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A study on the impact of industrial production index (IPI) to beverage, food and tobacco sector index with special reference to Colombo Stock Exchange

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Abstract

This study attempts to explore the impact of Industrial Production Index to sector performance of Beverage, Food and Tobacco in Colombo Stock Exchange Sri Lanka. Secondary data were used for the analysis. Sector index was taken from the Data Library of Colombo Stock Exchange and Industrial Production Index was taken from Annual Reports of Central Bank Sri Lanka. Monthly data were gathered from January 2002 to December 2014. For the time series data set, first, the stationary was checked using Augmented Dickey-Fuller and Phillips Perron Tests of E-views software. The results of stationary check show that the sector index is stationary at 1st difference in both ADF and PP tests. Industrial Production Index is stationary at 2nd difference in ADF test but 1st difference is stationary in PP test. Because of the seasonal trend in IPI 12th difference also considered and it is stationary in both ADF and PP tests. Granger Causality test was used to find out the causal relationship between variables. Results show the one way causality that the changes occurring in IPI will have an effect on changes in sector index. But changes in sector index will not have any effect on changes in IPI. Finally a regression was used to find out the relationship between variables. A Pearson Correlation coefficient was checked to find the correlation among variables before moving to the regression. Result of correlation test shows 84% higher correlation between variables and regression result shows a significant positive relationship among variables. The study concludes that Industrial Production Index will positively impact on Beverage, Food and Tobacco sector Index in Sri Lanka. It can be recommended that the changes occurring in the IPI be considered by Investors when they buy and sell stocks in BFT sector.

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Keywords: Sector Return; Industrial Production Index (IPI); Granger Causality; Regression

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1. Introduction

Food and beverage sector of Sri Lanka plays an important role in terms of its considerable contribution towards the growth in Gross Domestic Product (GDP) of the country. Processed food & beverage industry has become a booming product sector during last few years contributing around 10% to the GDP. Sri Lanka is blessed with natural resources and climatic conditions from tropical to sub-tropical, suitable for a wide range of fruits & vegetables. The factors such as quality, taste and flavor which are unique to Sri Lankan products are associated with the intrinsic quality of resources available in different geographical locations of the country.

In Sri Lanka, Industrial Production (IP) measures the output of businesses integrated in industrial sector of the economy such as manufacturing, mining, and utilities. When calculating the IPI it is considered Food, beverage and tobacco products (46.9%), Textiles, wearing apparel and leather products (22.7%), Wood and wood products (0.9%), Paper and paper products (0.4%), Chemicals, rubber, plastics and petroleum (14.2%), Non-metallic mineral products (5.1%), Basic Metal Products (0.2%), Fabricated metal products (7.7%), and Products (not elsewhere states) (1.9%). IP in Sri Lanka increased 13.50 percent in December of 2014 over the same month in the previous year 2013. IP averaged 6.03 percent from 2002 until 2014, reaching an all time high of 35.20 percent in July of 2010 and a record low of -7.95 percent in September of 2012.

Investors believe that macroeconomic events occurring in the country have a great influence on volatility of the stock prices which implies that macroeconomic variables can influence investors' investment decisions and motivates many researchers to observe the relationships between stock returns and macroeconomic variables. Thus detecting the association between sector index and IPI has become crucial for the academicians, practitioners and policy makers.

Less research have been done to identify the relationship between Beverage, Food and Tobacco sector index with IPI. But numerous studies have been examined the relationship between stock returns and IPI. Malliaris and Urrutia¹, Maysamiet al², Errunza and Hogan³ found a significant relationship between stock returns and IPI while Humpe and Macmillan⁴ found a positive relationship. Some studies have shown a significant causal relationship between variables.

2. Methodology

2.1 Data and Data collection

This study attempts to investigate the relationship between IPI and sector market index in Sri Lanka. The data used in this study are sampled on a monthly basis over the period from January 2002 to December 2014. Sector Market Index is taken from Colombo Stock Exchange publications and IPI that are hypothesized to influence stock returns are obtained from the publications of Central Bank of Sri Lanka.

2.2 Development of hypotheses

In order to find the relationship between IPI and BFT sector index the following hypothesis is formed.

$$H_0: \beta_1 = 0 \text{ Vs}$$

$$H_1: \beta_1 \neq 0$$

β_1 = the coefficients of IPI

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