

Effect of five Macroeconomic variables on Stock Prices: Evidence from Bangladesh Data

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Abstract: The key purpose of this research paper is to explore the impact of five macro-economic variables on stock prices derived from the Dhaka Stock Exchange. Five variables such as- Inflation rate, Average Currency Exchange Rate (EXR), Index of Industrial Production (IPI), Supply of Money (M3), and 91-day Treasury Bill Rate (TB) were taken as independent variables, where Broad Index Price of Dhaka Stock Exchange (DSEX) was taken as dependent variable. Monthly data was collected from July 2006 to June 2020 to achieve the study's target, totaling 168 data samples for analysis. Ordinary Least Square (OLS) Regression model used to estimate the relationship on contrary stationarity of data tested by Augmented Dickey Fuller (ADF) test. From the regression performance, it was revealed that the DSEX price had a positive association with Money Supply and, Currency Exchange rate whereas Inflation rate, T-Bill rate, and Industrial Production Index had no relationship with DSEX price. The investor should take investment decision wisely considering the fact that any changes in money supply and exchange rate will positively impact DSEX Broad index price as well as stock return.

Keywords: Stock Price, Macroeconomic variables, DSE, Regression analysis, Unit root test.

1.0 INTRODUCTION

Small savers get a share of large businesses or firms due to the capital market system. Stock Market serves as a conduit for channeling funds to investors by using individual capital. It aids in the development of a country's manufacturing and trade, which has an effect on the economy. In every country around the world, one of the priorities of government macroeconomic policy is to grow the stock market. By using financial assets such as capital and security, the stock market helps commodity movement and facilitates relationships between functional market participants. Stock markets, on the other hand, have often been vulnerable to relevant information that influenced the movement of individual stock prices. This information may include almost any news that the investors are interested in. The stock market's operation is dependent on investors' purchasing and selling decisions, which are affected by a variety of economic factors. Furthermore, Performance of companies largely influenced by their economic conditions hence, fluctuations of Stock price are linked to the local as well as international macro-economic factors that are occurring or being estimated by the market (Peiro, 2016).

The conduct of stock indices is influenced by a number of factors. These factors including the Economic, political, social, demographic, and geographic circumstances and events all play a role in the stock market's growth. Various macroeconomic variables such as interest rate, inflation, interest rate, GDP, political shocks, legislative adjustments, and so on play a

significant role in deciding stock prices. As a result, studying the effects of macroeconomic fundamental variables has emerged as one of the most critical topics for economists and financiers. Naik and Padhi (2012) in their report mentioned that - The Efficient Market Hypothesis (EMH) (Fama, 1970), In an efficient economy, all important information about fluctuations in macro-economic conditions is fully expressed in current stock prices, so investors cannot benefit from arbitrage in these markets. If the concluding assumptions of the Efficient Market Hypothesis is right, then adjustments in macroeconomic variables should have little impact on stock returns. However, subsequent studies by Fama and Schwert (1977), Nelson (1976), and several other scholars have critically analyzed the conclusions drawn from the EMH, concluding that macroeconomic variables do impact stock returns by influencing stock prices. An economy with an excessive amount of money supply also has a higher overall liquidity position, which boosts investor purchasing power for securities and raises demand and pushes up security prices. In the same way, the opposite circumstance causes security prices to decrease. Thus, the effect of insufficient liquidity on the economy is the opposite of the impact of strong liquidity (Sahu & Pandey, 2018).

Bangladesh's stock market, as part of the financial system, has long played an important role in the country's economic growth. Despite being one of Asia's smallest electronic stock exchanges, it is an important part of Bangladesh's financial system. Dhaka Stock Exchange (DSE), the country's first stock exchange, was established in 1954 and began operations in 1955. It began with

196 listed securities and Taka 4 billion in total paid-up capital. Bangladesh's financial sector has undergone significant changes as a result of economic reforms in the 1990s. As a result of the economic reform, more exposure to economic and financial risks has been assumed, as have the activities in the financial markets and their relationships with macroeconomic factors. Bangladesh's stock price is extremely unpredictable, and it is heavily influenced by monetary policy and other macroeconomic factors. It is important for investors to understand macroeconomic variables before buying or selling a stock. Any adjustment in macroeconomic variables such as the bank rate, inflation, interest rate, exchange rate, and so on have an effect on the overall stock market, either directly or indirectly. The major lagged effects of macroeconomic variables on stock prices, according to Ibrahim (1999), suggest informational inefficiency in the stock market. This means that individual investors will benefit abnormally by using historical macroeconomic data. The existence of this exploitable potential would then severely skew the market's ability to function efficiently to allocate insufficient resources. The fact that stock prices have the opposite impact on macroeconomic factors suggests that stock market fluctuations foreshadow future economic conditions. As a result, they may be used as a leading indicator to aid in the development of current economic stabilization policies.

Only few studies on the effect of macro variables on market prices have been performed in Bangladesh. As a result, the paper investigated whether the price of the DSE Wide Index is affected by various macroeconomic variables or not. It is generally impossible to determine the effect of all macroeconomic variables. As a result, the emphasis of this study was on five macroeconomic variables: monthly inflation rate, currency exchange rate (EXR), Index of industrial production (IPI), supply of money (M3), and short-term interest rate (TB).

1.1 History of Stock Market of Bangladesh:

As compared to the stock markets of neighboring countries, Bangladesh's stock market journey is relatively short. Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE) are Bangladesh's two fully electronic stock exchanges. On April 28, 1954, the DSE was established as the East Pakistan Stock Exchange Association Limited. Formal trading, on the other hand, started in 1956, when the DSE listed 196 securities with a total paid-up capital of about Tk. 4 billion. It was renamed East Pakistan Stock Exchange Limited on June 23, 1962. Because of the liberation and the government's economic policy, the stock exchange's trading operations were suppressed after 1971 until 1976. Trading resumed in 1976, with only 9 companies listed on the stock exchange, each with a paid-up capital of Tk. 137.52 million. It was renamed Dacca Stock Exchange on May 13, 1964, and then Dhaka Stock Exchange in 1986.

On the other hand, Chittagong lacked one key component of an industrialized economy: a stock exchange, which serves as a vital conduit for funds to reach entrepreneurs. Chittagong's business leaders recognized the need and understood that the Dhaka Stock Exchange (DSE) alone would not be sufficient to achieve the primary goal of providing an exchange. CSE was established in 1995 in the context of this scenario. It is a limited-by-shares company. On October 10, 1995, it began trading. The Chittagong Stock Exchange is also a non-profit entity, and its board of directors, size, and election rules are close to those of the DSE.

1.2 Issues with the Stock Market of Bangladesh

As we all know that some issues are obstructing the smooth operation of the capital market, especially the share market. As a result, the financial market, as reflected by the stock market, is unable to contribute significantly to the country's GDP. Issuers, Savings Holders/Investors, Intermediaries, and the Securities Exchange Commission are the four Interested Groups in the stock market. The status of the capital market cannot be established without their collective participation. The issuer companies are unable to contribute effectively due to a lack of numbers, irregularities in keeping AGMs and declaring dividends (or declaring insufficient dividends), losses, corruption, a strained relationship between lower and upper management, and the negative impact of trade unionism, among other factors. The position of savers/investors is not commendable because they lack adequate understanding of the market, they become fearful of investing their money, and they prefer to invest in saving certificates or small and medium businesses, among other things. Intermediaries such as banks and other financial institutions, as well as problem houses, become involved in some way. Commercial banks, for example, are involved in developing special credit programs or are unable to approve loans for the stock market without adequate protection, merchant banks do not operate properly, and so on. The watchdog, the Securities and Exchange Commission (SEC), is unable to play the position that it should. It cannot encourage investment, especially small investors, by offering attractive packages such as minimum investment benefits, risk avoidance, training centers, and proper market supervision; it also cannot establish a conducive environment for larger as well as foreign direct investment (FDI), constructive cooperation between or among the parties concerned, and so on. Of course, the Securities and Exchange Commission recently suspended the trading of stock in nine Z group companies due to shady dealings by those firms. Shareholders of those companies do not receive dividends, and annual general meetings are not held, thus the price of those shares falsely rises due to rumors and cheating by fraudulent investors and syndicates, causing small investors to lose money on those shares. A further issue discovered is that the existence of large and are mostly sound corporations in this industry is insignificant, which could aid in the soundness of this market. The current method for deciding the price of IPO shares requires companies to submit their Prospectus to the SEC for review, and the SEC then approves the Prospectus, which determines the price of the shares. As a result, large corporations claim that they are not receiving the correct value for their stock, and as a result, they are dissatisfied and unable to participate in this market. Of course, in light of the situation, the SEC agreed to implement a new method called the Book Building System (BBS) for determining the same. The price of IPO (initial public offering) shares will be decided by an automated bidding process in this scheme. The value of the IPO shares will then be calculated by the indicative price obtained from the five institutional investors, and this indicative price will then be subjected to an automated bidding procedure. Here, general institutional investors will participate and set the price for the shares, which will then be approved by the SEC. Still, in light of the aforementioned considerations, it is clear that, despite its many advantages, the capital market cannot meaningfully contribute to Bangladesh's economy.

2.0 LITERATURE REVIEW

The association between macro variables and stock market prices has been studied using various theoretical and analytical models all over the world. Different researchers have different data to support the notion that fundamental macroeconomic variables influence stock market index prices and vice versa. There are two types of previous empirical studies on the relationship between macroeconomic variables and stock price. The effect of macroeconomic factors on stock prices is the first type of research. The second set of research looked at the connection between stock market volatility and macroeconomic indicator volatility. Since this paper is focused on the first group, it has gone through some of the related literature on the macroeconomic determinants of stock prices.

By modeling equity return as a function of macro variables and non-equity asset returns for the United States, **Chen, Roll, & Ross** in 1986 (as cited by **Sahu & Pandey, 2018**) investigated a collection of macroeconomic variables as a systemic effect on stock market returns. They discovered that macroeconomic variables such as industrial output, expected and unanticipated inflation, and the yield gap between long- and short-term government bonds all clarified stock returns in a significant way. The authors demonstrated that the effects of economic state variables on potential dividends and discount rates have a systemic impact on stock return. According to **Sellin (2001)**, an increase in money supply would lead to an increase in stock prices. His point is founded on the fact that shifts in money supply provide demand knowledge based on future forecasts. If the money supply expands, it indicates that economic activity is increasing, as shown by increased cash flow and rising stock prices. **Sellin (2001)** describes the drop in economic activity as a result of rising interest rates, which causes stock prices to drop.

According to **Pearce and Roley (1985)**, investors will perceive an unusual increase in the money supply as bad news, which will result in a drop in stock prices. **Mukherjee and Naka (1995)** investigated the connection between Tokyo stock prices and a number of Japanese macroeconomic variables, including the exchange rate, money supply, industrial production index, inflation, and interest rates. **Gupta and Modise (2011)** use 12 macro variables to look at the predictability of South African stock returns. Different interest rates, wages, inflation, money supply, industrial output, global oil production, and crude oil price are among the macro variables we consider. Their findings show that most of the interest rate variables studied have in-sample and out-of-sample predictive potential, although at shorter time horizons. Only world oil output and a tightly specified money supply have some predictive power for the real sector over the entire sample duration at certain horizons. For the out-of-sample period, the inflation rate has a very strong predictive power over the medium-to long-run horizons, implying that inflation is often directly affected by external shocks. When compared to the completely updated data available for 2010:6, a real-time study focused on a subset of variables that underwent revisions revealed that the predictive capacity of these variables had deteriorated. The findings of this study point to the fact that macroeconomic and financial variables do not appear to be particularly useful in forecasting South African stock returns.

Over the period 1994:04–2011:06, **Naik and Padhi (2012)** analyze the relationships between the BSE Sensex and five macro - economic variables, namely the index of industrial production,

wholesale price index, broad money supply, treasury-bills rates, and exchange rates. The study found that three of the five macroeconomic variables examined had a significant long-run relationship with the Indian stock market index, as measured by the BSE Sensex. The stock market index has co-integrated with macroeconomic variables, according to the Johansen's co-integration test. Stock prices are found to be positively linked to money supply and real economic activity, as measured by the index of industrial output, in the long run. The entire sale price index, which serves as a proxy for inflation, has been discovered to be negatively linked to the stock price index. The real effective exchange rate and the short-term interest rate, as measured by three-month government of India treasury bills, are not proving to be significant determinants of stock prices.

Hussainey and Ngoc (2009) look at how macroeconomic factors (interest rate and industrial production) affect stock prices in Vietnam. The paper investigates how macroeconomic indicators in the United States impact stock prices in Vietnam. They focused on the effect of domestic and foreign macroeconomic indicators on stock prices in Vietnam. They discovered that industrial development has a positive impact on stock prices in Vietnam. They also discovered that long- and short-term interest rates had different effects on stock prices. As a result, the real development operation in the United States has a greater impact on Vietnamese stock prices than the money market in the United States. **McMillan (2005)** investigated how stock prices in the US market respond to fluctuations in industrial output and short-term interest rates (STR). He discovered an important positive relationship between industrial output and stock prices. The primary explanation for this is that a rise in the real sector increases potential cash flow, resulting in a higher future dividend. Investors have always been able to pay higher prices for shares in the hope of a higher dividend.

Furthermore, **Gjerde and Sættem (1999)** discovered that industrial output has a major positive effect on stock prices, but that this effect is delayed on the Norwegian market. The authors propose two major explanations for this predicament. The first explanation has to do with the differences in manufacturing company sizes. The majority of the companies on the Norwegian Stock Exchange are large exporters, while the industrial output index is based on a large number of small industrial companies. As a result, the stock market index, which is determined by the growth of exported companies, appears to reflect the outlook of the exported sector rather than the overall impact of the industrial sector. The second explanation is that industrial output and interest rates have a simultaneous impact on stock prices. Interest rates, according to the authors, are more closely linked to stock returns than industrial output. The rise in interest rates will allow the manufacturing sector to develop, but it will also have a negative effect on stock prices. Industrial production, which is a weaker factor than interest rates, will trigger a deferred positive response in stock prices.

Ibrahim (1999) explores the Malaysian stock market's lead-lag relationship with seven macroeconomic variables. The findings have significant implications for the EMH and the role of stock price movements as a source of knowledge. According to the findings of bivariate research, the Malaysian stock market is not informationally effective in terms of consumer prices, credit aggregates, and official statistics. They showed that stock prices

respond to deviations from the stock market's long-run equilibrium direction with the three macroeconomic variables. Furthermore, there appears to be a complex causal correlation between official reserve changes and stock price changes. Stock prices will serve as an informational vector for the movements of industrial output, M1, and the exchange rate, according to the study. In the short run, exchange rate fluctuations play a major causal function, according to the multivariate analysis. As a result, in the case of the Malaysian stock market, the study does not support the hypothesis of informational quality.

Using co-integration and the Granger causality test, **Gan et al. (2006)** studied the relationships between the New Zealand stock market index and a collection of seven macroeconomic variables from January 1990 to January 2003. The research found a long-term association between the New Zealand stock market index and the macroeconomic variables examined. According to the findings of the Granger causality test, the New Zealand stock index is not a leading indicator for shifts in macroeconomic variables. However, their findings showed that the interest rate, money supply, and real GDP all had a consistent impact on the New Zealand stock market.

Omorokunwa and Ikponmwosa (2014) explored the connection between stock price volatility and a few macroeconomic variables like inflation, exchange rate, GDP, and interest rate. The data used was obtained from the CBN and spans the years 1986 to 2011. The study's key results are that stock prices in Nigeria are highly unpredictable, rising and dropping in rapid succession. The study revealed an important ARCH term in the GARCH model, implying that business news triggers price fluctuations. Previous market news has a major impact on stock price volatility in Nigeria. The term GARCH was also significant. In Nigeria, the key determinant of stock price volatility is the inflation rate. Stock prices begin to shift quickly in the market as prices rise. In Nigeria, the exchange rate and interest rate have no effect on stock price volatility.

3.0 MATERIALS & METHODS

The analysis makes use of 14 years of monthly time series data collected from two key sources: the official website of the Dhaka Stock Exchange (DSEX) and the Bangladesh Bank's Handbooks of Statistics on Bangladeshi Economy (BB). Bangladeshi stock market indices are proxy by the Dhaka Stock Exchange Wide

Index. We restrict ourselves to five macroeconomic variables, namely inflation rate, exchange rate (EXR), industrial production index (IPI), money supply (M3), and short run interest rate, since it would be nearly impossible to add every possible factor to explain stock market activity (TB). The variables for this analysis were chosen based on current theoretical propositions and the pragmatic evidences. The IPI is used as a proxy for real production, as well as the large money supply (M3), the real effective average exchange rate of Bangladeshi Tk (average of foreign currencies), and the 91-day treasury bills rate, which incorporates the short-run risk-free interest rate. To achieve the study goal, monthly data from July 2006 to June 2020 was collected, totaling 168 data samples for the analysis. The research period is determined by the availability of data from various credible sources. **Table 01** contains descriptions of variables and data sources.

3.1 Hypothesis:

Null Hypothesis (H0): Fundamental Macroeconomic variables do not have impact on Dhaka Stock Market Board Index price

Alternative Hypothesis (H1): The price of the Dhaka Stock Market Board Index is influenced by fundamental macroeconomic variables.

3.2 Statistical Methodology of research

To investigate the relationship between the stock market index and the selected macroeconomic variables, the report employs the time series data analysis technique. If the data series are non-stationary, the Ordinary least squares regression results which provide a spurious regression in a time series study. As a result, the time series properties must be followed by the data series. The mean and variance of time series data should be constant over time, and the magnitude of covariance between two time periods should depend only on the distance between the two time periods, not the actual time at which the covariance is computed. The unit root test is the most common and commonly used test for the stationary. The existence of a unit root in a data set suggests a non-stationary data sequence. The researchers use a variety of techniques and models. The Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) tests, as well as the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests, are just a few examples. However, we used the ADF test to see if the data was stationary.

Table 01: Variables Explanation

Abbreviations	Structure of Research Variables	Sources of Data
DSEX	Dhaka Stock Exchange Broad Index	DSE
Inflation	Inflation Rate	Bangladesh Bank
TB	91days Treasury Bill Rate	Bangladesh Bank
EXR	Exchange Rate	Bangladesh Bank
IPI	Industrial Production Index	Bangladesh Bank
M3	Broad Money Supply	Bangladesh Bank

Source: Own

3.3 Stationarity Test:

The ADF test was used to evaluate the order of integration, or how many times a variable must be differentiated before it becomes stationary. If the data in a time series is not stationary, the effects of regression analysis may be misleading. Many researchers have used the ADF test to find

the unit root in data sequence, according to previous studies relevant to this study. The relationships between the Indian stock market index (BSE Sensex) and five macroeconomic variables were investigated by **Naik and Padhi (2012)**. To verify the series' stationary existence, they used three regular unit root tests: The Augmented Dickey Fuller (ADF), Phillips-Perron (PP), and Kwiatkowski-Phillips-Schmidt-Shin (KPSS).

Null hypothesis: Variables are not stationary or have unit root

Alternative hypothesis: Variable are stationary or do not have unit root

If the absolute value of test statistics exceeds the critical value, reject the null hypothesis and consider the alternative hypothesis, according to the decision law.

3.4 The Ordinary Least Square (OLS) Regression Model:

Following the first difference of the ADF test, OLS regression was performed using Stata software on the data sets. The price of the Dhaka Stock Exchange Broad Index was used as a dependent variable, while the inflation rate, exchange rate (EXR), industrial production index (IPI), money supply (M3), and short run interest rate (TB) were used as independent variables.

Multiple R square, Adjusted R square, Standard Error word, P value, T test Statistics, and F test were all seen in the regression results. The R square is a descriptive replica that indicates how much variance can be explained by self-sufficient variables.

The basic assumption is that if the p value of an independent variable is greater than 5%, the model's dependent variable has no relationship with it. If the p value is less than 5%, there is a connection between the dependent and independent variables. It's possible that the relationship or association is both positive and negative.

4.0 RESULTS AND DISCUSSION

4.1 Stationarity Test:

The data sets were tested using the Augmented Dickey Fuller (ADF) test to see if they were stationary.

Table 02: ADF test results summary

Augmented Dickey Fuller (ADF) Test summary				
Variables	At Level		At First Difference	
	Intercept	Trend & Intercept	Intercept	Trend & Intercept
	Test Statistics		Test Statistics	
DSEX	-2.265	-1.534	-9.037	-9.12
Inflation	-2.358	-3.076	-11.461	-11.433
TB	-2.182	-2.21	-12.461	-12.433
EXR	-0.305	-1.672	-9.482	-9.459
IPI	-1.034	-5.005	-19.581	-19.531
M3	6.188	0.032	-12.987	-16.381
Critical Values				
Critical value 1%	-3.488	-4.018	-3.488	-4.018
Critical value 5%	-2.886	-3.441	-2.886	-3.441
Critical value 10%	-2.576	-3.141	-2.576	-3.141

Source: Own, ADF test by STATA Software

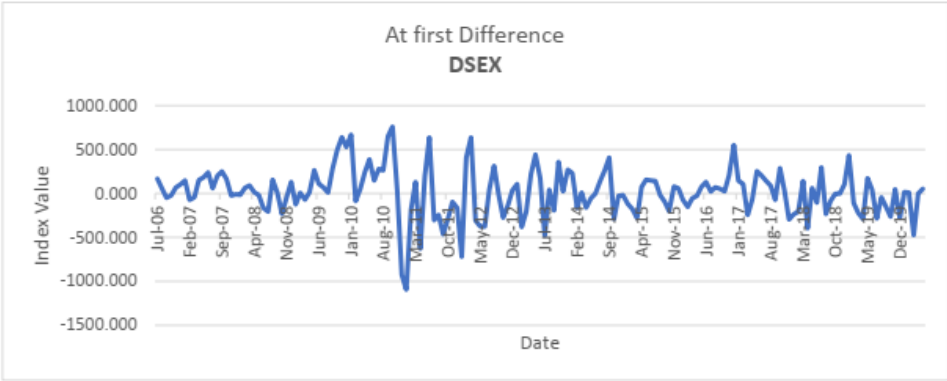
Table 02 shows that the variables DSEX, Inflation, TB, EXR, and IPI have unit roots or are not stationary at the log stage. At intercept and trend & intercept, the test figures of these variables are lower than the critical values. At the log stage, we can't deny Null Hypotheses. However, at the log stage, the M3 data set is stationary. M3 has a test statistic of 6.188, which is higher than the vital values of 1 percent, 5%, and 10%. We discovered that all of the variables are stationary and that there is no unit root at first difference. Below is a line graph with all the variables at Level and First Difference.

Chart 01: DSEX at Level



Source: Own

Chart 02: DSEX at First Difference



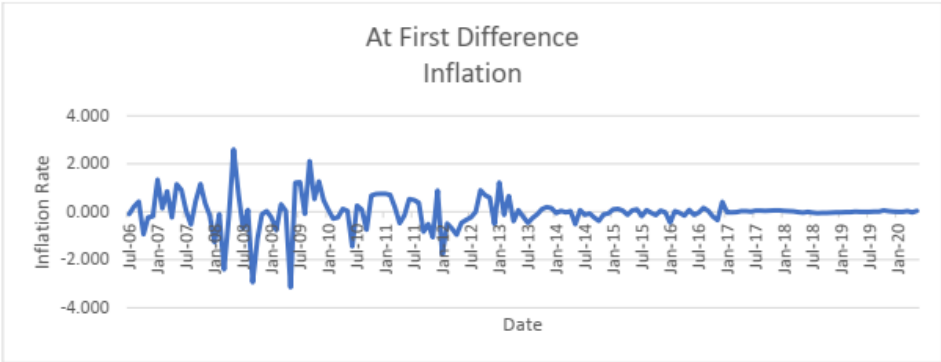
Source: Own

Chart 03: Inflation rate at Level



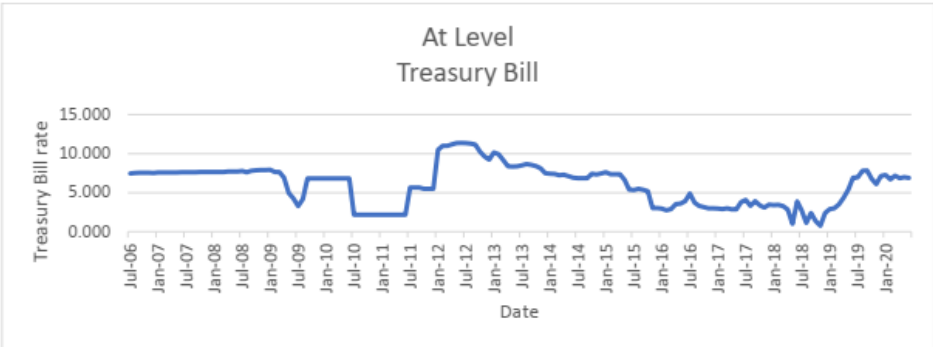
Source: Own

Chart 04: Inflation rate at First Difference



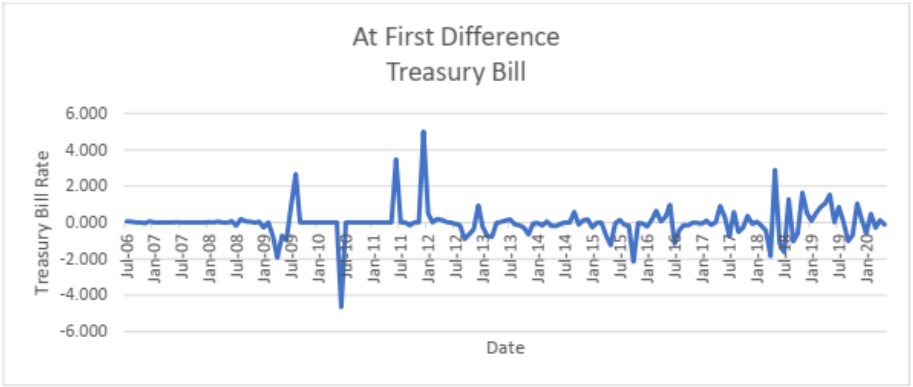
Source: Own

Chart 05: 91 days Treasury bill rate at Level



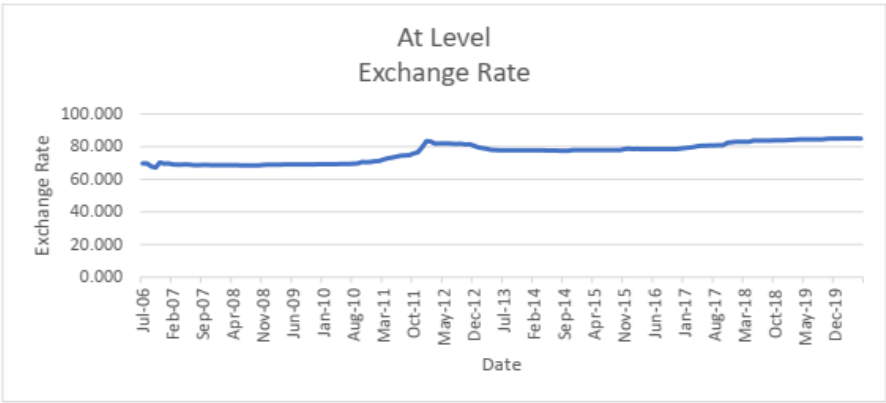
Source: Own

Chart 06: 91 days Treasury bill rate at First Difference



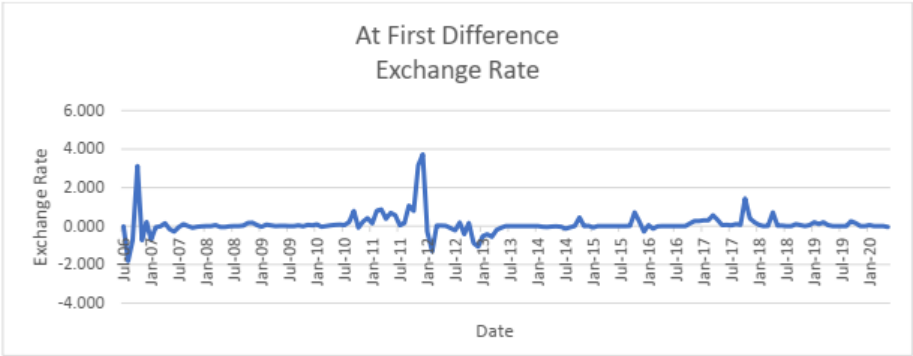
Source: Own

Chart 07: Exchange rate at Level



Source: Own

Chart 08: Exchange rate at First Difference



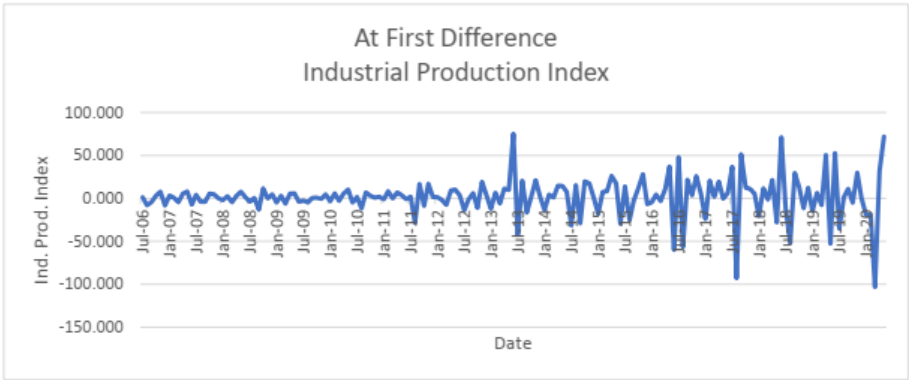
Source: Own

Chart 09: Industrial Production Index at Level



Source: Own

Chart 10: Industrial Production Index at First Difference



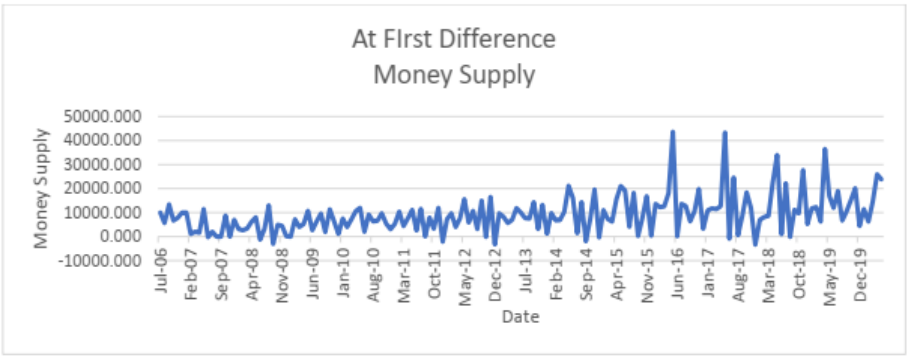
Source: Own

Chart 11: Money Supply M3 at Level



Source: Own

Chart 12: Money Supply M3 at First Difference



Source: Own

From the graph, we can see that at level most of the variables contains unit root in data set. After first difference, all the variables showed no unit root present in data sets.

4.2 Multiple Regression Test (OLS) Model:

Table 03 shows the regression output that the p value of inflation rate is 0.463, which is greater than 5%, and that there is no association with the dependent variable DSEX. We cannot reject the null hypothesis. Variable TB or 91 days Treasury bill p value is 0.492 which is more than 5%.

Table 03: Regression Output Summary

Source	SS	df	MS	Number of obs = 167		
Model	93042587	5	18608517.4	F(5, 161) = 13.14		
Residual	228015226	161	1416243.64	Prob > F = 0.0000		
				R-squared = 0.2898		
				Adj R-squared = 0.2677		
Total	321057813	166	1934083.21	Root MSE = 1190.1		
dsex	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Inflation D	103.5474	140.7482	0.74	0.463	-174.4033	381.4981
T-bill D	-78.9431	114.7336	-0.69	0.492	-305.5199	147.6338
Ex Rate D	577.6943	171.5175	3.37	0.001	238.9802	916.4085
IPI D	-.9728443	4.161121	-0.23	0.815	-9.190259	7.244571
M3 D	.0015548	.0002125	7.32	0.000	.0011351	.0019744
_cons	3214.091	189.2937	16.98	0.000	2840.272	3587.91

Source: Own, Regression test by STATA Software

The null hypothesis cannot be rejected, implying that there is no connection between stock price and 91-day Treasury bill. The p value for the vector EXR exchange rate is.001, which is less than 5%, allowing us to reject the null hypothesis and consider the alternative hypothesis. There is a connection between EXR and DSEX, implying that they are related. The coefficient is positive in this case, indicating that EXR is related to DSEX in a positive way. If EXR rises, the stock price will rise with it, and if EXR falls, the stock price will fall with it. Furthermore, the null hypothesis cannot be rejected since the variable IPI has a p value of 0.815, which is greater than 5%. As a result, there is no connection between IPI and DSEX. The fifth element is we may reject the null hypothesis because the p value of M3, or broad money supply, is less than 5%. M3 has a positive coefficient. M3 is positively related to stock price, implying that stock price is positively related to M3. If M3 moves, the stock price can move in the same direction at the same time.

The F test informs us whether the variables of this model are significant to explain the relationship with dependent variable and independent variables. The model is statistically significant if the significance F test is less than.005 or 5%, and it is not statistically significant if it is greater than 5%. The F test statistics in the OLS result are less than 5%, indicating that the model is meaningful. The modified R square is 0.2677, indicating that independent variables can only explain 26.77 percent of the variance in the dependent variable (**Table 03**).

5.0 CONCLUSION

The interrelationship between the Dhaka stock market wide index (DSEX) and five macroeconomic variables, namely the industrial production index, the wholesale price index to reflect inflation, broad money supply, risk-free interest rate, and real effective exchange rate, was investigated in this report. The DSEX index is used to represent the price of the Dhaka stock market. To achieve the study goal, monthly data from July 2006 to June 2020 was collected, totaling 168 data samples for analysis.

According to the study's results, only two out of five macroeconomic variables are linked to Bangladesh's stock price. Inflation rate, T-bill rate, and industrial output index have no

relationship with DSEX price, according to the OLS test shown in **Table 03**. However, DSEX price and Exchange Rate have a favorable relationship. The F test statistic is less than 5%, indicating that the model is meaningful. Before running the OLS test, we ran an ADF test to see if any of the data was stationary. In **Table 02** we can see that the variables DSEX, Inflation, TB, EXR, and IPI have a unit root or are not stationary at the log stage. The test figures of these variables are lower than the critical values at intercept and trend & intercept. At the log stage, we can't deny Null Hypotheses at certain percentage. We discovered that all of the variables are stationary and that there is no unit root at first difference.

Despite the study's limitations, we can conclude that only the exchange rate and the money supply have a positive relationship with the Dhaka stock market price. However, the stock price is unaffected by the other three factors. Bangladesh's exchange rate and money supply movement should worry investors. These two macroeconomic factors have a strong correlation with stock prices. If these two variables rise, the total stock price will rise, while if they fall, the stock price will fall. Only five macroeconomic variables are examined in this analysis. More variables and a longer time period could boost the performance. By adding more variables and evaluating sector-specific stock indexes, the analysis can be extended logically.

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