Regarding the inflation rate, these countries are Malawi, Angola, the Democratic Republic of Congo, and Ethiopia.
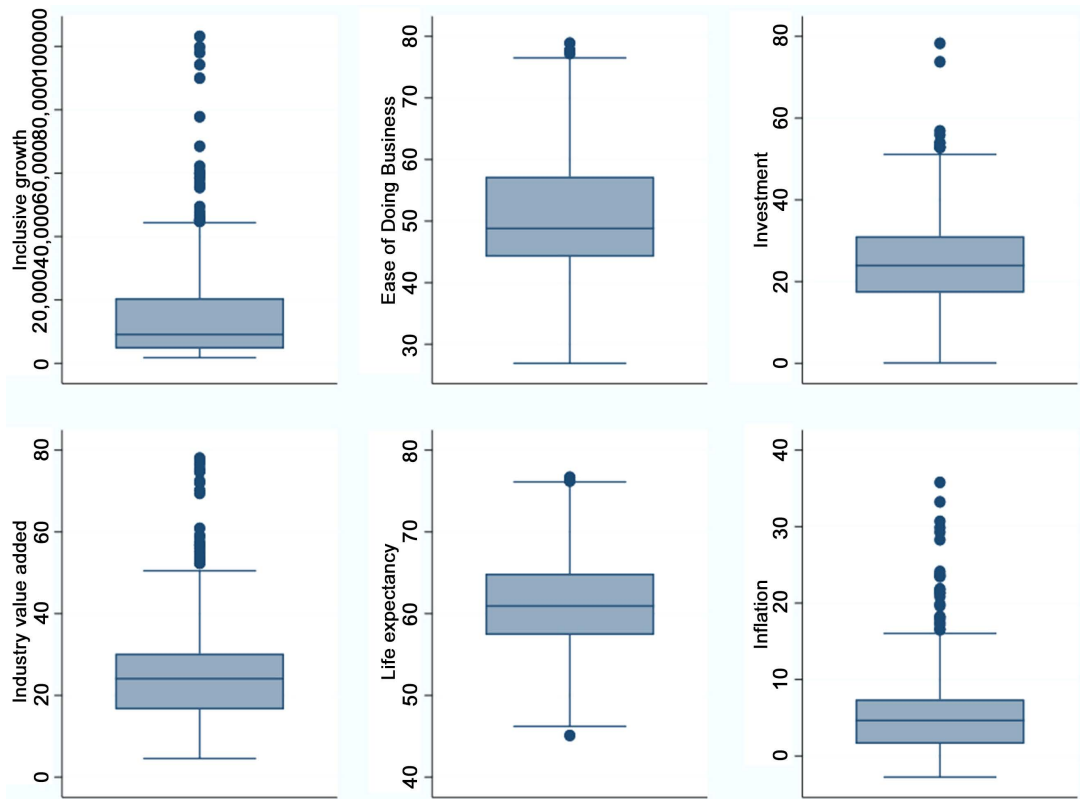
Figure 5. Box plots of the variables before removing outliers. Source: Author's representation.
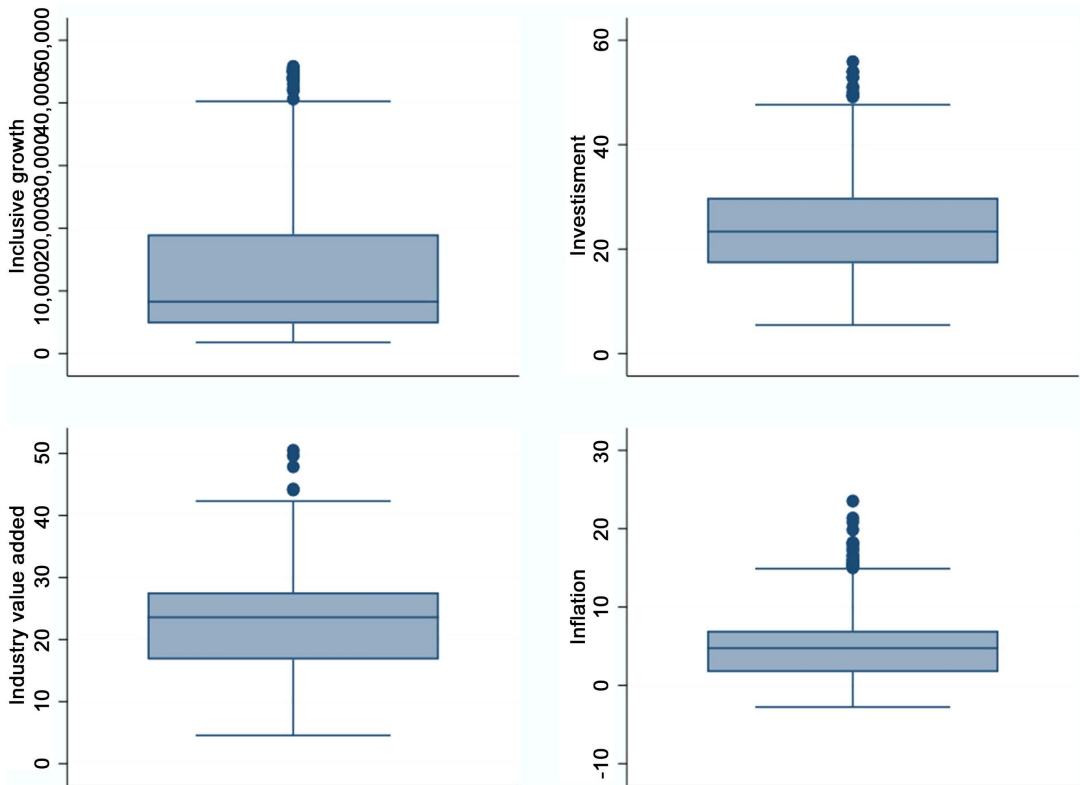

Figure 6. Box plots of the variables after removing outliers. Source: Author's representation.

In the second approach to robustness testing, we examine the business environment effect on inclusive growth approximated by an index that attempts to capture the multidimensional aspect of inclusive growth[12]. The estimation results are presented in Table 7, column (11) - (15). The results indicate that the business environment effect on inclusive growth is positive and significant for almost all the different estimation techniques, with the exception of the estimation with the fixed-effects DKSE model (i.e., Table 7, column (13)). Once again, these results confirm the robustness of the positive and significant effect of the business environment on inclusive growth in Africa, reflecting that a better business environment would be a means by which policymakers in African countries could achieve and sustain inclusive economic growth. Furthermore, our results are consistent with those previously found by Kouton (2019). The difference is that we use a different proxy for the business environment, namely the aggregate Ease of Doing Business index unlike him who uses the economic freedom index. The Ease of Doing Business indicators are derived from actual reforms, unlike other indicators that are derived from expert opinion data (Haidar, 2012). In addition, the Doing Business indicators have the advantage of assessing specific laws and regulations that promote or hinder business activity and assess courts, credit registries, and the business registry, unlike other business environment indicators (World Bank, 2004). Also, in addition, to use GDP per person employed as a measure of inclusive growth, our study uses an additional indicator of inclusive growth that has the advantage of approaching the multidimensional aspect of inclusiveness in terms of its components.

Finally, the results indicate mixed effects of the control variables' impact on inclusive growth depending on the indicator of inclusive growth used, except for the effect of life expectancy at birth on inclusive growth. Indeed, regardless of the indicator of inclusive growth, the results show that the effect of life expectancy at birth is generally positive and significant on inclusive growth. This result is in line with the result of Kouton (2019) who also finds a robust result for the effect of life expectancy at birth on inclusive growth, reflecting that human capital (measured here by life expectancy at birth) is an important driver of inclusive growth in Africa.

6. Conclusion and Policy Recommendations

6.1. Conclusion

Growth alone is not enough to be characterized as inclusive, i.e., broad-based and benefiting all segments of the population. Henceforth, policy instruments that, in addition to boosting economic growth, contribute to the creation of

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[12]Due to data availability, we constructed the inclusive growth index for 35 countries that are Angola, Benin, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, Cote d'Ivoire, Djibouti, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Tanzania, Togo, Uganda, and Zambia.

Table 7. Estimation results of the business environment on inclusive growth (inclusive growth index).

Variables	Dependent variable: Inclusive growth index				
	PCSE	Random effects	Fixed effects DKSE	Pooled OLS	GMM
	(11)	(12)	(13)	(14)	(15)
Inclusive growth index (−1)					0.654***
					(0.109)
Ease of Doing Business	0.056***	0.009*	−0.002	0.079***	0.026***
	(0.010)	(0.005)	(0.005)	(0.005)	(0.005)
Investment	0.007***	0.002	0.001	0.014***	0.003
	(0.002)	(0.002)	(0.001)	(0.004)	(0.002)
Industry value added	0.001	−0.009**	−0.012***	0.001	−0.001
	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)
Life expectancy at birth	0.047***	0.045***	0.047**	0.041***	0.007
	(0.010)	(0.010)	(0.014)	(0.007)	(0.016)
Inflation	−0.001	−0.002	−0.004	0.014**	−0.007*
	(0.005)	(0.003)	(0.003)	(0.006)	(0.004)
Constant	−5.664***	−2.991***	−2.448***	−6.670***	−1.624*
	(0.709)	(0.526)	(0.695)	(0.427)	(0.948)
Observations	315	315	315	315	280
R-squared	0.391			0.626	
Number of countries	35	35	35		35
Number of instruments					27
AR(1) p value					0.000
AR(2) p value					0.078
Sargan OIR p value					0.121
Hansen OIR p value					0.393
DHT for instruments					
(a) Instruments in levels					
H excluding group p value					0.383
Dif (null, H = exogenous) p value					0.404
(b) IV (Year, eq (diff))					
H excluding group p value					0.469
Dif (null, H = exogenous) p value					0.132
Wald test statistic					494.29***

Note: *, **, and *** represent significance at 10%, 5%, and 1% respectively. Values in parentheses are standard deviations. AR(1) = first-order serial correlation test; AR(2) = second-order serial correlation test; OIR = Over identifying Restrictions; DHT = Difference in Hansen Test. Source: Author's calculations.

decent jobs, the reduction of income inequality and poverty, etc., enabling inclusive economic growth are topical. One of these policy instruments that this study tries to highlight is the business environment induced by business regulatory reforms, and which we show to be beneficial for inclusive economic growth when it is of better quality. This study aims to examine the impact of business environment on inclusive growth in Africa. From that perspective, we started with a sample of 46 African countries over the period 2010-2018. We measured the business environment by the World Bank's Ease of Doing Business Index and used GDP per person employed and an inclusive growth index as proxy for inclusive growth. In this study, we examine business environment and inclusive growth nexus in a static framework using a Panel Corrected Standard Error (PCSE) proposed by Beck & Katz (1995). In addition, we use other estimation methods such as random-effects, fixed-effects DKSE and pooled OLS models. In a dynamic framework, the study mobilizes System-GMM.

The results show that business environment has a positive and significant effect on inclusive growth, suggesting that countries with better business environments benefit the most from inclusive economic growth in Africa. This finding is consistent with that of Kouton (2019) who finds that economic freedom—one of the proxies for business environment in the literature—is conducive to inclusive growth in Africa. This result that we find is explained by the fact that an improved business environment made possible by better government business reforms would have fostered competitiveness and innovation, which in turn would have contributed to inclusive growth through improved economic growth, job creation, and reduced income inequality and poverty, etc. We find evidence that the positive and significant effect of improving the business environment on inclusive economic growth is robust. Indeed, after excluding outliers, using several estimation methods (i.e., PCSE, random-effects, fixed-effects DKSE, pooled OLS and System-GMM), and using an inclusive growth index constructed through a PCA method as an alternative measure of inclusive growth, the results confirm a positive and significant business environment effect on inclusive growth that remains robust. Thus, this study both contributes to the existing literature between business environment and inclusive growth and fills the gap by being the first study to examine this relationship using the World Bank's Ease of Doing Business index as a measure of the business environment. Another contribution of this study is that it quantitatively assesses business environment effect on inclusive growth in a rigorous econometric framework. Indeed, to our knowledge, only the study by Kouton (2019) has quantitatively examined business environment effect measured by economic freedom on inclusive growth.

Finally, we used in this study the Ease of Doing Business index as a proxy for the business environment. This index is an aggregate index derived from several sub-indices corresponding to dimensions or components of the business climate. This provides an opportunity for future research to explore the differential effect of the sub-indices of the Ease of Doing Business on inclusive growth in Africa.

Ultimately, it will provide insight into which components of the Ease of Doing Business do and do not lead to inclusive growth. In addition, future research could examine this relationship using other measures of business environment mentioned in section 2.2 of this study. Finally, inclusive growth is a cross-cutting issue for both developing and developed economies. This provides a perspective for re-examining the business environment effect on inclusive growth for countries around the world on the one hand, and for specific economies (European countries, OECD countries, emerging countries, developed countries, developing countries, etc.) on the other hand.

6.2. Policy Recommendations

In terms of policy recommendations, it emerges that a prerequisite for achieving and sustaining the objective of inclusive growth would be for policymakers in African countries to engage in regulatory reforms that aim to make business environment favorable. Concretely, this would mean implementing reforms that remove implicit barriers to market entry for new firms and building strong institutions to enforce rules and regulations. This would prevent the rise of market power, which in turn would promote inclusiveness through a system of reasonable prices in markets. For example, business regulatory reforms to facilitate market entry by new firms could include reducing the number of procedures, time, cost, and minimum capital required to start a business (World Bank, 2019b). At the same time, creating a better business environment would require that policymakers in African countries focus their reforms on making it easier to obtain building permits, obtain electricity, transfer property, access credit, trade internationally, protect minority investors, enforce contracts, resolve insolvency, and provide a good tax system for paying taxes. This would have the effect of energizing the private sector in African countries through competition and innovation in the sense that the highest levels of productivity in the market are set by innovation, which would ultimately boost economic growth, encourage entrepreneurship, and create productive employment, which is the primary means of reducing income inequality and poverty. The overall effect of economic growth, job creation, reduction of income inequality and poverty, etc. would ultimately result in broad-based growth, benefiting all segments of the population: hence the inclusiveness of growth

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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Appendix

Extreme poverty and inequality are higher in Africa than in other world region, 1980-2017

Source: Staff computations based on World Bank data.
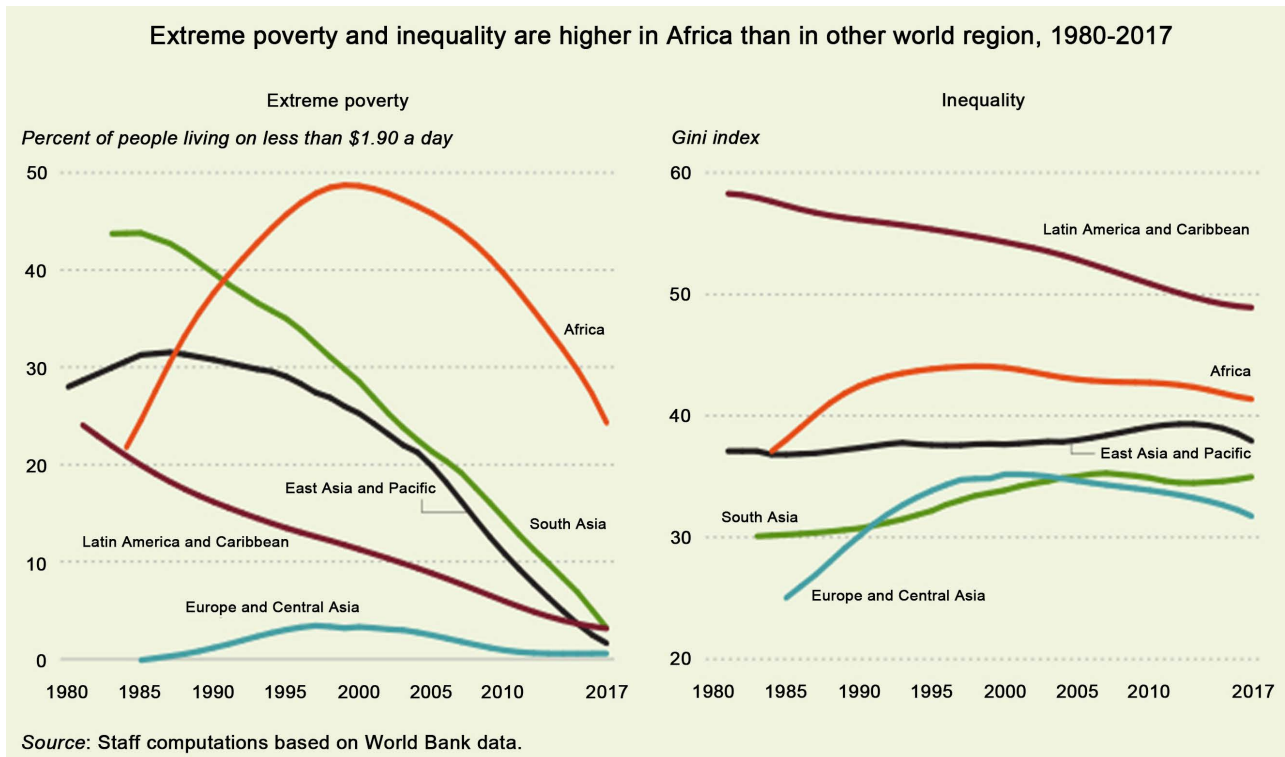
Figure A1. Trend in extreme poverty and inequality from 1980 to 2017 in different regions of the world. Source: African Development Bank, 2020.