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Determinants of economic growth in Asian countries

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Abstract. Asia consists of 50 countries with the largest population and continental economy in the world in terms of both nominal GDP and PPP. Despite the extensive literature on the determinants of economic growth, research on this topic in Asian countries remains limited. This article evaluates the determinants of economic growth in Asian countries over the past two decades. The System Generalized Method of Moments (SGMM) proposed by Arellano and Bond (1991) is used in the research sample of 32 Asian countries from 2003-2022. Data for the analysis are taken from the Global Development Index (WDI) compiled by the World Bank. Research results indicate that economic growth in Asian countries is determined by the following factors: foreign direct investment (FDI), labor ratio (LAR), public expenditure (GCE), inflation rate (INF), and economic openness (OPEN). These research findings have significant implications for those involved in reforming macroeconomic policies with the objective of stimulating economic growth in Asian countries in the future.

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1. INTRODUCTION

Economic growth has remained a highly researched issue globally for decades. In order to achieve and maintain high growth rates, policymakers must have a clear understanding of the factors that determine economic growth (Mallick, 2008). The income level in the economy at any given time represents the cumulative growth of income over time. The investigation of the factors that contribute to higher incomes and determine economic growth is an important research question that requires further examination (Romer, 2019). Therefore, research on economic growth and its determinants attracts the attention of scholars, experts, and international organizations. Many studies have investigated the relationship between economic growth and a range of determinants at the country, regional and continental level around the world (Barro, 2003; Wang & Choi, 2016; Mazurek, 2017; Niebel, 2018; Aung, 2023). The differences in the results originate from the variety of selected data, research models, estimation methods, and research

objectives. However, the fundamental premise of such studies is that they are based on endogenous and exogenous economic theories investigating macroeconomic factors that determine economic growth. These include foreign direct investment, public expenditure, gross capital formation (formerly gross domestic investment), economic openness, inflation, and labor. While this research into the determinants of economic growth is crucial, most of these studies are either conducted outside Asia, outdated (Wang & Choi, 2016), or limited in their scope to the ASEAN region (Aung, 2023).

According to the United Nations report (2022), the Asian economy includes about 4.7 billion people (approximately 60% of the world's population) living in 50 countries. Asia is the fastest-growing economic region and the largest continental economy by nominal gross domestic product (GDP) and gross domestic product (Purchasing Power Parity) worldwide. This indicates that research on Asian economic growth is vital. To date, except the study of Wang & Choi (2016), no studies have been conducted on the determinants of economic growth in Asian countries. Nonetheless, the study's limitations are as follows: a small sample size (21 out of 50 Asian countries); a lengthy research period (2002–2013); and a research approach that has not accounted for the endogenous phenomenon, which can significantly affect the outcomes. This work addresses and mitigates the gaps and limitations identified in prior studies concerning the determinants of economic growth. Moreover, this article presents a novel examination of crucial factors that can promote economic growth across a large sample of 32 Asian economies over a two-decade period (2003–2022). The study employs the SGMM method to overcome the endogeneity commonly present in economic research models. The analysis results of the article provide important policy implications for reforming macroeconomic policies aimed at enhancing economic growth in Asian countries.

2. LITERATURE REVIEW

From a theoretical standpoint, early theories of economic growth commenced with mercantilism during the 15th to 17th centuries. Subsequently, classical growth theories emerged, represented by figures such as Adam Smith (1776), David Ricardo (1821), and Karl Marx (1872). Next was Schumpeter's growth theory, published in 1911, 1926, and 1934. Growth theories originated with the seminal work of Keynes (1936) and were later expanded by Harrod (1939) and Domar (1946), followed by the exogenous growth theory proposed by Solow (1956) and Swan (1956). Additionally, based on the research of Arrow (1962), Romer (1986) and Lucas (1988) developed the endogenous growth theory, thereby enhancing the diversity of the economic growth theory.

With the emergence of the above theories, economic growth is a topic of interest for scholars and researchers. Samuelson and Nordhaus (1985) characterized economic growth as the expansion of a country's GDP or potential output. Economic growth is often measured by increases in both real and nominal GDP (Kummu et al., 2018). The Oxford Dictionary defines economic growth as a rise in the production of goods and services per capita over a given period of time. When these definitions are integrated and the economic literature is examined more broadly, economic growth can be interpreted as an increase in the quantity and value of goods and services produced over a period of time, measured by GDP or GDP per capita.

In previous empirical studies, economic growth in countries each year was measured using different strategies, as follows: (a) GDP growth in absolute terms is equal to GDP in year t when compared to GDP in year t-1 (Wang & Choi, 2016). (b) GDP growth was calculated as a percentage of GDP in year t compared to GDP in year t-1 (Samsuddin & Amar, 2020). (c) GDP per capita growth in absolute terms is equal to GDP per capita in year t when compared to GDP per capita in year t-1 (Myovella et al., 2020; Pandey & Bishnoi, 2023).

Economic growth is affected by various factors, and the research on determinants of growth is extensive. The Solow-Swan theory of growth convergence posits that nations with low per capita income will experience higher growth rates compared to those with high per capita income (Solow, 1956; Swan, 1956). This phenomenon also describes the tendency for growth rates to decelerate over time. Barro (1996, 2003) noted that growth is often indirectly proportional to the initial GDP level. This relationship is referred to as beta convergence or the "catch-up effect." Countries with lower GDP generally exhibit faster growth, a phenomenon that is well-documented at both national and regional levels (Evans & Karras, 1996; Young et al., 2008). Moreover, the initial GDP (GDP per capita in year t-1) that impacts economic growth has been reported in the literature (Mazurek, 2017; Solomon & Klyton, 2020). However, the initial GDP level is not the only determinant of economic growth. In the exogenous growth model (Solow, 1956; Swan, 1956), economic growth depends on population growth, labor force, savings, and technology. Meanwhile, endogenous growth models (Romer, 1986; Lucas, 1988) emphasize the role of human capital factors and R&D activities as the primary drivers of economic growth. Furthermore, the endogenous growth theory implies that policies, including capital formation, economic openness, competition, and innovation, will promote economic growth.

Prior research on the determinants of economic growth across countries, regions, and continents utilized various variables as follows: domestic investment capital (Solomon & Klyton, 2020 Batrancea et al., 2021); foreign direct investment (Batrancea et al., 2021; Hadush et al., 2023); public consumption expenditure (Fischer, 1993); economic openness (Batrancea et al., 2021); inflation rate (Fischer, 1993; Aung, 2023); development of science and technology (Niebel, 2018); physical and human capital (Niebel, 2018;); total population and population growth rate (Samsuddin & Amar, 2020); monetary policy (Samsuddin & Amar, 2020); degree of democracy and political institutions (Mazurek, 2017). Law provisions (Solomon & Klyton, 2020); educational system and policy (Barro, 2003); domestic savings (Batrancea et al., 2021); public debt, funding for research and development (Ješić, 2023); private consumption (Pandey & Bishnoi, 2023); fiscal policy (Easterly & Rebelo, 1993); and official development assistance (Wang & Choi, 2016).

This study integrates the theories of exogenous and endogenous growth, along with the factors of economic growth derived from prior research materials. Economic growth is measured by per capita GDP growth. Determinants of growth encompass the following: initial GDP per capita; foreign direct investment; labor force rate; public consumption expenditure; gross capital formation; economic openness; and inflation rate. We believe that the chosen economic indicators will substantially influence the phenomena of economic growth

3. METHODOLOGY

3.1. Definition of variables

Economic growth (GROWTH). In this article, economic growth was measured based on GDP per capita growth. GDP per capita growth in absolute terms equals GDP per capita in year t compared to GDP per capita in year t-1 (Pandey & Bishnoi, 2023).

GDP per capita at the beginning of the period (GDP t-1). The GDP t-1 variable representing GDP per capita at the beginning of the period was added to the research model to control beta convergence (the "catch-up effect"). Moreover, this variable was included in most studies on economic growth (Myovella et al., 2020).

Foreign direct investment (FDI). Plenty of evidence indicates that foreign direct investment favorably influences economic growth. Pegkas (2015) established that foreign direct investment is a crucial determinant that positively influences economic growth. This variable has been incorporated in recent

studies on economic growth across various countries, regions, and continents (Wang & Choi, 2016; Batrancea et al., 2021).

Labor force rate (LAR). The labor rate variable denotes the growth rate of the workforce. It pertains to the growth rate of the labor structure index and workforce growth rate. The growth rate of the labor structure indicates variations in human capital. Recent studies also featured this variable, including Niebel (2018) and Solomon & Klyton (2020). In this study, the labor rate is defined as the ratio of labor force participation among individuals aged 15 and above relative to the total population.

Public consumption expenditure (GCE). This variable is expressed as a percentage of GDP. The government's general final consumption expenditure includes all current government expenditures to purchase goods and services (including remuneration of officers, employees, and workers). It also includes most defense and security expenditures but excludes government military expenditures that are part of government capital formation. Barro (2003) argued that government consumption rates lead to improved levels of output per worker and increased investment and economic growth effects. This variable has been mentioned in recent studies by Oyebowale & Algarhi (2020) and Hadush et al. (2023).

Gross capital formation (formerly gross domestic investment) (GCF). Gross domestic capital accumulation was calculated by subtracting the value of final consumption expenditure from GDP, expressed as a percentage of GDP. Recent studies reported this factor, such as those by Batrancea et al. (2021), Aung (2023), and Hadush et al. (2023).

Economic openness (OPEN). This indicator is quantified by the sum of exports and imports of goods and services (% GDP). Gallup et al. (1999) asserted that open economies more effectively acquire new technology and ideas from the global landscape than their less open counterparts, hence facilitating accelerated growth. Mazurek (2017) and Hadush et al. (2023) also discussed this factor.

Inflation rate (INF). The inflation rate is determined using the Consumer Prices Index (CPI) and is expressed as an annual percentage. Numerous studies demonstrated that inflation can exert either a detrimental or beneficial influence on economic growth (Barro, 2003; Pandey & Bishnoi, 2023).

3.2. Research models and estimations method

The research model for assessing the determinants of economic growth in Asian countries is structured as follows:

$$GROWTH_{it} = \beta_0 + \beta_1 GDP_{it-1} + \beta_2 FDI_{it} + \beta_3 LAR_{it} + \beta_4 GCE_{it} + \beta_5 GCF_{it} + \beta_6 OPEN_{it} + \beta_7 INF_{it} + \varepsilon_{it},$$

where i indicates the country; t indicates the period analyzed; β_0 indicates the intercept; $\beta_1 - \beta_7$ indicate the coefficients of the predictor; ε_{it} indicates the error term; $GROWTH = Ln(Y_t - Y_{t-1})$, $GDP_{t-1} = Ln(Y_{t-1})$. Y_t and Y_{t-1} are GDP per capita in year t and year t–1, respectively; FDI is the foreign direct investment, net inflows (% of GDP); LAR is the labor force participation rate, total (% of total population ages 15+); GCE is the general government final consumption expenditure (% of GDP); GCF is the gross capital formation (% of GDP); OPEN is economic openness (% of GDP); INF is the inflation rate (annual %).

The factors influencing economic growth in Asian nations are evaluated using coefficients β1 to β7 in the model. If the regression coefficients are positive and statistically significant, it indicates that these factors will favorably influence economic growth. In contrast, if these regression coefficients are negative and statistically significant, they will adversely affect economic growth. Concurrently, if these regression coefficients lack statistical significance, economic growth will remain unaffected.

In this study, estimation and testing methods were used as follows: First, the models were estimated using fixed-effects and random-effects methods. Then, the Hausman test was conducted to determine the most suitable method. Next, the heteroskedasticity and autocorrelation in the model were assessed and

overcome with the modified Wald and Wooldridge tests. Moreover, a frequent problem in estimating models with economic data is the endogeneity of variables. To solve the problem of the endogeneity of variables, all variables were evaluated in the research model using the Durbin–Wu–Hausman test. Then, the SGMM estimation method of Arellano and Bond (1991) was used to overcome the endogeneity phenomenon through instrumental variables. The author performed tests to ensure reliability, including checking the appropriateness of the research model and representative variables using the F-test. The autocorrelation of residuals was assessed using AR(1) test and AR(2) test. Additionally, the Sargan–Hansen test was employed to determine the appropriateness of the instrumental variables. Research model estimation results and tests are presented in detail in Tables 4, 5, and 6.

3.3. Sample and data

Our sample includes 32 Asian countries. According to data from the United Nations, Asia includes 50 countries. However, some countries do not have the most recent observational data, so the study was conducted with 32 countries (Table 1), accounting for 64% of Asian countries. Therefore, the research sample still ensures representativeness. Data for this analysis were collected from the Global Development Index (WDI) database of the World Bank for 32 Asian countries in from 2003 to 2022.

Table 1

Asian countries in the sample

No.	Country name	Country code	No.	Country name	Country code
1	Armenia	ARM	17	Lao PDR	LAO
2	Azerbaijan	AZE	18	Malaysia	MYS
3	Bangladesh	BGD	19	Mongolia	MNG
4	Bhutan	BTN	20	Oman	OMN
5	Brunei Darussalam	BRN	21	Pakistan	PAK
6	Cambodia	KHM	22	Philippines	PHL
7	China	CHN	23	Qatar	QAT
8	Georgia	GEO	24	Saudi Arabia	SAU
9	India	IND	25	Singapore	SGP
10	Indonesia	IDN	26	Sri Lanka	LKA
11	Japan	JPN	27	Tajikistan	TJK
12	Jordan	JOR	28	Thailand	THA
13	Kazakhstan	KAZ	29	Timor-Leste	TLS
14	Korea, Rep.	KOR	30	United Arab Emirates	ARE
15	Kuwait	KWT	31	Uzbekistan	UZB
16	Kyrgyz Republic	KGZ	32	Vietnam	VNM

Source: own compilation

Data on variables in the research model are described in Table 2 as follows:

- The average economic growth (GDP per capita) in 32 Asian countries in 2003–2022 is 520 USD/year, its lowest rate is -26,141 USD/year, and its highest rate is 20,803 USD/year. This result reflects the considerable difference in economic growth between countries and across different years.
- The average ratio of foreign direct investment to GDP in 20 years from 2003 to 2022 of 32 Asian countries is 4.41%, its lowest ratio is -37.17%, and its highest ratio is 55.07%. Moreover, this result demonstrates that foreign direct investment significantly differs between countries and across years during the research period.

- The average labor force ratio is 63.70%, its lowest ratio is 30%, and its highest is 94.3%. This indicates that the labor force participation rate in some Asian countries is very low in some years.
- The average ratio of public expenditure to GDP in 32 Asian countries during this period was 15.66%/year, its highest rate was 115.9%, and its lowest rate was 3.46%. The findings illustrated that there have been considerable differences in public expenditure in different countries over the years.
- The average ratio of investment capital to GDP is 28.99%/year, its lowest rate is 9.13%, and its highest rate is 70.33%.
- The average economic openness in 32 Asian countries from 2003 to 2022 is 96%, its lowest level is 21.33%, and its highest level is 437.3%.
- The average inflation rate in 32 Asian countries in 2003–2022 is 5.02%, the lowest rate is -4.86%, and the highest rate is 49.7%.

To sum up, the data in Table 2 indicates significant variations in the average ratios of investment capital to GDP, economic openness, and inflation rate indexes across different years and countries during the research period.

Table 2

Descriptive statistics of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
GROWTH (US$)	640	519.66	3,189.48	-26,141.24	20,802.71
Ln (GROWTH)	640	3.1995	5.2539	-10.1713	9.9428
GDP_{t-1} (US$)	640	12,240.70	17,655.29	186.66	98,041.35
$Ln(GDP_{t-1})$	640	8.3950	1.4720	5.2293	11.4931
FDI (% of GDP)	640	4.4113	6.4357	-37.1727	55.0729
LAR (% of total population aged 15+)	640	63.7019	11.0242	30.0700	94.3000
GCE (% of GDP)	640	15.6655	12.0722	3.4603	115.9236
GCF (% of GDP)	640	28.9928	9.2525	9.1367	70.3349
OPEN (% of GDP)	640	96.0234	60.4974	21.3261	437.3267
INF (annual %)	640	5.0169	4.8363	-4.8633	49.7211

Source: own compilation

4. EMPIRICAL RESULTS AND DISCUSSION

First, the presence of multicollinearity in the model with Stata software was assessed by analyzing panel data from 32 Asian nations spanning the years 2003 to 2022. The correlation between variables in the model is presented through the correlation coefficient matrix in Table 3. The correlation coefficient measures the degree of linear relationship between two variables, regardless of whether one variable depends on the other. The correlation coefficient matrix between variables in the model shows that the correlation coefficients of pairs of independent variables are all less than 0.53. According to Franke (2010), a correlation coefficient between variables greater than 0.8 leads to multicollinearity in the model. Therefore, all independent variables in the model have a low correlation with each other and do not affect the regression results.

Table 3

Matrix of correlation coefficients of variables

VARIABLES	GROWTH	GDP_{t-1}	FDI	LAR	GCE	GCF	OPEN	INF
GROWTH	1.0000	-0.1160	0.1240	0.0142	-0.1025	-0.0190	0.0952	0.0944
GDP_{t-1}	-0.1160	1.0000	-0.0195	0.3161	0.0111	-0.0706	0.2728	-0.4266
FDI	0.1248	-0.0195	1.0000	0.0664	-0.1036	0.1230	0.5282	0.0847
LAR	0.0142	0.3161	0.0664	1.0000	-0.1591	0.0718	0.1966	-0.1332
GCE	-0.1025	0.0111	-0.1036	-0.1591	1.0000	0.1534	0.0028	-0.0912
GCF	-0.0190	-0.0706	0.1230	0.0718	0.1534	1.0000	-0.0768	0.1055
OPEN	0.0952	0.2728	0.5282	0.1966	0.0028	-0.0768	1.0000	0.2558
INF	0.0944	-0.4266	0.0847	-0.1332	-0.0912	0.1055	-0.1238	1.0000
Obs	**640**	**640**	**640**	**640**	**640**	**640**	**640**	**640**

Source: own compilation

Next, both random-effects and fixed-effects models are estimated to select the appropriate model. The phenomenon of heteroskedasticity and autocorrelation of the selected model was tested. The estimation results are presented in Table 4.

Table 4

Results of estimating random-effects model and fixed-effects model

Variables	Random-effects model	Fixed-effects model
GDP_{t-1}	0.004	0.000
FDI	0.236	0.073
LAR	0.529	0.216
GCE	0.033	0.006
GCF	0.610	0.198
OPEN	0.044	0.028
INF	0.334	0.229
Constant	0.001	0.000
Modified Wald test	0.000	
Wooldridge test	0.000	
Hausman test	0.000	

Source: own compilation

Table 4 displays the model estimation outcomes regarding the factors of economic growth in Asian nations. The Hausman test results indicate that the p-value is below the 5% significance threshold. Consequently, the fixed-effects model is superior to the random-effects model. Table 4 also presents the outcomes of estimating the fixed-effects regression model, with the p-value of the Modified Wald test falling below the 5% significance threshold, indicating the presence of heteroskedasticity. Additionally, the p-value of the Wooldridge test is less than the 5% significance level, so there is autocorrelation in the model. Besides, in macroeconomic research, a limitation of the fixed-effects regression model is the presence of endogeneity within the model. Therefore, the endogeneity with all variables in the model was examined. The researcher employed the Durbin–Wu–Hausman test, where one lag of the independent variables was used to test whether the independent variable was endogenous or not. Considering the time aspect of macroeconomic variables, one lag would be an appropriate instrumental variable because it is highly correlated with the original variable. The test results are presented in Table 5.

Table 5

Results of testing endogenous/exogenous variables (Durbin–Wu–Hausman test).=

Variables	P.Value	Note
GDP_{t-1}	0.0001	Endogenous variable
FDI	0.6565	Exogenous variable
LAR	0.6860	Exogenous variable
GCE	0.0000	Endogenous variable
GCF	0.5531	Exogenous variable
OPEN	0.0000	Endogenous variable
INF	0.0002	Endogenous variable

Source: own compilation

Table 5 highlights that, in the research model, GDP at the beginning of the period (GDP t-1), public expenditure (GCE), economic openness (OPEN), and inflation rate (INF) are endogenous variables. In contrast, foreign direct investment (FDI), labor ratio (LAR), and gross capital formation (GCF) are not endogenous variables (exogenous variables). To address the heteroscedasticity, autocorrelation, and endogeneity in the models, the SGMM method was used to estimate the model of determinants of economic growth in Asian countries. The results of model estimation using Stata software are presented in Table 6.

Table 6

SGMM estimation results

Variables	Coefficient	Std. error	Z	P>|Z|	[95% conf. interval]	
GDP_{t-1}	0.0145	1.8228	0.01	0.994	-3.5581	3.5872
FDI	0.8317	0.2857	2.91	0.004	0.2718	1.3917
LAR	0.3027	0.1440	2.10	0.036	0.0204	0.5850
GCE	0.2071	0.1104	1.88	0.061	-0.0093	0.4235
GCF	-0.2085	0.1702	-1.23	0.221	-0.5420	0.1251
OPEN	-0.1487	0.0651	-2.28	0.022	-0.2763	-0.0211
INF	1.6565	0.3212	5.16	0.000	1.0269	2.2861
Constant	-14.2503	13.6585	-1.04	0.297	-41.0206	12.5199
Arellano–Bond test for AR(1)			0.0000			
Arellano–Bond test for AR(2)			0.2650			
Hansen test			0.8230			
F-test			0.0000			
Number of obs			512			
Number of groups			32			
Number of instruments			14			

Source: own compilation

Table 6 displays the findings of estimating the model to evaluate the determinants of economic growth of Asian countries using the SGMM method. The outcomes demonstrate that the estimated model has a p-value of AR(1) test of 0, less than the 5% significance level, and a p-value of the AR(2) test of 0.265, greater than the 5% significance level. Therefore, the model has first-order autocorrelation but no second-order autocorrelation of the residuals. The Hansen test of the model has a p-value of 0.823, which is more significant than the 5% significance level. Roodman (2009) stated that the p-value must be greater than 0.25 to ensure the instrumental variables are valid. Therefore, the instrumental variables used in the model are appropriate. The results in Table 6 reveal that the SGMM method estimation satisfies the requirement of the appropriateness of instrumental variables. The p-value of the F-test is less than the 5% significance level, showing the model's suitability. Table 6 further indicates that another constraint when using the SGMM method is also satisfied: the number of instrumental variables cannot exceed the number of groups. In the

analytical model, the number of instrumental variables is 14, which is fewer than the number of groups (32). Thus, the model ensures reliability when conducting the analysis.

Table 6 lists the model estimation results as follows:

Foreign direct investment (FDI) to GDP has a regression coefficient of 0.83, which is positive and highly statistically significant at a 1% level. Thus, FDI has a positive impact on economic growth in Asian countries. This result is similar to those of Wang & Choi (2016), Samsuddin & Amar (2020), and Aung (2023).

The labor force (LAR) exhibits a regression coefficient of 0.3, which is positive and statistically significant at the 5% level. LAR, encompassing those aged 15 and older, has a favorable influence on economic growth in Asian nations. This outcome parallels the findings of research conducted by Niebel (2018) and Solomon & Klyton (2020). This indicates that in Asian nations, increasing the labor rate will promote economic growth. This outcome aligns with endogenous growth theory and the actual circumstances in Asian nations, many of which remain developing countries benefiting from inexpensive labor resources.

The public expenditure variable (GCE) possesses a regression coefficient of 0.2, indicating a positive and statistically significant relationship at the 10% level. Consequently, public expenditure (GCE), as quantified by general government final expenditure (% of GDP), has an advantageous impact on economic growth in Asian nations. This indicates that in Asian nations, raising public expenditure will enhance economic growth. This outcome aligns with the findings of Oyebowale & Algarhi (2020) and Hadush et al. (2023), although it contradicts certain studies indicating that GCE adversely affects economic growth (Barro, 2003; Pandey & Bishnoi, 2023). The discrepancies in these conclusions arise from variations in data sources, sample sizes, study locations, and the timeframes of the investigations.

The regression coefficient for the economic openness variable, defined as the sum of total exports and imports relative to GDP (OPEN), is -0.15 and is statistically significant at the 5% level. This indicates that in Asian nations, economic openness from 2003 to 2022 adversely affects economic growth. This outcome differs from prior studies, which indicate that economic openness positively affects economic growth (Barro, 2003). Nevertheless, from 2003 to 2022, Asian countries exhibited total imports exceeding exports, resulting in a negative correlation between economic openness and economic growth, albeit with minimal impact.

The inflation variable (INF) possesses a regression coefficient of 1.66, which is positive and statistically significant at the 1% level. Consequently, inflation (INF) assessed via consumer prices (annual %) has the most significant and positive influence among all independent variables on economic growth in Asian nations. This suggests that in Asian countries during the research period, the annual inflation rate was sustained at a moderate level, hence showing a positive and significant impact on economic growth. Specifically, in 2003–2022, the average annual inflation rate of Asian countries was 5.02%. Sarel (1996) found an inflation threshold of 8% below, indicating a positive impact on economic growth. Khan & Senhadji (2001) believed that the inflation threshold in developing countries is 11%-12%/year and reported that if inflation exceeds this threshold, it will negatively impact economic growth. In contrast, if inflation is below this level, it can positively impact economic growth. Mubarik (2005) asserted that moderate inflation will promote economic growth. Most Asian nations are developing countries; thus, the inflation rate during the research period was 5.02%/year, which positively impacts economic growth. Other studies from developing countries also revealed that inflation has a positive impact on economic growth (Munir & Mansur, 2009).

5. CONCLUSION

In this study, the SGMM was used (Arellano and Bond, 1991). The research sample included 32 Asian countries from 2003 to 2022. The sample was subjected to panel data analysis using Stata software version 14. The results displayed that foreign direct investment (FDI), ratio labor (LAR), public expenditure (GCE), and inflation rate (INF) positively impact economic growth. Meanwhile, economic openness (OPEN) has a negative effect on economic growth.

Based on the research findings, the author proposes some policy implications for governments in Asia. First, authorities should develop favorable conditions for FDI capital flows and improve the business investment environment, as well as perfect institutions and laws on FDI attraction to enhance the efficiency of attracting and using FDI capital. As mentioned, most Asian countries are developing countries; thus, FDI would contribute to GDP growth, create jobs, reduce unemployment, and indirectly impact economic growth. Second, national governments and regional organizations must create a more stable and efficient business environment while improving the quantity and quality of labor resources. Thanks to their cheap labor force, Asian countries can be more present in the international labor market and attract domestic and foreign investors, which impacts economic growth. Third, the national government needs to increase the efficiency of public consumption spending. Public consumption expenditure (government consumption expenditure) is one of the factors determining the economic growth of Asian countries. Asian national governments should find solutions to increase the efficiency of public consumption expenditure, which will help improve and contribute to economic growth. Last but not least, the macroeconomy has to be stabilized, and the annual inflation rate must be controlled at a reasonable level. As previously mentioned, the country's annual inflation rate has to be within a reasonable threshold to promote economic growth; otherwise, it will negatively impact the national economy.

6. LIMITATIONS

The current study has certain limitations, like any other empirical research effort. First, the sample includes only 32 out of 50 countries across Asia. Future studies could consider including more countries to test the study's hypotheses. Second, our study included limited variables related to economic growth (seven variables) and determinants (five factors). Future research could expand the set of indicators to explore the impact of other variables on the economic growth of Asian countries and countries from other regions or continents. In that regard, comparisons between similar samples from different regions and continents will yield intriguing findings. Third, the analysis period is 20 years. Future investigations could extend the period beyond two decades to draw out other diverse insights into the evolution of economic growth.

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