South African Journal of Economic and Management Sciences
ISSN: (Online) 2222-3436, (Print) 1015-8812

Globalisation and economic growth in Africa: New evidence from the past two decades

Authors:
Parfait B. Beri[1,2]
Gabriel Mhonyera[1]
Gabila F. Nubong[1]

Affiliations:
[1]School of Economic Sciences, Faculty of Economic and Management Sciences, North-West University, Potchefstroom, South Africa

[2]Socio-Economic Research Applications and Projects, Washington, DC, United States

Corresponding author:
Parfait Beri,
parfaitberi@gmail.com

Dates:
Received: 08 Jan. 2022
Accepted: 17 May 2022
Published: 25 July 2022

How to cite this article:
Beri, P.B., Mhonyera, G. & Nubong, G.F., 2022, 'Globalisation and economic growth in Africa: New evidence from the past two decades', *South African Journal of Economic and Management Sciences* 25(1), a4515. https://doi.org/10.4102/sajems.v25i1.4515

Copyright:
© 2022. The Authors. Licensee: AOSIS. This work is licensed under the Creative Commons Attribution License.

Read online:
Scan this QR code with your smart phone or mobile device to read online.

Background: In the last two decades, the world experienced two overlapping global shocks – that is, the 2008–2009 financial crisis and the COVID-19 lockdowns – with severe social and economic consequences on African economies that have, once again, brought to the fore the intricate role that globalisation plays in economic growth because of grave risks that often accompany it.

Aim: We consider three research questions about globalisation: (i) does globalisation heighten economic growth? (ii) is there a statistically significant threshold level of globalisation above which globalisation affects growth differently than at lower levels? (iii) what factors moderate the globalisation-economic growth nexus?

Setting: A panel of 47 selected countries from Africa from 2001 to 2018 is under scrutiny.

Method: To begin, it applies an overlapping five-year moving average (MA) to smoothen the data. In addition, we employ the revised globalisation index and the two-step systems generalised method of the moment (GMM) in its empirical strategy.

Results: We find a largely insignificant relationship between globalisation and economic growth. We attribute these results to Africa's infinitesimal share – less than 5% – in foreign direct investment (FDI) and global trade, acute infrastructure deficit and the lack of relevant skills that lead to productivity losses and weak performance within the international business ecosystem. We also find, among others, that globalisation is more effective in countries with more gross capital formation, higher population and urban growth rates.

Conclusion: For Africa to maximise its growth potential from globalisation, sound policies should be put in place to promote trade, FDI, domestic capital formation and urbanisation. We suggest that future studies investigate the long-run equilibrium relationship between globalisation and economic growth.

Keywords: globalisation; internationalisation; KOF Index; economic integration; economic growth; trade; generalised method of moment; Africa.

Introduction

In the last two decades, the world experienced two overlapping global shocks that had severe social and economic consequences for African economies. To begin with, the 2007–2009 global financial crisis – following a subprime mortgage-backed securities crisis – decelerated economic growth that characterised the preceding quinquennium in Africa. Although the underdeveloped financial system and weak integration into the global economy insulated Africa, the indirect effects were evident in higher lending costs and other impairments due to tightening credits in advanced economies. In October 2008, the International Monetary Fund (IMF) revised its economic forecast in Sub-Saharan Africa (SSA) from 5.2% to 1.7%, reminiscent of the overly optimistic projections during the oil shock in the 1970s (International Monetary Fund 2009). In addition, the unprecedented health crisis, due to the COVID-19 pandemic and slower vaccine roll-out amidst the accelerating pace of climate change are adversely affecting African economies. Despite these challenges, current economic forecasts show signs of resilience and rapid recovery in 2022 (up to 3.8%), following a sharp contraction in 2020. However, SSA is still at the lower end of recovery, compared to other regions in developing countries (International Monetary Fund 2021).

These crises revved the nosedive in foreign direct investment (FDI), remittances, commodity prices (export prices and volumes), rising consumer prices, high unemployment and the economic volatility in African countries, which are spillovers directly intertwined with globalisation, and all essential to economic growth. Nevertheless, globalisation has beneficial and detrimental effects on

growth. These crises, their speeds of transmission and the outcomes they foist on African countries have, once again, brought to the fore the intricate role that globalisation plays in economic growth. The case of African countries is peculiar because of interminable efforts to accelerate deeper integration into the global economy to promote sustainable development.

Globally, countries vary in their financial integration, technological progress and institutional development, which are strong determinants of their potential to benefit from globalisation (Samimi & Jenatabadi 2014). The anti-globalisation movements vociferously argue that globalising amidst these polarities perpetuate dependency, leading to more severe poverty and income inequality (Salahuddin et al. 2020; Yameogo & Omojolaibi 2021), which may impede economic growth in developing economies. Secondly, some pessimists associate globalisation with a long-term agenda of Western countries to dominate developing economies through the expansion of Anglo-American capitalism, whose economic, political and cultural ideologies are antithetical (Akinola 2020; Asongu & Nwachukwu 2017; Thompson 2007). Therefore, a rigorous empirical study of its impact on economic growth with data that cover the past two decades in Africa is both timely – especially with recent success in bringing African countries together under the African Continental Free Trade Area (AfCFTA) – and crucial for policymaking in the future of deeper economic integration with the rest of the world.

Although many studies exploit the availability of large cross-sectional datasets to examine the role of globalisation on economic growth in developing countries (Goldberg & Pavcnik 2007; Samimi & Jenatabadi 2014; Zahonogo 2018), there are not many rigorous empirical studies on Africa. One part of the debate in literature starts from the premise that the protection of infant industries from established foreign enterprises lead to long-run economic growth. In addition, the pro-globalists argue that globalisation increases competition between business corporations by enhancing innovation, productivity, economic growth and better opportunities for citizens. Conversely, many African countries are fraught with poor regulations, poorly developed financial markets, telecommunication, transportation and inefficient systems (institutions) that may impede them from taking full advantage of a globalised market to enhance economic growth. Also, it is not clear whether Africa has benefited from globalisation in the last two decades, given the slow pace of its technological progress, skills, industrialisation, transport, as well as information and communication technology (ICT) infrastructure that are known to moderate its positive effects on economic growth (Gurgul & Lach 2014; Latif et al. 2018).

Against this backdrop, this study answers the following questions: does globalisation heighten economic growth in Africa? Huh and Park (2021) showed that globalisation promoted growth, but high-income countries benefited most. Asongu (2017), Asongu and Nwachukwu (2017), Shittu et al. (2020) and Zahonogo (2018) have empirically investigated the dynamic impact of globalisation – typically measured with the economic (trade openness), financial or overall indices of globalisation using the KOF index – on economic growth over the short run. However, these studies did not provide sufficient granularity on its transmission mechanisms. Similarly, globalisation is a multifaceted concept to such a degree that results from studies that measure it with trade openness and FDI may not be reliable because these are not all-encompassing measures of economic globalisation (Gygli et al. 2019).

Although Rudra and Tobin (2017) find that the effectiveness of globalisation on economic development predicates some preconditions, only a few studies examined such conditions in Africa. Latif et al. (2018) and Samimi and Jenatabad (2014) found that direct foreign investment, ICT and the income level of countries played a significant moderating role on the impact of globalisation on economic growth in BRICS (Brazil, Russia, India, China and South Africa) and the Organization of Islamic Cooperation (OIC) countries, respectively. On this basis, the study also investigates factors that moderate the impact of globalisation on economic growth in Africa.

The present inquiry makes two crucial contributions to the literature: Firstly, there is no consensus about the development impact of globalisation (Asongu et al. 2020). However, its insidious effects on income inequality are well-documented in developing countries, inducing calls for integration that is mutually beneficial (Tchamyou 2019). Accordingly, these disparities in income are more apparent in Africa and other developing countries. Therefore, the current study adds another notch to the discourse by employing recent data to examine the short-run dynamic link between globalisation and economic growth, and moderating factors that enhance the relationship in selected African countries. We are not aware of studies in which the moderating role of these existing conditions on the relationship between globalisation and economic growth in Africa have been thoroughly examined. The method employed enables us to articulate specific factors that mitigate the dynamic link between globalisation and economic growth. Secondly, the study examines the nonlinear relationship between the globalisation-growth nexus. This approach is relevant because it provides insights into at what level a previously insignificant effect from globalisation may become a positive and significant one, which may improve policy decisions.

The remaining sections are structured as follows: the second section reviews the theoretical framework – focusing on the transmission mechanisms – and the empirical literature. The third section explains the data and estimation strategies. The fourth section presents the results, while the fifth section concludes the study and makes policy recommendations.

Literature review

Theoretical underpinnings

Does globalisation stimulate economic growth? Since it is not easy to dissociate globalisation from trade, a standard answer from most trade theories is that it does. Globalisation as an economic concept accentuates two changes: (1) improvements

in transport and communication systems, and (2) high mobility of financial resources and trade. It also implies a situation in which countries continually depend on the global system for transactions. Three main perspectives shed light on how these affect countries. These are the countries' external position (systemic approach), the domestic or internal conditions within the nation (sub-systemic), and a combination of the systemic and sub-systemic approaches. In essence, the structure of the international ecosystem, its evolution and the roles that individual countries play in trade, labour and capital supplies influence development outcomes in diverse ways.

We isolate three relevant theoretical perspectives that offer enthralling insights into the relationship between globalisation and economic growth. These include (1) the optimists (liberalists or hyper-globalists), (2) the pessimists (dependency theorists), and (3) the transformationalists. The optimists comprise classical theories – that emphasise the labour cost theory of value (comparative advantage) – and neoclassical theories that focus on the importance of opportunity cost due to specialisation in international trade. They perceive free trade, competition and division of labour as preconditions for economic growth (Aspers & Kohl 2015). One of the most cited liberal theories on the impact of globalisation on development outcomes is the Heckscher-Ohlin, Stolper-Samuelson – H-O-S – trade theory (Khan 1970; Rudra & Tobin 2017). It builds on the comparative advantage model to explain how factor endowments shape international trade patterns (O'Rourke & Williamson 2005). This theory – which takes a global perspective – postulates that a nation would export the good that uses more of its abundant factor relative to the trading partner.

The H-O-S model abridges trade within the framework of comparative statics to show its short- to medium- term effects on economic growth through increased globalisation. In competitive markets, trade leads to divergence in abundant resources, specialisation in production, and equalisation of returns on factors between trading partners (Davis & Mishra 2007). In the long run, this results in lower income per capita, albeit at a higher offer curve. In an imperfect market, globalisation ignites competition between countries, increases market size, attracts direct foreign investment and remittances from migrants, improves the balance of payments position, develops the domestic infrastructure and propel the transfer of skills and technological innovations that increase productivity and economic growth (Gruber 2011).

On the other hand, pessimistic theories of globalisation have links with Marxism, dependency theories and the World System Theory. Unlike the optimists, dependency theories contend that the current model of integrating less developed countries (LDCs) into the world system is exploitative, because it enriches advanced economies at the expense of the former. They suppose that the influx of capital, managerial skills and technology hurt developing economies, because it does not consider their relative factor endowments (Ahiakpor 1985). Accordingly, since these countries lack the necessary capital and skills, imported technology deprives them of a chunk of the value-added in production.

Many analysts believe that capitalism and the provision of development finance – for instance, through foreign aid and debts (particularly resource-backed debts) as outlined in the modernisation theory – entrap developing nations so much that it becomes impossible to break the circle of dependency. Globalisation also leads to unfair competition between local (infant industries) and foreign companies that destroy the former because the latter possesses better managerial and technological skills, which is detrimental to economic growth.

Finally, transformationalists probably take a more sensible approach by recognising the complex and unpredictable processes that characterise globalisation and its effects on development outcomes. The theory aims to harmonise the centrifugal tendencies of many theories of globalisation – that is, hyper-globalists, sceptics and transformationalists – into a single and rigorous analytical framework. Transformationalists argue that the impact of globalisation on economic growth is exaggerated by hyper-globalists even though resisting it, primarily on beliefs about Western imperialism, does irreparable destruction to human progress (Sen 2002). They also believe that the side effects of globalisation can either be reversed or mitigated.

Empirical literature

Several distinguished journals and book publications recognised the crucial role of globalisation on economic growth over the past decades. While this positive relationship remains contentious in the literature, we can isolate three strands of the debate. The first incorporates various studies that validate the notion that globalisation accentuates economic growth. Literature in this regard includes pioneering works of Dollar (1992), Sachs et al. (1995) and Edwards (1998), along with a significant body of recent studies stemming from Coulibaly, Erbao and Mekongcho (2018), Samimi and Jenatabadi (2014) and, Hassan et al. (2019). For instance, by employing the fixed effect model, Fully Modified Ordinary Least Squares (FMOLS), Dynamic Ordinary Least Squares (DOLS) and the group-mean estimator techniques, Latif et al. (2018) found that ICT, FDI and globalisation were signficantly associated with the economic growth in BRICS countries over the long run. Gurgul and Lach (2014) studied the impact of globalisation on economic growth during the two decades of transition in Central and Eastern European Countries (CEEC), using indices from the Swiss Economic Institute. Their results were significant across the social and economic dimensions of globalisation, but not for political globalisation.

The second strand comprises studies that are more reserved in advocating for the globalisation-led growth link (Alesina, Grilli & Milesi-Ferrett 1994; Rodriguez & Rodrik 2000; Rodrik 1998; Ulaşan 2015; Vamvakidis 2002). This body of academic literature saw the contention of the openness-led growth studies of Dollar (1992), Sachs et al. (1995) and

Edwards (1998) by Rodriguez and Rodrik (2000). They argued that the evidence supporting this positive relationship was weak. Their concerns were about the authors' utilisation of an outlandish trade openness index and the lack of control over some outstanding indicators of economic growth. Warner (2003) also repudiated concerns raised by Rodriguez and Rodrik (2000) by expressing scepticism towards their new index (i.e. tariff revenues divided by imports), which ignored all other trade barriers in their measure of trade restriction in countries.

The third strand of literature covers researches that find a nonlinear relationship between globalisation and economic growth. Several works in this domain (Borensztein, De-Gregorio & Lee 1998; Twerefou, Danso-Mensah & Bokpin 2017) suggest that overall globalisation and its political and social dimensions adversely affect economic growth (Bolaky & Freund 2004). However, scholars such as Borensztein et al. (1998), Grossman and Helpman (2015), Latif et al. (2018), Samimi and Jenatabadi (2014) and Zahonogo (2018) emphasise the effects of complementarities in the globalisation-growth nexus. They generally find human capital stock, level of education, infrastructure, quality of institutions, regulations and financial development to complement the impact of globalisation on economic growth. Zahonogo (2018) employed a dynamic growth model and found an inverted U curve relationship between globalisation and the economic progress in 42 countries in SSA.

For a country to experience the benefits of globalisation in economic growth, some initial conditions must be present to catalyse these relationships. Borensztein et al. (1998), for instance, noted that the progressive technology, brought by FDI enhanced economic growth in countries with adequate human capital. Furthermore, Samimi and Jenatabadi (2014) employed the GMM and found a positive effect of globalisation on economic growth in high and middle-income countries within the OIC relative to low-income ones. Other studies such as Rudra and Tobin (2017) and Zaidi et al. (2019) convincingly show that globalisation positively influences economic growth in countries with existing conditions. These include financial development, technological preparedness, entrepreneurship, healthy institutions, high population growth and labour force participation rate. Asongu and Nwachukwu (2017) used the fixed effects and Tobit models to show, among others, that middle income, oil-poor countries experienced more globalisation-driven human development. Coulibaly et al. (2018) showed that entrepreneurship significantly moderated the impact of globalisation on economic growth in the BRICS countries.

The literature review shows many potential channels through which globalisation affects economic growth. Unfortunately, these are not yet adequately researched in empirical studies on Africa. Similarly, the use of trade openness as a measure of globalisation in some studies does not reflect its multifaceted nature. Finally, empirical studies are still fraught with methodological inconsistencies. Although several studies use cross-country data, they still suffer from the lack of sufficient observations, and the assumption of homogeneity in conventional panel estimation techniques poses additional challenges (Grossman & Helpman 2015).

A comprehensive review of the literature also suggests that globalisation benefits developed countries and their multinationals more than developing countries (Hartungi 2006). This variation is because foreign companies often possess enormous capital for investment, technology and managerial skills that easily outperform infant industries in developing countries. Over the past two decades, however, African countries witnessed growing integration and several initiatives to boost private sector development and trade. A prominent view in the literature holds that globalisation is good for growth; yet, there is not enough evidence to support this claim in African countries. This study aims to disentangle the relationship using advanced econometric techniques and, possibly, identify moderating factors in the globalisation-led growth hypothesis.

Data and estimation procedure

Data

In the study, 47 African countries from 2001 to 2018 are investigated. We exclude archipelagos (São Tomé and Príncipe and Seychelles), also Libya, Malawi, Somalia, South Sudan and Zambia, because of data constraints. Appendix Table A1 shows variables and their sources. We glean the data in this study from the World Development Indicators (WDI) of the World Bank (WB 2021); the KOF globalisation index (Dreher 2006; Gygli et al. 2019); and the Polity5 Project of the Centre for Systemic Peace (CSP 2020). To begin, we used the method of linear interpolation to generate missing observations. In addition, we applied an overlapping 5-year moving average (MA) to smooth the data.

Since the original data covers 2001 to 2018, the final data used in the analysis is a balanced micro-panel with 14 periods. In this regard, year 1 (t_{i1}) is a MA for 2001, 2002, 2003, 2004 and 2005; year 2 (t_{i2}) is a MA for 2002 … 2006, and t_{i14} averages data points from 2014 to 2018. The method removes outliers in the data due to business cycles and also controls higher degrees of autocorrelation (Islam 1995; Mankiw, Romer & Weil 1992).

Dynamic panel estimation strategy

Our analysis begins with the neoclassical Solow-growth model ($Y_{i,t}$), with capital ($K_{i,t}$) and labour stocks ($L_{i,t}$) as inputs in Equation (1):

$$Y_{i,t} = F(K_{i,t}, AL_{i,t}) \quad \text{[Eqn 1]}$$

Where A is the residual or technology, i and t represent cross-sections (country) and years, respectively. This model assumes that population growth (N) and savings (S) are exogenous. Robert Solow concluded that higher savings

were associated with more income, while countries with higher population growth rates were poorer. If we follow Mankiw et al. (1992) to define Equation (1) à la augmented Cobb-Douglass production function by adding human capital ($H_{i,t}$) and globalisation ($G_{i,t}$), we obtain Equation (2):

$$Y_{i,t} = [A_{i,t}L_{i,t}]^{1-\alpha-\beta-\delta} K_{i,t}^{\alpha} H_{i,t}^{\beta} G_{i,t}^{\delta} \quad \text{[Eqn 2]}$$

Where α, β and δ are the responsiveness of output to changes in capital, labour and globalisation, respectively, dividing Equation (2) by units of labour and abridging from Islam (1995), the linear form of Equation (2) within a dynamic panel system is presented as follows:

$$Y_{i,t} = \lambda_0 + \lambda_1 y_{i,t-1} + \sum_{j=1}^{2} \gamma_j \chi_{i,t}^{j} + \delta_0 g_{i,t} + \eta_t + \nu_i + \mu_{i,t} \quad \text{[Eqn 3]}$$

Where $g_{i,t}$ is the new index of globalisation and $x^{j}_{i,t}$ is a list of exogenous variables, η_t measures time effects, while v_i represents cross-section (country) effects and $\mu_{i,t}$ is the idiosyncratic error component. This model provides a convenient environment to account for time and country-fixed effects (Islam 1995) and can be estimated, using any variant of panel data techniques. During the analysis, we also include the second-order polynomials of globalisation to examine nonlinearities between globalisation and economic growth in Africa.

To estimate the moderating effect of existing conditions (*EC*) on economic growth, we interact $g_{i,t}$ with urbanisation, financial development, institutional quality and population growth at different stages of the regression ($g_{i,t}$, *EC*). According to Rudra and Tobin (2017), improvements in these conditions over time enhance the effect of globalisation on economic growth. Equation (4) shows the generic form of the model:

$$Y_{i,t} = \lambda_0 + \lambda_1 y_{i,t-1} + \sum_{j=1}^{2} \gamma_j \chi_{i,t}^{j} + g_{i,t} EC + \eta_t + \nu_i + \mu_{i,t} \quad \text{[Eqn 4]}$$

As noted in the preceding section, equations (3) and (4) can be estimated with several panel data estimation techniques, such as the first-difference estimators, random effect and fixed-effect models. The first-difference estimator may address the problem of omitted variables. At the same time, it results in endogeneity bias due to correlations between $y_{it\text{-}1}$ and the error term (μ_{it}) in Equation (5):

$$\left(y_{i,t} - y_{i,t-1}\right) - = \beta_1 \left(x_{i,t} - x_{i,t-1}\right) + \lambda \left(y_{i,t-1} - y_{i,t-2}\right) + \left(\mu_{i,t} - \mu_{i,t-1}\right)$$

[Eqn 5]

This problem arises because the transformed dynamic variable ($y_{i,t\text{-}1}$–$y_{i,t\text{-}2}$) correlates with the idiosyncratic error ($\mu_{i,t}$–$\mu_{i,t\text{-}1}$) even at higher lags.

Similarly, static models such as fixed and random effects (FE/RE) assume strict exogeneity, that is, a country's globalisation and other macroeconomic fundamentals that affect economic growth are orthogonal. However, most cross-sectional time-series variables suffer from simultaneity and endogeneity (Beri & Nubong 2022). Simultaneity bias often happens when the evolution of globalisation does stimulate economic growth. Economic growth also increases the likelihood that a country will engage in deeper integration over the next period. Therefore, the assumption of strict exogeneity means ignoring this possibility of reverse causality and may result in biased estimated parameters, due to contemporaneous correlations with the idiosyncratic errors. In the presence of these challenges, the GMM model provides robust results (Arellano & Bover 1995; Blundell & Bond 1998).

However, its challenge is that of obtaining accurate instruments for the estimations. In this study, we estimate a two-step system GMM model using internal instruments, derived from the lags of the endogenous variables and the first differences of the exogenous variables. In addition, we employ the Hansen test to verify the validity of these instruments. We ignore results from the Sargan test since this estimator relaxes the assumption of homoscedasticity and serial correlation of the idiosyncratic error term in levels (Roodman 2009). Theoretically, an insignificant *p*-value for the Hansen test within the boundaries $0.1 \leq$ Hansen ≤ 2.5 is considered a linchpin for valid instruments (Roodman 2009).

All models account for time-fixed effects to capture, among others: (1) changes in growth in all countries in specific years (Schularick & Solomou 2011), (2) ensure mean reversion of growth over time and, (3) account for unobserved or inaccurately observed components of the economic environment, such as the investment climate and regulations that affect economic growth (Beri & Nubong 2021, 2022).

Figure 1 (a) and (b) presents the scatter plot of economic growth and globalisation over the period considered. A visual analysis shows that there is no direct relationship between the two variables, although this descriptive view does mask time and cross-country heterogeneity. Figure 1(a): Scatter plot of the overall index of globalisation and economic growth; Figure 1 (b): Scatter plot of economic globalisation and economic growth.

Results and discussions

Preliminary results

Appendix Table A2 shows all transformed variables included in the study. There are 47 countries (n), 14 periods (T), and 658 ($n \times T$) observations (N). The standard deviations are quite large, suggesting that the data spread over a range of values. The use of GMM in this study is because it minimises the spread of these standard errors from the distribution.

Table 1 shows that the correlation between population growth rate and urbanisation is 0.831, a strong signal of multicollinearity. We do not enter these variables in the same equation during the analysis. The remaining variables have low correlations that cannot influence the results.

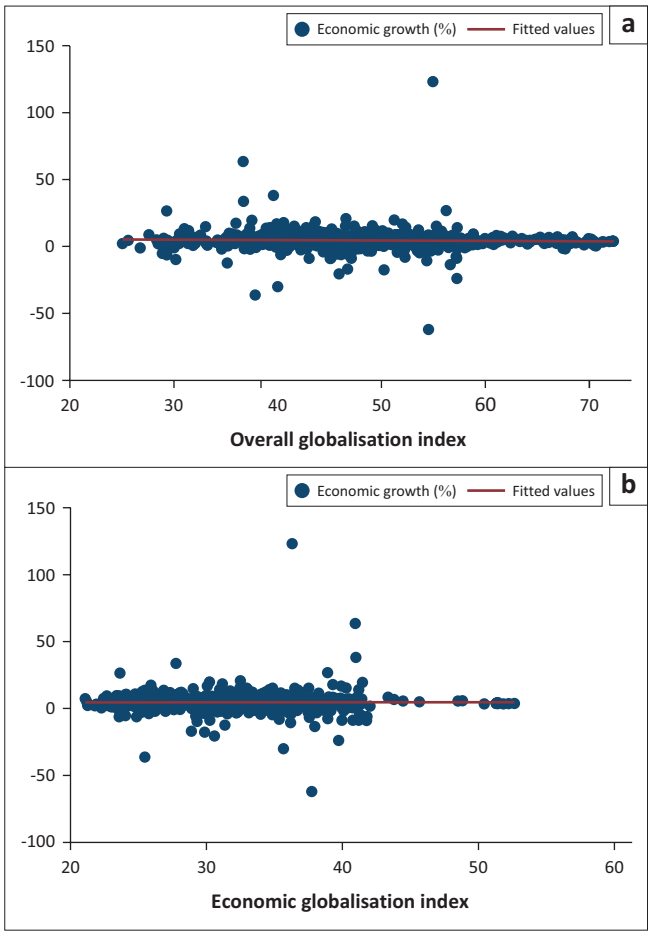

FIGURE 1: Scatter plot of economic growth and globalisation.

TABLE 1: Matrix of correlations between regressors.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) LFPR	1.000	-	-	-	-	-	-		-
(2) CAPITAL	0.219	1.000	-	-	-	-	-	-	-
(3) HCAPITAL	-0.491	-0.164	1.000	-	-	-	-	-	-
(4) KOFGI	-0.403	-0.181	0.692	1.000	-	-	-	-	-
(5) EKOFGI	-0.258	-0.189	0.525	0.682	1.000	-	-	-	-
(6) URBAN	0.316	-0.011	-0.517	-0.359	-0.266	1.000	-	-	-
(7) FINDEV	-0.275	-0.107	0.650	0.685	0.536	-0.383	1.000	-	-
(8) POLITY2	0.027	-0.081	0.226	0.210	0.080	-0.090	0.222	1.000	-
(9) POP	0.269	0.012	-0.594	-0.423	-0.359	0.831	-0.496	-0.146	1.000

LFPR, Labour Force Participation; CAPITAL, Gross Capital Formation; HCAPITAL, Human Capital; KOFGI, Globalisation; EKOFGI, Economic Globalisation; URBAN, Urbanisation; FINDEV, Financial Development; POLITY2, Institutional Quality; POP, Population Growth Rate.

We employ a mixed-up strategy approach for stationarity with four lags, that is, the Levin-Lin-Chu (LLC) and the Im-Pesaran-Shin (IPS) tests (Im, Pesaran & Shin 2003; Levin, Lin & Chu 2002). The LLC test assumes that groups are homogenous, while the assumption of heterogeneity is central in the IPS test. Table 2 shows that only the population growth rate is stationary at first difference. Therefore, the transient effects of shocks on economic growth would return to their long-run equilibrium. It also implies that there is no need for a cointegration test, and as a result, our results are unlikely to suffer from spurious relationships. Therefore, policy implications drawn from the GMM would be valid.

TABLE 2: Results of the Stationarity test.

Variable	LLC		IPS	
	Adjusted *t**	Status	*W-t*-bar	Status
GDP	-2.31**	Level	-6.33***	Trend
LFP	-2.33**	Level	-2.05**	Level
Capital	-7.70***	Level	-7.19***	Level
HK	-4.57***	Trend	-	-
KOFG	-4.01***	Level	-2.20**	Level
EKOFG	-3.12***	Level	-6.79***	Trend
URBAN	-5.97***	Level	-2.23**	Level
FINDEV	-1.51*	Level	-20.11***	Trend
POLITY2	-3.0e + 05***	Level	-	-
POP	-12.10***	I (1)	-3.83***	Level

LLC, Levin-Lin-Chu; IPS, Im-Pesaran-Shin; GDP, Economic growth; LFPR, Labour Force Participation; CAPITAL, Gross Capital Formation; HCAPITAL, Human Capital; KOFGI, Globalisation; EKOFGI, Economic Globalisation; URBAN, Urbanisation; FINDEV, Financial Development; POLITY2, Institutional Quality; POP, Population Growth Rate.

*, $p < 0.10$; **, $p < 0.05$; ***, $p < 0.010$.

TABLE 3: The impact of globalisation on economic growth in Africa.

Variable	(1)	(2)	(3)	(4)	(5)
L.GDP	0.833***	0.813***	0.817***	0.830***	0.832***
	(0.0839)	(0.0627)	(0.0714)	(0.0607)	(0.0631)
LFPR	0.00687	0.0126**	0.0129**	0.0110*	0.0120*
	(0.0068)	(0.0056)	(0.0060)	(0.0057)	(0.0064)
CAPITAL	0.0123**	0.0114**	0.0119**	0.0109**	0.0108**
	(0.0053)	(0.0054)	(0.0059)	(0.0050)	(0.0053)
HCAPITAL	-0.000525	0.00155	0.00453	0.000741	0.00164
	(0.0028)	(0.0046)	(0.0079)	(0.0037)	(0.0040)
KOFGI	-	0.00449	0.241	-	-
	-	(0.0213)	(0.288)	-	-
KOFGI # KOFGI	-	-	-0.00242	-	-
	-	-	(0.0030)	-	-
EKOFGI	-	-	-	0.00255	0.0417
	-	-	-	(0.0114)	(0.0504)
EKOFGI # EKOFGI	-	-	-	-	-0.00041
	-	-	-	-	(0.0005)
Constant	-	-0.362	-6.115	-0.0301	-1.126
	-	(0.916)	(7.332)	(0.954)	(1.593)
Observations	-	611	611	611	611
No. of instruments	34	38	39	43	42
AR (1) (p-value)	0.002	0.0019	0.0020	0.0014	0.0015
AR (2) (p-value)	0.288	0.295	0.291	0.296	0.295
Sargan n-j	0.000	3.29e-2	7.50e-2	1.04e-1	3.33e-2
Hansen n-J	0.172	0.117	0.114	0.186	0.108

GDP, Economic growth; LFPR, Labour Force Participation; CAPITAL, Gross Capital Formation; HCAPITAL, Human Capital; KOFGI, Globalisation; EKOFGI, Economic Globalisation; AR, Autoregressive process.

Standard errors in parentheses *, $p < 0.10$; **, $p < 0.05$; ***, $p < 0.010$.

Globalisation and economic growth in Africa

The first objective of this research was to assess the short-run partial effects of globalisation on economic growth in Africa. We controlled for labour force participation, capital and human capital development. From Table 3, (1) our baseline model is with labour, gross capital formation and human capital development. Model (2) shows the main effect of overall globalisation, (3) examines the second-order polynomial or threshold effect of overall globalisation, (4) presents results on economic globalisation and (5) presents results regarding the threshold effect of economic globalisation on economic growth.

According to models (2) and (4), the overall and economic indices of globalisation positively affect economic growth,

but the coefficients are not significant at a 5% level. Similarly, their second-order polynomials in (3) and (5) show a negative and trivial effect, that is, concavity or an inverted U-shaped relationship over time. Therefore, globalisation is not concomitant with economic growth in Africa. The results were consistent after removing Nigeria, South Africa and Egypt to control for the effect of large economies (not presented). Finally, the coefficients of labour force participation and gross capital formation are positive and significant, as expected from the theoretical and empirical literature (Islam 1995; Mankiw et al. 1992).

Regarding the post-estimation analyses, Table 3 shows no evidence of second-order autocorrelation as expected (p-value of $AR2 > 0.05$). All instruments are less than the number of groups, and the Hansen p-values lie within the theoretically recommended boundary ($0.1 \leq H \leq 2.5$). Similarly, the coefficients of the lag dependent variables are less than one, which satisfy their theoretical expectations. Therefore, all estimated coefficients are non-biased, consistent and efficient.

These results differ from those obtained by Shittu et al. (2020), in which globalisation was a signficant determinant of economic growth in West Africa, using data from 1996 to 2016. Zahonogo (2018) employed the trade openness index from 1980 to 2012 and showed that globalisation was a significant determinant of economic growth to a particular threshold in SSA, beyond which it declined, while Asongu and Nwachukwu (2017) showed that globalisation was crucial for human development using data from 1996 to 2011. Similarly, Samimi and Jenatabadi (2014) found supportive evidence for the globalisation-growth nexus in high and middle-income countries of the OIC over the period 1980–2008. However, results in this study add to the strand of empirical studies that have not found robust evidence to support the globalisation-led growth hypothesis (Alesina et al. 1994; Rodriguez & Rodrik 2000; Rodrik 1998; Ulaşan 2015; Vamvakidis 2002). Schularick and Solomou (2011) found that protectionism was insignificant to growth during the first era of globalisation and attributed the results to the triviality of trade policies. These results suggest that, although globalisation was beneficial to economic growth during its initial phases (Coulibaly et al. 2018; Samimi & Jenatabadi 2014; Shittu et al. 2020; Yameogo & Omojolaibi 2021; Zahonogo 2018), the effect has slowed down over the past two decades. This may be due to the combined effects of the overlapping economic and health crises and the slowing down in remittances, FDI and Africa's trade share.

The moderating role of existing conditions and overall globalisation

In the first half of our second objective, we aimed to investigate the interactive effects of existing conditions with overall globalisation on economic growth in Africa. These conditions include urbanisation, financial development, population growth and institutional quality. Table 4 presents the mediating effects of overall globalisation as follows:

TABLE 4: Existing conditions, overall globalisation and economic growth.

Variable	(1)	(2)	(3)	(4)
L.GDP	0.895***	0.881***	0.836***	0.836***
	(0.0562)	(0.0561)	(0.0628)	(0.0690)
CAPITAL	0.0109***	0.00834	0.00922**	0.0104**
	(0.00385)	(0.00517)	(0.00393)	(0.00409)
LFPR	-	0.0190**	0.0140*	0.0123*
	-	(0.00917)	(0.00709)	(0.00727)
HCAPITAL	0.00813	0.00914	0.00366	0.00192
	(0.00930)	(0.00955)	(0.00623)	(0.00402)
POP	-3.644***	-	-	-
	(1.248)	-	-	-
KOFGI	-0.369**	-0.224**	0.00217	0.00140
	(0.156)	(0.0915)	(0.0438)	(0.0234)
POP # KOFGI	0.0763**	-	-	-
	(0.0287)	-	-	-
URBAN	-	-1.696***	-	-
	-	(0.569)	-	-
URBAN # KOFGI	-	0.0344***	-	-
	-	(0.0123)	-	-
FINDEV	-	-	-0.0148	-
	-	-	(0.0423)	-
FINDEV # KOFGI	-	-	0.000185	-
	-	-	(0.000664)	-
POLITY2	-	-	-	-0.00358
	-	-	-	(0.138)
POLITY2 # KOFGI	-	-	-	0.000286
	-	-	-	(0.00254)
Constant	18.19***	-	-	-
	(6.173)	-	-	-
Observations	611	611	611	611
No. of instruments	43	46	46	47
AR (1) (p-value)	0.000832	0.000779	0.00148	0.00169
AR (2) (p-value)	0.269	0.281	0.285	0.286
Sargan n-j	7.27e-13	7.68e-16	9.79e-17	4.94e-17
Hansen n-J	0.135	0.103	0.100	0.121

GDP, Economic growth; LFPR, Labour Force Participation; CAPITAL, Gross Capital Formation; HCAPITAL, Human Capital; KOFGI, Globalisation; EKOFGI, Economic Globalisation; URBAN, Urbanisation; FINDEV, Financial Development; POLITY2, Institutional Quality; POP, Population Growth Rate; AR, Autoregressive process.

Standard errors in parentheses *, $p < 0.10$; **, $p < 0.05$; ***, $p < 0.010$.

(Model 1) population growth rate (POP # KOFGI), (2) urbanisation (URBAN # KOFGI), (3) financial development (FINDEV # KOFGI), and (4) institutional quality (POLITY2 # KOFGI).

Results for model (1) show that the combined impact of population growth and overall globalisation is positive and significant at an error margin of 5%. Similarly, the combined effect of globalisation and urbanisation is robust at the significance level of 5% (2). Therefore, we reject the null hypotheses and conclude that globalisation is significant in countries experiencing a rapid population growth rate and those whose urbanisation is increasing. These conclusions agree with our theoretical expectations.

The mediating effects of institutional quality and financial development with globalisation in models (3) – (4) were not significantly associated with economic growth, upholding the null hypotheses. Finally, we also found evidence that the effect of interacting globalisation with human capital was detrimental to economic growth in Africa at an error margin

of 10%. Similarly, globalisation was beneficial to economic growth in countries with more gross capital formation at an error margin of 10% (not presented). Similar to the previous section, models (1) – (4) are valid because AR2 and the Hansen tests are insignificant.

In a related study, Samimi and Jenatabadi (2014) showed that globalisation was more effective in countries with more financial development and a more educated labour force. Zahonogo (2018) contended that complementary policies on strengthening the quality of institutions and acquiring new knowledge were necessary for enhancing the impact of globalisation on economic growth in Africa. We are not aware of studies examining the mediating effects of globalisation with population growth rate and urbanisation on economic growth in Africa. In economic literature, however, population and urbanisation are often associated with a larger market size, more business opportunities and economic growth.

The moderating role of existing conditions and economic globalisation

In this sub-hypothesis, we present the interactive effects of existing conditions and economic globalisation on growth in Africa. Like in the preceding section, models (1) – (4) in Table 5 show the interactive effects of population, urbanisation, financial development and polity scores (quality of institutions) with economic globalisation.

According to the results, the mediation effect of population growth rate, urbanisation, financial development, and quality of institutions is not concomitant with economic growth. Therefore, we reject the null hypotheses and conclude that there is no significant mediation between existing conditions and economic globalisation for economic growth in Africa. Our model is valid based on AR2 and Hansen tests.

In previous studies, Hassan et al. (2019) found a signficant correlation between economic globalisation and economic growth in developing countries. Although some researchers such as Borensztein et al. (1998), Grossman and Helpman (2015), Rudra and Tobin (2017), Coulibaly et al. (2018), Samimi and Jenatabadi (2014) and Zahonogo (2018) emphasised the importance of complementarities in the globalisation-growth nexus, the results in this study, using the GMM method, have found only labour and urbanisation to significantly moderate the effect of globalisation on economic growth. Coulibaly et al. (2018) showed that entrepreneuship was also a signficant mediating variable on the growth-globalisation relationship.

Concluding remarks and implications

Globalisation has beneficial, as well as detrimental effects, on nation-states. The reduction or removal of economic, social, cultural and political barriers implies that shocks in one country can speedily spread to other nations within a short period. It was evident during the 2007–2009 financial crisis and the present Coronavirus pandemic. The consequences of these shocks often transcend challenges in designing appropriate monetary and fiscal policies in ways that can erode the gains in economic growth over several decades. The effects have been noticeable on low FDI, slumps in commodity prices, remittances and debt accumulation that further obstruct economic recoveries long after the crises are gone.

In view of these challenges that rapidly spread across the world due to globalisation, this paper contributes to the literature by thoroughly investigating the relationship between globalisation and economic growth in Africa over the past two decades. It considers the last two decades because of the expanding integration of African countries into the global economy and the materialisation of the long-awaited AfCFTA as part of measures to promote intra-regional trade and investment. In this period also, a spike has been seen in unemployment, trans-Atlantic migration in search of better economic opportunities and a dwindling support for globalisation. To identify complementarities that may potentially influence the relationship, we also examined

TABLE 5: Existing conditions, economic globalisation and growth.

Variable	(1)	(2)	(3)	(4)
L.GDP	0.853***	0.849***	0.842***	0.833***
	(0.0761)	(0.0379)	(0.0656)	(0.0669)
LFPR	0.00932*	0.00357	0.0117*	0.00975*
	(0.00543)	(0.0111)	(0.00654)	(0.00504)
CAPITAL	0.00931**	0.0113***	0.00920**	0.00940**
	(0.00414)	(0.00405)	(0.00418)	(0.00428)
HCAPITAL	-0.00192	-0.00511	0.00270	0.00140
	(0.00506)	(0.00460)	(0.00417)	(0.00366)
POP	0.0538	-	-	-
	(0.303)	-	-	-
EKOFGI	0.0145	0.0876	-0.0102	-0.0111
	(0.0265)	(0.0939)	(0.0182)	(0.0166)
POP # EKOFGI	-0.00451	-	-	-
	(0.00516)	-	-	-
URBAN	-	0.586	-	-
	-	(0.693)	-	-
URBAN # EKOFGI	-	-0.0143	-	-
	-	(0.0134)	-	-
FINDEV	-	-	-0.00624	-
	-	-	(0.0134)	
FINDEV # EKOFGI	-	-	0.000102	-
	-	-	(0.000218)	-
POLITY2	-	-		-0.0658
	-	-		(0.115)
POLITY2 # EKOFGI	-	-	-	0.00154
	-	-	-	(0.00243)
Constant	-	-	0.104	
	-	-	(1.056)	
Observations	611	611	611	611
No. of instruments	45	42	46	47
AR (1) (p-value)	0.00215	0.00102	0.00153	0.00144
AR (2) (p-value)	0.285	0.270	0.288	0.281
Sargan n-j	1.67e-15	8.99e-14	1.29e-17	1.54e-15
Hansen n-J	0.126	0.123	0.102	0.103

GDP, Economic growth; LFPR, Labour Force Participation; CAPITAL, Gross Capital Formation; HCAPITAL, Human Capital; KOFGI, Globalisation; EKOFGI, Economic Globalisation; URBAN, Urbanisation; FINDEV, Financial Development; POLITY2, Institutional Quality; POP, Population Growth Rate; AR, Autoregressive process.

Standard errors in parentheses *, $p < 0.10$; **, $p < 0.05$; ***, $p < 0.010$.

the moderating effects of overall and economic globalisation with population growth rate, urbanisation, financial development, the quality of institutions and other control variables. Several regressions were estimated using the two-step systems generalised method of the moment.

We found a largely insignficant association between globalisation and economic growth in Africa. There is ample evidence in the literature that openness is not associated with economic growth (Alesina et al. 1994; Rodriguez & Rodrik 2000; Rodrik 1998; Ulaşan 2015). We also found that the second-order polynomial effects of globalisation on economic growth were insignificant and, therefore, no threshold effects. However, results on the control variables showed that countries with a higher labour force participation rate and gross capital formation had a higher likelihood to experience more growth.

After obtaining these results, we turned to the moderating role of existing conditions on the relationship between globalisation and economic growth. We found that globalisation (the overall index) was more effective on economic growth in countries with higher population and urban growth rates. However, these multiplicative interactions with economic globalisation did not have a significant impact on economic growth. Further analyses showed that countries with more gross capital formation experienced more growth, while globalisation was detrimental to economic growth in countries with more secondary school enrollments. However, these results mask heterogeneity across countries and may require further investigation at country and sub-regional levels to corroborate its conclusion.

It was necessary to use a different analytical technique with the revised index of globalisation to produce novel insights, although several studies have explored the relationship in Africa. Shittu et al. (2020) and Zahonogo (2018) used the autoregressive distributed lag model with data from 1996 to 2016, and the pooled mean group estimates with data from 1980 to 2012, respectively. However, these studies found supporting evidence for the globalisation-led growth hypothesis. Accordingly, the effect of globalisation on economic growth varies by the period and the samples included in the analyses. We recommend that future studies endeavour to account for variations in economic development (large and small economies) and location of the country (landlocked or coastal), as these factors may moderate the globalisation-economic growth nexus.

These results on the negligible impact of globalisation have several practical implications. To begin, trade remains a crucial component of globalisation. It also influences development outcomes, but what is the share of Africa's trade at the international market? The continent accounts for less than 5% of global trade and FDI, and the rate of technology absorption is still slow and inconsequential. These are essential components of economic globalisation that should theoretically influence its effect on economic growth. For globalisation to augment economic growth in Africa, policies to boost its global share in trade, FDI and remittances must be promulgated.

Similarly, it is fast becoming a cliché that African countries trade in raw natural resources and agricultural products – such as cocoa, cotton and vanilla – at the international market, often susceptible to price volatility, especially during economic and health crises. Although Nordic African countries, Rwanda, Nigeria and South Africa have made significant strides to add value through processing, many countries are yet to take full advantage of available opportunities to promote resource-based industrialisation. The consequences have been overdependence on commodity exports – despite its limited trickle-down effects and the resource curse – at the cost of value addition that processing and manufacturing could bring. For Africa to receive commensurate benefits from globalisation, it needs to promote resource-based industrialisation, or more investments in the manufacturing sector for exports. This export-led growth approach to economic growth would enable African countries to take full advantage of market access through preferential trade agreements and initiatives such as the AfCFTA. The ratification and effective implementation of the AfCFTA may also provide the necessary impetus on trade, FDI, productivity and economic growth over the next decades because of the support it has garnered from across the continent.

The results further demonstrate the interactive effects of population and urbanisation on the globalisation-economic growth nexus. Urbanisation is often associated with economies of agglomeration or increasing returns to scale. Emerging empirical evidence shows that cities and urban areas play a significant role in attracting FDI. Similarly, countries with a higher population often provide a large market size for global enterprises. As globalisation increases, such countries attract more investment and trading opportunities. Finally, the results reiterate the importance of promoting domestic capital formation. Future studies should investigate the long-run equilibrium relationship between globalisation and economic growth and the role of intra-regional trade vis-à-vis the benefits of globalisation on economic growth in Africa.

Acknowledgements

We are thankful to two anonymous reviewers for their insightful comments. All references used in this study have been diligently cited.

Competing interests

The author(s) declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

P.B.B. wrote the manuscripts' introduction, theoretical framework, method, results and conclusion. G.M. assembled

the data and reviewed the empirical literature. G.F.N. wrote the introduction and supervised the research. All authors read and approved the draft manuscript.

Ethical considerations

This article does not contain any studies involving human participants performed by any of the authors.

Funding information

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data availability

The data that support the findings of this study are openly available in the World Development Indicators, Swiss Economic Institute and the Polity 5 databases. All codes used in the econometric analysis shall be made available on request.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

References

Ahiakpor, J.C.W., 1985, 'The success and failure of dependency theory: The experience of Ghana', *International Organization* 39(3), 535–552. https://doi.org/10.1017/S0020818300019172

Akinola, A. O., 2020, 'Economic reforms in Africa: A critical appraisal, in *The Palgrave handbook of African political economy,* Palgrave Macmillan, pp. 489–502, Cham, Switzerland.

Alesina, A., Grilli, V. & Milesi-Ferrett, G.M., 1994, 'The political economy of capital controls', in L. Leidermann, A. Razin (eds.), *Capital mobility: The impact on consumption, investment and growth*, pp. 289–321, Cambridge University Press, Cambridge.

Arellano, M. & Bover, O., 1995, 'Another look at the instrumental variable estimation of error-components models', *Journal of Econometrics* 68(1), 29–51. https://doi.org/10.1016/0304-4076(94)01642-D

Asongu, S.A., 2017, 'Assessing marginal, threshold, and net effects of financial globalisation on financial development in Africa', *Journal of Multinational Financial Management* 40, 103–114. https://doi.org/10.1016/j.mulfin.2017.05.003

Asongu, S.A., Efobi, U.R., Tanankem, B.V. & Osabuohien, E.S., 2020, 'Globalisation and female economic participation in sub-Saharan Africa', *Gender Issues* 37(1), 61–89. https://doi.org/10.1007/s12147-019-09233-3

Asongu, S.A. & Nwachukwu, J.C., 2017, 'The comparative inclusive human development of globalisation in Africa', *Social Indicators Research* 134(3), 1027–1050. https://doi.org/10.1007/s11205-016-1467-2

Aspers, P. & Kohl, S., 2015, 'Economic theories of globalization', in Bryan Turner, Robert Holton (eds.), *The Routledge International handbook of globalization studies,* pp. 41–59, Routledge, s.l.

Beri, P.B. & Nubong, G.F., 2021, 'Impact of bilateral investment treaties on foreign direct investment in Africa', *Afrian Development Review* 33(3), 439–451. https://doi.org/10.1111/1467-8268.12583

Beri, P.B. & Nubong, G.F., 2022, 'The impact of the investment climate on foreign direct investment in Africa', *African Review of Economics and Finance* 14(1).

Blundell, R. & Bond, S., 1998, 'Initial conditions and moment restrictions in dynamic panel data models', *Journal of Econometrics* 87(1), 115–143. https://doi.org/10.1016/S0304-4076(98)00009-8

Bolaky, B. & Freund, C.L., 2004, *Trade, regulations, and growth,* World Bank Policy Research Working Paper No. 3255, s.l.

Borensztein, E., De-Gregorio, J. & Lee, J.W., 1998, 'How does foreign direct investment affect economic growth?', *Jousrnal of International Economics* 45(1), 115–135. https://doi.org/10.1016/S0022-1996(97)00033-0

Centre for Systemic Peace (CSP), 2020, *Polity5 project* [online], viewed 15 November 2021, from http://www.systemicpeace.org/inscr/p5v2018.xls.

Coulibaly, S.K., Erbao, C. & Mekongcho, T.M., 2018, 'Economic globalization, entrepreneurship, and development', *Technological Forecasting and Social Change* 127, 271–280. https://doi.org/10.1016/j.techfore.2017.09.028

Davis, D. R. & Mishra, P., 2007, *Stolper-Samuelson is dead. In globalization and poverty* s.l.,University of Chicago Press. Chicago. IL.

Dollar, D., 1992, 'Outward-oriented developing economies really do grow more rapidly: Evidence from 95 LDCs 1976–1985', *Economic Development and Cultural Change* 40, 523–544.

Dreher, A., 2006, 'Does globalization affect growth? Evidence from a new index of globalization', *Applied Economics* 38(10), 1091–1110. https://doi.org/10.1080/00036840500392078

Edwards, S., 1998, 'Openness, productivity and growth: What do we really know?', *Economic Journal* 108, 383–398.

Goldberg, P.K. & Pavcnik, N., 2007, 'Distributional effects of globalization in developing countries', *Journal of Economic Literature* 45(1), 39–82. https://doi.org/10.1257/jel.45.1.39

Grossman, G.M. & Helpman, E., 2015, 'Globalization and growth', *American Economic Review* 105(5), 100–104. https://doi.org/10.1257/aer.p20151068

Gruber, L., 2011, 'Globalisation with growth and equity: Can we really have it all?', *Third World Quarterly* 32(4), 629–652.

Gurgul, H. & Lach, Ł., 2014, 'Globalization and economic growth: Evidence from two decades of transition in CEE', *Economic Modelling* 36, 99–107. https://doi.org/10.1016/j.econmod.2013.09.022

Gygli, S., Haelg, F., Potrafke, N. & Sturm, J.E., 2019, 'The KOF globalisation index – Revisited', *The Review of International Organizations* 14(3), 543–574. https://doi.org/10.1007/s11558-019-09344-2

Hartungi, R., 2006, 'Could developing countries take the benefit of globalisation?', *International Journal of Social Economics* 33(11), 728–743. https://doi.org/10.1108/03068290610705652

Hassan, S.T., Xia, E., Huang, J., Khan, N.H. & Iqbal, K., 2019, 'Natural resources, globalization, and economic growth: Evidence from Pakistan', *Environmental Science and Pollution Research* 26(15), 27–34. https://doi.org/10.1007/s11356-019-04890-z

Huh, H.S. & Park, C.Y., 2021, 'A new index of globalisation: Measuring impacts of integration on economic growth and income inequality', *The World Economy* 44(2), 409–443. https://doi.org/10.1111/twec.12998

Im, K.S., Pesaran, M.H. & Shin, Y., 2003, 'Testing for unit roots in heterogeneous panels', *Journal of Econometrics* 115(1), 53–74. https://doi.org/10.1016/S0304-4076(03)00092-7

International Monetary Fund, 2009, *World economic outlook, January 2009 update,* IMF, Washington, DC.

International Monetary Fund, 2021, *A fraught recovery. Despite some encouraging signs, another difficult year: Regional economic outlook, October 2021,* IMF, Washington DC.

Islam, N., 1995, 'Growth empirics: A panel data approach', *The Quarterly Journal of Economics* 110(4), 1127–1170. https://doi.org/10.2307/2946651

Khan, S., 1970, 'A review of Heckscher-Ohlin and Stolper-Samuelson theorems of international trade', *The Punjab University Economist* 8(1), 59–73.

Latif, Z., Mengke, Y., Danish, Latif, S., Ximei, L., Pathan, Z.H. et al., 2018, 'The dynamics of ICT, foreign direct investment, globalization and economic growth: Panel estimation robust to heterogeneity and cross-sectional dependence', *Telematics and Informatics* 35(2), 318–328. https://doi.org/10.1016/j.tele.2017.12.006

Levin, A., Lin, C.F. & Chu, C.S.J., 2002, 'Unit root tests in panel data: Asymptotic and finite-sample properties', *Journal of Econometrics* 108(1), 1–24. https://doi.org/10.1016/S0304-4076(01)00098-7

Mankiw, N.G., Romer, D. & Weil, D.N., 1992, 'A contribution to the empirics of economic growth', *The Quarterly Journal of Economics* 107(2), 407–437. https://doi.org/10.2307/2118477

O'Rourke, K.H. & Williamson, J.G., 2005, 'From Malthus to Ohlin: Trade, industrialisation and distribution since 1500', *Journal of Economic Growth* 10(1), 5–34. https://doi.org/10.1007/s10887-005-1111-5

Rodriguez, F. & Rodrik, D., 2000, 'Trade policy and economic growth: A skeptic's guide to the cross-national evidence', *NBER Macroeconomics Annual* 15, 261–325. https://doi.org/10.1086/654419

Rodrik, D., 1998, 'Who needs capital-account convertibility?', in *Should the IMF pursue capital account convertibility? Essays in international finance,* pp. 55–65, Department of Economics, Princeton University, Princeton, NJ.

Roodman, D., 2009, 'How to do xtabond2: An introduction to difference and system GMM in Stata', *Stata Journal* 9(1), 86–136. https://doi.org/10.1177/1536867X0900900106

Rudra, N. & Tobin, J., 2017, 'When does globalization help the poor?', *Annual Review of Political Science* 20, 287–307. https://doi.org/10.1146/annurev-polisci-051215-022754

Sachs, J., Warner, A., Åslund, A. & Fischer, S., 1995, 'Economic reform and the process of global integration', *Brookings Papers on Economic Activity* 1995(1), 1–118. https://doi.org/10.2307/2534573

Salahuddin, M., Vink, N., Ralph, N. & Gow, J., 2020, 'Globalisation, poverty and corruption: Retarding progress in South Africa', *Development Southern Africa* 37(4), 617–643. https://doi.org/10.1080/0376835X.2019.1678460

Samimi, P. & Jenatabadi, H.S., 2014, 'Globalization and economic growth: Empirical evidence on the role of complementarities', *PLoS One* 9(4), e87824. https://doi.org/10.1371/journal.pone.0087824

Schularick, M. & Solomou, S., 2011, 'Tariffs and economic growth in the first era of globalization', *Journal of Economic Growth* 16(1), 33–70. https://doi.org/10.1007/s10887-011-9061-6

Sen, A.K., 2002, 'Globalization, inequality and global protest', *Development* 45(2), 11–16. https://doi.org/10.1057/palgrave.development.1110341

Shittu, W.O., Yusuf, H.A., El-Houssein, A.E.M. & Hassan, S., 2020, 'The impacts of foreign direct investment and globalisation on economic growth in West Africa: Examining the role of political governance', *Journal of Economic Studies* 47(7), 1733–1755. https://doi.org/10.1108/JES-09-2019-0446

Tchamyou, V.S., 2019, 'The role of information sharing in modulating the effect of financial access on inequality', *Journal of African Business* 20(3), 317–338. https://doi.org/10.1080/15228916.2019.1584262

Thompson, F.G., 200, 'Global inequality and global macro economics,' in *Global Inequality,* Cambridge: Polity Press, Cambridge, UK.

Twerefou, D.K., Danso-Mensah, K. & Bokpin, G.A., 2017, 'The environmental effects of economic growth and globalization in sub-Saharan Africa: A panel general method of moments approach', *Research in International Business and Finance* 42, 939–949. https://doi.org/10.1016/j.ribaf.2017.07.028

Ulaşan, B., 2015, 'Trade openness and economic growth: Panel evidence', *Applied Economics Letters* 22(2), 163–167. https://doi.org/10.1080/13504851.2014.931914

Vamvakidis, A., 2002, 'How robust is the growth-openness connection? Historical evidence', *Journal of Economic Growth* 7(1), 57–80. https://doi.org/10.1023/A:1013418610712

Warner, A., 2003, *Once more into the breach: Economic growth and integration,* Center for Global Development Working Paper, No. 34, Washington, DC.

World Bank, 2021, *World development indicators* [online], viewed n.d., from https://databank.worldbank.org/source/world-development-indicators.

Yameogo, C.E.W. & Omojolaibi, J.A., 2021, 'Trade liberalisation, economic growth and poverty level in sub-Saharan Africa (SSA)', *Economic Research-Ekonomska Istraživanja* 34(1), 754–774. https://doi.org/10.1080/1331677X.2020.1804428

Zahonogo, P., 2018, 'Globalization and economic growth in developing countries: Evidence from sub-Saharan Africa', *The International Trade Journal* 32(2), 189–208. https://doi.org/10.1080/08853908.2017.1333933

Zaidi, S.A.H., Wei, Z., Gedikli, A., Zafar, M.W., Hou, F. & Iftikhar, Y., 2019, 'The impact of globalization, natural resources abundance, and human capital on financial development: Evidence from thirty-one OECD countries', *Resources Policy* 64, 101476. https://doi.org/10.1016/j.resourpol.2019.101476

Appendix starts on the next page →

Appendix

TABLE A1: Description of variables.

Variable	Symbol	Measurement	Source
Economic growth	GDP	Annual percentage growth in GDP at constant 2010 US$.	WB (2021) WDI
Labour Force Participation	LFPR	Annual percentage of the population aged between 15 and 64 that is economically active.	WB (2021) WDI
Gross Capital Formation	CAPITAL	Annual percentage growth in capital formation at constant 2010 US$.	WB (2021) WDI
Human Capital	HCAPITAL	Annual percentage growth in gross secondary school enrollment.	WB (2021) WDI
Globalisation	KOFGI/G	KOF overall globalisation index comprising economic, social and political dimensions of globalisation.	Dreher (2006) and Gygli et al. (2019)
Economic Globalisation	EKOFGI	The overall economic dimension of the KOF globalisation index.	Dreher (2006) and Gygli et al. (2019)
Urbanisation	URBAN	Annual percentage growth in people living in urban areas.	WB (2021) WDI
Financial Development	FINDEV	Domestic credit to the private sector as a percentage of GDP.	WB (2021) WDI
Institutional Quality	POLITY2	Modified combined annual polity score.	CSP (2020) Polity5 Project
Population Growth Rate	POP	Annual percentage growth in population.	WB (2021) WDI

WB, World Bank; WDI, World Development Indicators; CSP, Centre for Systemic Peace.

TABLE A2: Summary statistics.

Variable	Type	Mean	Std. Dev.	Min	Max	Observations
GDP	overall	10.524	5.402	0.235	60.685	*N* = 658
	between		3.228	6.319	20.067	*n* = 47
	within		4.355	-8.217	51.864	*T* = 14
LFPR	overall	133.445	23.981	84.963	179.793	*N* = 658
	between		24.021	88.598	177.636	*n* = 47
	within		3.078	122.679	147.483	*T* = 14
CAPITAL	overall	27.637	44.553	-254.358	412.458	*N* = 658
	between		27.261	0.032	146.777	*n* = 47
	within		35.447	-236.442	310.653	*T* = 14
HCAPITAL	overall	91.452	44.306	15.610	214.576	*N* = 658
	between		42.404	27.149	190.659	*n* = 47
	within		14.159	55.374	136.675	*T* = 14
KOFGI	overall	48.334	9.256	27.048	72.220	*N* = 658
	between		8.899	30.360	68.445	*n* = 47
	within		2.839	37.687	56.588	*T* = 14
EKOFGI	overall	44.582	10.562	23.330	83.807	*N* = 658
	between		10.241	29.193	76.151	*n* = 47
	within		2.959	26.475	55.398	*T* = 14
URBAN	overall	7.622	2.689	1.598	15.178	*N* = 658
	between		2.605	1.826	13.294	*n* = 47
	within		0.762	3.933	13.022	*T* = 14
FINDEV	overall	47.171	52.290	2.761	297.487	*N* = 658
	between		51.891	8.238	278.235	*n* = 47
	within		9.742	9.649	91.906	*T* = 14
POLITY2	overall	1.742	5.138	-9.000	10.000	*N* = 658
	between		5.026	-8.714	10.000	*n* = 47
	within		1.280	-2.558	8.442	*T* = 14
POP	overall	5.411	1.611	1.340	9.527	*N* = 658
	between		1.552	1.982	9.059	*n* = 47
	within		0.484	3.162	8.921	*T* = 14

GDP, Economic growth; LFPR, Labour Force Participation; CAPITAL, Gross Capital Formation; HCAPITAL, Human Capital; KOFGI, Globalisation; EKOFGI, Economic Globalisation; URBAN, Urbanisation; FINDEV, Financial Development; POLITY2, Institutional Quality; POP, Population Growth Rate; Std. Dev., standard devation.