

“Relationship between Macro – Economic Variables and Stock Market Performance of Colombo Stock Exchange”

Prabath Suranga Morawakage

*Lecturer (Probationary) Department of Finance Faculty of Commerce and Management Studies
University of Kelaniya*

prabath145@gmail.com

Abstract

Smooth functioning of stock exchange is paramount important to a healthy economy. This study makes efforts to provide a justifiable answer for the question of whether the stock market performance is affected by movement of economic variables in Sri Lankan context. To examine the dependency of stock market performance proxies on macro-economic variables, multiple regression and correlation matrix have been used.

The dependent variables is ASPI and exchange rate, money supply, Treasury bill rate and S & P 500 index are the explanatory variables. Both multiple regression and correlation analysis indicate that there is a relationship between the market performance of Colombo stock exchange and the above mentioned macro- economic variables.

Correlation matrices revealed that there is a significant relationship between S & P 500 US index and stock market performance indicators while there is no significant relationship with exchange rate. However multiple regression analysis has suggested to remove S & P 500 US index from its models and to include Exchange rate. Finally, this study concludes that there is an impact from macro-economic variables on stock market performances of CSE as a whole.

Key Words: ASPI, MPI, S & P 500 US index, multiple regression analysis, correlation matrix

1.0. OVERVIEW OF THE RESEARCH.

Share market plays a vital role in collecting funds for public corporations whose stocks are traded publicly since it is a place where excessive funds in the economy are transferred to fund deficit units in that economy. Therefore, upgrade of stock exchanges a well-established indicator about the performance of a particular economy. Almost all empirical studies raised the question of how the stock exchange performance in a particular economy relates with changes in macro-economic variables.

Simply, return of a stock is the present value of future cash stream expected from a stock or dividend which is distributed out of company's earning. Thus, these earnings are determined by movement in macro-economic components. There are two fundamental variables affecting the intrinsic value of a security in discounted cash flow approach. They are, discounting rate and the ability of the firm to generate cash flows. Those components get shape from the real economic activities of the economy. Therefore, it is the base of a plenty of researches that argue that stock market indices representing the changes in share prices vibrate with movement in macro-economic variables. Most of empirical studies which are conducted in the context of developed countries demonstrate the accuracy of causal relationship between share market performance and changes in macroeconomic variables by providing potential evidence in favor of above mentioned argument.

Even though numerous empirical studies on this issue with respect to developed countries exist, no enough researches have been done in the field of emerging stock markets. On the other hand, it is unjustifiable to generalize evidence for the argument that fundamental economic activities in a particular economy are strongly linked to stock market performances which can be attributed to most developed countries such as Canada, Germany, Italy, Japan and the USA since these stock exchanges are small in size and they are less liquidate in developing countries than those of developed countries. As well as, these economies are more interdependent on global economic condition than domestic economic scenarios. Growing up of international investment inflows to those markets also causes to deduct the solidness of the relationship between share indices and domestic economic variables. So, necessity of conducting research in less developed countries is growing rapidly since no systematic way to build a relationship between performance of share market and macroeconomic factors otherwise.

So, in this research, the relationship of macroeconomic phenomena will be examined with relevant to ASPI through providing empirical evidence from Colombo Stock exchange. Money supply, Treasury bill rate, exchange rate and the "S & P 500" US index have been used to represent the macroeconomic variables. The later part of this study is organized as; section two describes the literature, section three explains data used in the study and methodology. Last two sections focus on the analysis and findings made by employing methodology explained in previous section and thereby the conclusion.

1.1 Objectives.

Key Objective of this study is to examine whether the macroeconomic variables have an impact on the stock market performances of Sri Lanka. Since the researchers use the All Share Price Index to determine the stock market performances, the secondary objective is to identify the extent to which the ASPI can be explained by macro-economic variables.

1.2 Contribution of the study

In this study, data relating to macro-economic variables and data from CSE are used to get the answers to the question of whether stock market performance is affected by changes in aggregate economic variables. As per the most of studies conducted in less developed market, it is revealed that there was no reasonable circumstance to have a sufficient relationship between real economic activities and stock market performance. But, in case of developed market scenarios, this will not be the truth. So, there is a greater possibility to explain the performance in those markets from changes in macro-economic variables. Even though the outcomes of these investigation conducted in developing markets were not align with those which were conducted in developed markets, logic behind the argument that there is a relationship between economic fundamentals and security exchange performance, is rational. So, it is critical to investigate those relationships in developing market context.

Other than firm's cash flows and risk -adjusted discount rate, economic condition may also influence the availability and types of real investment opportunities.

To gain an advantage through stock exchange, one needs to have a sound economic understanding and intuition to interpret the effects of principle economic indicator on stock market. However, degree of sensitivity of stock exchange to those economic indicators will be different from one economy to another. Therefore, implication of those economic changes will also give different impact on share market performance in different economies. For instance, specially, in developing countries, the behavior of markets may not be restricted to those of economic aggregates and it may be handled by the speculative activities of irrational investors whose perception may be different from those in developed, well-organized market.

Role of CSE is critically examined in only fewer published literature. Therefore, it will be a definite advantage to academic researchers who have a great deal of attention about implication of economic fundamentals on share market performance. Further, this will be greatly helpful with respect to regulatory changes and policy making decision about future enhancement of the stock market.

2.0. LITERATURE REVIEW

In this literature review, many research articles addressing the matters of the influences of the macro – economic variables on stock exchange performance have been discussed, specially how various researchers carried out their researches under this topic in line with their countries' economic scenarios, what are the variables used to represent the macro – economic condition in their researches and conclusion obtained on these researches are discussed in here.

Even though most of researchers discussed the matter of relationship between stock market indicators and macro economic variables in the context of already developed countries, researchers would like to give a more attention on the same matter in the context of developing economies since they were highly attached with this research topic. Thereby, readers may easily understand the methodology, findings and, conclusion drawn from this research deeply. Most of the researchers have selected aggregate economic variables to be employed in their research models, in most of cases, based on their countries' economic environment. Inflation rate, exchange rate, Interest rate, money supply, industrial production index, crude oil price, economic growth (growth in national output) were the variables that they have mostly selected to study macro economic conditions with stock market indices.

In Gunasekarage, Pisedtasalasai and Power's research, researchers suggested that treasury bill rate belongs the strongest impact on stock index change compared to other variables while vector error correction model (VECM) analysis give a some sort of empirical support for the argument that the lagged values of macro variables such as the consumer price index, the money supply and T' bill rate has a potential influence on stock market index. In their research, they pointed out logic behind the selection of money supply, interest rate, inflation, and exchange rate. In addition to those variables, they had tried to add a more value to their research by adding another new variable, US stock index as a proxy variable for external influence in their research model, in which they have included it as a dummy variable assuming that the US stock market has an effect on the Sri Lankan stock market, not vice versa.

According to the vector error correction model (VECM) model estimated in their study, the rate of inflation, money supply and the Treasury bill rate had a significant lagged influence on the stock market index while the Variance Decomposition (VDC) analysis provides the empirical result that only the minority of variability was described by selected macro- economic variables. Researchers justified their findings gained from the VDC by giving the reason that they used only a sub set of variables available in studies of developed market. In addition to that, they proposed to prospective researchers to integrate other variables such as industrial production, a broader measure of money supply and a long term interest rate in to their analysis through which their researches' findings may overcome the above short falls they have observed. Under the Impulse response function (IRF), it was reflected that macro economic variables had only an immediate impact on stock market index. As per their opinion, reason of not to have a significant long – lasting impact may be the trading strategies of speculative investors exerted in immature stock exchange of both size and liquidity position. That is why variability of stock index was well explained by the irrational behavior of the speculative investors than macro-economic fundamentals.

Athapaththu and Jayasinghe have approach to investigate the impact of macro variable on stock market performance in a little bit different way compared to the other researches referred. They used only economic growth to examine whether the stock market performance promotes economic growth in Sri Lanka. There is a common acceptance that frequency of the data on stock market development should be on daily (or monthly)

frequency. They carried out their investigation on quarterly data, it was because of the fact that monthly GDP figures in Sri Lanka are not available at the time of research they have concerned.

Even though they had used quarterly figures, they had reached their research objectives, by introducing additional stock exchange development indicators on size and liquidity of the stock exchange, following Levine and Zervos, (1995). To represents the size of the stock exchange, they have used market capitalization and ASPI while liquidity is reflected by an index which is the average of market capitalization ratio (market Capitalization/GDP), turnover ratio (Value traded/market capitalization)and liquidity ratio (Value traded/GDP). In fact, they were not frequently used stock exchange indicators in researches on stock market.

Therefore, compared to the other researches, their approach was somewhat new. In their research, they examined the impact of stock market performance on economic growth of Sri Lanka which was considered in terms of nominal and real growth rates over the study period of 1997 – 2008, by introducing stock market indicators employed as independent variable and growth in national output as explained variable. According to them, stock market development is a crucial factor to enhance the economic growth in Sri Lanka. Further their results are more similar with the finding of previous researches, especially of Levine and Zervos, (1996), Demignc, Kunt and Levine, (1956). As well as, consistent experience was there in countries within the same region like India, Pakistan, Nepal, Philippines, suggesting that stock market could influence to accelerate the economic growth in both term of real and nominal. This study revealed that basically, direction of the casual relationship was from stock market performance to economic growth. In addition to that, there was some empirical evidence that bidirectional causality was there; suggesting economic growth could influence the stock market performance as well. In other words, their conclusion says that both considered variables (economic growth and stock market performance) have impacts on each other.

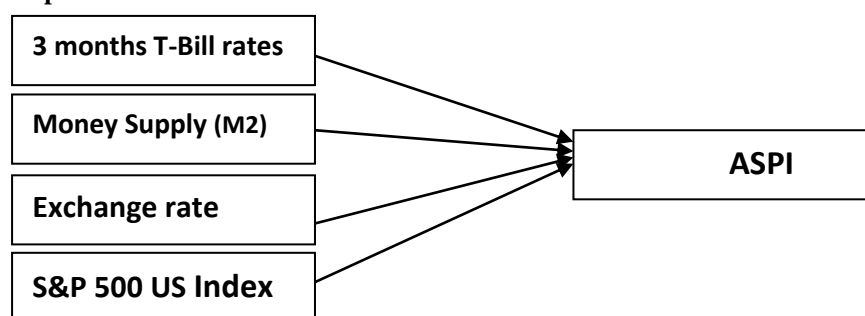
Chawla & Sirinivasan,(1980) suggested that money supply & interest rate assist significantly in explaining the fluctuations of price of shares. Compared to the interest rate ,impact of money supply over security prices was the same in all seasons. Pearce & Roley,(1983) found that the unanticipated changes in money supply which is predicted by the Efficient Market Hypothesis(EMH) is the only factor which affects stock prices. In advance, unanticipated increase in money supply gives a pressure to lower stock price & vice versa. Even though various researches provided conflicted findings about the relationship of macro-economic variables with stock market, especially in emerging stock markets, this is what requires enhancing the effectiveness of regulatory changes, policy decision & rational behavior of the investors who are dealing with share market towards the development of the future stock exchange in both developed & less developed countries.

2.0. RESEARCH DESIGN AND METHODOLOGY.

3.1. Research Problem

Is there any relationship between macro economic variables and stock market performances?

3.2. Conceptual Framework



3.3. Sample selection and Data collection.

Sampling period of this study is for 11 years, beginning from 2000 for both macro-economic and stock market index (ASPI) .Monthly values of ASPI values are gathered from data stream of CSE whose values are used to represent performance of the share market. This gives an indication about price fluctuation of all publicly listed companies which gives weights to cover all securities.

In this study, only a sub set of macro variables are employed to represent macro-economic scenarios. Under macro-economic variables, data related to money supply (M2), three-month T' bill rate which represents the risk free interest rate and exchange rates have been extracted from the monthly review of CBSL. However, there are some variables such as industrial production, GNP and trade balance, which are not included to the study due to non availability of those data on monthly basis. S & P 500, United State index was considered in addition to the local macro variables. Researchers have incorporated this index to explain the global impact on the ASPI. Literature suggests US market has a solid impact on most of markets in world.

3.4. Regression Model

In this study, multiple regression analysis was employed to assess the association between previous stated macro-economic factors and stock market performance. Accordingly, explained (Dependent variable) is the monthly ASPI and explanatory variables (Independent variables) are money supply, interest rate, exchange rate and S & P 500 index as proxy variable for external influences.

Money supply in a particular economy represents the liquidity position of that economy. There may be impact on investor's decision to the change in money supply. Treasury bill rate has been included as a representative for interest rate because of the fact that the T' bill acts as the rate of return gained from risk free investment. Exchange rate is also a vital factor since foreign investors deal with the CSE.

The above three macro variables are explained only the impact from domestic economic variables. However with the globalization, interdependency between national economies has been expanded and thus there should be at least one variable to represent the global impact on national stock exchange performance. To complete the model from the international perspective, the S & P 500 U S index is used. This index had been used by Gunasekarage, Pisedtasalasai, and Power in the study of Macro-economic influences on the stock market : Evidence from an emerging market in South Asia. Following is the model used for multiple regression analysis.

$$\text{ASPI} = \beta_1 + \beta_2 \text{MS} + \beta_3 \text{TBR} + \beta_4 \text{ExR} + \beta_5 \text{SP} + U_i$$

Where,

ASPI =Monthly stock market index.

MS= Monthly value in money supply.

TBR=Monthly Treasury bill rate

ExR= Monthly exchange rate

SP =Monthly value in S & P 500 index (representing external influence on stock index).

Ui=Error term

3.5. Correlation

Correlation measures the degree of linear association between two variables. Researcher expects to use a correlation analysis to identify the relationships between macro economic variables and stock market performances.

3.6. The Analysis Extension

Correlation technique was employed as a further analysis to analyze the relationship among variables. SPSS 19 (Statistical Package for Social Science) analytical package was used for the correlation analysis and regression analysis.

3.7. Hypotheses

Following null hypothesis and alternative hypothesis were made in this study to support the objectives of the study.

Null hypothesis

H0= There is not a significant relationship between macroeconomic variables such as T-Bill rate, exchange rate money supply and the stock market performances in Sri Lanka.

Alternative Hypothesis

H₁= There is a significant relationship between macroeconomic variables such as T-Bill rate, exchange rate money supply and the stock market performances.

Further following sub hypothesis also can be formulated.

- I. H₀ = There is a relationship between T-bill rate and ASPI
H₁ = There is no relationship between T-bill rate and ASPI
- II. H₀= There is a relationship between exchange rate and ASPI
H₁ = There is no relationship between exchange rate and ASPI
- III. H₀= There is a relationship between money supply and ASPI
H₁= There is no relationship between money supply and ASPI
- IV. H₀= There is a relationship between S& P 500 and ASPI
H₁= There is no relationship between S& P 500 and ASPI

4.0. FINDINGS AND ANALYSIS

AS discussed in the methodology a multiple regression and a correlation analysis were run to understand the relationship between performances of the stock market in terms of ASPI and the macro economic variables.

4.1. Correlation analysis

Correlation analysis is given first to get an understanding about behavior or movement of each variable included in the conceptual framework. ASPI is the dependent variable and others are independent macro economic variables.

Correlation measures the degree of linear association between two variables which is given in the table 05 in Appendices. There are relationships between ASPI which is the depended variable and other independent variables included in the framework other than Exchange rate.

There is a 0.889 strong positive correlation between ASPI and Money supply at 0.01 significant level.

This indicates when the money supply increases ASPI also increases vice versa. People tend to demand more when they have more money in their hands and thereby the prices of shares may increase. Then the stock market performances rise.

There is a -.0287 weak negative correlation between ASPI and Treasury bill rate at 0.01significant level suggesting when three months T-bill rate increases ASPI decreases. People try to invest in risk free investments when the rate of such investments rises and thereby demand for shares may fall. Then the stock market performances fall. Increase in T-bill rate may not create a strong impact still the rate may be not enough for the investors. It may be the reason why there is a weak correlation.

There is a 0.709 strong positive correlation between ASPI and the S&P 500 US index at 0.01 significant level. When the global market is strong and performing well, S&P 500 is also performing well vice versa. Therefore Colombo stock market may also reflect the better global economic conditions and hence it is positively correlated with S&P 500.

There is no relationship between ASPI and exchange rate according to the analysis.

4.2. Multiple Regression analysis

Stepwise multiple linear regression analysis was run and the results are given in the table 02- 04 in appendices.

Three models are proposed by the analysis are as follows.

$$1. ASPI = \beta_1 + \beta_2 MS + U_i$$

$$ASPI = -622.89 + 0.003 MS + U_i$$

$$2. ASPI = \beta_1 + \beta_2 MS - \beta_3 TBR + U_i$$

$$ASPI = 260.1 + 0.003 MS - 70.152 TBR + U_i$$

$$3. ASPI = \beta_1 + \beta_2 MS - \beta_3 TBR + \beta_4 ExR + U_i$$

$$ASPI = -1601.552 + 0.003 MS - 101.071 TBR + 1.872 ExR + U_i$$

Model 1: $ASPI = \beta_1 + \beta_2 MS + U_i$

Model one excludes the T-bill rate, Exchange rate and S&P 500 variables from the model suggested under the conceptual framework. Here ASPI is explained only by the money supply. As per the table 01, 79% of the total variation of ASPI is explained by the money supply under the model one since R^2 is 0.79.

Model two excludes the Exchange rate and S&P 500 variables from the model suggested under the conceptual framework. Here ASPI is explained by both money supply and T-bill rates. 83.4% of the total variation of ASPI is explained by the money supply and T-bill rate since R^2 is 0.834 according to the table 01. Explanatory power of the model two is higher than the model one since T-bill rate also affects the ASPI.

Model three excludes only the S&P 500 variable from the model suggested under the conceptual framework. Therefore the explanatory power of the independent variables has improved to 0.893 as per table 01 suggesting 89.3% of the total variation of ASPI is explained by money supply, T-bill rate and exchange rate.

4.3. Analysis of variance (Test for the suitable models)

Hypothesis

H_0 = There is a not significant relationship between ASPI and the macro economic variables

H_1 = There is a significant relationship between ASPI and macro economic variables

$$H_0 - R^2 = 0$$

$$H_1 - R^2 \neq 0$$

If the null hypothesis is correct R^2 should be zero and model will not be suitable. In this context the regression sum of squares will be smaller and error sum of square becomes larger. Then the value of F will be small.

If the alternative hypothesis is correct R^2 should not be zero and model will be suitable. In this context the regression sum of squares (SSR) will be larger and error sum of square (SSE) becomes smaller. Then the value of F will be larger.

Variable	Model	R^2	t	F	Significance
MS	$ASPI = -622.89 + 0.003 MS + U_i$	0.79	22.089	487.927	0.000
MS and TBR	$ASPI = 260.1 + 0.003 MS - 70.152 TBR + U_i$	0.834	24.137, -5.846	323.315	0.000
MS, TBR, ExR	$ASPI = -1601.552 + 0.003 MS - 101.071 TBR + 1.872 ExR + U_i$	0.893	30.092, -9.751, 8.369	354.262	0.000

Model 01

F value of the model one is 487.927 which is larger and the significance level close to zero suggesting the overall model is significant and fit for the regression line. Then we can reject the null hypothesis and accept the alternative hypothesis.

Further, the t value of the coefficients of the parameter β_1 and β_2 are -4.9 and 22.089 respectively which are also larger suggesting that the coefficient are also significant at the 0.0001 level.

Model 02

F value of the model two is 323.315 which is larger and the significance level close to zero suggesting the overall model is significant and fit for the regression line. Then we can reject the null hypothesis and accept the alternative hypothesis.

Further, the t value of the coefficients of the parameter β_1 , β_2 and β_3 are 1.379, 24.137 and -5.846 respectively. t value of Coefficients of β_2 and β_3 are also larger suggesting that the coefficient are also significant at the 0.0001 level. t value of coefficient of β_1 is just above 1.

Model 03

F value of the model three is 354.262 which is larger and the significance level close to zero suggesting the overall model is significant and fit for the regression line. Then we can reject the null hypothesis and accept the alternative hypothesis.

Further, the t value of the coefficients of the parameter β_1 , β_2 , β_3 and β_4 are -5.942, 30.092, -9.751 and 8.369 respectively which are also larger suggesting that the coefficient are also significant at the 0.0001 level.

04. Conclusion

Key Objective of this study was to examine whether the macroeconomic variables have an impact on the stock market performances of Sri Lanka. ASPI was used as a proxy to the stock market performances and money supply, T-bill rate, exchange rate and S&P 500 index were used as macroeconomic variables. Then the researchers tested whether there is any significant relationship between ASPI and the said macro economic variables to say macro economic variables have an impact on the stock market performances.

Employing multiple regressions and correlation matrix attempted to identify whether the macro economic variables have significant impact on the performance of the Colombo stock exchange. Correlation matrix evidences that there are relationships between ASPI and the macro economic variables. Further stepwise multiple regressions also propose three linear regression models for the ASPI and other macro economic variables. Finally researchers conclude that AAPI is explained by macroeconomic variables and thus stock market performances are explained by macroeconomic variables.

Proposed three models can be used for some forecasting purposes. Model one is more significant with largest F value. However model three explains the ASPI by 89.3% suggesting it as the best model which best fits to the regression line.

Though there is a strong positive correlation between the S&P 500 and ASPI, stepwise multiple regression method excludes that variable from the model suggesting there are minimum impacts from the global markets to the Colombo Stock Exchange. In addition to that the exchange rate variable has been considered under the stepwise multiple regressions though there is not a relationship according to the correlation matrix. Small number of foreign investors may positively react on exchange rate changes over the ASPI.

5.0. Appendices

Table 01

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.889 ^a	.790	.788	629.47995
2	.913 ^b	.834	.831	561.85339
3	.945 ^c	.893	.890	453.45467

a. Predictors: (Constant), Money Supply

b. Predictors: (Constant), Money Supply, Treasury Bill Rate

c. Predictors: (Constant), Money Supply, Treasury Bill Rate, Exchange Rate

Table 02

ANOVA^d

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.933E8	1	1.933E8	487.927	.000 ^a
	Residual	51511851.310	130	396245.010		
	Total	2.449E8	131			
2	Regression	2.041E8	2	1.021E8	323.315	.000 ^b
	Residual	40722620.846	129	315679.231		
	Total	2.449E8	131			
3	Regression	2.185E8	3	72843685.259	354.262	.000 ^c
	Residual	26319505.372	128	205621.136		
	Total	2.449E8	131			

a. Predictors: (Constant), Money Supply

b. Predictors: (Constant), Money Supply, Treasury Bill Rate

c. Predictors: (Constant), Money Supply, Treasury Bill Rate, Exchange Rate

d. Dependent Variable: All Share Price Index

Table 03

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-622.890	126.498		-4.924	.000
	Money Supply	.003	.000	.889	22.089	.000
2	(Constant)	260.100	188.574		1.379	.170
	Money Supply	.003	.000	.870	24.137	.000
	Treasury Bill Rate	-70.152	12.000	-.211	-5.846	.000
3	(Constant)	-1601.552	269.518		-5.942	.000
	Money Supply	.003	.000	.876	30.092	.000
	Treasury Bill Rate	-101.071	10.365	-.304	-9.751	.000
	Exchange Rate	1.872	.224	.260	8.369	.000

a. Dependent Variable: All Share Price Index

Table 03

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-622.890	126.498		-4.924	.000
	Money Supply	.003	.000	.889	22.089	.000
2	(Constant)	260.100	188.574		1.379	.170
	Money Supply	.003	.000	.870	24.137	.000
	Treasury Bill Rate	-70.152	12.000	-.211	-5.846	.000
3	(Constant)	-1601.552	269.518		-5.942	.000
	Money Supply	.003	.000	.876	30.092	.000
	Treasury Bill Rate	-101.071	10.365	-.304	-9.751	.000
	Exchange Rate	1.872	.224	.260	8.369	.000

Table 04

Excluded Variables ^d						
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Treasury Bill Rate	-.211 ^a	-5.846	.000	-.458	.992
	Exchange Rate	.152 ^a	3.983	.000	.331	.997
	S&P_US index	-.147 ^a	-1.974	.051	-.171	.285
2	Exchange Rate	.260 ^b	8.369	.000	.595	.871
	S&P_US index	-.169 ^b	-2.556	.012	-.220	.284
3	S&P_US index	-.051 ^c	-.900	.370	-.080	.264

a. Predictors in the Model: (Constant), Money Supply

b. Predictors in the Model: (Constant), Money Supply, Treasury Bill Rate

c. Predictors in the Model: (Constant), Money Supply, Treasury Bill Rate, Exchange Rate

d. Dependent Variable: All Share Price Index

Table 05

Correlations						
		All Share Price Index	Money Supply	Treasury Bill Rate	Exchange Rate	S&P_US index
All Share Price Index	Pearson Correlation	1	.889**	-.287**	.104	.709**
	Sig. (2-tailed)		.000	.001	.234	.000
	N	132	132	132	132	132
Money Supply	Pearson Correlation	.889**	1	-.088	-.053	.845**
	Sig. (2-tailed)	.000		.315	.545	.000
	N	132	132	132	132	132
Treasury Bill Rate	Pearson Correlation	-.287**	-.088	1	.359**	-.103
	Sig. (2-tailed)	.001	.315		.000	.240

	N	132	132	132	132	132
Exchange Rate	Pearson	.104	-.053	.359**	1	-.188*
	Correlation					
	Sig. (2-tailed)	.234	.545	.000		.031
	N	132	132	132	132	132
S&P_US index	Pearson	.709**	.845**	-.103	-.188*	1
	Correlation					
	Sig. (2-tailed)	.000	.000	.240	.031	
	N	132	132	132	132	132

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

6.0. REFERENCES

Arshanapalli, B., & Doukas, J. (1993). International Stock Market Linkages:evidence from the pre- & Post-October 1987 period. *Journal of Banking & Finance* . , vol 17,pp 193-208.

Athapathu, A. R., & Jayasinghe, P. (n.d.). STOCK MARKET PERFORMANCE AND ECONOMIC GROWTH: THE CASE OF SRISTOCK MARKET. *Working Paper* .

Atindehou, R., & Gueyie, J. (2001). Canadian chartered bank's stock returns & exchange rate risk. *Management Decision* , 51(4): 285-295.

Bodie, Z. (1976). Common stock as a hedge against inflation. *Journal of Finance* , vol 31:pp 459-470.

Castanias, R. (1979). Macroinfomation & the volatality of stock market prices. *Journal of Finance* , vol 34 ,pp 439-450.

Chen, N., Roll, R., & Ross, S. (1986). Economic Forces & the stock Market. *Journal of Business* , vol 59,pp 383-403.

Cheung, Y., & Mak, S. (1992). The International Transmission of Stock Market Fluctuations between Developed Markets & Asian-pacific Markets. *Applied Financial Economics* , vol 2,pp 43-47.

Cheung, Y., & Ng, L. (1998). International Evidence on Stock Market & Aggregate Economic Activity. *Journal of Empirical Finance* . , vol 5,pp 281-296.

Cutler, D., Poterba, J., & Summers, L. (1989). what moves stock prices. *Journal of Portfolio management* , 15:4-12.

Darret, A. (1990). Stock Returns,money & Fiscal deficits. *The Journal of Financial & quantitative analysis* , 25(3):387-398.

Eun, C., & Shim, S. (1989). International Transmission of Stock Market Movements. *Journal of Financial & quantitative Analysis* . , vol 24, pp241-256.

Fama E.F, S. G. (1977). Asset returns & Inflation. *Journal of Financial Economics* , 5:115-46.

Fama, E., & Schwert, G. (1977). Assets returns & Inflation. *Journal of financial Economics* , 5:115-46.

- Feldstein, M. (1980). Inflation & Stock market. *American Economic review* , 70(5):839-847.
- Fifield, S., Power, D., & Sinclair, C. (2002). Macroeconomic Factors & Share Returns:An Analysis using Emerging Market Data. *International Journal of Finance & Economics.* , vol 7,pp 51-62.
- Gjerde, O., & Asetterm, F. (1995). Linkages among European & world Stock Markets. *European Journal of Finance.* , vol 1,pp 165-179.
- Gunasekarage, A., & Power, D. (2001). The profitability of Moving Average Trading Rules in South Asian Stock Markets. *Emerging Markets Review.* , vol 2,pp 17-33.
- Gunasekarage, A., Pisedtasalasai, A., & Power, D. (n.d.). Macroeconomic influences on the stock market : Evidence from an emerging market in South Asia.
- Harvey, C. (1995 b). Predictable Risk & returns in emerging market. *Review of Financial studies* , vol 8, pp 773-816.
- Harvey, C. (1995 a). The Risk exposure of Emerging Stock Markets. *The World Bank Economic Review.* , vol 9,pp 19-50.
- Hosseini, S. M., Ahmad, Z., & Lai, Y. W. (Nov ,2011). The Role of macroeconomic Variables on stock market index in China and india. *international Juornal of Economics and Finance* , , Vol 3,No: 6.
- Jaffe, J., & Mandelker, G. (1976). The "Fisher Effect" for risky assets:an empirical investigation. *Journal of Finance* , 31(2):447-458.
- Jain, P. (1988). Responses of hourly stock prices & trading volume to economic news. *Journal of Business* , vol 61,pp 219-31.
- Janakiramanan, S., & Lamba, A. (1998). An Empirical Examination of Linkage between Pacific-Basin Stock Markets. *Journal of International Financial markets,Institutions & Money* , vol 8, pp 155-173.
- Joseph, N., & Vezos, P. (2006). The sensitivity of the US bank's stock returns to interest rate & exchange rate changes. *Managerial Finance* , 32(2):182-199.
- Lintner, J. (1973). Inflation & common stock prices in a cyclical context. *National Bureau of Economic research Annual Report* .
- Liu, Y., & Pan, M. (1997). Mean & volatility spill-over effects in the US & Pacific-Basin stock markets. *Multinational Finance Journal.* , vol 1, pp 47-62.
- Maish, A., & Maish, R. (1997). comparative Analysis of the propagation of stock market fluctuations in Alternative Models of Dynamic Causal Linkages. *Applied Financial Economics.* , vol 7,pp 59-74.
- Meric, I., & Meric, G. (1997). comovements of European Equity Markets before & after the 1987 crash. *Multinational Finance Journal.* , vol 1, pp137-152.
- Modigliani, F., & Cohn, R. (1979). Inflation,rational valuation & the market. *Financial Analysts Journal* , 35:3-23.
- Mohiuddin, M., Alam, M., & Shahid, A. (2008). An Empirical Study of the relationship between macro-economic variables & Stock prices:A Study on Dhaka Stock Exchange. *Working Paper-American International University-Bangladesh.*
- Naka, A., Mukherjee, T., & Tufte, D. (1991-2006). Macroeconomic variables and the performance of the Indian Stock Market;. *Department of Economics and Finance Working paper* .
- Nelson, C. (1976). Inflation & rates of return on common stocks. *Journal of Finance* , 31(2):pp 471-483.
- Oudet, B. (1973). The variation of the returns on stock in periods of inflation . *Journal of Financial & Quantitative Analysis* , vol 8,pp247-58.
- Pearce, D., & Roley, V. (1985). Stock prices &Economic News. *Journal of Business* , vol 58;49-67.

