



## THE IMPACT OF TRADE OPENNESS, GDP PER CAPITA, GOVERNMENT SPENDING, AND BANKING SECTOR DEVELOPMENT ON FINANCIAL DEVELOPMENT IN ASEAN-5 COUNTRIES

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### ABSTRACT

The growth of the banking sector and economic growth are key indicators of a country's success. A well-developed financial sector plays a crucial role in stimulating economic activity, while an underdeveloped financial sector can lead to liquidity constraints that hinder economic growth. This study examines the impact of trade openness, GDP per capita, government spending, and banking sector development on financial development in ASEAN-5 countries, namely Indonesia, Malaysia, the Philippines, Singapore, and Thailand, from 1981 to 2020. Using a quantitative approach, this study applies panel data regression analysis, which combines time series and cross-sectional data. The data collection methods include literature review and documentation studies. The findings indicate that trade openness, GDP per capita, government spending, and banking sector development each have a significant positive impact on financial development. This suggests that increasing trade openness enhances financial sector growth by facilitating capital flows and investments. Similarly, higher GDP per capita reflects improved economic conditions that contribute to financial sector expansion. Government spending plays a vital role in strengthening financial institutions and infrastructure, while banking sector development directly supports financial deepening and economic progress. The study concludes that both individually and collectively, these factors contribute to the financial development of ASEAN-5 countries. Strengthening policies that promote trade liberalization, economic growth, and financial sector development can further enhance financial stability and economic resilience in the region.

**Keywords:** Trade Openness, GDP Per Capita, Government Spending, Banking Sector Development, Financial Development

### INTRODUCTION

Financial development serves as a cornerstone of economic growth, fostering efficient capital allocation, promoting investment, and enhancing economic stability (Gizaw et al., 2024). A well-developed financial sector plays a pivotal role in supporting businesses by providing access to credit, facilitating investment, and strengthening monetary policy transmission (Hunjra et al., 2022). These functions collectively contribute to long-term economic progress by ensuring liquidity, enabling efficient risk management, and supporting financial inclusion (Meniago et al., 2025). In the context of emerging economies, particularly in ASEAN-5 countries—Indonesia, Malaysia, the Philippines, Singapore, and Thailand—financial development is essential for sustaining economic expansion, improving market competitiveness, and fostering regional financial integration (Kenedi, 2022).

Over the past few decades, ASEAN-5 countries have witnessed rapid economic growth, largely driven by increasing trade liberalization, structural reforms, and advancements in the financial sector (Kenedi, 2024). Trade openness has played a significant role in accelerating this development by facilitating capital inflows, encouraging technological innovation, and enhancing market efficiency (Seti et al., 2025). When economies become more open to trade, they gain access to a broader range of financial instruments, diversified investment opportunities, and increased competition, which collectively strengthen financial markets (Nam & Ryu, 2024). Additionally, GDP per capita serves as a crucial indicator of economic prosperity, reflecting household income levels, savings potential, and demand for financial services (Dědeček & Dudzich, 2022). Higher income levels contribute to greater financial sector participation, as individuals and businesses seek banking services, investment products, and credit facilities to support consumption and entrepreneurial activities (Feghali et al., 2021).

Government spending also plays a vital role in financial development by ensuring macroeconomic stability and fostering investor confidence (Ngigi et al., 2024). Public expenditures directed towards infrastructure, education, and social programs create a more conducive environment for financial deepening. Investments in physical and digital infrastructure, such as transportation networks and internet access, facilitate financial inclusion by enabling remote and underserved populations to engage in financial activities (Nurkodri et al., 2024; Yülek et al., 2017). Furthermore, a strong social safety net and well-managed fiscal policies enhance overall economic resilience, reducing risks associated with financial instability (Onyina & Baye, 2024).

Meanwhile, the banking sector remains the backbone of financial development, as it serves as the primary channel through which credit is allocated to businesses and individuals (Tongurai & Vithessonthi, 2018). A robust banking system contributes to economic growth by facilitating transactions, supporting entrepreneurship, and managing liquidity (Obiora et al., 2022). Well-regulated banks improve access to capital, lower borrowing costs, and provide risk management tools that enhance economic stability. However, banking sector development varies across ASEAN-5 countries due to differences in regulatory frameworks, institutional quality, and financial market maturity (Malarvizhi et al., 2019). While Singapore and Malaysia have established sophisticated banking and capital market systems, other nations in the region continue to face challenges related to financial inclusion, weak regulatory enforcement, and systemic vulnerabilities (Tan, 2022).

Despite the significant progress made in financial development across ASEAN-5 countries, disparities remain due to structural economic differences, variations in governance quality, and differing levels of financial sector liberalization (Kenedi & Sukmawan, 2022). These disparities hinder the full realization of a well-integrated and efficient regional financial system. Additionally, external economic shocks, such as the 2008 global financial crisis and the COVID-19 pandemic, have highlighted the need for resilient financial systems capable of mitigating economic downturns and sustaining long-term growth (Cheema et al., 2022). The COVID-19 pandemic, in particular, exposed weaknesses in financial structures, increased public debt burdens, and disrupted trade flows, underscoring the importance of robust financial institutions and effective monetary policies in supporting economic recovery (Li et al., 2022).

Recognizing the importance of financial integration, the ASEAN Economic Community (AEC) has taken proactive steps to promote financial sector development and regional economic cohesion. The AEC aims to create a single market and production base, enhance financial stability, and facilitate cross-border capital flows. Through policy coordination and regulatory harmonization, ASEAN member states have sought to improve financial connectivity, streamline capital movement, and strengthen financial institutions. By encouraging financial technology adoption and fostering cooperation in banking regulations, the AEC has played a crucial role in enhancing financial sector efficiency. However, several challenges remain, including regulatory fragmentation, inconsistent implementation of financial policies, and uneven access to financial services across the region.

Addressing these challenges requires coordinated efforts among ASEAN-5 countries to develop stronger regulatory frameworks, improve financial literacy, and enhance financial inclusion initiatives. Policymakers must focus on modernizing financial institutions, strengthening risk management mechanisms, and promoting innovation in banking and financial services. Additionally, fostering regional cooperation in capital markets and banking regulations will be key to creating a more integrated and resilient financial system.

This study aims to examine the impact of trade openness, GDP per capita, government spending, and banking sector development on financial development in ASEAN-5 countries from 1981 to 2020. This research provides empirical insights into how these macroeconomic factors influence financial sector growth and stability. By analyzing the long-term trends and relationships among these variables, this study offers valuable contributions to the existing literature on financial development in emerging economies. The findings will serve as a crucial reference for policymakers, financial institutions, and economic development planners seeking

to enhance financial sector resilience, promote economic stability, and strengthen regional financial integration in ASEAN.

As ASEAN-5 countries continue their efforts to build stronger financial systems, understanding the key determinants of financial development will be essential for designing effective policy interventions. A well-developed financial sector will not only drive economic growth but also provide a foundation for sustained regional development, economic resilience, and greater financial inclusion. This research seeks to contribute to the ongoing discourse on financial sector transformation in ASEAN, providing evidence-based insights to support the formulation of policies that enhance financial deepening, foster economic stability, and accelerate sustainable development in the region.

## **METHOD**

This study employs a quantitative research approach using the panel data regression analysis method, which combines cross-sectional data and time-series data. The primary objective is to analyze the effects of variations across different entities and observation periods on financial development. The subject of this research is Financial Development, while the object of study is the ASEAN-5 countries (Indonesia, Malaysia, the Philippines, Singapore, and Thailand). The study utilizes secondary data sourced from the official World Bank database, covering the period from 1981 to 2020.

This study examines financial development as the dependent variable, represented by the Financial Development Index. This index consolidates multiple financial indicators through a structured process of normalization, aggregation into sub-indices, and final index formulation, providing a comprehensive measure of financial sector progress.

The independent variables in this study include trade openness, GDP per capita, government spending, and banking sector development. Trade openness is measured as the sum of exports and imports of goods and services as a percentage of GDP, reflecting the extent of a country's integration into the global economy. GDP per capita, expressed in current US dollars, is calculated by dividing total GDP by the mid-year population, serving as an indicator of economic prosperity and financial sector demand. Government spending is represented by General Government Final Consumption Expenditure (% of GDP), encompassing all government expenditures on goods, services, and employee compensation, except for military capital expenditures. Lastly, banking sector development is assessed through Deposit Money Banks' Assets to GDP (%), which reflects the share of total banking assets in relation to GDP. This indicator

captures the role of commercial banks and other financial institutions in financial development by measuring their asset holdings and financial intermediation capacity.

## RESULTS AND DISCUSSION

### Descriptive Statistics

**Table 1.** Descriptive Statistics

	TO	GDPC	GOV	BSD	FD
Mean	143.4977	8449.658	11.13315	8678.205	0.455995
Median	102.6947	3039.020	10.71695	9276.500	0.398798
Maximum	437.3267	66859.34	18.32138	17137.00	0.793245
Minimum	32.18014	440.3724	5.693508	1478.000	0.145660
Std. Dev.	113.0251	14188.80	2.520068	4316.592	0.162944
Observations	200	200	200	200	200

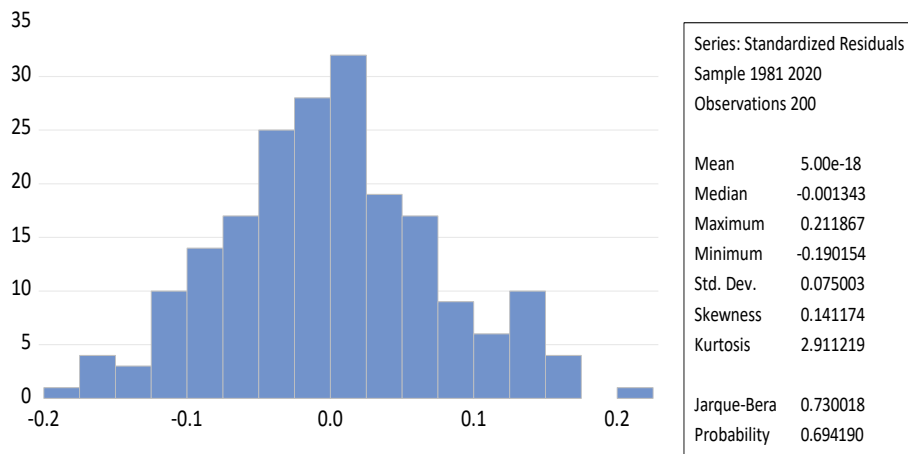
The descriptive statistics in Table 1 provide insights into the distribution and variability of the variables used in the study. Trade Openness (TO) has a mean of 143.50, with a wide range from 32.18 to 437.33, indicating significant variation across observations. GDP per Capita (GDPC) exhibits substantial dispersion, with a mean of 8,449.66 and a high standard deviation of 14,188.80, reflecting economic disparities among ASEAN-5 countries. Government Spending (GOV) is relatively stable, averaging 11.13% of GDP. Banking Sector Development (BSD) and Financial Development (FD) show moderate variations, suggesting differences in financial sector maturity. The dataset includes 200 observations, ensuring robustness in analysis.

### Diagnostic Test

A diagnostic test in panel data regression is conducted to ensure the validity and reliability of the model by checking key assumptions. The main diagnostic tests include:

#### Normality Test

The Normality Test is conducted to determine whether the residuals of the regression model are normally distributed. This is important because many statistical tests, including hypothesis testing and confidence interval estimation, assume normality. If the p-value of the normality test is greater than the significance level (e.g., 0.05), the residuals are considered normally distributed, indicating that the assumption of normality is met.



**Figure 1.** Normality Test Results

Based on the analysis, the data in this study follow a normal distribution. This is evidenced by the probability value of 0.694190, which exceeds the significance level ( $\alpha = 5\%$ ). Since the probability value is greater than 0.05, the residuals satisfy the normality assumption, indicating that the model meets the requirement for normal distribution.

### Multicollinearity Test

Multicollinearity test is conducted to determine the correlation between independent variables in a regression model.

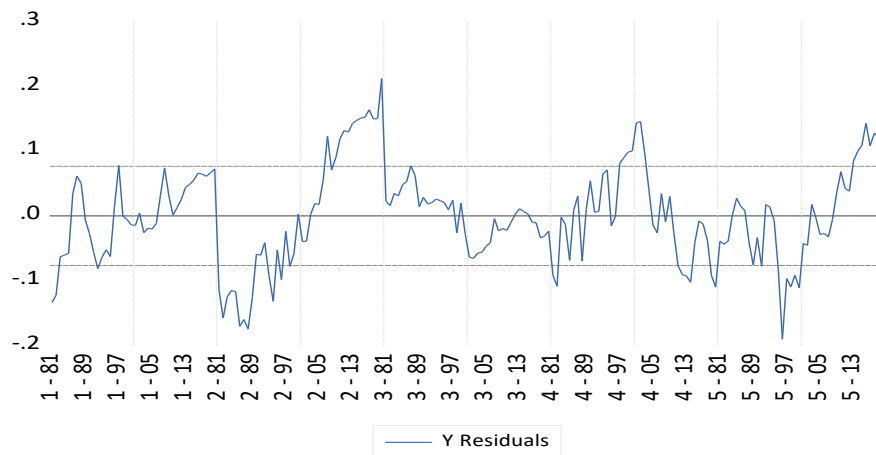
**Table 2.** Multicollinearities Test Results

	TO	GDPC	GOV	BSD
TO	1.000000			
GDPC	0.748459	1.000000		
GOV	-0.008582	-0.107170	1.000000	
BSD	0.594825	0.492548	0.494197	1.000000

The multicollinearity test results in Table 2 show the correlation coefficients among the independent variables: Trade Openness (TO), GDP per Capita (GDPC), Government Spending (GOV), and Banking Sector Development (BSD). A high correlation (above 0.8) indicates potential multicollinearity issues. The highest correlation is between TO and GDPC (0.748459), which is below the critical threshold of 0.8, suggesting no severe multicollinearity. Other variables exhibit lower correlations, further confirming that multicollinearity is not a concern in this study. Thus, the independent variables can be reliably used in the regression analysis without significant distortion in coefficient estimates.

### Heteroscedasticity Test

The heteroscedasticity test is conducted to test whether in a regression model, there is an inequality of variables or residuals from one observation to another.



**Figure 2.** Heteroscedasticity Test Results

From the residual graph of the heteroscedasticity test, it can be observed that the residual values range between 0.3 and -0.3, which remain well within the threshold limits of 500 and -500 ( $0.3 < 500$  and  $-0.3 > -500$ ). This indicates that the variance of the residuals is consistent across observations, suggesting that heteroscedasticity is not present in the model. Therefore, the assumption of homoscedasticity is met, confirming that the model passes the heteroscedasticity test.

**Autocorrelation Test**

The autocorrelation test is used to determine whether there is a correlation between the error terms in the regression model across different time periods. Specifically, it examines whether the residuals in period  $t$  are correlated with those in period  $t-1$  (previous period). Detecting autocorrelation is crucial, as its presence can lead to inefficient estimates and affect the reliability of hypothesis testing in time-series and panel data analysis.

**Table 3.** Autocorrelation Test Results

F-statistic	2.470224 Prob. F(2,43)	0.0965
Obs*R-squared	5.152693 Prob. Chi-Square(2)	0.0761

The autocorrelation test results indicate that the F-statistic is 2.470224 with a probability value of 0.0965, and the Obs\*R-squared value is 5.152693 with a probability of 0.0761. Since both probability values are greater than the significance level of 5% ( $\alpha = 0.05$ ), it can be concluded that there is no significant autocorrelation in the model. This suggests that the residuals

are independent across observations, fulfilling the assumption of no autocorrelation in the regression model.

### Model Selection Test

The Model Selection Test is conducted to determine the most appropriate panel data regression model among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The selection process typically involves the following tests:

- a. Chow Test – Used to compare the Common Effect Model (CEM) and Fixed Effect Model (FEM). If the p-value is  $< 0.05$ , FEM is preferred; otherwise, CEM is used.
- b. Hausman Test – Compares the Fixed Effect Model (FEM) and Random Effect Model (REM). If the p-value is  $< 0.05$ , FEM is chosen; otherwise, REM is more suitable.

### Chow Test

The chow test is conducted to determine the best model to use between the common effect model or the fixed effect model.

**Table 4.** Chow Test Results

Redundant Fixed Effects Tests  
 Equation: Untitled  
 Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.791444	(4,191)	0.0000
Cross-section Chi-square	37.305276	4	0.0000

The results of the Chow Test indicate that the Fixed Effect Model (FEM) is more appropriate than the Common Effect Model (CEM). This conclusion is based on the p-values of both the Cross-section F-test (0.0000) and the Cross-section Chi-square test (0.0000), which are less than 0.05. This suggests that individual differences across cross-sections (ASEAN-5 countries) significantly influence the model. Therefore, the null hypothesis (which favors CEM) is rejected, and the alternative hypothesis (which supports FEM) is accepted.

### Hausman Test

The Hausman test is conducted to determine the best model to use between the fixed effect model or the random effect model.

**Table 5.** Hausman Test Results

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq.		
	Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	39.165775	4	0.0000

The Hausman Test results indicate that the Fixed Effect Model (FEM) is more appropriate than the Random Effect Model (REM) for this study. The Chi-Square statistic is 39.165775 with a p-value of 0.0000, which is less than 0.05. This means that the null hypothesis (which supports REM) is rejected, and the alternative hypothesis (which favors FEM) is accepted. Therefore, country-specific effects are correlated with the independent variables, making FEM the better choice for analyzing financial development in ASEAN-5 countries.

**Panel Data Estimation (Fixed Effect Model)**

From the results of the data estimation carried out, it can be seen that the data processing results obtained show that the most appropriate data model used in this study is the Fixed Effect Model, which can be explained through the following equation.

**Table 6.** Fixed Effect Model Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.050036	0.048018	1.042021	0.2987
TO	0.001410	0.000201	7.016742	0.0000
GDPC	4.18E-06	7.05E-07	5.933894	0.0000
GOV	0.006242	0.003154	1.979140	0.0492

BSD	1.14E-05	3.24E-06	3.515401	0.0005
Effects Specification				
Cross-section fixed (dummy variables)				
Root MSE	0.074816	R-squared		0.788122
Mean dependent var	0.455995	Adjusted R-squared		0.779248
S.D. dependent var	0.162944	S.E. of regression		0.076558
Akaike info criterion	-2.257577	Sum squared resid		1.119479
Schwarz criterion	-2.109152	Log likelihood		234.7577
Hannan-Quinn criter.	-2.197512	F-statistic		88.80803
Durbin-Watson stat	0.250322	Prob(F-statistic)		0.000000

The results of the Fixed Effect Model (FEM) test in Table 6 provide insights into the relationship between financial development and its key determinants—trade openness, GDP per capita, government spending, and banking sector development—in ASEAN-5 countries. Trade openness (TO) has a coefficient of 0.001410 with a p-value of 0.0000, indicating a statistically significant positive relationship with financial development. This suggests that increased trade, as measured by the sum of exports and imports as a percentage of GDP, contributes to financial sector growth by facilitating capital flows, enhancing market efficiency, and fostering innovation in financial services (Nam & Ryu, 2024; Zahonogo, 2017).

Similarly, GDP per capita (GDPC) has a coefficient of 4.18E-06 and a p-value of 0.0000, confirming its strong positive and statistically significant effect on financial development. Higher GDP per capita reflects economic prosperity, increasing demand for financial services, promoting financial inclusion, and driving the expansion of the financial sector (Thathsarani et al., 2021).

Government spending (GOV) is also positively associated with financial development, with a coefficient of 0.006242 and a p-value of 0.0492, indicating significance at the 5% level. This finding suggests that government expenditures, particularly in infrastructure, education, and public services, play a crucial role in strengthening financial markets and fostering economic stability (Chen et al., 2019).

Additionally, banking sector development (BSD), measured by deposit money banks' assets as a percentage of GDP, has a coefficient of 1.14E-05 and a p-value of 0.0005, confirming

its highly significant positive impact. A well-developed banking sector supports financial growth by improving access to credit, managing liquidity, and enhancing financial intermediation (Farhat, 2023).

Overall, the Fixed Effect Model results indicate that trade openness, GDP per capita, government spending, and banking sector development all contribute positively to financial development in ASEAN-5 countries. Among these factors, trade openness and GDP per capita show the strongest significance, emphasizing their critical role in shaping financial markets. The significance of government spending highlights the importance of efficient fiscal policies in supporting financial stability, while banking sector development remains essential for ensuring effective financial intermediation (Saefullah et al., 2024). Given these findings, policymakers in ASEAN-5 countries should focus on expanding trade, fostering economic growth, optimizing government spending, and strengthening the banking sector to achieve sustainable financial development.

## CONCLUSION

The findings of this study indicate that trade openness, GDP per capita, government spending, and banking sector development significantly contribute to financial development in ASEAN-5 countries. Trade openness and GDP per capita exhibit the strongest positive effects, highlighting the critical role of international trade and economic growth in strengthening financial markets. Government spending, while also significant, suggests that fiscal policies should be directed toward sectors that enhance financial inclusion and stability. Additionally, the positive impact of banking sector development underscores the importance of financial institutions in facilitating capital flows and promoting economic efficiency.

These findings have important policy implications. Governments should implement strategies that encourage trade liberalization while ensuring macroeconomic stability to maximize financial sector benefits. Investments in infrastructure, digital finance, and regulatory reforms are necessary to strengthen banking sector resilience and improve access to financial services. Moreover, prudent fiscal policies should focus on expenditures that enhance economic productivity, such as education, technology, and infrastructure development.

Despite its contributions, this study has several limitations. The analysis is based solely on secondary data from The World Bank, which may not fully capture country-specific factors affecting financial development. Additionally, the study does not account for institutional quality, financial regulations, or political stability, which could influence the results.

Future research should explore the role of institutional quality, financial technology, and governance in financial development. Expanding the dataset to include more recent years and additional countries would provide a broader perspective. Further studies could also incorporate dynamic panel data models to assess long-term causality and interactions among variables.

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