

Long-run impact of institutional quality on economic growth: Evidence from ASEAN countries

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Abstract

This study aims to assess the long-term impact of institutional quality on economic growth in ASEAN countries over the period 2000-2022. The study uses panel data sourced from the World Development Indicators (WDI) for the years 2000 to 2022. It employs Fully Modified Ordinary Least Squares (FMOLS) and Canonical Cointegrating Regression (CCR) estimation techniques to evaluate the relationship between institutional quality and economic growth. Institutional quality is represented by six key indicators: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. Control variables include investment capital, human capital, trade openness, and the inflation rate. The empirical results indicate that voice and accountability, political stability, and the rule of law have a positive and statistically significant impact on long-run economic growth in ASEAN countries. In contrast, government effectiveness, regulatory quality, and control of corruption are found to have a negative impact on economic growth. Furthermore, investment capital, human capital, and the inflation rate contribute positively to growth, whereas trade openness exerts a negative influence. Based on the results, the study proposes several policy recommendations aimed at strengthening institutional quality to support long-term economic growth in ASEAN countries. Policymakers should prioritize improvements in the institutional components that show positive effects while critically reassessing and reforming the areas found to negatively influence growth.

Keywords: ASEAN, CCR, Economic Growth, FMOLS, Institutional Quality.

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1. Introduction

Economic growth depends on economic and non-economic factors, among which institutional quality is an important factor. Good institutional quality helps to effectively allocate economic resources and minimize waste, loss, and corruption, thereby promoting sustainable economic growth for each country.

ASEAN is a dynamic economic region in which many ASEAN countries have emerged as bright spots in the global economic growth picture. However, increasing geopolitical instability and increasingly fierce international competition have impacted the regional and global economy, creating challenges for ASEAN countries in improving institutional quality to promote economic growth in the medium and long term.

There are many studies on the impact of institutional quality on economic growth in developing countries and emerging economies. In the ASEAN region, there are very few studies on the impact of institutional quality on economic growth, such as the study of Sari and Prastyani [1] and Sohag et al. [2]. Nevertheless, these studies use different measures of institutional quality, resulting in inconsistent research findings and conclusions. In particular, they have not clearly clarified the long-term trend of the impact of institutional quality on economic growth.

The contribution of this study is to assess the long-run impact of institutional quality on economic growth in ASEAN countries, contributing to enriching the empirical literature on the long-run relationship between institutional quality and economic growth. In terms of methods, this study uses dynamic panel data with FMOLS (Fully Modified Ordinary Least Squares) estimation techniques and confirms the results obtained by CCR (Canonical Cointegrating Regression) estimation techniques to assess the long-term impact of institutional quality on economic growth. Furthermore, the findings of this study also propose several important policy implications to improve institutional quality and promote long-term economic growth for ASEAN countries.

The remainder of this paper is structured as follows: Section 2 presents the theoretical framework and research overview; Section 3 describes the data sources and research methods; Section 4 presents the research results and discussion; Section 5 draws conclusions and highlights policy implications based on the research results.

2. Theoretical Framework and Research Overview

2.1. Literature review

The pioneer of institutional economics theory, North [3], describes institutions as a set of rules, procedures, and ethical and moral norms designed to shape human interactions. Institutions include both formal (constitutions, laws, and property rights) and informal (customs, practices, and norms of conduct) norms. Kasper and Streit [4] argue that institutions are rules that control the actions of individuals that are inherently unstable so that they can be more easily predicted and encourage the division of social labor. According to Schotter [5], institutions are consistent in the way of communication and social behavior that all components of society respect and follow. Institutions can be rules, customs of society, organizations, beliefs or policies and regulations chosen and issued by people [6]. Institutions establish rules, frameworks of order, norms, and constraints that are shared and agreed upon by the social community [7].

Traditional growth theories emphasize the importance of human capital, technological diffusion, and public infrastructure or incentives to innovate in explaining cross-country differences in growth [8, 9]. However, in recent years, there has been increasing emphasis on the role of institutions and governance in economic growth. According to Acemoglu et al. [10], institutions play an important role in development by influencing investment and the organization of production. North and Thomas [11] argued that institutions are the source of differences in economic growth across countries. The "institutional quality" hypothesis suggests that the institutional framework has an important influence on economic development, Alexiou et al. [12]. Acemoglu and Robinson [13] argued that institutions are the fundamental determinants of economic growth and the source of differences in economic growth across countries.

Institutional quality has become a crucial topic for economists when examining how factors of production contribute to economic growth. Alexiou et al. [12] argue that the institutional framework within which economic agents interact significantly impacts economic development. From this perspective, the most important elements are the "rules of the game" in society-specifically, the explicit and implicit norms that govern behavior, as well as their capacity to establish suitable incentives that encourage desired economic actions [14].

There are many indicators to measure institutional quality, but the World Bank's Worldwide Governance Indicator (WGI) is widely analyzed and used because of its comprehensiveness. This index is divided into six component indicators, including voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. Kaufmann [15] and Arndt and Oman [16] point out that the World Bank's Global Governance Indicators are the best available measure of institutional quality, not only because of their greater precision but also because of their broader geographic coverage.

2.2. Research Overview

Valeriani and Peluso [17] conducted a study on the influence of institutional quality on economic growth and development across various regions, including sub-Saharan Africa, East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, the Middle East and North Africa, South Asia, and North America. The research employed pooled regression models and fixed effects models, analyzing data from 1950 to 2009. The results showed that institutional quality has a positive impact on economic growth, but the impact of institutional quality on economic growth varies across regions.

The study conducted by Alexiou et al. [12] used the ARDL (Autoregressive Distributed Lag) method to investigate both short-run and long-run relationships between institutional variables and several key economic factors, including government

expenditure, trade openness, inflation rate, domestic investment, domestic credit, and population growth rate in relation to economic growth in Sudan between 1972 and 2008. The empirical results indicate that the quality of the institutional environment is one of the most significant factors influencing economic prosperity in a developing country like Sudan

Nawaz et al. [18] used the Generalized Method of Moments (GMM) to assess the impact of institutions on economic growth in Asian economies from 1996 to 2012. The empirical results indicate that institutions play a significant role in fostering long-term economic growth in these countries. However, the impact of institutions is more pronounced in developed countries compared to developing ones. This evidence implies that different countries need different institutional arrangements to promote long-run economic growth.

Asghar et al. [19] employed the panel data autoregressive distributed lag (ARDL) estimation method to investigate the impact of institutional quality on economic growth in developing Asian economies from 1990 to 2013. The results of the study indicate that the institutional quality index positively influences economic growth in 13 developing Asian countries. This research highlights the importance of enhancing institutional quality in certain developing Asian nations to foster economic growth.

Epaphra and Kombe [20] conducted a study using the Generalized Method of Moments (GMM) to analyze the impact of institutions on economic growth in Africa. Their research focused on a sample of 48 countries over the period from 1996 to 2016. The study concluded that political stability is the most important factor influencing the growth of real GDP per capita in Africa. Additionally, the findings indicated that trade liberalization, fixed capital formation, the labor force and foreign direct investment all have a significant impact on economic growth in Africa.

Bhattacharjee [21] studied the impact of institutional quality, physical capital stock, human capital stock, and trade openness and liberalization on the economic growth of four major economies in South Asia. The results indicated that physical capital, as well as voice and accountability and regulatory quality, has a positive and significant effect on GDP per capita in South Asian countries. In contrast, government effectiveness and the rule of law were found to have a significant negative impact. The study suggests that more investment in human capital, physical capital, and improvement in the quality of institutions are needed to sustain economic growth in South Asia in the future.

Radzeviča et al. [22] used the Generalized Method of Moments (GMM) to examine the impact of institutional quality on the economic growth of 113 countries from 2006 to 2016. The findings indicated that various factors positively influence economic growth, including government effectiveness, regulatory quality, tax burden, monetary freedom, financial freedom, trade freedom, the strength of auditing and reporting standards, the effectiveness of corporate boards, and the level of investor protection.

Research conducted by Afonso et al. [23] provides empirical evidence that institutional quality is a crucial factor influencing medium- and long-term growth in OECD countries. The estimation results indicate that a one-point increase in institutional quality is associated with an estimated 16.88 percentage point increase in potential GDP per capita growth. This finding suggests that making significant improvements in institutional quality is essential for enhancing economic growth.

Liko [24] examines the role of institutions in promoting employment and economic growth using a sample of eight Balkan countries during the period 2000-2022. The findings reveal a positive and statistically significant relationship between the quality of institutions and economic growth. The study concludes that ongoing improvements in institutional quality and education are essential for fostering growth and creating jobs in developing countries.

In general, there are many studies providing theoretical and empirical evidence on the relationship between institutional quality and economic growth in economies around the world. However, the results and conclusions of these studies are inconsistent, especially the trend of the impact of institutional quality on economic growth in the long run has not been clarified. In addition, studies on the impact of institutional quality on economic growth in ASEAN countries are very limited and have not clarified the trend of the impact of institutional quality on economic growth in the long run. Therefore, an empirical study assessing the long-term impact of institutional quality on economic growth in ASEAN countries is necessary and is the desired objective of this study.

3. Data and Methodology

3.1. Data Sources

This study aims to assess the long-term effects of institutional quality on economic growth in ASEAN countries. The study uses data from 10 ASEAN countries (excluding Timor-Leste) for the period from 2000 to 2022, sourced from the World Development Indicators (WDI) published by the World Bank and the Worldwide Governance Indicators (WGI) presented by Kaufmann et al. [25].

3.2. Estimation Techniques

This study employs the Fully Modified Ordinary Least Squares (FMOLS) estimation method, as proposed by Kao and Chiang [26], to investigate the long-term relationship between institutional quality and economic growth. The FMOLS method effectively addresses issues of endogeneity, autocorrelation and heteroskedasticity. Furthermore, the study applies Canonical Cointegrating Regression (CCR) to validate the results obtained from the FMOLS estimation. CCR is a robust and stable estimation technique, particularly useful when the variables being analyzed exhibit cointegration. Additionally, CCR effectively solves endogeneity and autocorrelation, which is especially beneficial in cases of small sample sizes.

3.3. Model Specification

This study develops an econometric model to analyze the long-term impact of institutional quality on economic growth. It combines the neoclassical production function proposed by Solow [27] with the endogenous growth theories [8, 9]. Based

on the studies of Nawaz et al. [18]; Alexiou et al. [12]; Asghar et al. [19]; Epaphra and Kombe [20]; Bhattacharjee [21]; Afonso et al. [23]; Sari and Prastyani [1] and Liko [24], this study develops an econometric model to study the long-run impact of institutional quality on economic growth and proposes the following:

GDP = f(INS, INV, HC, OPEN, INF) (1)

In the above model, GDP is used as a proxy for growth in output of goods and services expressed as a function of institutional quality, investment capital, human capital, trade openness and inflation.

For the dynamic panel data used in this study, equation (1) can be presented in tabular form as follows:

 $GDP_{it} = \beta_0 + \beta_1 INS_{it} + \beta_2 INV_{it} + \beta_3 HC_{it} + \beta_4 OPEN_{it} + \beta_5 INF_{it} + \epsilon_{it} (2)$

The above model describes the impact of institutional quality, investment capital, human capital, trade openness, and inflation rate on economic growth of ASEAN countries.

Table 1.

Description and measurement of variables.

Variables	Measurement	Acronym	References	Data Source
Dependent variable				
Economic growth of	GDP growth rate (%)	GDP _{it}	Asghar, et al. [19] and	World Development
country i in year t			Liko [24]	Indicators
Independent variables	I			I
	Voice and	VA _{it}	Epaphra and Kombe [20]	
	accountability		and Afonso et al. [23]	
	Political stability	PS _{it}	Epaphra and Kombe [20];	
			Afonso et al. [23] and Sari	
			and Prastyani [1]	
	Government	GE _{it}	Epaphra and Kombe [20];	
	effectiveness		Afonso et al. [23] and Sari	
			and Prastyani [1]	
	Quality of regulations	RQ _{it}	Epaphra and Kombe [20]	
Institutional quality of			and Afonso et al. [23]	
country 1 in year t	Rule of law	RL _{it}	Epaphra and Kombe [20];	
			Afonso et al. [23], and Sari	
	~	~~	and Prastyani [1].	
	Control of corruption	CC _{it}	Asghar, et al. [19];	
			Epaphra and Kombe [20];	Worldwide Covernance
			Afonso et al. [23] and Sari	Indicators
		DIG	and Prastyani [1].	
	Institutional Quality	INS _{it}	Nawaz, et al. [18]; Epaphra	Worldwide Governance
	Index.		and Kombe [20] and	Indicators/
			L1ko [24]	Principal Component
Control unrighted				Analysis
Control variables	Cross conital	INIV	Nowaz at al [18] and Like	World Development
investment capital of	formation (% of	IIN V _{it}		Indiastors
country I in year t	CDP)		[24]	Indicators
Human capital of	Government	HC	Nawaz et al [18] and	World Development
country i in year t	spending on	IIC _{it}	Rhattacharige [21]	Indicators
country i m year t	education (% of		Dhattaenarjee [21].	maleators
	GDP)			
Trade openness of	Total import and	TOit	Nawaz et al [18]. Asghar et	World Development
country i in year t	export turnover (%	ron	al [19]: Bhattachariee [21]:	Indicators
	GDP).		Afonso et al. [23] and Liko	
			[24]	
Inflation of country i in	Inflation rate (%).	INF _{it}	Alexiou et al. [12];	World Development
year t		n n	Nawaz et al. [18]; Epaphra	Indicators
			and Kombe [20] and	
			Afonso, et al. [23];	

Note: For the INS variable, this study uses principal component analysis (PCA) to construct a composite index based on six component indices, including voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption as proposed by Kaufmann et al. [25].

4. Empirical Results and Discussion

4.1. Descriptive Statistics

Descriptive statistics of the study variables are presented in the table below as follows:

Variables	Mean	Std. Dev	Minimum	Maximum
GDP	4.4755	3.9087	-12.02	14.52
VA	- 0.7630	0.6566	-2.2134	0.1848
PS	- 0.1154	0.9091	-2.2117	1.5991
GE	0.1651	1.0132	-1.6840	2.4696
RQ	0.0123	0.9719	-2.2737	2.2522
RL	- 0.1758	0.8758	-1.5512	1.8378
CC	- 0.2449	0.9913	-1.6728	2.2316
INS	- 0.3558	2.0250	-4.2081	4.2477
INV	8.0897	18.3908	- 137.635	73.048
HC	0.5505	1.4960	-1.684 0	4.8867
BIG	122.96	87.088	11.855	437.32
INF	4.4081	6.7959	-22.0914	42.3032

Table 2.Descriptive statistics of variables.

Table 2 shows that the GDP growth of ASEAN countries has an average value of 4.4755%, the smallest is -12.02%, the largest is 14.52%, and the standard deviation is 3.9087%. Institutional quality (INS) has a mean value of -0.3558, with a minimum of -4.2081, a maximum of 4.2477, and a standard deviation of 2.0250. Gross capital formation (INV) shows a mean of 8.0897%, with a minimum of -137.6351%, a maximum of 73.04876%, and a standard deviation of 18.39084%. Human capital (HC) has a mean of 0.5505%, with a minimum of 1.6840% and a maximum of 4.8867%. The standard deviation for human capital is 1.4960%. Trade openness (TO) has a mean value of 122.96%, with a minimum of 11.855%, a maximum of 437.32%, and a standard deviation of 87.088%. Lastly, the inflation rate (INF) has a mean value of 4.4081%, with a minimum of -22.0914%, a maximum of 42.3032%, and a standard deviation of 6.7959%.

4.2. Correlation Analysis

Table 3.The result of the correlation matrix.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	GDP	1.0000											
2	VA	-0.1565	1.0000										
3	PS	-0.1388	-0.9065	1.0000									
4	GE	-0.2630	0.9806	0.9697	1.0000								
5	RQ	-0.3121	0.9629	0.9316	0.9584	1.0000							
6	RL	-0.2540	0. 9096	0.9088	0.9776	0.9487	1.0000						
7	CC	-0.2529	0. 9939	0.9665	0.9419	0.9307	0.9656	1.0000					
8	INS	-0.2671	0.9716	0.9282	0.9838	0.9769	0.9857	0.9712	1.0000				
9	INV	0.1472	0.0672	0.5359	0.4272	0.4777	0.4714	0.5257	0.4936	1.0000			
10	HC	0.0700	0.1321	0.5267	0.6102	0.5021	0.6127	0.5638	0.5809	0.2703	1.0000		
11	BIG	-0.0299	0.2228	0.6359	0.7629	0.7400	0.7898	0.7991	0.7777	0.7687	0.5866	1.0000	
12	INF	0.1857	-0.2126	-0.1317	-0.2386	-0.2677	-0.2253	-0.1976	-0.2381	-0.0622	0.0384	-0.1390	1.0000

Table 3 presents the results of the correlation analysis among the variables. It indicates a negative correlation between the variables VA, PS, GE, RQ, RL, CC, INS, and the GDP variable. In contrast, the variables FDI, HC, and INF show a positive correlation with GDP. Furthermore, the pairwise correlation coefficients for the variables VA, PS, GE, RQ, RL, CC, and INS are all greater than 0.9, so there may be multicollinearity between the research variables [28].

4.3. Cross-Sectional Dependence Tests Results.

The countries considered in this study are similar in the economic development process. Hence, the possible economic assimilation of the countries cannot be ignored as it may lead to cross-country interrelationships. To address this issue, the study has adopted two cross-sectional dependence tests, namely, the Breusch Pagan LM [29] tests and the Pesaran CD test [30].

Table 4.

The result of the cross-section dependence test.

	Pesaran CD test		Breusch Pagan LM test			
Variable	CD Test	P-value	Statistic	P-value		
GDP	14.221***	0.0000	33.67***	0.0000		
VA	2.389**	0.0169	952.72 ***	0.0000		
PS	3.745***	0.0002	1011.47***	0.0000		
GE	4.916***	0.0000	1129.06***	0.0000		
RQ	5.060***	0.0000	1056.35***	0.0000		
RL	9.199***	0.0000	1130.18***	0.0000		
CC	1.743***	0.0813	1109.61***	0.0000		
INS	14.872***	0.0000	1128.21***	0.0000		
INV	10.508***	0.0000	877.54***	0.0000		
HC	18.898**	0.0227	1117.90***	0.0000		
BIG	1.807*	0.0708	1103.54***	0.0000		
INF	7.656***	0.0000	5.12**	0.0118		

Note: * 10% significance level; **5% significance level; *** 1% significance level.

The test results shown in Table 4 indicate that there is cross-sectional dependence at the 1%, 5%, and 10% significance levels. Given the interdependence of variables in the data series, this study employs second-generation unit root tests (CIPS and CADF) to check the stationarity of the variables.

4.4. Panel unit root Tests

The research variables exhibit cross-sectional dependence; therefore, this study employs the second-generation unit root tests, specifically the cross-sectional Augmented Dickey-Fuller (CADF) test and the Im et al. [31] CIPS test developed by Pesaran [32].

Panel unit root results					
CIPS Test			CADF Test		Order of integration
Variables	Level	First difference	Level	First difference	
GDP	-0.914	-2.792***	-0.976	-2.913***	I(1)
VA	-1.874	-2.715**	-1.453	-2.701***	I(1)
PS	-2.072	-3.437***	-1.951	-3.550***	I(1)
GE	-1.804	-3.933***	-1.768	-3.933***	I(1)
RQ	-1.918	-3.425***	-1.918	-3.425***	I(1)
RL	-1.768	-3.073***	-1.768	-3.073***	I(1)
CC	-1.947	-3.578***	-1.794	-3.367***	I(1)
INS	-1.932	-3.605***	-1.932	-3.605***	I(1)
INV	-1.834	-3.631***	-2.129	-3.945 ***	I(1)
HC	- 1.344	-2.781***	-1.039	-3.617 ***	I(1)
ТО	-0.998	-3.307***	-0.998	-3.307***	I(1)
INF	-1.082	-3.192 ***	-1.082	-4.192 ***	I(1)

Та	ble	5.	
D	1		

Note: * 10% significance level; ** 5% significance level; *** 1% significance level.

The results of the second-generation unit root test (CIPS and CADF) show that all variables are stationary at the first difference I(1) with a significance level of 1%. The data of the research variables are also stationary at the first difference, so it is suitable for using FMOLS estimates.

4.5. Cointegration Test

The common cointegration tests, such as Johansen [33] and Kao and Chiang [26], can be biased when there is crossdependence between variables. This study employs the Westerlund [34] cointegration test as recommended by Dauda et al. [35].

Table 6.

Co-integration test results

Cointegration tests	t-Statistics	P-value
Westerlund		
Variance ratio	-3.4676	0.0000
Pedroni		
Modified Phillips–Perron t	3.6804	0.0001
Phillips–Perron t	-8.9723	0.0000
Augmented Dickey–Fuller t	-8.6366	0.0000
Kao		
Modified Dickey–Fuller t	-4.3389	0.0000
Dickey–Fuller t	-5.6205	0.0000
Augmented Dickey–Fuller t	-1.9867	0.0289
Unadjusted modified Dickey–Fuller t	-8.7806	0.0000
Unadjusted Dickey–Fuller t	-6.7812	0.0000

The results of the Westerlund cointegration test [34] in Table 6 show that the research variables have a cointegration relationship or there is a long-run relationship between the variables. This conclusion is further supported by the findings of the Pedroni [36] test and Kao and Chiang [26] the above conclusion is also supported. Subsequently, the study proceeds to evaluate the long-run impact of the independent and control variables on economic growth in ASEAN countries using the Fully Modified Ordinary Least Squares (FMOLS) model.

4.6. Estimation results

The estimation results using the FMOLS method are presented in the following table:

Table 7.

Table 7.	
Panel FMOLS estimation re	sults.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
VA	4.12 [8.08]						
PS		4.06 [15.27]					
GE			-1.76 [-5.4]				
RQ				-6.73 [-24.61]			
RL					3.97 [17.47]		
CC						-0.08 [8.70]	
INS							1.32 [7.83]
INV	0.66 [33.07]	0.73 [33.04]	0.67 [34.39]	0.79 [38.66]	0.53 [34.77]	0.50 [27.22]	0.70 [41.14]
НС	0.84 [3.98]	0.59 [19.22]	0.51 [3.87]	0.59 [3.78]	0.62 [6.06]	0.65 [12.32]	0.96 [13.19]
ТО	-0.10 [-11.49]	-0.12 [-12.10]	-0.10 [-6.11]	-0.13 [-14.00]	-0.08 [-4.46]	-0.12 [-7.43]	-0.10 [-10.67]
INF	0.04 [12.13]	0.12 [17.35]	0.04 [4.60]	0.01 [4.08]	0.09 [17.80]	0.06 [15.5]	0.10 [23.86]

Note: Values in square brackets are t-statistics.

4.7. Canonical Cointegrating Regression for Robustness Check

To test the reliability of the estimates from FMOLS, Canonical Cointegrating Regression (CCR) is used to test the longrun relationship estimates among the variables. The results of the CCR estimation are shown in Table 8.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
VA	4.56 [3.78]						
PS		4.18 [10.95]					
GE			-0.68 [-4.34]				
RQ				-6.87 [-15.19]			
RL					3.75 [13.59]		
CC						-0.44 [7.11]	
INS							0.92 [5.88]
INV	0.66 [17.63]	0.74 [15.36]	0.66 [20.05]	0.83 [19.88]	0.52 [16.61]	0.54 [13.30]	0.92 [21.78]
НС	0.85 [3.54]	0.57 [9.23]	0.53 [4.76]	0.63 [4.94]	0.63 [3.96]	0.68 [7.73]	0.55 [4.79]
ТО	-0.10 [6.92]	-0.12 [7.68]	-0.10 [4.52]	-0.13 [8.92]	-0.08 [-2.87]	-0.12 [2.56]	-0.07 [4.04]
INF	0.03 [5.44]	0.10 [8.70]	0.02 [4.28]	0.01 [3.29]	0.08 [8.97]	0.03 [6.63]	0.07 [11.88]

 Table 8.

 Panel CCR estimation results.

Note: Values in square brackets are t-statistics.

The CCR model results are consistent with the FMOLS model estimation method, with only the values of the regression coefficients differing.

4.8. Discussion of Research Results

The estimation results from the FMOLS and CCR models show that:

Institutional quality has a statistically significant positive impact on long-term economic growth in both the FMOLS and CCR models. Good institutional quality creates a supportive environment for business activities, encourages capital accumulation, technology transfer, and efficient exploitation of resources, bringing economic growth to ASEAN countries in the long term. However, government effectiveness, regulatory quality, and corruption control are components of institutional quality that can hinder economic growth in ASEAN countries in the long term. This research result is consistent with the conclusions of studies by Valeriani and Peluso [17], Asghar et al. [19], and Afonso et al. [23] but contrary to the research results of Alexiou et al. [12] and Liko [24].

Gross capital formation has a positive impact on long-term economic growth in both the FMOLS and CCR models. Gross capital formation or gross domestic investment reflects the growth of investments aimed at enhancing a country's productive capacity, thereby generating domestic value and promoting economic growth. The positive effect of gross capital accumulation suggests that the efficient use of capital has increased the marginal productivity of capital, owing to the adoption of modern technological advancements and improvements in the quality of human resources. These findings are consistent with the conclusions of previous studies by Alexiou et al. [12], Asghar et al. [19], Bhattacharjee [21], and Liko [24].

Human capital, as measured by government spending on education, has a positive impact on long-term economic growth in ASEAN countries in both the FMOLS and CCR models. Increased investment in education contributes to enhancing the quality of human resources and the level of science and technology, while also fulfilling infrastructure requirements necessary for economic development. Moreover, the quality of human capital directly influences labor productivity and the efficient use of economic resources, thereby fostering economic growth in ASEAN countries. Additionally, a highly skilled workforce can formulate better policies to promote sustainable long-term growth. These findings are consistent with the results of Bhattacharjee [21] and Liko [24].

This study provides evidence that trade openness has a negative impact on long-term economic growth in ASEAN countries. International trade offers many benefits through more efficient resource allocation driven by production specialization. It also enables countries to access modern technologies, exploit comparative advantages, promote technological innovation, and increase productivity. However, in the case of ASEAN countries, a large trade openness can make their economies more vulnerable to adverse external shocks, which may lead to negative effects on long-term economic growth. These findings are consistent with those of Alexiou et al. [12], Asghar et al. [19], Bhattacharjee [21], and Liko [24].

The research results show that inflation rates have a positive impact on economic growth in ASEAN countries in the long run. ASEAN countries maintain reasonable inflation rates, making investment more attractive, encouraging businesses to expand production scale. On the other hand, inflation stimulates consumption, while enhancing the international competitiveness of export goods, helping to improve the trade balance, increasing aggregate demand, thereby promoting long-term economic growth. This research result is also consistent with the results of previous empirical studies such as those of Afonso et al. [23] and Bhattacharjee [21], but contrary to the results of Alexiou et al. [12].

5. Conclusion, Policy Implications and Future Directions

5.1. Conclusion

This study aims to assess the impact of institutional quality on economic growth in ASEAN countries in the long run, with data collected from the World Bank (WB) database for the period 2000-2022. The study uses FMOLS and CCR estimation techniques, with independent variables and control variables used in this study being institutional quality, foreign direct investment, human capital, trade openness, and the inflation rate. The results of the study show that the components of institutional quality, such as voice and accountability, political stability, rule of law, and control variables such as foreign direct investment, human capital, and the inflation rate have a positive impact on economic growth in ASEAN countries in the long run. In contrast, other aspects of institutional quality, such as government effectiveness, regulatory quality, control of corruption, and trade openness, negatively impact economic growth in ASEAN countries in the long run. From the research results, some policy implications are proposed to contribute to improving institutional quality to promote economic growth for ASEAN countries.

5.2. Policy implications

Based on the above research results, to promote economic growth in ASEAN countries in the long term, it is necessary to build a strong legal system to protect property rights and ensure the enforcement of contracts, maintain the necessary political stability, and minimize administrative procedures for economic activities, creating a transparent and predictable business environment. In addition, it is necessary to enhance transparency in the public sector, accountability, and build effective government through improving the capacity of civil servants as well as transparency and credibility in the government's commitment and reform policies, control corruption, and improve institutional quality indicators. Furthermore, ASEAN countries need to increase investment spending on infrastructure systems and public works to create job opportunities and stimulate economic growth. On the other hand, it is necessary to use investment capital effectively, improve the quality of human resources through increasing public spending on education, continue to improve the investment environment to unblock capital flows in each country, and create favorable conditions to attract foreign direct investment. Additionally, ASEAN countries need to control inflation at a reasonable level, maintain macroeconomic stability, promote trade liberalization, promote comparative advantages in international trade, and promote intra-bloc trade to exploit the comparative advantages of each country, thereby promoting economic growth for ASEAN countries.

5.3. Future directions

Although the study indicates that various aspects of institutional quality have an impact on economic growth in ASEAN countries in the long run, to gain a deeper understanding of the relationship between institutions and growth, future research should focus on individual ASEAN countries or broaden the scope to include other regions. This would enhance our understanding of how institutional quality affects economic growth in countries with varying levels of development. On the other hand, this study only focuses on the relationship between institutional quality and economic growth in the long run, but the relationship between institutional quality and economic growth in the short run may differ from the results of this study.

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