Stock Market Development and Economic Growth: An Evidence from Six South and Southeast Asian Countries

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ABSTRACT

The study appraised the relationship between stock market development and economic growth in six Asian countries. The study employed collected secondary data from World Bank Indicators of 15 years have been used for the period from 2006 to 2020.

The relationship has been measured in terms of market capitalization, total value of stocks traded, stock turnover ratio and volume of the stock market determined through the total number of companies listed in the stock exchange of each country in countries South and Southeast Asian region. By using linear-log model, the study has found out that development of the stock market affects economic growth significantly.

The development of the stock market has significant and positive effect on the economic growth of Bangladesh, India, Sri Lanka, Indonesia, Malaysia, and Thailand. Further, in response to the second objective of the research study, the best indicator of the capital market is the Volume of the Stock Market (Listed Domestic Companies), which is highly associated with the real economic growth of Bangladesh, India, Sri Lanka, Indonesia, Malaysia, and Thailand.

In addition, the result of the study by employing the stepwise regression analysis shows that the most representative indicator of capital market that is positively associated to the real economic growth of each country is volume of the stock market (Listed Domestic Companies).

Keywords: Stock market development, Economic growth, South and Southeast Asian countries, Market Capitalization.

INTRODUCTION

The economic growth in countries by increasing investment and financial deepening promoted by higher saving depends on financial system of those countries. Therefore, a well-developed financial system is vital for sustainable economic growth.

The activities of the financial system such as mobilizing saving, allocating resources, easing risk management, and improving corporate governance, play an important role in economic development. Stock market as a part of financial system promotes economic development through its liquidity function and lowering charge of rising capital. A well- established stock market promotes to the mobilization of local savings by improving the set of financial instruments and efficiently allocates capital to productive investments which leads to an increase in the rate of economic growth.

However, theory does not provide a single concept of stock market development to guide empirical research, but sound literatures recommend that stock market development is complex, connecting issue of market size, market volume, market liquidity etc.

Bangladesh maintained positive GDP per capita growth rate from 1976, just after five years of getting the

independent status. Bangladesh was able to maintain a stable positive GDP growth rate even during the COVID 19 global pandemic period in 2020.However, all other 5 countries continued negative GDP growth rate during the year.

India maintained negative GDP growth rate in 1979. However, after the liberalization of their economy in 1991, India started to maintain growth rates with a few fluctuations. India maintained the highest negative (- %) GDP growth rate due to COVID 19 global pandemic compared to all other countries.

Sri Lanka sustained positive GDP growth rates after the liberalization of the economy process in 1977. But country showed down its GDP growth rate further. After a 26-year military campaign, the Sri Lankan Armed Forces militarily defeated the Tamil Tigers in May2009, bringing the civil war to an end. Then up to 2019 country had been maintaining growth rate with slight fluctuations. Sri Lanka also maintained a negative (-3.62 %) GDP growth rate due to COVID 19 global pandemic with other countries. Table/FIGURE No.

If we summarize the GDP growth rate in selected Southeast Asian countries, Indonesia, Malaysia, and Thailand maintained very high negative GDP growth rate during the Asian Financial Crises started in Thailand in July 1997 after the Thai baht fell in value. It then spread over the East and Southeast Asia. However, by 2001 Indonesia and Thailand jumped to positive GDP growth rates but Malaysia was unable to catch up.

Due to COVID-19 global pandemic, the above three economies retained with negative GDP growth rates.

During the Global Financial Crisis 2007-09, both Malaysia and Thailand suffered a negative GDP growth rate, but Indonesia was able to survive.

The following table shows a comparison of market capitalization to GDP among six South and

Southeast Asian Countries are presented below.

Table 1 Comparative Information of Domestic Market Capitalization to GDP ratio in Six South and Southeast Asian Countries

No	Country (Name of the main Stock Exchange)	Market Capitalization to GDP Ratio			Percent Change (June -2020 & June – 2021)
		June – 2019	June - 2020	June – 2021	Change %
1.	Bangladesh-Dhaka Stock Exchange (DSE)	15.80	12.30	18.40	49.59
2.	India – Bombay Stock Exchange (BSE)	74.29	62.75	81.39	29.71
3.	Sri Lanka – Colombo Stock Exchange (CSE)	17.00	14.92	21.44	43.70
4.	Indonesia -Indonesia Stock Exchange (IDX)	46.61	35.83	45.02	25.65
5.	Malaysia -Stock Exchange of Malaysia (BURSA MALAYSIA)	109.81	97.19	120.77	24.26
6.	Thailand-Stock Exchange of Thailand (SET)	113.81	89.29	113.83	27.48

Compiled from statistics@world-exchanges.org

The table shows how as a measure of stock market size, the market capitalization relates to the GDP ratio. Malaysia and Thailand efficiently utilized the capital markets in increasing their GDP. However, Bangladesh and Sri Lanka were not very successful, the ratios are 15.80% and 17.00% respectively by June

of 2019. However, by 2021, both Bangladesh and Sri Lanka could significantly achieve a high market capitalization to GDP Ratio compared to other countries. When we compare the market capitalization to GDP Ratio by June 2021 with 2020, Bangladesh has shown the highest percentage rate (49.59%) compared with the other countries.

According to Atapattu and Prabhath (2010), stock markets are expected to play several key roles in long-term perception. First, the most important role is spreading the risks of long-term investment projects. By imposing a degree of control over the investment behavior of companies through continuous monitoring of their share prices can contribute to more efficient investment, this can be taken as the second role. Thirdly, by attracting foreign portfolio flows, the development of stock market can serve to enhance the supply of invest able funds.

The body of the study is as follows: section I for the introduction, the development of six stock markets namely Bangladesh, India and Sri Lanka in South Asia and Southeast Asian markets such as Indonesia, Malaysia and Thailand are discussed in brief in section II. A brief literature review of earlier studies is also presented in section II. Section III explains the methodology and the data sources specification of the model. Section IV includes analysis and discussion of the result. The last section of V appraises the summary and recommendation.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

- To examine the relationship between capital market development and economic growth in selected South and Southeast Asian countries.
- To find out the most demonstrative indicator and the most important factor of capital market that is highly connected to the real economic growth of each country.

LITERATURE REVIEW

Role of the Capital Market in Economic Development

The study has conducted a comprehensive literature survey to review a broader theoretical and empirical literature on financial /stock market development and economic growth in both developed and developing economies.

The classical school of economics describes that the income which is not spending for consumption purpose is savings. Savings would then go to form capital accumulation as savings are equal to investment in a closed economy. Therefore, savings in the economy encourages into investment and net accumulation or the change in capital that will contribute to output growth. According to neo- classical growth models, the long-run growth rate is exogenously determined by either assuming a savings rate (Harrod-Domar model) or a rate of technical progress (Solow model).

Liberalization of financial markets permits financial deepening that causes increased financial intermediation among savers and investors resulting in resourceful allocation of resources among growth sectors of the economy McKinnon (1973) and Shaw (1973). The subsequent financial environment encourages savings and facilitates investments by transferring capital to more productive from less productive sectors of the economy. Consequently, the development of the financial sector would help in the growth of the economy.

Gurley and Shaw (1967) study the relationship between financial markets and real sector activity. They

clarified that one of the differences between developed and developing countries is that the financial system is more developed in the developed world. McKinnon (1973) and Shaw (1973) found that the development of financial markets has been significantly correlated with the growth of national income/output.

Financial deepening hypothesis and Endogenous Growth Theory seem to have gained fame in the recent past. The concept can be used to investigate whether economic growth can be facilitated by financial market development considering the movement of periodic GDP values and stock market indicators.

By describing and utilizing some key stock market development indicators, market capitalization ratio, liquidity ratio (traded stock value/GDP) and turnover ratio (traded stock value/market capitalization), Levine and Zervos (1996) have empirically examined the linking between stock market development and long-run economic growth. An overall stock market development "index" has been developed and used in their study. They have recognized a solid positive relationship between stock market development and long-run economic growth. Their influential variable results show that the prearranged component of stock market development extracted by the first -stage regressions is strongly, positively correlated with economic growth. They proposed through careful case studies which might better identify the causal relations between the two and suggested to identify the policies that will affluence sound security market development by future research.

Empirical Review from South and Southeast Asian and BRICS countries

Atapattu and Prabath (2010) have empirically examined the causal relationship between stock market performance and economic growth in Sri Lanka based on time series data between the period of 1997 and 2008. Econometric methods such as co-integration analysis, error correction mechanism and Granger Causality Tests are employed to explore the relationship between GDP growth rate and three stock market performance proxies. A unidirectional causal relationship is observed between stock market performance indicators and GDP growth of Sri Lanka.

Mukit, Uddin, Islam, & Arif (2014) developed hypotheses for five South Asian countries, Bangladesh, India, Pakistan, Sri Lanka, and Nepal in their study. They investigated the relationship between stock market development and economic growth in five SAARC counties, collected secondary data of 15 years for the period of 1996 -2010.

The relationship measured in terms of market capitalization, total value of stocks traded, stock turnover ratio and volume of the stock market determined through the total number of companies listed in the stock exchange of each country in this region. By using linear -log model, the study has found out that stock market affects economic growth significantly in SAARC countries. Except the above, the result of the study by employing the stepwise regression analysis represents that the most representative indicator of capital market that is positively associated to the real economic growth of each country is market capitalization.

The hypotheses that were developed by Mukit, Uddin, Islam, & Arif (2014) are incorporated to develop the hypotheses for this research for six countries of South Asian and Southeast Asian region namely Bangladesh, India, Sri Lanka, Indonesia, Malaysia, and Thailand.

Srinivasan (2014) endeavored to investigate the direction of causality between stock market development and economic growth in the Indian context. Using the cointegration and causality tests for the period June 1991 to June 2013, the study approves a well-defined long-run equilibrium relationship between the stock market development indicators and economic growth in India. The empirical results show bidirectional causality between market capitalization and economic growth and unidirectional causality from turnover ratio to economic growth in the long-run and short- run. By and large, it can be inferred that the stock market development indicators viz. market capitalization and turnover ratio have a positive influence on economic growth in India.

Rezina, Jahan and Mustafi (2017) investigated the causal relationship between stock market development and economic growth in Bangladesh during the period from 1994 to year 2015. The stock market performance was measured by market capitalization ratio, number of listed companies, total value traded, and turnover ratio and the economic growth was denoted by real gross domestic product. The effect of the stock market reform has been addressed to explain the relationship. The study has been conducted using Augmented Dickey Fuller Unit Root Test, Johansen Cointegration Test and the Granger Causality Test. As the study revealed that the stock market capitalization and economic growth has a long-run causal relationship, stock market regulators should address the policy issues to encourage the investor's confidence by offering better policy formulation.

Mamun, Ali, Hoque, Mowla and Basher (2018) investigated the time series evidence of the influence of stock market development on growth of Bangladesh economy for the period 1993-2016 employing ARDL. Bounds testing approach and finds stock market development has direct impact on economic growth both in the short -run as well as in the long-run together with financial depth, interest rate spread and real effective exchange rate. Granger Causality Tests confirm a bidirectional causal relationship between stock market development and economic growth. However, the study fails to identify a system convergent to the equilibrium regarding stock market development along with other factors that has important economic implications.

Ogbeide and Akanji (2018) evaluated the stock market development and economic growth in these BRICS nations. The data used is quarterly time series data (1994 to 2014) from World Bank Indicators. The Panel Generalized Method based on the fixed effect estimation was employed to determine how stock market development affects the economic growth of BRICS. Diagnostic tests were conducted to determine the robustness and stability of the regression results after carrying out the unit root calculations. The findings disclose that stock market development exerts significant impact on the economic growth. The study further reveals that there was a positive correlation between stock market development indicators and BRICS's economic growth.

Sattar, Ali, Rehman and Naeem (2018) in their study attempted at analyzing the importance of the relationship between stock market development and economic growth in Pakistan, India, and China. The data for GDP and stock market capitalization have been taken from World Bank from 1993 – 2016. This data frame has considered a smart portion of China, Pakistan Economic Corridor. The panel regression is applied by using Stata 12. The Hausman specific test specifies that random effects model is better for the sample used in this study. The results also revealed that stock market capitalization has a positive significant impact on GDP.

Osaseri and Osamwonyi (2019) in their study examined stock market development and economic growth in BRICS. Quarterly time series data for the period 1994Q1 to 2015Q4 were facilitated from World Bank Indicator. The Panel Least Squares based on the fixed effect estimation was utilized to determine how stock market development impacts on the economic growth of BRICS. The study revealed that there is a positive correlation between stock market development indicators and BRICS's economic growth. The study recommends overcoming the weaknesses of each of the BRICS member country and to introduce the strategies necessary, to strengthen these countries should be applied by the governments as policy focus.

Hismendi, Masbar, Nazamuddin, Majid and Suriani (2021) in their study analyzed the causality relationship between sectoral stock markets (agricultural, financial, industrial, and mining sectors) and economic growth in the short and long term as well as to analyze whether it has similar types or not. The data used is quarterly time series data (2009Q1 to 2019Q4). To identify the causality relationship, this study conducts a variable and multivariate causality test. The results of the varying granger causality test show that there is only a one-way relationship, where the economic growth of the agriculture sector affects its shares. A one-way relationship also occurs in stocks of the industrial sector, which has an influence on economic growth. The multivariate causality test shows that the economic growth of the agriculture sector has a two-way causality

relationship, and it also exists between the industrial sector and the financial sector stock markets. The two -way causality relationship between the stock market and sectoral economic growth is a convergence towards long- term equilibrium. As policy implication, the study suggested that the government through the Financial Services Authority and the Indonesia Stock Exchange must maintain stability in the stock market as a supporter of the national economy.

Empirical Review from Middle East and North Africa (MENA) and other countries

Al Salamat and Batayneh (2022) investigated the impact of the stock market performance on the economic growth of a group of Middle East and North Africa (MENA) countries during the period 2000-2019. The study uses unbalanced panel data, unit root test, co-integration test, and autoregressive distributed lag (ARDL) model for data analysis. The findings report that the stock market index, banking sector development, the ratio of foreign direct investment (FDI) to GDP, and the consumer price index, as a proxy of inflation have a significant positive long- run effect on the economic growth, while the ratio of the broad money supply (M2) to the GDP has a significant negative long- run effect on the economic growth. As policy implications, the government should develop and adopt necessary policies to improve and enhance the efficiency of the stock market, thereby attracting new investors inside as well as outside of the country, which results in increasing the economic growth.

Asiri and Abdalla (2015) examined the relationship between stock market development and economic growth in the Kingdom of Bahrain over the twenty-five-year period of 1990 to 2014. Using regression analysis, the study analyzed the relationship between economic growth, measured by GDP growth rate, and stock market indicators, such as size, liquidity, all-share index, turnover, and market capitalization. The major finding was that the stock market indicators have an influence on economic growth in Bahrain. The most significant of these variables are the all-share index, market capitalization, and turnover ratio. The results indicated that stock market development leads to economic growth in Bahrain. Further, this study confirmed that economic growth, in turn, also leads to development of the stock market.

Brown and Nyeche (2016) investigated the imperative of stock market on economic performance in Nigeria. The objective of the study was to examine the relationship between total value traded in the stock market, market capitalization, trade openness, inflation rate and economic growth in Nigeria. The study was basically about the time series data based relating to market capitalization, total value traded ratio, real GDP per capita, inflation rate and trade openness of the economy. The study adopted the Ordinary Least Squares (OLS) techniques of multiple regression and co integration test. The coefficient of Error Correction Model (ECM) appeared with the right sign and is statistically significant at the 5% level. Therefore, it corrects any deviation from long-run equilibrium. The overall fit is satisfactory with an R-squared of 0,790. Moreover, the lag one and two forms of the independent variables were positively signed. While the lag one and two forms of the independent variable (inflation) are negatively signed. Finally, the study suggests that the government should implement the reforms already in place as this will boost the activities of the market.

Albentosa, Asuncion, and Beatriz (2016) examined the link between the stock market and economic growth. Through an empirical analysis for six countries in Eastern Europe (Bulgaria, Slovakia, Hungary, Poland, Czech Republic, and Romania) it tried to study the link between stock market development and economic growth of these countries from 1995 to 2012, to recognize the transition processes, from the Communist to market economies, which began with the fall of the Berlin Wall in 1989. The results show evidence of Granger causality between economic growth variables and financial market variables.

METHODOLOGY

The study involves a comprehensive analysis of the first set of three out of South Asian countries, that is Bangladesh, India, and Sri Lanka. The other five South Asian countries such as Afghanistan, Bhutan, Maldives, Nepal, and Pakistan have been excluded from the study due to unavailability of updated data of

those countries. The second set of three countries is Indonesia, Malaysia, and Thailand that of countries belong to Southeast Asian region.

Finally, this research employed only the data of selected six countries of the South and Southeast Asian countries for this study.

To analyze the effect of stock market development on the real economic growth of the six countries,15 years' secondary data have been used from 2006 to 2020.To collect the data, World Bank Indicators (http://data.worldbank.org/indicator) have been used as the extra source. Hence, the following dependent variable and independent variables were adopted from the study of Mukt, Uddin, Islam, and Arif (2014).Thus the samples have been selected and indicators for evaluating the relationship between stock market development and economic growth including one dependent variable, that is GDP per capita growth (in US$) and four independent variables, such as market capitalization (in US$)as a measure of stock market size, total value of stock traded (in US $) and stock turnover ratio(in percentage)both as a measure of liquidity of the stock market, and volume of the stock market (in US$) determined through the total number of listed companies. The analysis is conducted utilizing R version 4.2.2 software. The summary of descriptive statistics of the variable are shown in Appendix 01.

GDP per capita is measured as GDP divided by the total population of the country. Market capitalization is measured by multiplying the outstanding shares of the companies by their share price. The fundamental theory of the use of this variable (market capitalization) as an indicator of stock market development is that the size of the stock market is positively correlated with the ability to mobilize capital and spread risk. While not a direct measure of trading costs or the uncertainty associated with trading on a particular exchange, theoretical models of stock market liquidity and economic growth directly motivate value traded (Levine (1991); Bencivenga et al., (1996). Total value of stock traded refers to the total number of shares that is traded in the market, times their respective prices, and the stock turnover ratio is calculated by dividing the total value of stock traded by market capitalization. Liquidity may importantly influence the growth by easing investment in large, long-term projects and encouraging the acquisition of information about firms and managers. These liquidity measures have been included in the stock market development index of the present study through turnover ratio and total value of stock traded. Lastly, the volume of the stock market has been examined by the total number of all the listed companies in six South and Southeast Asian countries. Log transformation with the stepwise method has been applied on the independent variables of the countries.

ANALYSIS AND DISCUSSION OF RESULT

To avoid a false regression situation, the variables in a regression model must be stationary or co-integrated. Therefore, in the first step, unit root tests on these five-time series have been performed to investigate whether they are stationary or not. To check for non -stationarity property, the data are subjected to Augmented Dickey and Fuller Test (ADF test). Dickey and Fuller (1979) and also the KPSS test Kwiatkowski, Phillips, Schmidt and Shin (1992). Mukit, Uddin, Islam, & Arif (2014) developed hypotheses for five South Asian countries Bangladesh, India, Pakistan, Sri Lanka, and Nepal in their study. The study investigated the relationship between stock market development and economic growth in five SAARC counties and collected secondary data of 15 years for the period of 1996 -2010. The same hypotheses incorporated to develop the following hypotheses for six countries of South Asian and Southeast Asian namely Bangladesh, India, Sri Lanka, Indonesia, Malaysia, and Thailand.

The null hypothesis of ADF test states that a variable is non-stationary, whereas the null hypothesis of KPSS tests states that a variable is stationary. The null hypothesis of non -stationary is rejected if the calculated ADF statistics is less than the critical value from Fuller's table. On the other hand, the null hypothesis stationary is accepted if the value of the KPSS test statistic is less than its critical value. Stepwise regression method has been used to find the best fit model.

The hypotheses developed for the study are as follows:

H0: Stock markets development has no significant effect on the economic growth of Bangladesh.

H1: Stock markets development has significant effect on the economic growth of Bangladesh.

H0: Stock markets development has no significant effect on the economic growth of India.

H2: Stock markets development has significant effect on the economic growth of India.

H0: Stock markets development has no significant effect on the economic growth of Sri Lanka.

H3: Stock markets development has significant effect on the economic growth of Sri Lanka.

H0: Stock markets development has no significant effect on the economic growth of Indonesia.

H4: Stock markets development has significant effect on the economic growth of Indonesia.

H0: Stock markets development has no significant effect on the economic growth of Malaysia.

H5: Stock markets development has significant effect on the economic growth of Malaysia.

H0: Stock markets development has no significant effect on the economic growth of Thailand.

H6: Stock markets development has significant effect on the economic growth of Thailand.

Stationarity Tests

ADF Test

ADF is performed by adding the lagged values of the dependent variable $?Y_t$. The null hypothesis for ADF test for unit root test is $a_1=0$. The following regression is for the purpose of ADF test:

$$\Delta Y_t = \beta_1 + \beta_2\, t + \delta Y_{(t-1)} + \alpha_i\, \Sigma \Delta Y_{(t-i)} + \varepsilon_t$$

Where ε_t is a white noise error term and $\Delta Y_{(t-i)} = (Y_{(t-1)} - Y_{(t-2)})$ and so on are the number of lagged difference term which is empirically determined. Lag length 0 is used for the purpose of this test.

KPSS Test

To test the null hypothesis of stationarity, the study has also followed the KPSS test (Kwiatkowski, Phillips, Schmidt, and Shin, 1992). They consider a series y_t that can be decomposed into the sum of deterministic trend, a random walk, and a stationary error: $y_t = \xi + r_t + \varepsilon_t$, where ε_t is a stationary process, and r_t is a random walk given by: $r_t = r_{(t-1)} + u_t$ with $u_{(t)} \sim iid(0, \sigma_u^2)$. The initial value r_0 is fixed and serves as the intercept. Under these assumptions, the null hypothesis of stationary is $\sigma_u^2 = 0$. ε_t is assumed to be an error in the stationary process, under the null hypothesis the series y_t is trend stationary. To test the null hypothesis of level stationary, ξ is set equal to zero. The number of lags in the KPSS test of this study is selected automatically by Newey and West Bandwidth using Bartlett Kernel Spectral estimation method.

Table 1 shows ADF statistics used to examine the null of a unit root in the GDP per capita, market capitalization, total value of stock traded, volume of the stock market and stock turnover ratio of each country. The results in Table 1 clearly indicate that ADF tests fail to reject the null of non-stationary for all five countries except GDP per capita of India. ADF test indicates that most of the variables are first difference stationary.

To avoid the low power in the standard unit root tests, the newly developed KPSS test is also employed to test the null of stationary against the replacement of non-stationary. The results on the GDP and capital market factors in Table 2 show that the null of stationary could not be rejected for the countries, which implies that the data on GDP per capita growth, market capitalization, total value of stock traded, stock turnover ratio and volume of the stock market are stationary.

Table 2 – List of Variables

	The variables	Definitions
1.	GDP per capita –Dependent variable	GDP per capita
2.	Market Capitalization – Independent variable (as a measure of stock market size)	Market Capitalization (in US $)
3.	Stocks Total Value -Independent variable. (as a measure of liquidity of the stock market)	Total value of stock traded (in US $)
4.	Volume of Stock Market – Independent variable	Total number of listed domestic companies
5.	Stock Turnover Ratio -Independent variable (as a measure of liquidity of the stock market)	Stock turnover ratio (in percentage)

Table 3 – Results of ADF and KPSS Tests

		Original		First Difference	
		ADF Test	KPSS Test	ADF Test	KPSS Test
Bangladesh	GDP per capita	0.9900	0.0225**	0.6392	0.0752*
	Market Capitalization	0.9317	0.0243**	0.0243**	0.1000*
	Stocks total value	0.5423	0.0436**	0.0100***	0.1000*
	Volume of Stock Market	0.9288	0.0278**	0.0464**	0.1000*
	Stocks turnover ratio	0.5113	0.0843*	0.0145**	0.1000*
India	GDP per capita	0.0943*	0.0243**	0.2995	0.1000*
	Market Capitalization	0.8865	0.0322**	0.0100***	0.1000*
	Stocks total value	0.9135	0.1000*	0.2210	0.1000*
	Volume Stock Market	0.6652	0.1000*	0.0354**	0.1000*
	Stocks turnover ratio	**0.5121**	0.1000*	0.0100***	0.1000*
Sri Lanka	**GDP per capita**	0.4995	0.0242**	0.3233	0.0894*
	Market Capitalization	0.5703	0.1000*	0.0100***	0.1000*
	Stocks Total value	0.2853	0.1000*	0.0100***	0.1000*
	Volume of Stock Market	0.7332	0.0471**	0.0498**	0.1000*
	Stocks turnover ratio	0.3790	0.0879*	0.0100***	0.1000*
Indonesia	**GDP per capita**	0.5612	0.0227**	0.2947	0.1000*
	Market Capitalization	0.8821	0.0333**	0.0249**	0.1000*
	Stocks Total value	0.9297	0.0720*	0.0571*	0.1000*
	Volume of Stock Market	0.9900	0.0223*	0.6211	0.1000*
	Stocks Turnover ratio	0.2772	0.0938*	0.0100***	0.1000*
Malaysia	**GDP per capita**	0.9136	0.0245**	0.2186	0.1000*
	Market Capitalization	0.6932	0.0955*	0.0100***	0.1000*
	Stocks Total value	0.7767	0.0558*	0.0100***	0.1000*
	Volume of Stock Market	0.5764	0.0527*	0.2120	0.0296**
	Stocks Turnover ratio	0.5945	0.1000*	0.0100***	0.1000*
Thailand	**GDP per capita**	0.9540	0.0243**	0.1855	0.1000*
	Market Capitalization	0.9779	0.0245**	0.0370**	0.1000*
	Stocks Total value	0.9832	0.0230**	0.0458**	0.1000*
	Volume Stock Market	0.9816	0.0242**	0.5782	0.0817*
	Stocks Turnover Ratio	0.6768	0.1000*	0.0100***	0.1000*

Note: ***, ** and * show statistically significant at the 1%, 5% and 10% level respectively.

Source: Author's calculation using R version 4.2.2 software

FINDINGS OF THE STUDY

Comparison of GDP per capita growth in US$ among six countries of South and Southeast Asian countries, (they are Bangladesh, India, and Sri Lanka Indonesia, Malaysia, and Thailand) for the last fifteen years. The average GDP per capita growth of Bangladesh is US$ 1,168.88. Similarly, the calculated average GDP per capita growth of India, Sri Lanka, Indonesia, Malaysia and Thailand are US$ 1,465.89, 3,435.08, 3,094.58, 9,318.28 and 5,583.66 respectively for the period of 2006 to 2020.

In addition, Bangladesh in 2006 showed US $ 809.47 the minimum GDP per capita among six countries of South and Southeast Asian countries for the last fifteen years whereas Malaysia maintained the maximum GDP per capita US $ 11,414.58 in 2019 among all those countries during the period. The year wise growth rates of GDP per capita of six countries of South and Southeast Asian countries are given in Appendix 02.
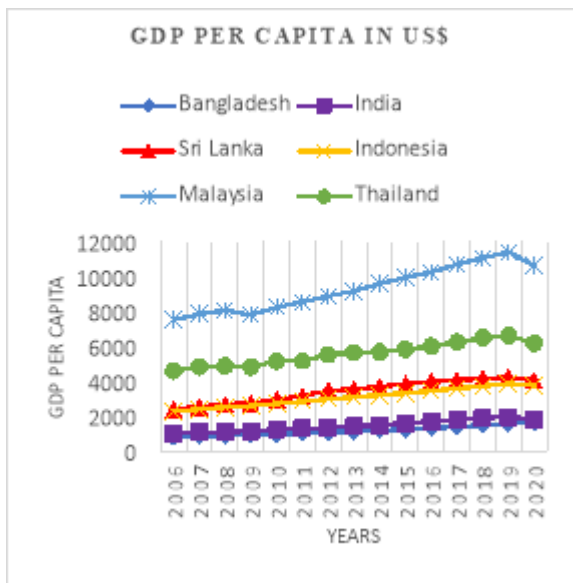

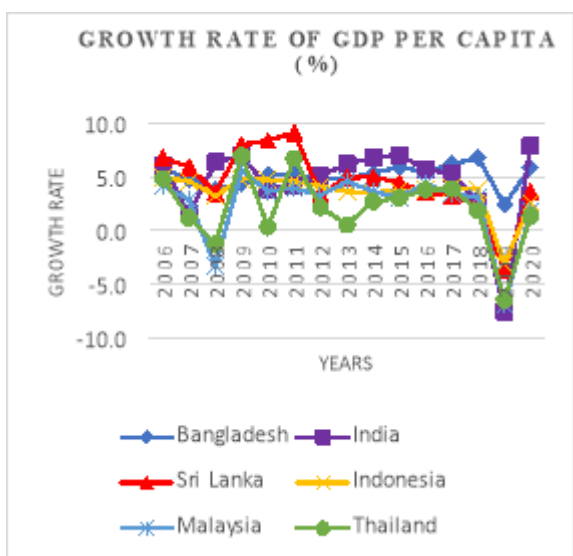Figure 1 GDP Per Capita in US $ of Six South and Southeast Asian Countries Annually from 2006 to 2020

Figure 2Growth Rate of GDP Per Capita of Six South and Southeast Asian Countries Annually from 2006 - 2020

Analysis between Stock Market Development and Economic Growth Bangladesh

Table 4 – Statistical Regression Results of Bangladesh Data

	Coefficient	Standard Error	T Stat	Sig*	R^2
Intercept	567.959	78.798	7.208	0.000	0.837
X Variable	1.407	0.172	8.183	0.000	
F	66.956			0.000	

Note: * Significant at 5% level, here X = Volume of the Stock Market

Source: Author's calculation using R version 4.2.2 software

GDP per capita growth = 567.959 + (1.407 x Volume of the Stock Market)

Here, it has been observed that among four market indicators, Volume of the stock market highly associated to the real economic growth of Bangladesh.

The results in Table 1 show that as total value of stock traded increases by 1% the estimated increases in the mean or average GDP per Capita is US$ 1.407.

The slope coefficient is statistically significant at 5% level and the relationship between the variables is positive. Moreover, F=66.956 and P=0.000 imply that the regression equation is a good model fit for the data. Finally, R2 indicates that 84% variation of GDP per capita can be explained by total variations in independent variables.

So, we can reject our null hypothesis and accept alternative hypothesis (H1) i.e., stock market's development has significant and positive effect on the economic growth of Bangladesh. At the same time, the result of the study shows the best indicator of the capital market which are highly associated to the real economic growth of Bangladesh. That indicator is the Volume of the Stock Market.

Analysis between Stock Market Development and Economic Growth India

Table 5 – Statistical Regression Results of India Data

	Coefficient	Standard Error	T Stat	Sig*	R^2
Intercept	-1023.839	764.480	-1.339	0.205	0.743
X Variable	0.350	0.154	0.356	0.042	
F	17.335			0.000	

Note: * Significant at 5% level, here X = Volume of the Stock Market

Source: Author's calculation using R version 4.2.2 software

GDP per capita growth = – 1,023.839 + (0.350 x Volume of the Stock Market)

Here, it has been observed that among four market indicators, Volume of the Stock Market highly associated with the real economic growth of India.

The results in the Table 1 show that as total value of stock traded increases by 1% the estimated increases in the mean or average GDP per Capita is US$ 0.350.

The slope coefficient is statistically significant at 5% level and the relationship between the variables is positive. Moreover, F=17.335and P=0.000 imply that the regression equation is a good model fit for the data. Finally, R2 indicates that 74% variation of GDP per capita can be explained by total variations in independent variables.

So, we can reject our null hypothesis and accept alternative hypothesis (H1) i.e., stock market's development has significant and positive effect on the economic growth of India. At the same time, the result of the study shows the best indicator of the capital market which is highly associated with the real economic growth of India. That indicator is the Volume of the Stock Market.

Analysis between Stock Market Development and Economic Growth Sri Lanka

Table 6 – Statistical Regression Results of Sri Lanka Data

	Coefficient	Standard Error	T Stat	Sig*	R^2
Intercept	-2503.870	671.272	-3.730	0.003	0.859
X Variable	21.861	2.460	8.888	0.000	
F	78.998			0.000	

Note: * Significant at 5% level, here X = Volume of the Stock Market

Source: Author's calculation using R version 4.2.2 software

GDP per capita growth = – 2,503.870 (21.861 x Volume of the Stock Market)

Here, it has been observed that among four market indicators, Volume of the Stock Market highly associated to the real economic growth of Sri Lanka.

The results in Table 1 show that as total value of stock traded increases by 1%the estimated increases in the mean or average GDP per Capita is US$ 21.861.

The slope coefficient is statistically significant at 5% level and the relationship between the variables is positive. Moreover, F=78.998 and P=0.000 imply that the regression equation is a good model fit for the data. Finally, R^2 indicates that 86% variation of GDP per capita can be explained by total variations in independent variables.

So, we can reject our null hypothesis and accept alternative hypothesis (H_1) i.e., stock market's development has significant and positive effect on the economic growth of Sri Lanka. At the same time, the result of the study shows the best indicator of the capital market which is highly ;passociated to the real economic growth of Sri Lanka. That indicator is the Volume of the Stock Market.

Analysis between Stock Market Development and Economic Growth Indonesia

Table 7 – Statistical Regression Results of Indonesia Data

	Coefficient	Standard Error	T Stat	Sig*	R^2
Intercept	1139.663	150.022	7.597	0.000	0.973
X Variable	3.800	0.460	8.255	0.000	
F	131.484			0.000	

Note: * Significant at 5% level, here X = Volume of the Stock Market

Source: Author's calculation using R version 4.2.2 software

GDP per capita growth = 1,139.663 + (3.800 x Volume of the Stock Market)

Here, it has been observed that among four market indicators, Volume of the Stock Market highly associated to the real economic growth of Indonesia.

The results in the Table 1 show that as total value of stock traded increases by 1% the estimated increases in the mean or average GDP per Capita is US$ 3.800.

The slope coefficient is statistically significant at 5% level and the relationship between the variables is positive. Moreover, F=131.484 and P=0.000 imply that the regression equation is a good model fit for the data. Finally, R^2 indicates that 97% variation of GDP per capita can be explained by total variations in independent variables.

So, we can reject our null hypothesis and accept alternative hypothesis (H_1) i.e., stock market's development has significant and positive effect on the economic growth of Indonesia. At the same time, the result of the study shows the best indicator of the capital market which is highly associated to the real economic growth of Indonesia. That indicator is the Volume of the Stock Market.

Analysis between Stock Market Development and Economic Growth Malaysia

Table 8 – Statistical Regression Results of Malaysia Data

	Coefficient	Standard Error	T Stat	Sig*	R^2
Intercept	32,562.808	5712.424	5.700	0.000	
X Variable	-25.010	6.141	-4.072	0.001	0.56
F	16.585			0.001	

 Note: * Significant at 5% level, here X = Volume of the Stock Market

Source: Author's calculation using R version 4.2.2 software

GDP per capita growth = 32,562.808 + (-25.010 x Volume of the Stock Market)

Here, it has been observed that among four market indicators, Volume of the stock market highly associated to the real economic growth of Malaysia.

The results in Table 1 show that as total value of stock traded increases by 1% the estimated decreases in the mean or average GDP per Capita is US$ -25.010.

The slope coefficient is statistically significant at 5% level and the relationship between the variables is positive. Moreover, F=16.585 and P=0.000 imply that the regression equation is a good model fit for the data. Finally, R^2 indicates that 56% variation of GDP per capita can be explained by total variations in independent variables.

So, we can reject our null hypothesis and accept alternative hypothesis (H_1) i.e., stock market's development has significant and positive effect on the economic growth of Malaysia. At the same time, the result of the study shows the best indicator of the capital market which is highly associated to the real economic growth of Malaysia. That indicator is the Volume of the Stock Market.

Analysis between Stock Market Development and Economic Growth Thailand

Table 9 – Statistical Regression Results of Thailand Data

	Coefficient	Standard Error	T Stat	Sig*	R^2
Intercept	2574.056	612.787	4.201	0.001	0.948
X Variable	3.632	1.379	2.634	0.022	
F	108.854			0.000	

Note: * Significant at 5% level, here X = Volume of the Stock Market

Source: Author's calculation using R version 4.2.2 software

GDP per capita growth = 2,574.056 + (3.632 x Volume of the Stock Market)

Here, it has been observed that among four market indicators, Volume of the Stock Market highly associated to the real economic growth of Thailand.

The results in the Table 1 show that as total value of stock traded increases by 1% the estimated decreases in the mean or average GDP per capita is US$ 3.632.

The slope coefficient is statistically significant at 5% level and the relationship between the variables is positive. Moreover, F=108.854 and P=0.000 imply that the regression equation is a good model fit for the data. Finally, R^2 indicates that 95% variation of GDP per capita can be explained by total variations in independent variables.

So, we can reject our null hypothesis and accept alternative hypothesis (H_1) i.e., stock market's development has significant and positive effect on the economic growth of Thailand. At the same time, the result of the study shows the best indicator of the capital market which are highly associated to the real economic growth of Thailand. That indicator is the Volume of the Stock Market.

SUMMARY AND RECOMMENDATION

The study appraised the relationship between stock market development and economic growth in six Asian countries. The study employed World Bank Indicators of 15 years and have been used for the period from 2006 to 2020. Comparison of GDP per capita growth in US$ among six countries of South and Southeast Asian countries, (they are Bangladesh, India, Sri Lanka, Indonesia, Malaysia, and Thailand) for the last fifteen years.

In addition, Bangladesh in 2006 showed US $ 809.47 the minimum GDP per capita among six countries of South and Southeast Asian countries for the last fifteen years whereas Malaysia maintained the maximum GDP per capita US $ 11,414.58 in 2019 among all those countries during the period.

In this study the impact of stock market variables on GDP per capita as dependent variable of economic growth, is empirically tested. The relationship has been measured in terms of market capitalization, total value of stocks traded, stock turnover ratio and volume of the stock market determined through the total number of companies listed in the stock exchange of each country in countries South and Southeast Asian region. By using linear-log model, the study has found out that development of the stock market affects economic growth.

The data suggest that there is a significant positive relationship between stock market development and economic growth for each country. The results of the study by employing the stepwise regression analysis show that the most representative indicator of capital market is the Volume of the Stock Market (Listed

Domestic Companies), which is highly associated with the real economic growth of above all countries.

To assess the relationship with economic growth, this study suggests the use of Volume of the Stock Market as the best proxy for stock market development.

However, the study could be more precise if the shorter intervals of the data could be used rather than annual data. So, the study can proceed further by using monthly data and the results can be compared to the other countries of the region as well as developed countries in the future.

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Appendix 1: Summary Statistics of the Study Variable

Stock Market Development and Economic Growth: An Evidence from Six South and Southeast Asian Countries

Country	Variables	Mean	Standard Deviation	Maximum	Minimum
Bangladesh	GDP per capita	1,168.88	264.37	1,619.78	809.47
	Volume of Stock Market	427.20	171.99	628.00	192.00
	Market Capitalization	50,483,912.00	28,111,077.00	89,773,660.00	3,850,310.00
	Stocks turnover ratio	14.29	8.48	30.75	2.42
	Stocks total value	8,661,407.00	8,205,801.00	26,503,040.00	236,490.00
India	GDP per capita	1,465.89	323.48	1,965.54	1,014.63
	Volume of Stock Market	5,233.07	329.68	5,835.00	4,796.00
	Market Capitalization	1,705,143,457.00	558,759,668.00	2.60E+09	7.91E+08
	Stocks turnover ratio	61.19	22.20	131.08	45.14
	Stocks total value	995,252,989.00	355,304,229.00	1.65E+09	5.71E+08
Sri Lanka	GDP per capita	3,435.08	637.57	4,228.15	2,398.43
	Volume of Stock Market	271.67	27.03	297.00	231.00
	Market Capitalization	15,578,736.00	5,665,469.00	23,665,120.00	4,285,950.00
	Stocks turnover ratio	12.42	6.47	25.07	5.99
	Stocks total value	1,927,004.00	1,308,980.00	4,994,900.00	942,180.00
Indonesia	GDP per capita	3,094.58	523.32	3,877.42	2,289.42
	Volume of Stock Market	496.87	108.57	713.00	344.00
	Market Capitalization	361,179,937.00	136,592,594.00	523,321,860.00	98,760,600.00
	Stocks turnover ratio	29.93	14.91	76.80	17.77
	Stocks total value	93,349,832.00	20,677,542.00	131,144,740.00	40,323,050.00
Malaysia	GDP per capita	9,318.28	1,298.94	11,414.58	7,531.36
	Volume of Stock Market	929.40	38.89	1,021.00	892.00
	Market Capitalization	380,444,896.00	87,843,717.00	500,387,410.00	189,239,210.00
	Stocks turnover ratio	33.29	8.95	56.95	26.50
	Stocks total value	125,351,650.00	42,437,597.00	248,607,740.00	69,145,410.00
Thailand	GDP per capita	5,583.66	648.79	6,612.23	4,603.75
	Volume of Stock Market	606.47	80.12	743.00	518.00
	Market Capitalization	352,121,930.00	154,146,999.00	569,228,320.00	103,128,240.00
	Stocks turnover ratio	76.28	13.21	102.84	57.20
	Stocks total value	263,355,768.00	116,867,088.00	481,299,000.00	97,009,620.00

Note: GDP per capita, Market capitalization & Total value of stock total are in US $

Stock turnover ratio is in percentage. Volume of the stock market is in numbers.

Source: Author's calculation using R version 4.2.2 software

Appendix 02:

Table Growth Rate of GDP Per Capita

Year	Bangladesh	India	Sri Lanka	Indonesia	Malaysia	Thailand
2006	5.75%	6.05%	6.80%	4.95%	4.24%	4.85%
2007	4.81%	1.59%	5.95%	4.62%	2.85%	1.19%
2008	3.88%	6.35%	3.54%	3.25%	-3.29%	-1.19%
2009	4.39%	7.04%	8.02%	4.81%	5.62%	6.99%
2010	5.25%	3.89%	8.40%	4.75%	3.67%	0.36%
2011	5.30%	4.17%	9.14%	4.61%	3.96%	6.74%
2012	4.80%	5.14%	3.40%	4.15%	3.27%	2.22%
2013	4.86%	6.19%	4.96%	3.64%	4.60%	0.55%
2014	5.37%	6.80%	5.01%	3.56%	3.69%	2.72%
2015	5.95%	7.08%	4.49%	3.76%	3.04%	3.05%
2016	5.45%	5.67%	3.58%	3.84%	4.38%	3.82%
2017	6.19%	5.35%	3.27%	3.99%	3.44%	3.89%
2018	6.78%	2.69%	2.33%	3.87%	3.06%	1.86%
2019	2.42%	-7.52%	-3.62%	-3.10%	-6.86%	-6.43%
2020	5.90%	7.90%	3.66%	2.63%	1.84%	1.35%

Source: Author's Calculation