Effect of Inflation on Stock Prices: Evidence from Sri Lanka

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Abstract— Objective of this study is to test the relationship between inflation rate of a country and the Stock prices during a period of ten years. Monthly inflation rate is used as independent variable and All Share Price Index as the dependent variable in developing a linear regression model. Correlation between the variables provides further contribution to the outcome. Results of the study reveal a negative relationship between Inflation rate and Stock prices. Percentage change approach in the study discloses a positive relationship between growth rate of Inflation and Stock returns.

Index Terms— Inflation Rate, All Share Price Index, Stock Returns, Inflation Growth Rate, Colombo Stock Exchange, Capital Markets.

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1 INTRODUCTION

The emerging trend of investing in capital markets has increased the attention of investors on economic factors that affect stock returns. Studies on capital markets and economic variables are driven by this necessity of investors in order to predict future returns. At the same time Stocks are considered as hedging instruments against inflation due to their comparable behavior (Tripathi & Kumar , 2014).The knowledge from this research would facilitate investment decision making and risk mitigation of all the stake holders of capital markets.

2 REVIEW OF LITERATURE

The relationship between stock market returns and inflation has drawn the attention of researchers for a long time.

Ibrahim & Agbaje (2013) examined the long-run relationships and dinamic interaction between stock returns and inflation in Nigeria using monthly data of the All Share Price Index from the Nigerian Stock Exchange and Nigerian Consumers Price Index from January 1997 to 2010. In their results they found that there was evidence existed of a long-run relationship between stock returns and inflation.

In another study conducted by Geetha etal (2011) revealed that there is long run relationship between expected and unexpected inflation with stock returns but there is no short run relationship between these variables for Malaysia and United States but it exists for China. Further their findings implied that investors in making good portfolio decisions should perhaps view equities as long-term holdings against inflation's erosion of purchasing power.

When it comes to the South Asian region Vanita & Arnav (2014) stated that stocks are generally considered to be a good hedge against inflation because of their tendency to move together. Their results revealed a significant negative relationship between stock index and inflation rate for Russia and a significantly positive relationship for India & China.

Perera (2015) argued that the inflation rate has a weaker impact in determining Stock index, in his study on Colombo Stock Exchange of Sri Lanka.

3 METHODOLOGY

3.1 Data Collection and Sample

Monthly data for the period of 2004 to 2014(ten years) are collected due to limitations in availability of data. Central bank of Sri Lanka provides monthly inflation rates for the considered period and Colombo Stock Exchange offers monthly All Share Price Index data for the study. Numeric data are transformed in to percentage changes in testing the effect of inflation growth rate on stock returns.

3.2 Hypotheses

Based on the literature, researcher is encouraged to develop two main hypotheses,

H1. There is a negative relationship between Inflation and Stock Prices.

H2. There is a positive relationship between Inflation growth rate and Stock Returns.

3.3 Model

Following the simplified model used by Alam & Uddin (2009), researcher introduced a linear regression model to collected data.
Linear regression model;

$$Y_{1it} = u_{0i} + u_{1i} X_{1it} + u_{it}$$

Further the model suggests testing the relationship between percentage changes of the variables. Below model provides a mechanism to transform the data set to percentage changes. The percentage data will be considered to find the correlation between inflation growth and Stock Returns.

Percentage change calculation;

$$X_2 = 100 * [X_{1(t)} - X_{1(t-1)}] / X_{1(t-1)}$$

which is proven to be weak.

4 ANALYSIS

Output from the data is displayed using statistical tables, which emphasize the relationship between the variables.

Correlations

		Inflation Rate	All Share Price Index
Inflation Rate	Pearson Correlation	1	-.471**
	Sig. (2-tailed)		.000
	N	120	120
All Share Price Index	Pearson Correlation	-.471**	1
	Sig. (2-tailed)	.000	
	N	120	120

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

There is a negative relationship between Inflation rate and Share Prices. A correlation of -.471suggests that the strength of the relationship is moderate.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5406.458	306.486		17.640	.000
	Inflation Rate	-155.156	26.782	-.471	-5.793	.000

a. Dependent Variable: All Share Price Index

P values of T-test falls below 0.05 boundary, which states the coefficients of Inflation rate is significant in determining the Stock Prices.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.471[a]	.221	.215	1719.3315	.221	33.562	1	118	.000

a. Predictors: (Constant), Inflation Rate

b. Dependent Variable: All Share Price Index

Coefficient of determination (R square) shows that 22.1% of the Stock Prices are determined by Inflation Rate. The minor difference between R square and Adjusted R square further strengthens the above argument.

Correlations

		Change in Inflation rate	Change in All Share Price Index
Change in Inflation rate	Pearson Correlation	1	.074
	Sig. (2-tailed)		.423
	N	120	120
Change in All Share Price Index	Pearson Correlation	.074	1
	Sig. (2-tailed)	.423	
	N	120	120

Above table shows the correlation between percentage changes of Inflation (Inflation growth rate) and Change in Stock Prices (Stock Returns). There is a positive correlation,

5 CONCLUSION

Considering the analysis of the outcome, Researcher arrives at few conclusions. As per the literature; there is a negative relationship between Inflation rate and Stock prices. This finding guides investors and hedgers to mold their decisions regarding capital markets. However the Inflation growth rate affects Stock Returns positively. Despite the positive relationship, it would be risky for an investor to merely depend on growth rates (percentage changes) of variables.

This study was subject to data collection limitations which restricted the sample duration of ten years. Further monthly average inflation rate is observed as the independent variable in this study.

Conducting the same study for different sectors could be seen as future research directions.

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