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Review Article

The Impact of Stock Market Development on Economic Growth of Sri Lanka

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Abstract - *This study examines the linkage of Sri Lanka's stock market development and its impact on economic performance. The primary objective of the study is to estimate the impact of stock market development on the economic growth of Sri Lanka. The study uses secondary data to estimate the effects of stock market performance on economic growth for the period starting from 1990 to 2019. Secondary data are mainly based on the data published by the Colombo Stock Exchange of Sri Lanka (CSE) and the Central Bank of Sri Lanka (CBSL). To achieve the study objectives, mainly the Ordinary Least Square (OLS) regression model was applied. In determining stock market liquidity, the study employs turnover ratio (TR), and the market capitalization ratio (MCR) is calculated to measure the size of the stock market. For estimating the impact of market liquidy and market size on economic growth, turnover ratio and market capitalization ratio was included in the regression model. In addition to that, regression results were derived by adding the same two variables with a time lag. The estimated OLS regression coefficients indicate that the turnover ratio positively influences the gross domestic product of Sri Lanka without any time lag. However, the findings of the study show that the market capitalization ratio positively influences gross domestic product with a time lag.*

Keywords — *Economic Growth, Liquidity, Market Size, Stock Market Development.*

I. INTRODUCTION

In modern economies, stock markets have become the central theme for their economic performance over the last few decades. The increase of domestic savings and the improvement in quality and quantity of investment with the development of the stock market is the main reason for accelerating the economic growth of these economies (Singh, 1997). The stock market is the major source for businesses to raise long term capital. Well developed and efficient stock market increases the ease of raising capital for new business projects as well as for expanding the prevailing businesses. Well developed and efficient stock market increases the ease of raising capital for new business projects as well as for expanding the prevailing businesses. Numerous studies found in literature give evidence for the importance of the capital market in economic performance (Alajekwu & Achugbu, 2012; Odetayo & Sajuyigbe, 2012; Pat & James, 2010). The present study attempts to identify how the Colombo Stock Exchange (CSE) contributes to the economic performance of Sri Lanka. Accordingly, the primary objective of the study is to investigate the relationship between the stock market performance and the economic growth of Sri Lanka. The study investigates, more specifically, the contribution made by stock market size and liquidity to the economic growth of the country. According to the aforementioned objectives, the study is carried out by hypothesizing that there is a positive relationship between stock market development and the economic growth of Sri Lanka.

II. LITERATURE REVIEW

The literature review of the study explores theoretical and empirical investigations on the impacts of stock market development on economic performance. Accordingly, this section explores recent literature on stock market development.

According to the literature review, relatively there are ample amount of studies on the field of the stock market and economic growth. Alajekwu and Achugbu (2012) pay special attention to the impacts of the stock market development of Nigeria on its economic growth. Researchers have used 15-year time-series data of the stock market and gross domestic product (GDP) for the 1994-2008 period. In order to estimate the degree of relationship between Nigerian stock market development and economic growth, the researchers have used Ordinary Least Square (OLS) techniques. The study has measured the development of the stock market in the sense of market liquidity and market size of the Nigerian stock market. In measuring market size, researchers have computed the stock market capitalization ratio while using the value traded ratio and turnover ratio to measure the liquidity improvement. Researchers have found that market capitalization and value traded ratio has a very weak negative relation with economic growth while turnover ratio has a very strong positive relationship with economic growth.

Also, Odetayo and Sajuyigbe (2012) have studied on Nigerian stock market and its impact on economic growth and development by using time series data for the 1990-2011period. The researchers have employed multiple regression techniques to disentangle the relationship between stock market development and economic growth. In their multiple-regression model, the gross domestic product has been taken as the proxy for economic growth. The independent variables which have been employed to measure as proxies for assessing capital market development are market capitalization, new stock issues, the value of stocks, and total listed of equity and government bond. Accordingly, their findings confirm that market capitalization, total new stock issues, the value of stocks, total listed of equity and government bond jointly have a significant positive impact on the economy's growth and development. Pat and James (2010) have studied on stock market development and economic growth relationship of Nigeria for the 1981 -2008 period. Like Odetayo and Sajuyigbe (2012), Pat and James (2010) have employed the same independent variables to estimate the stock market and growth relationship in Nigeria. However, it is interesting to see that those researchers have reported opposite results of the study of Odetayo and Sajuyigbe (2012). Eventually, those researchers have concluded that the capital market indices have not made a significant impact on the GDP of Nigeria.

III. METHODOLOGY

In identifying the impact of stock market development on economic growth, data were collected over a 30-year time period. Accordingly, the present study has gathered data of the main variables of the study for the time period from the year 1990 to the year 2019.

A. Methods of Data Analysis

Most of the studies which have been carried out on the stock market confirm the suitability of applying quantitative statistical methods to reach research objectives. Hence, the variables identified in the main objective of the present study are tested hypothetically, and quantitative analytical methods are applied to make accurate and reliable conclusions. Descriptive statistics and multiple regression analysis have been employed to explore the degree of relationships among the variables concerned. All the statistical calculations of the study have been done by using Eviews statistical computer software package.

B. Specifications of the Empirical Model

The present study has used the OLS method to derive parameters of the multiple-regression model, which is employed to disentangle the impact of stock market liquidity and stock market size on the economic growth of Sri Lanka. In estimating the effects of stock market development on economic performance following multivariate regression equation is employed in the study.

$$GDP_t = \alpha_0 + \beta_1 MC_t + \beta_2 TR_t + u_t$$

Where,

GDP = Gross Domestic Product
MC = Stock Market Capitalization Ratio
TR = Turnover Ratio
U = Error Term

C. Stock Market Measures

a) Stock Market Size

In literature, a common indicator to measure stock market size is market capitalization. All listed shares of a stock market refer to the market capitalization of that stock exchange. In theory, it signifies that the ability for mobilizing capital and diversify risk is positively related to stock market size. That means an increase in stock market size enables to increase the ability for mobilizing capital and diversifying risk.

b) Stock Market Liquidity

The ability of investors to buy and sell securities easily is defined as liquidity. Liquidity is a vital measure in assessing the development of any stock market. In a well-developed stock market, it is assumed a high degree of liquidity. The high degree of liquidity helps the investors to quickly and cheaply alter their portfolios. As a result, the riskiness of their investment is reduced by making a high level of return. Liquidity is an important indicator of stock market development since it signifies how the market helps in improving the allocation of capital and thus accelerating the prospects of long-term economic growth.

The turnover ratio (TR) and the Total value traded ratio (TVR) is basically the most significant measures in assessing the liquidity of stock markets. The turnover ratio is computed by dividing the total value of shares traded from the market capitalization of the stock market. This ratio is used as an index of comparison for market liquidity rating and level of transaction costs. The total value traded ratio measures the organized trading of equities as a share of the national output.

IV. RESULTS AND DISCUSSION

A. The behaviour of Major Variables

a) Market Size of Colombo Stock Exchange

Over the last three decades, the market size of the CSE has been widening at a significant level. In 1990 aggregate market capitalization was Rs. 36.87 billion. This level has increased to Rs. 2851.30 billion by 2019 in the CSE. Aggregate market capitalization as a percentage of GDP also has been increased from 11.46 percent in 1990 to 18.99 percent in 2019. This ratio has reached a maximum of 39.44 percent in 2010. The year 2009 was a crucial year for Sri Lanka. Because the Government of Sri Lanka was able to wipe out the terrorism in 2009, which severely affected the Sri Lankan economy over three decades. As a result of that, after the year 2009, the share market of the country has shown a significant improvement showing the high economic performance of the country.

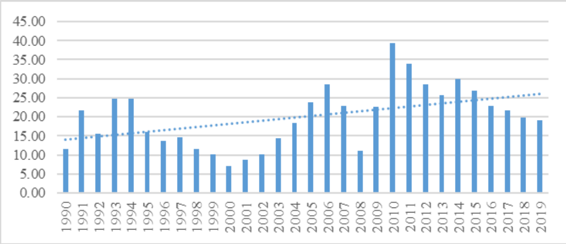

Fig. 1 Market Capitalization Ratio

Source: Colombo Stock Exchange

Figure 1 exhibits the long term movement of the market size of the CSE. Although the figure shows a positive trend, it shows some considerable fluctuations of the variable during the last three decades. Depending on the different political regimes which governed the country and the civil unrest which prevailed in the country before 2009, the market capitalization ratio exhibits some considerable fluctuations during the study period. For example, with the end of the civil war of the country in 2009, the share market was shown a boost in the next few years. However, the change of political regime in 2014 and political instability that prevailed for the next few years in Sri Lanka have provided some evidence to exhibit downward movement of the market capitalization ratio.

b) Liquidity of Colombo Stock Exchange

During the last three decades, the market liquidity of the Colombo stock exchange has been showing some considerable fluctuations with a slight positive long term trend. From 1990 to 2012, the turnover ratio has been increased at a substantial level. For example, in 1990 turnover ratio was 4.24, and it has improved to 25.8 percent by 2010. This increase is a significant improvement of the variable. However, after the year 2010, the market shows a gradual decrease in market liquidity. By 2019, the turnover ratio has decreased to 6.01 percent, which is slightly a higher value compared to the turnover ratio of 1990.

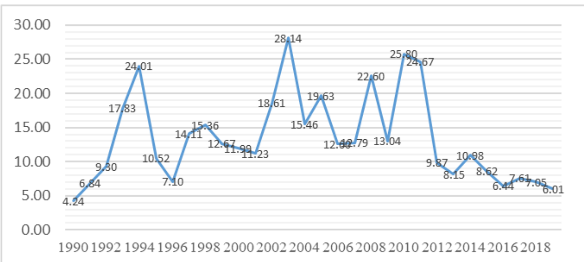

Fig. 2 Turnover Ratio

Source: Colombo Stock Exchange

c) Number of Listed Companies

The number of listed companies in the CSE also has been increased at a significant level over the last two decades. In 1990, the total number of listed companies in the stock market was 175 companies. This number has increased to 241 by 2012 in the CSE. Again stock market in Sri Lanka showed a significant increase of listed companies after the end of the civil war in 2009. During the 2010 - 2018 period, 56 new companies have entered the market. However, with the poor performance of the economy during the last few years, the total number of listed companies has decreased to 291 by 2019.

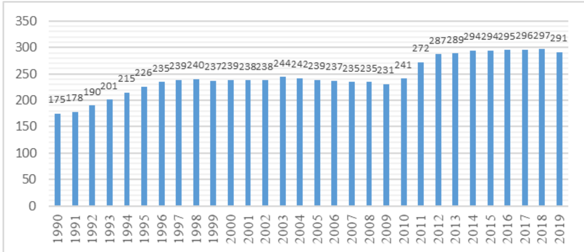

Fig. 3 Number of Listed Companies

Source: Colombo Stock Exchange

B. Regression Analysis

The present study has employed multiple regression techniques to disentangle the effect of stock market development on the economic growth of Sri Lanka**.** Since the estimation of the empirical model is based on time series variables, all the variables were employed after making them stationary**.** The augmented Dicky Fuller test confirms that the GDP variable is stationary with second deference**.** The market capitalization ratio **(**MCR**)** is stationary with the first difference, and the turnover ratio **(**TR**)** variable is stationary at the level**.** The Eviews output of regression results derived with the use of stationary variables is presented in Table 1**.**

Table 1. Multiple Regression Result

Dependent Variable: LGDP				
Method: Least Squares				
Sample (adjusted): 1992 2019				
Included observations: 28 after adjustments				
White heteroskedasticity-consistent standard errors & covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.018368	0.02143	-0.85706	0.400
MCR_t	-0.000913	0.00092	-0.99260	0.331
TR_t	0.002689	0.00097	2.76234	0.011
MCR_{t-1}	0.003150	0.00131	2.40537	0.025
TR_{t-1}	-0.001706	0.00099	-1.72119	0.099
R-squared	0.448	Durbin-Watson stat		2.226
Adjusted R-squared	0.352	Wald F-statistic		4.340
F-statistic	4.672			
Prob(F-statistic)	0.006595			
Prob(Wald F-statistic)	0.00924			

The results derived based on the OLS regression confirmed that the overall model was significant at 1 percent level of significance. The coefficient of determination **(**R^2**)** authenticated that almost 35 percent of the variation of the dependent variable was explained by the OLS regression line. All the independent variables were statistically significant at 5 percent level of significance. Also, the regression result showed that the overall model is significant at 5 percent level of significance. The multiple regression model has employed the market capitalization ratio and turnover ratio as independent variables to identify their impact on GDP. Since the economic impact of the independent variable could have a chance to influence a time lag, lagged variables of those two independent variables were included in the regression model. Accordingly, the regression result showed that except MCR_t other, all variables were statistically significant. MCR_t is the market capitalization ratio of the current year, and the regression result indicated that GDP is not influenced by the MCR_t. However, since the MCR_{t-1} was statistically significant at a 5 percent level of significance, the regression result showed a positive impact on the dependent variable by market capitalization ratio with a one-year time lag **(**MCR_{t-1}**)**. This result is not against the theoretical expectations since most of the economic variables were influenced by a time lag.

In determining stock market liquidity, the study has employed a turnover ratio to investigate the behaviour of liquidity on the economic growth of Sri Lanka. The regression coefficient of the current turnover ratio showed a significant positive value which indicated that it is correlated positively with the GDP. The positive sign of the coefficient of market turnover (TR) is consistent with the theoretical explanation. That is, higher liquidity of the stock market creates a positive impact on the economic growth of a country.

V. CONCLUSION

The present study has encompassed data for the recent 30 year time period. The findings of the study are on the relationships between the performance of CSE and the economic growth of Sri Lanka. In assessing the effects of stock market performance, the empirical model of the study employed two vital variables, market capitalization ratio and turnover ratio, which are important to determine the economic performance of a country due to the improvement of the performance of the stock market. The major hypothesis of the study was to test the relationship between stock market performance and Sri Lanka's economic growth. The analysis showed that the stock market development seems to be having a positive effect on the GDP of Sri Lanka, which is accepted with the theoretical expectations. Especially, the result showed a positive impact of market size on GDP with a time lag. Also, the market liquidity has a significant immediate positive impact on GDP.

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