



Original Article

Exploring Economic Growth Determinants in Developing Countries of Asia and Africa

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Abstract: Asian and African regions have experienced periods of economic growth, yet they continue to grapple with distinct challenges and issues that hinder their ability to sustain and distribute that growth effectively. In addressing this concern, our research investigates the impact of exports, exchange rates, foreign direct investment, bank credit, government spending, and the Human Development Index on the economic growth of developing nations in Asia and Africa. The employed methodology is the panel least square method, which utilizes secondary data. The Asian region comprises 28 countries, and Africa encompasses 34 countries, from 1946 to 2018. The outcomes of the study reveal that within developing Asian countries, variables such as exports, exchange rates, foreign direct investment, bank credit, government spending, and the Human Development Index have positive and noteworthy effects on economic growth. In the context of African nations, the research finds that exports, exchange rates, and government spending have favorable and significant impacts. However, the Human Development Index displays a detrimental and significant influence. On the other hand, foreign direct investment and bank credit exhibit positive yet inconsequential effects on economic growth in developing African countries. Consequently, these findings underscore the need for robust macroeconomic foundations in developing economies to counteract global economic uncertainties. This strategy is imperative to facilitate swift economic expansion that aligns with each nation's distinctive economic development plans.

Keywords: economic growth; exports; exchange rates; foreign direct investment; government spending; human development index; Asia – Africa.



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1. Introduction

The significant turmoil in the world's economy has substantially impacted the fluctuations of macroeconomic indicators in developing nations, particularly in Asia and Africa. Even today, these countries continue to labor towards the ongoing global economic recovery unfolding over the past few years. This process deeply influences the policies they implement. The nature of economic growth varies notably among developing and developed countries, as well as those classified as impoverished or low-income. In the Asian region, countries have borne witness to considerable advancements in growth, characterized by rapid expansion and high earnings. In contrast, African nations experience

minimal growth rates and income levels, often accompanied by internal conflicts. Currently, global economic growth is marked by inequalities in development, reflecting the resurgence of the US economy alongside slower economic growth in the Eurozone and China. Furthermore, the Indian economy also contributes to this overall growth (Bank Indonesia, 2018).

Export expansion is the primary driving force behind the economy and maintains a close and contemporary connection (Tahir et al., 2015). This is particularly valid for developing nations, which typically aim for diversification, while developed nations specialize in specific products (Persson & Wilhelmsson, 2016). Regarding specific research by Muhammad Adnan Hye (2012), they delve into the correlation between exports, imports, and economic growth in China using the ARDL approach. Similarly, Shahbaz & Rahman (2014) adopt the same technique to investigate the link between exports and the financial sector's impact on economic growth in Pakistan.

Furthermore, Taivan et al. (2015) conducted an additional investigation involving a pragmatic analysis of the impact of African commodity exports on China's GDP across 32 African nations. They employed a panel data technique for their study. Bakari (2016) analyzed the correlation between exports, imports, and economic growth in Canada, employing the VAR methodology. Nguyen (2016) researched the influence of exports on economic growth in Vietnam, utilizing the OLS approach. Quaicoe et al. (2017) conducted a study on the effects of export-free zones and investment on economic growth in Ghana. The instability of currency exchange rate fluctuations in developing countries significantly affects domestic economic conditions and presents challenges for investors, especially in Asian and African countries (You & Sarantis, 2012). Research indicates that risk or uncertainty is closely linked to economic instability and a country's socio-political environment. This impact extends to open economic scenarios, influencing economic participants engaged in domestic and international financial and commercial transactions (Akram & Rath, 2017).

In the context of developing nations, the rapid inflow of capital provides an opportunity to secure funds for advancing economic development. The dynamics of capital investment influence both robust and modest economic growth, reflecting the development trajectory. Consequently, each nation strives to create an environment conducive to stimulating investments to enhance economic expansion. Susceptibility to global economic shocks and market sentiments, along with the strategies of the Federal Reserve, play pivotal roles in shaping policy directions. Looking at the research by Fraj et al. (2018), an inquiry is conducted into the impact of fixed exchange rates on economic growth, covering 21 developed nations and 29 developing nations, and utilizing GMM specifications. Jantarakolica & Jantarakolica (2018) delve into the consequences of financial integration, mainly related to exchange rates, on economic growth within ASEAN countries, using a multivariate GARCH (M-GARCH) methodology.

Highlighting the significance of foreign FDI in propelling economic growth, Cambazoglu & Karaalp (2014) investigate how FDI and international trade impact economic growth in Turkey, using the VAR methodology. Study by Szkorupová (2014) delves into the correlation between FDI and economic growth in Slovakia, employing the VECM approach. Hayat (2018) scrutinizes the influence of FDI inflows on economic growth across 142 countries, utilizing the GMM panel technique. Azam & Ahmed (2015) focuses on the outcomes of FDI and human capital (HK) on economic growth within 10 countries belonging to the Commonwealth of Independent States (CIS). Sudrajat & Sodik (2018) analyzed the partial influence of productive funding sourced from Islamic banking on economic expansion in Indonesia, utilizing the OLS technique. Wang et al. (2019) revealed an adverse impact of banking allowances on economic stability across various nations. This was achieved through the MBA-PVAR approach and the Partial equilibrium model. Restrepo (2019) focused on the impact of bank credit on industrial growth, subsequently affecting economic progress in Latin America, using the GMM method.

Government expenditure has the potential to amplify the overall output of an economy. However, it can also lead to unfavorable outcomes for private investment and potentially hinder overall economic performance. This becomes especially apparent when such expenditure is funded through heightened taxes or increased borrowing (Alshahrani & Alsadiq, 2014). In a study conducted by d'Agostino et al. (2016), the impact of government spending and corruption on economic growth across 106 countries was investigated, utilizing the GMM panel method. Dudzevičiūtė et al. (2018) delved into the relationship between government spending and economic growth in the European Union, employing the PVAR approach. Similarly, Maingi (2010) carried out a parallel study in Kenya.

The impact of government spending, particularly public expenditure, on economic growth and poverty reduction in India was scrutinized through a panel data approach (Sasmal & Sasmal, 2016; Nirola & Sahu, 2019). Olayungbo & Olayemi (2018) explored the dynamic interplay between Nigeria's non-oil revenue, government expenditure, and economic growth, adopting the ECM method. Examining the long-term consequences, Scott-Joseph & Turner (2019) analyzed the effect of economic growth on total government expenditure in Eastern Caribbean Currency Union (ECCU) economies, employing ARDL and ECM methods.

Neoclassical and endogenous growth theories emphasize the importance of nurturing human capital development to achieve dynamic economic expansion (Latif, 2009). In their study, Odit et al. (2010) analyzed the impact of education investments on economic growth in Mauritius, employing the Cobb-Douglas framework. Subsequent studies explored the role of education in driving Pakistan's economic growth, with Khattak & Khan (2012) and Nowak & Dahal (2016) utilizing the OLS method. Dewi & Sutrisna (2014) examined the effects of health index, education index, and purchasing

power index on economic growth in Bali, using panel data and the pooled least squares method. [Pribac & Anghelina \(2015\)](#) delved into the relationship between education and economic growth within the European Union, employing a multiple regression model approach. This study seeks to fill a gap in the literature by assessing and providing more comprehensive empirical evidence. The study utilizes 3533 total observations to examine the influence of exports, exchange rates, foreign direct investment, bank credit, government spending, and the Human Development Index on the economic growth of developing nations in Asia and Africa. The findings of this research are anticipated to make a valuable contribution to the existing literature on economic growth.

2. Literature Review

2.1. Exports and Economic Growth

Numerous investigations have explored the connection between economic growth and exports. [Muhammad Adnan Hye \(2012\)](#) conducted research that unveiled a lasting correlation between exports, imports, and economic growth. In a separate study, [Shahbaz & Rahman \(2014\)](#) identified a prolonged association and causation between exports and the financial sector in the context of Pakistan's economic growth. An investigation by [Szkorupová \(2014\)](#) revealed a causal correlation between exports, FDI, and economic growth. This research highlighted a favorable link between exports and FDI in the economy's advancement. [Taivan et al. \(2015\)](#) demonstrated a favorable connection between economic growth and exports. However, the significance of this correlation depends on the specific sources of commodities within African nations. In contrast, an investigation by [Bakari \(2016\)](#) did not identify a straightforward association between exports, imports, and Canada's economic growth. Nonetheless, a causal connection between these factors exists. On the other hand, [Nguyen \(2016\)](#) revealed a significant and positive correlation between economic growth and exports. [Quaicoe et al. \(2017\)](#) conducted a study investigating the influence of export and investment-free zones, revealing a detrimental impact on economic growth. The study by [Fatemah & Qayyum \(2018\)](#) illustrates a favorable and noteworthy connection between exports and economic growth in Pakistan. Similarly, [Munir & Javed \(2018\)](#) establish a positive correlation between exports and economic growth.

2.2. Exchange Rate and Economic Growth

As explored by [Basirat et al. \(2014\)](#), the impact of exchange rates on economic growth uncovers a noteworthy and substantial inverse association between fluctuations in exchange rates and economic growth across 18 developing nations. Research by [Tang \(2015\)](#) suggests a lack of a direct connection between the actual exchange rate and economic growth. In the investigation carried out by [Purba & Magdalena \(2017\)](#), a favorable and meaningful correlation with exports is identified, while the relationship between the exchange rate and economic growth, despite its beneficial impact, is not deemed statistically significant. [Lee & Yue \(2017\)](#) demonstrate a marked and meaningful positive correlation between the USD exchange rate and economic growth. The investigation carried out by [Akram & Rath \(2017\)](#) shed light on how fluctuations in exchange rates can exacerbate economic growth challenges, as evidenced by the unfavorable connection. In the study conducted by [Mwinlaaru & Ofori \(2017\)](#), a meaningful and positive association with economic growth in Ghana is detected, both in the short and extended periods.

The study by [Barguelli et al. \(2018\)](#) presents a negative correlation between exchange rate instability and economic growth within developing nations. [Guzman et al. \(2018\)](#) established a constructive link between policies related to real exchange rates and economic growth, suggesting that appropriate policies can potentially attract market participants. The investigation led by [Fraj et al. \(2018\)](#) underscores that exchange rate flexibility disproportionately impacts developing nations negatively, while its significance in developed countries is relatively muted. In the study by [Jantarakolica & Jantarakolica \(2018\)](#), the integration of exchange rates is recognized as having a constructive influence on economic growth, particularly regarding trade among emerging economies. Furthermore, the examination of FDI's impact on economic growth by [Cambazoglu & Karaalp \(2014\)](#) establishes a favorable connection between FDI, international trade, and economic growth. Study by [Hayat \(2018\)](#) points to a meaningful and positive correlation between FDI and economic growth. In the research by [Azam & Ahmed \(2015\)](#), human capital development is observed to affect economic growth, followed by a positive association with FDI.

2.3. FDI and Economic Growth

Study by [Chen \(2016\)](#) illustrates a direct correlation between FDI and income inequality, subsequently affecting employment. [Rehman \(2016\)](#) suggests a negative connection between FDI and human capital, highlighting a positive association with economic growth. The findings by [Owusu-Nantwi & Erickson \(2019\)](#) unveil a lasting link between FDI and economic growth, characterized by reciprocal influence between the two. Study by [Doku et al. \(2017\)](#) uncovers a significant and favorable bidirectional relationship between FDI from China and economic growth in Africa. Investigation by [Sunde \(2017\)](#) establishes a prolonged association between FDI and exports concerning economic growth; further analyses reveal a causal connection between FDI and exports. In the research conducted by [Sirag et al. \(2018\)](#),

cointegration testing demonstrates a sustained relationship between financial sector development and FDI's impact on economic growth.

2.4. Bank Credit and Economic Growth

Studies that investigating the influence of bank credit on economic growth have been conducted by various scholars. For instance, [Judith et al. \(2014\)](#) recognized a positive correlation between bank credit and economic growth, establishing a cause-and-effect relationship between the two. In contrast, [Hachicha & Ben Amar \(2015\)](#) revealed a negligible association between Islamic bank financing and economic growth in Malaysia. The impact of Islamic finance indicators is more prominent in the short run than in the long term. Furthermore, [Hartarska et al. \(2015\)](#) demonstrated a significant influence of agricultural credit financing on economic advancement. [Sehrawat & Giri \(2015\)](#) conducted research utilizing a cointegration test to ascertain the presence of an enduring connection between financial progress and economic expansion. Their study underscored the pivotal role of developing the financial sector. The results also shed light on the impact of the credit transition policy introduced by the Central Bank of India on economic growth trajectory. [Khairuna et al. \(2017\)](#) discovered through their study that there is a partial correlation between working capital credit and the Gross Regional Domestic Product (GRDP) of Banda Aceh City.

The results of the investigation carried out by [Badeeb & Lean \(2017\)](#) suggest an adverse association between the expansion of the financial sector and dependence on oil, along with a favorable connection between the growth of the financial sector and overall economic growth. Upon examining causality, it becomes apparent that there is a one-way relationship between the expansion of the financial sector and the economy's progression in Yemen. Study by [Wang et al. \(2019\)](#) illustrates a significant and unfavorable correlation between bank credit and economic growth across a range of countries globally. In contrast, [Restrepo \(2019\)](#) uncovers a positive correlation between bank credit and the industrial sector. Nevertheless, a substantial tax burden can have negative effect on this relationship, resulting in a diminished contribution to the advancement of economic growth.

2.5. Government Expenditure and Economic Growth

A comprehensive analysis of the relationship between government expenditure and economic expansion, as investigated by [Dipeitro & Anoruo \(2012\)](#), reveals that government outlays, particularly debt, adversely influence economic growth. [Attari & Javed \(2013\)](#) present findings that suggest a persistent association among inflation, economic growth, and government expenditure. A clear connection between inflation and economic expansion becomes evident in the short term. [Roşoiu \(2015\)](#) establishes a reciprocal link between government income and spending. [d'Agostino et al. \(2016\)](#) uncover a positive relationship between government expenditure, corruption, and the economy, particularly in military disbursements. Notably, eliminating corruption also yields a directly positive impact on economic growth and its indirect influence. [Dudzevičiūtė et al. \(2018\)](#) identify eight European Union nations demonstrating a significant correlation between government spending and economic growth.

Research by [Sasmal & Sasmal \(2016\)](#) indicated that an increased proportion of public funds allocated to developing infrastructure, such as roads, irrigation, electricity, transportation, and communication, can decrease poverty and subsequently accelerate economic growth. [Maingi \(2010\)](#) demonstrated a direct correlation between government expenditure and economic growth, showing a positive connection. On the other hand, a study by [Olayungbo & Olayemi \(2018\)](#) discovered evidence of both short-term and long-term adverse links between government spending and economic growth. [Scott-Joseph & Turner \(2019\)](#) unveiled that overall government spending can have mixed effects on economic growth, especially in sectors such as agriculture, manufacturing, and mining, where the outcomes can be positive or negative. [Nirola & Sahu \(2019\)](#) identified a negative association between government expenditure and economic growth. They emphasized the significance of effective institutional control and proper functioning to expedite India's economic growth rate.

2.6. Human Development and Economic Growth

Previous study by [Odit et al. \(2010\)](#) illustrated that the role of educational capital is crucial for the economic advancement of Mauritius. According to [Khattak & Khan \(2012\)](#), secondary education makes a substantial contribution to the real GDP per capita in Pakistan. While primary education also has a positive impact on economic growth, its effect is less substantial. The findings of the study carried out by [Dewi & Sutrisna \(2014\)](#) indicate that the combined influence of the health index, education index, and purchasing power index significantly impacts the economic growth of Bali Province. Additionally, results from partial tests suggest that the education index and purchasing power index of the community exert a positive and noteworthy influence on economic growth, whereas the health index does not have a significant effect on the economic growth of Bali Province. [Pribac & Anghelina \(2015\)](#) demonstrated that educational capital has a positive and significant effect on economic growth in the European Union. [Nowak & Dahal \(2016\)](#) found that both secondary and higher education significantly contributed to real GDP per capita in Nepal. While primary

education also positively impacted economic growth, the results were statistically insignificant. The study conducted by [Mustafa et al. \(2017\)](#) revealed a positive relationship between human resources and economic growth. However, this relationship needs to be further examined regarding the contribution of related institutions in developing Asian countries.

[Malangeni & Phiri \(2018\)](#) presented empirical findings that showcased a significant connection between education and economic advancement in South Africa. In a separate, [Kotásková et al. \(2018\)](#) focused on India and discovered strong evidence supporting a favorable link between educational levels and economic progress. This discovery holds the potential to shape future governmental strategies for India. [Fahimi et al. \(2018\)](#) delved into the interrelation between economic growth and the tourism sector, incorporating elements related to human resources in their investigation. The outcomes demonstrated a positive correlation between human resources and the development of the tourism industry, thereby exerting a direct influence on economic growth. A research effort undertaken by [Mutandwa & Genc \(2018\)](#) revealed that the significant contribution of human resources plays a substantial role in formulating policies that directly impact economic expansion in nations such as Zimbabwe, South Africa, Namibia, and Botswana.

3. Materials and Methods

3.1. Design of the Study and Data Sources

The data utilized in this study are secondary data presented in the quantitative data. The data type employed in this research is panel data, which comprises a fusion of time series and cross-sectional data. The time series data employed are sourced from institutions such as the World Bank, The Federal Reserve Bank of St. Louis (FRED), The Organization for Economic Co-Operation and Development (OECD), ASEANstats (ASEAN Statistical Division), International Financial Statistics, the International Monetary Fund (IMF), and the United Nations Development Program (UNDP). The developing countries included in this study adhere to the World Bank (2018) criteria. Specifically focusing on the Asian region, the developing countries considered are Azerbaijan, Bangladesh, Bhutan, Cambodia, China, Georgia, India, Indonesia, Iran, Jordan, Kazakhstan, Kyrgyzstan, Lao PDR, Lebanon, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Russia, Sri Lanka, Syrian Arab Republic, Tajikistan, Thailand, Turkey, Turkmenistan, Uzbekistan, and Vietnam. This selection encompasses 28 countries, chosen primarily due to data availability. The data employed in the study spans from 1948 to 2018, is presented annually, and comprises a dataset of 1,360 observations. The developing countries within the African region encompass Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Republic of the Congo, Cote d'Ivoire, Djibouti, Egypt, Ethiopia, Gabon, Gambia, Ghana, Kenya, Madagascar, Malawi, Mali, Morocco, Mozambique, Niger, Nigeria, Senegal, South Africa, Eswatini, Tanzania, Tunisia, Uganda, Zambia, and Zimbabwe. This compilation comprises 34 countries, and their selection is closely tied to data availability. The data utilized spans from 1946 to 2018 and is presented annually, resulting in a dataset of 2,173 observations.

3.2. Panel Least Square Approach

This study employs panel data, and as such, the data analysis model employed is a multiple regression analysis panel model based on the estimation of the Generalized Least Squares (GLS) model. To ensure robust results, diagnostics include stationarity tests and the determination of the best method using the Chow test and the Hausman test. The general structure of the panel least square model is as follows:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + e_{it} \quad (1)$$

The equation above is transformed into the following research equation:

$$\begin{aligned} \text{LogGDPAS}_{it} = & \alpha + \beta_1 \text{LogXAS}_{it} + \beta_2 \text{LogERAS}_{it} + \beta_3 \text{LogFDIAS}_{it} + \beta_4 \text{LogCBAS}_{it} + \beta_5 \text{LogGEAS}_{it} \\ & + \beta_6 \text{LogHDIAS}_{it} + e_{it} \end{aligned} \quad (2)$$

$$\begin{aligned} \text{LogGDPAF}_{it} = & \alpha + \beta_1 \text{LogXAF}_{it} + \beta_2 \text{LogERAF}_{it} + \beta_3 \text{LogFDIAF}_{it} + \beta_4 \text{LogCBAF}_{it} + \beta_5 \text{LogGEAF}_{it} \\ & + \beta_6 \text{LogHDIAF}_{it} + e_{it} \end{aligned} \quad (3)$$

Where, GDPAS represents economic growth in Asia, GDPAF denotes economic growth in Africa, XAS signifies exports in Asia, XAF stands for exports in Africa, ERAS represents the exchange rate in Asia, ERAF denotes the exchange rate in Africa, FDIAS symbolizes foreign direct investment in Asia, FDIAF stands for foreign direct investment in Africa, CBAS denotes bank credit in Asia, CBAF stands for bank credit in Africa, GEAS represents government spending in Asia, GEAF stands for government spending in Africa, HDIAS signifies the human development index in Asia, HDIAF stands for the human development index in Africa. The symbols β_1 - β_6 represent the regression coefficients, and e_{it} stands for the residual.

4. Results

4.1. Stationarity Test

In this study, we examine data stationarity using a range of methodologies, including LLC, IPS, ADF-Fisher, and PP-Fisher, each with an individual intercept. As shown in Table 1, the outcomes indicate data stationarity at the I(0) and the first difference level of I(1). As per the table, the variables of the human development index and government expenditure in Asia exhibit non-stationarity under the LLC criterion. Conversely, the remaining variables encompassing economic growth, exports, exchange rates, foreign direct investment, and bank credit demonstrate stationary results across all criteria—LLC, IPS, ADF-Fisher, and PP-Fisher.

Table 1. Panel Unit Root Test of Developing Asian Countries.

Variable	Individual Intercept			
	LLC	IPS	ADF-Fisher	PP-Fisher
G(GDP)AS	-12.400 (0.000)	-15.553 (0.000)	339.102 (0.000)	381.238 (0.000)
G(X)AS	-267.293 (0.000)	-82.808 (0.000)	719.927 (0.000)	710.848 (0.000)
G(ER)AS	-25.886 (0.000)	-26.349 (0.000)	632.596 (0.000)	701.731 (0.000)
G(FDI)AS	-88.792 (0.000)	-88.793 (0.000)	-41.983 (0.000)	443.179 (0.000)
G(CB)AS	-24.502 (0.000)	-22.965 (0.000)	510.529 (0.000)	519.123 (0.000)
G(GE)AS	9.806 (1.000)	-12.741 (0.000)	304.021 (0.000)	390.643 (0.000)
G(HDI)AS	-1.059 (0.144)	-3.323 (0.004)	80.451 (0.013)	102.983 (0.000)

Table 1 captures the variables of the human development index and government expenditure in Asia exhibit non-stationarity under the LLC criterion. Conversely, the remaining variables encompassing economic growth, exports, exchange rates, foreign direct investment, and bank credit demonstrate stationary results across all criteria—LLC, IPS, ADF-Fisher, and PP-Fisher.

Table 2. Panel Unit Root Test of Developing African Countries.

Variable	Individual Intercept			
	LLC	IPS	ADF-Fisher	PP-Fisher
G(GDP)AF	-28.227 (0.000)	-26.973 (0.000)	676.840 (0.000)	753.541 (0.000)
G(X)AF	-43.461 (0.000)	-39.081 (0.000)	1001.06 (0.000)	1060.87 (0.000)
G(ER)AF	-49.619 (0.000)	-38.282 (0.000)	791.895 (0.000)	811.766 (0.000)
G(FDI)AF	-33.138 (0.000)	-29.521 (0.000)	676.839 (0.000)	692.352 (0.000)
G(CB)AF	-27.368 (0.000)	-24.185 (0.000)	601.443 (0.000)	608.709 (0.000)
G(GE)AF	-24.692 (0.000)	-23.793 (0.000)	619.046 (0.000)	663.979 (0.000)
G(HDI)AF	-2.243 (0.000)	-3.323 (0.004)	106.237 (0.000)	132.481 (0.000)

Table 2 shows a comparable assessment of data stationarity within the African region. Notably, all variables—namely economic growth, exports, exchange rate, foreign direct investment, bank credit, government expenditure, and human development index—demonstrate stationarity at the level across all criteria, including LLC, IPS, ADF-Fisher, and PP-Fisher.

4.2. Chow Test

The Chow test is performed to determine whether the more suitable model is the common effect model or the fixed effect model. If the outcome of the Chow test yields a Chi-square probability exceeding 0.05, the chosen model becomes the common effect model. Conversely, if the derived Chi-square probability falls below 0.05, the optimal model is deemed to be the fixed effect model.

Table 3. Chow Test Results of Developing Asian Countries.

Effect Test	Statistic	d.f	Prob.
Cross-section F	42.533	(20.341)	0.0000
Cross-section Chi-square	460.453	20	0.0000

Table 3 reveals that the cross-section Chi-square probability is 0.000, a value lower than 0.05. This finding suggests that the most suitable model for developing Asian countries is the fixed effect model. Similarly, as indicated in Table 4, the cross-section Chi-square probability is also 0.000, which is below 0.05. This observation underscores that the optimal model for developing African countries is likewise the fixed effect model.

Table 4. Chow Test Results of Developing African Countries.

Effect Test	Statistic	d.f	Prob.
Cross-section F	60.731	(22.161)	0.0000
Cross-section Chi-square	423.675	22	0.0000

4.3. Hausman Test

The utilization of the Hausman test aims to ascertain whether the preferable model is the fixed effect model or the random effect model. Should the Hausman test result in a Chi-square probability surpassing 0.05, the selected model shifts to the random effect model. Conversely, if the calculated Chi-square probability falls beneath 0.05, the most suitable model is the fixed effect model.

Table 5. Hausman Test Results of Developing Asian Countries.

Test Summary	Chi. Sq. Statistic	Chi. Sq d.f	Prob.
Cross-section random	18.021	6	0.0060

The outcomes in Table 5 demonstrate that the cross-sectional random probability stands at 0.006, a figure below 0.05. This outcome implies that the fixed effect model is the more appropriate for developing Asian countries. As highlighted in Table 6, the cross-sectional random probability is recorded at 0.000, falling beneath the 0.05 threshold. This observation reinforces the conclusion that the fixed effect model is also the optimal selection for developing African countries.

Table 6. Hausman Test Results of Developing African Countries.

Test Summary	Chi. Sq. Statistic	Chi. Sq d.f	Prob.
Cross-section random	345.848	6	0.0000

4.4. Results of Panel Least Square

4.4.1. Developing Asian Countries

Table 7 presents the panel least square estimation outcomes for developing Asian countries. In this analysis, the coefficient for exports is determined to be 0.108300, accompanied by a p-value <0.05. This finding suggests that exports positively and substantially influence economic growth. This observation aligns with the research conducted by [Sothan \(2016\)](#) across 21 Asian countries, which indicates a positive correlation between exports and economic growth, particularly in the long term. The coefficient of the exchange rate variable is determined to be 0.900469, accompanied by a p-value <0.05. This outcome signifies that the exchange rate variable positively and substantially influences economic growth within developing Asian countries. In line with previous research by [Chiappini & Lahet \(2020\)](#), global factors, regional characteristics of the area, and internal conditions within each country significantly impact exchange rate fluctuations in Asia. Their findings also highlight that fluctuations in China's exchange rate and the macroeconomic variables' landscape can affect the volatility of other currency exchange rates, particularly in the case of the Japanese

Yen and Korean Won, especially over the long term. Moreover, the ramifications of trade wars also play a role in influencing the value of Asian currencies against the dollar (Thorbecke, 2019).

Moreover, the coefficient attributed to the foreign direct investment variable is 0.025211, with a p-value of <0.05. This outcome underscores that the foreign direct investment variable exerts a positive and notable impact on economic growth within developing Asian countries. The findings from a study conducted by Tahir et al. (2015) established a positive correlation between foreign direct investment growth and Pakistan's economic growth. Similarly, a twofold causality relationship was identified in harmony with the research conducted by Lin & Benjamin (2018) focusing on countries like Mexico, Indonesia, Nigeria, and Turkey—nations characterized by substantial populations. Specifically, in Mexico, a two-way causality exists between economic growth, energy consumption, and foreign direct investment inflows. In the case of Indonesia, a two-way causality linkage between foreign direct investment and economic growth was noted. Furthermore, for Nigeria, the study revealed a two-way relationship encompassing economic growth and energy consumption, as well as economic growth and foreign direct investment inflows. Lastly, a two-way causality relationship involving economic growth, energy consumption, and foreign direct investment inflows was identified in Turkey.

Table 7. Panel least square results of developing Asian countries on LogGDPAS.

Variable	Coefficient	Standard Error	t-ratio	P-Value
Constant	-1.029180	0.204229	-5.039347	0.0000
LogXAS	0.108300	0.023342	4.639659	0.0000
LogERAS	0.900469	0.018260	48.63912	0.0000
LogFDIAS	0.025211	0.012330	2.044719	0.0416
LogCBAS	0.276112	0.030540	9.040923	0.0000
LogGEAS	0.242459	0.018260	13.27817	0.0000
LogHDIAS	0.639752	0.108963	5.871262	0.0000
R-squared	0.942307			
Adjusted R-squared	0.942348			
F-stats	982.7032			
t-table	1.961690			
F-table	2.105200			

Subsequently, the coefficient associated with the bank credit variable in developing Asian countries is determined to be 0.276112, accompanied by a p-value of <0.05. This result underscores that the bank credit variable exerts a positive and substantial influence on economic growth. Chen et al. (2019) discovered that in China, corporate utilization of bank credit plays a predominant role in company operations, and bank profits have a more immediate impact in fostering short-term economic growth. Likewise, the coefficient pertaining to the government expenditure variable is recorded at 0.276112, with a p-value of <0.05. This outcome underscores the positive and substantial influence of the government expenditure variable on economic growth in developing Asian countries. Similarly, the coefficient linked to the human development index variable stands at a positive 0.639752, with a p-value of <0.05. This observation reinforces the positive and noteworthy impact of the human development index variable on economic growth in developing Asian countries. Mustafa et al. (2017) emphasize that while human development contributes positively to the economic growth of developing nations, its effects can be hampered by uneven growth patterns and delays in institutional development stemming from government spending. These factors can potentially impede the progress of human resource development.

4.4.2. Developing African Countries

Table 8 presents the results derived from the panel least square estimation for developing African nations. This analytical section establishes the coefficient linked to exports at 0.426290, accompanied by a p-value below 0.05. This is in line with previous research conducted by Ouma et al. (2016) that revealed the considerable importance of economic growth, mainly when driven by the agricultural sector, within African countries where prolonged famines recurrently affect diverse regions. Additionally, the findings highlight a reciprocal causality connection between agricultural exports and economic growth in Kenya, alongside a unilateral relationship observed in the context of Rwanda. Tyce (2019) also noted that export success played a significant role in shaping economic growth in Kenya. The study is intertwined with internal and external conflicts, including transitional regimes, domestic policy interventions, and political pressures.

The coefficient attributed to the exchange rate variable is calculated as 0.203934, with a p-value below 0.05. This result indicates that the exchange rate variable positively and significantly impacts economic growth within developing African countries. Research conducted in developing countries by Mission et al. (2017) demonstrates a positive

correlation between exchange rates and economic growth. Furthermore, the coefficient associated with the foreign direct investment variable is 0.032116, but the obtained p-value is >0.05 . This result highlights that the foreign direct investment variable has a positive but not statistically significant impact on economic growth within developing African countries. A study conducted by [Zghidi et al. \(2016\)](#) concluded that economic openness, practiced in four African countries—Morocco, Tunisia, Algeria, and Egypt—positively affects economic growth. This is because economic openness attracts multinational investments into the country. Next, the coefficient linked to the bank credit variable in developing African countries is established at 0.019775, although the associated p-value is also >0.05 . This outcome highlights that the bank credit variable offers a positive but not statistically significant impact on economic growth. The research conducted by [Léon & Zins \(2020\)](#) emphasizes that expanding the banking sector in developing nations, particularly within the African region, involving both foreign and domestic banks, has a favorable impact. The enthusiastic presence of banks enhances access to credit for diverse companies and bolsters the economy of the lower middle class.

Table 8. Panel least square results of developing African countries on LogGDPAF.

Variable	Coefficient	Standard Error	t-ratio	P-Value
Constant	-0.877554	0.341145	-14.29766	0.0000
LogXAF	0.426290	0.048427	8.802678	0.0000
LogERAF	0.203934	0.019011	10.72729	0.0000
LogFDIAF	0.032116	0.305758	1.007026	0.3154
LogCBAF	0.019775	0.023175	0.853300	0.3948
LogGEAF	0.882475	0.038911	22.67960	0.0000
LogHDI AF	-3.228752	0.305758	-10.55982	0.0000
R-squared	0.984491			
Adjusted R-squared	0.981794			
F-statistics	365.0047			
t-Table value	1.961690			
F-Table value	2.102760			

Source: Eviews.

The coefficient associated with the government expenditure variable is documented as 0.882475, accompanied by a p-value of <0.05 . This result strongly emphasizes the positive and significant impact of the government expenditure variable on economic growth within developing African countries. Research undertaken by [Lazarus et al. \(2017\)](#) encompassed a comparison between countries within the OECD and African nations. The study revealed a notable contrast in government spending patterns between the OECD and Africa. This finding suggests that prudent government spending should align with a country's economic growth trajectory. The human development index variable exhibits a coefficient of -3.228752, accompanied by a p-value of <0.05 . This result concludes that the human development index exerts a negative and significant impact on economic growth within developing African countries. Despite the abundance of natural resources in the African region compared to Asia, the effective utilization of these resources has not been optimized due to various factors such as limited infrastructure, insufficient human resources, and underdeveloped technology ([Takor & Ojo, 2018](#)). In a similar vein, [Anyanwu \(2014\)](#) highlights that the primary contributors to economic development in Africa encompass the efficacy of domestic investment, net capital inflows, education, comprehensive governmental policies spanning all sectors, population dynamics, and the harnessing of natural resources, all of which hold the potential to yield positive effects on economic growth.

5. Conclusions

This study concludes that the key drivers of economic growth in developing Asian countries, notably exports and exchange rates, emerge as vital factors, highlighting the centrality of trade and global influences. Foreign direct investment and bank credit also play pivotal roles, in channeling investments and financial support. Moreover, government expenditure and the human development index exhibit positive impacts, emphasizing the importance of investment in human capital. This holistic evidence underscores the complex dynamics of economic growth in the region and the need to promote trade, investment, financial stability, and human resource development for sustained progress. The study's findings shed light on the factors influencing economic growth in developing Asian countries. Notably, exports echo prior research that emphasizes the positive connection between exports and economic growth. This underscores the pivotal role of trade in fostering long-term economic development. Similarly, the exchange rate variable resonates with observations on the intricate interplay of global factors, regional characteristics, and domestic conditions in influencing exchange rates. Additionally, the positive effect of foreign direct investment and bank credit underscores

their substantial contributions to economic growth through investment inflows and financial intermediation. Moreover, the positive influence of government expenditure and the human development index on economic growth in developing Asian countries insights into the relationship between government spending and human capital development further reinforce these findings. This collective evidence underscores the region's multifaceted nature of economic growth dynamics, emphasizing the significance of fostering trade, investment, financial stability, and human resource development to drive economic progress sustainably.

Regarding developing African countries, the findings highlight the pivotal role of exports in driving economic growth. This resonates with prior research emphasizing the importance of export-driven economic growth, especially in the agricultural sector. Similarly, the positive impact of exchange rates on economic growth underscores the potential benefits of favorable exchange rate conditions in stimulating economic development. While FDI, bank credit, and government expenditure variables also demonstrate positive relationships with economic growth, the significance of their impacts varies. FDI and bank credit show positive but statistically insignificant effects, suggesting the need for deeper exploration. At the same time, the strong impact of government expenditure underscores its crucial role in driving economic growth through prudent fiscal policies. Finally, the negative impact of the human development index on economic growth highlights the challenges faced by developing African countries in harnessing their abundant natural resources effectively, emphasizing the importance of addressing infrastructural, human resource, and technological limitations to foster sustainable development.

The pivotal role of exports in driving economic growth also shows in developing African countries, emphasizing export-driven growth, particularly in agriculture. Favorable exchange rates also positively influence economic growth, while FDI and bank credit exhibit positive but statistically insignificant effects, necessitating further investigation. Government expenditure significantly impacts growth, highlighting its role through prudent fiscal policies. The adverse link between the human development index and growth emphasizes challenges in resource utilization, accentuating the need to address infrastructure, human resources, and technological constraints for sustainable development. The study's findings underscore the centrality of exports, exchange rates, FDI, government expenditure, and human capital development in economic growth in developing Asian and African countries. To leverage these insights, policymakers should prioritize trade promotion, exchange rate stability, targeted FDI incentives, and efficient government spending on critical sectors, education, and healthcare while fostering technological innovation, agricultural modernization, infrastructure development, and regional collaboration. These recommendations aim to create a conducive environment for sustained progress, addressing challenges and maximizing opportunities for economic development and improved quality of life.

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