Relationship between stock market operations and economic growth in Sri Lanka

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Introduction

Economic growth is a process by which a country increases its wealth over time and measures through the rate of growth in a country's gross domestic product. Stock markets are seen as improving the operations of the domestic financial system in general and the capital market in particular. If one country has the capability, capacity to pool, channels the required resources for economic growth that country is believed as efficient. Researchers, academicians and policy makers have well noted that capital market as an efficient channel of financial intermediation for the economic growth of developed and developing countries. Thus, the capital market plays a major role in the economy. According to Levine and Zervos (1998), there are certain factors that can be used as a measurement of stock market development and those have direct relation with the economic growth of the country as well. Some of these factors include liquidity and stock market capitalization as well as the turnover of the stocks. An appropriate financial system results in a better financial performance and contributes to the economic growth is the universal understanding. This is because it links household savings and corporate sector investment, which facilitates smooth consumption for the individual. Caporale et al. (2004) re-examine the dynamic interactions between investments, stock market development and economic growth in Chile, Korea, Malaysia and the Philippines from 1977 to 1998 and found that stock markets can enhance economic growth through investment productivity. Their findings are supporting to Levine and Zervos (1998) argument in which a well-developed stock market can promote economic growth in the long run. It seems the stock market is a good indicator of the economy of a country. MacKinnon (1973) and Shaw and Edward (1973) found that the development of financial markets has been significantly correlated with the growth of national income. It can be seen in Sri Lanka a significant development in the financial market activity in the post 1978 era after the liberalization of economy. The establishment of the Colombo Stock Exchange (CSE) in 1985 and the Securities Exchange Council (SEC) in 1987 has helped the capital market especially the stock market development in the country. Atje (1993) presents a cross country study of capital market and economic growth over the period 1980-

1988. They found a significant correlation between average economic growth and stock market capitalization for 40 countries. According to Atapattu and Jayasinghe (2002) the stock market development is an influential factor for economic growth in Sri Lanka. Bencivenga and Smith (1996) argue that stock market liquidity is crucial for growth. Further Sililo (2010) has found that there is no link between stock market development and economic growth. According to the findings of the previous studies, it is clear that the relationship between stock market operations and economic growth in various countries is diverse. Therefore the objective of current study is to examine the relationship between stock market operations and economic growth in Sri Lanka.

Methodology

Based on the extant literature the following conceptual model has been developed for the study.

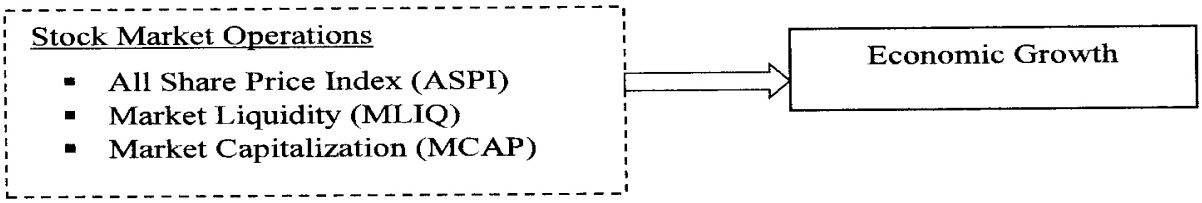

Figure 1 Conceptual framework of the study

The study gathered annual stock market data from the CSE and GDP growth rate from Central Bank of Sri Lanka for the period of 20 years from 1996 to 2015. GDP is used as the proxy for economic growth as it is commonly used to measure the economic performance of a country. All Share Price Index, Market Capitalization and Market Liquidity have been identified as the independent variables of the study. All the data were transformed in to their log form and descriptive statistics and regression analysis were employed in data analysis. In addition, stationary of the all data series were tested with Augmented Dickey-Fuller (ADF) test. Accordingly the following regression model is formulated to study the relationship between the variables.

$$GDP = \alpha + \beta_1 ASPI + \beta_2 MLIQ + \beta_3 MCAP + \varepsilon \qquad (1)$$

Where, GDP - Gross Domestic Product, ASPI - All Share Price Index, MLIQ -Market Liquidity, MCAP - Market Capitalization, α- Intercept, β_i - Regression coefficient of i^{th} variable, ε - Error Term.

Results and discussion

In order to confirm the robustness of the results, the unit root test was conducted to confirm stationarity of the variables. For the purpose, Augmented Dickey-Fuller test was used. The results of the unit root test are shown in Table 2. All the

variables except GDP are not stationary at the level $I(0)$ but become stationary at first difference $I(1)$.

Table 1 Result of Unit Root test

	Level	p value	1st Deference	p value
D(GDP)	-3.242**	0.034	-7.828*	0.000
ASPI	-0.496	0.872	-4.176*	0.006
MCAP	-0.380	0.894	-3.739**	0.013
MLIQ	-1.796	0.371	-4.315*	0.004
1% level	-3.831		-3.886	
5% level	-3.029		-3.052	
10% level	-2.655		-2.666	

** , ** significant at 1% and 5% levels respectively.*

Having concluded that all the series are stationary at the 1st difference, the effect of stock market performance on the economic growth is examined by using Ordinary Least Square (OLS) estimation after converting all the series into 1st difference. The results are reported in Table 3. Before interpreting OLS results, we carry out the diagnostic checkup on the residuals of OLS to confirm the fitness of the model. Table 3 also includes the results. The diagnostic checkup confirmed that the results are free from serial correlation problem and Arch effect. Further, the F value is 49.75 and it is significant at 0.01 level. This result also confirms the fitness of the overall model of the study.

Table 2 Results of OLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.969	7.188		-0.135
D(ASPI)	0.060	0.010	0.586	0.021**
D(MCAP)	0.861	0.317	2.714	0.015**
D(MLIQ)	0.048	0.049	0.984	0.339
LM test	2.836	(0.074)		
Heterokedasticity	0.029	(0.864)		
R-squared	0.295			
Adjusted R-squared	0.457			
F statistic	49.475	(0.000)		

*** is significant at 5% level*

Next we move to explain the regression results in the respective table and it says that there is moderate level of an association between GDP and selected independent variables of the model because adjusted R square value is reported as 0.457. This result indicates that around 46 percent of the variability in GDP is explained by the independent variables of this study. The individual coefficients which are significant at 0.05 level of significance reveal that ASPI and MCAP

have positive effect on GDP of the country while MLIQ does not make any significant influence over it.

Conclusion

This study was performed with the objective of finding the relationship between stock market operations and economic growth in Sri Lanka. The results show that there is a significant and positive relationship between All Share Price Index (ASPI) and Market Capitalization (MCAP) with Gross Domestic Product (GDP). This finding supports the view that stock market development measured by ASPI and MCAP has a positive and significant impact on economic growth. Thus, the government should take necessary actions to increase the stock market operations smoothly to achieve higher economic growth. Moreover, stock market operations are seen as cheaper fund sourcing method when compared to other money market operations. So that the investors should be encouraged to invest in the stock market and need to be very careful about the cost of transactions and the illegal brokers who earn black money through stock market operations. There is a need for the government through the Central Bank to implement policy that will increase the level and size of market capitalization in the capital market. Such developments in capital market will provide the needed funds for investors for further investments and therefore the productivity can be increased. There is also need to reduce some strict registration and operating procedures to enable more people and organizations to participate in the market since nearly 2 percent of population is invested in the stock market in Sri Lanka. It is important to note that interest rate should be set at lowest as to promote the investment in the share market.

Keywords: *All share price index, gross domestic product, market capitalization, market liquidity.*

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