Impact of crude oil prices on the Bombay stock exchange

Abstract

The main objective of this paper is that oil is known as the important factor, which effects on all the economy of the country. For this purpose we have taken the data and apply the multiregression method to check if data is stationary or not, we have applied the ADF test and Johansen co integration Test. Which have shown that there is positive relationship between oil prices, inflation and stock exchange of India. Bombay stock exchange is known as the faster stock exchange of the world. It was founded in 1876.According to market capitalization; it comes on the 11th no. Large capitalization is the reason the investors want to invest here. The value of market capitalization is seen 1.9 $ trillion. In 2001, it was considered as the derivatives market. It is famous due to its screen based trading system. AT any time, investors can do trade through this system.

Keywords: Consumer price index, Bombay stock exchange, oil prices, co integration

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Introduction:

Most of the studies have been done about the investments that such money which is used for the purpose of the future use. In the world, there is various ways through which investors can invest their money like oil and gold. The investment in the shape of gold is known as the tangible assets. During the financial crisis decade gold is known as the safe way of the investment. It has seen that oil is risky investments then other asssets. Many studies prove that oil prices and stock exchange have the inverse relationship. It can be crude oil is known as the safe investment. The aim of this paper is to show the relationship between stock market and crude oil prices. Crude oil prices have influenced on the performance of the stock exchange. Crude oil prices influence on the industries.
on the countries. Similarly, it is seen that oil prices on the prices of the subsidies. For analysis the economy of the country, oil is known as the debatable variable. Increase and decrease the oil prices have influenced on the oil prices.

**Overview on the Bombay stock exchange:**

Bombay stock exchange is known as the faster stock exchange of the world. It was founded in 1876. According to market capitalization; it comes on the 11th no. Large capitalization is the reason the investors want to invest here. The value of market capitalization is seen 1.9 $ trillion. In 2001, it was considered as the derivatives market. It is famous due to its screen based trading system. AT any time, investors can do trade through this system.

**Impact of international crude oil on the different stock market:**

1) Lower cost of the energy become reason of the high profitability.

2) Crude oil prices have also impact on the exchange rate.

3) Lower energy costs have reason of the higher demand in the different domestic market.

Of course it is proved that all the sentiments about the stock market showing that its behavior.

**Objectives:**

1) Impact of crude oil prices on the stock market of India.

2) Impact of crude oil prices on the inflation rate.

3) Impact of crude oil on the economy of the India.

**Problem statement:**

In this paper, problem statement is the increase and decrease crude oil prices impact on the economy and inflation of the Indian stock exchange.

| Years | GDP(billion US $) | Exchange Rate US/RS | Inflation |
|-------|------------------|---------------------|-----------|
| 2007  | 127.6            | 60.658              | 7.7       |
| 2008  | 143.202          | 70.416              | 20.28     |
| 2009  | 163.88           | 81.78               | 13.66     |
| 2010  | 161.99           | 85.17               | 13.89     |
| 2011  | 174.98           | 86.32               | 11.93     |
Literature review:

Aden, Analyzed the impact of crude oil on the stock exchange of Pakistan. For this purpose they had taken the data from 2001 to 2011 and applied the ADF test and proves that data is not stationary. The results have shown that there is no positive relationship between the variables. He has applied the variance decomposition between the variables [1].

Miller, M. H., & Upton, C. W, Observed the impact of crude oil on the stock exchange of India. For this purpose they had taken the data from 2002 to 2012 and applied the GARCH test. The results have shown that there is no positive relationship between the variables. They have applied the variance decomposition between the variables [2].

Huang, B.N., M.J. Huang, and H.P. Peng, examined the impact of crude oil on the stock exchange of India. For this purpose they had taken the data from 2005 to 2015 and applied the ARCH test. The results have shown that there is no positive relationship between the variables. They has applied the variance decomposition between the variables [3].

Sharma, G.D., Mahendru, M., Examined the impact of crude oil on the stock exchange of India. For this purpose they had taken the data from 2002 to 2012 and applied the simultaneous equation. The results have shown that there is no positive relationship between the variables. They have applied the variance decomposition between the variables [4].

Ratanapakorn, O. and Sharma, S.C. analyzed the impact of crude oil on the stock exchange of China. For this purpose they had taken the data from 2002 to 2012 and applied the VECM model. The results have shown that there is no positive relationship between the variables. They have applied the variance decomposition between the variables [5].

Graham, S. Observed the impact of crude oil on the stock exchange of Japan. For this purpose they had taken the data from 2000 to 2015 and applied the VAR model. The results have shown that there is no positive relationship between the variables. They have applied the variance decomposition between the variables [6].

De Gregorio, J., O. Landerretche, and C. Neilson, Observed the impact of crude oil on the stock exchange of Japan. For this purpose they had taken the data from 1998 to 2000 and applied the regression model. The results have shown that there is no positive relationship between the variables. They have applied the variance decomposition between the variables [7].

Bernanke, B.S., M. Gertler, and M. Watson, Examined the impact of crude oil on the stock exchange of Jordan. For this purpose they had taken the data from 1999 to 2001 and applied the ADF model. The results have shown that there is no positive relationship between the variables. They has applied the variance decomposition between the variables [8].

Perry Sadorsky, Examined the impact of crude oil on the stock exchange of France. For this purpose they had taken the data from 1999 to 2001 and applied the ECM model. The results have
shown that there is no positive relationship between the variables. They have applied the variance decomposition between the variables [9].

Moore, G.H. Examined the impact of crude oils on the stock exchange of Canada. For this purpose they had taken the data from 1987 to 2003 and applied the VAR model. The results have shown that there is no positive relationship between the variables. They have applied the variance decomposition between the variables [10].

**Gaps in literature:**

1) In the prior studies did not discuss about the impact of crude oil on the inflation rate.
2) From last few decades, nobody has explained impact of crude oil on the performance of the stock market.
3) There is no previous studies about the impact of decrease the crude oil on the development of the country

**Hypothesis:**

H0: There is positive association between oil prices and stock exchange of India

H1: There is no association between oil prices and stock market of India

H0: There is positive association between oil prices and inflation rate.

H1: There is no positive association between oil prices and inflation rate.

**Theoretical framework:**
Methodology:

We have taken the secondary data from dec2008 to August 2013. In this paper, we have taken the Shangi and Bombay stock exchange as the independent and oil prices and dependent variable. We have applied the multiple regressions for this purpose.

\[ Y = a + \beta_1X_1 + \beta_2X_2 + \beta \]

In the table no 1 we have analyzed that data is stationary or not, the results has shown that data are stationary at level 1. Table no 2 AIC shows that quadratic, intercept trend. Table no 3 shows that both null hypotheses are accepted. Table no 4 shows that there is positive relationship between oil prices and stock market.

Augmented Dickey-Fuller Test

1st difference

Table #1

| Variable/Test        | Intercept | Trend and intercept | None |
|----------------------|-----------|---------------------|------|
| Stock Market         | -6.49     | -6.4                | -6.6 |
| Oil Prices           | -4.74     | -4.68               | -4.79|
| Inflation rate       | -6.9      | -6.76               | -6.87|

Johansen Cointegration Test Summary

Table #2

| Data Trend:           | None          | None          | Linear          | Linear          | Quadratic       |
|-----------------------|---------------|---------------|-----------------|-----------------|-----------------|
| Rank or No Intercept  | Intercept     | Intercept     | Intercept       | Intercept       | Intercept       |
| No. of CEs            | No Trend      | No Trend      | Trend           | Trend           | Trend           |
| Akaike Information Criteria by Model and Rank |

|                |              |              |                 |                 |                 |
|----------------|---------------|---------------|-----------------|-----------------|-----------------|
| 0              | -14.53528     | -14.53528     | -14.41185       | -14.41185       | -14.29232       |
| 1              | -14.83488     | -15.02312     | -14.93088       | -14.90108       | -14.81222       |
| 2              | -15.03777     | -15.19717     | -15.13619       | -15.07938       | -15.01865       |
| 3              | -15.01206     | -15.28294     | -15.25286       | -15.18274       | -15.15232       |
| 4              | -14.83102     | -15.12936     | -15.12936       | -15.0398        | -15.0398        |

Johansen Cointegration Test
Table #3

| Eigenvalue | Likelihood | 5 Percent Critical Value | 1 Percent Critical Value | Hypothesized No. of CE(s) |
|------------|------------|--------------------------|--------------------------|--------------------------|
| 0.53695    | 111.8459   | 54.65                    | 61.25                    | None **                  |
| 0.366459   | 62.57224   | 34.56                    | 40.4                     | At most 1 **             |
| 0.318646   | 33.36083   | 18.18                    | 23.47                    | At most 2 **             |
| 0.128546   | 8.805798   | 3.75                     | 6.5                      | At most 3 **             |

*(**) denotes Johansen Cointegration Test

Table #4

| Variable    | Coefficient | Std. Error | t-Statistic | Prob.    |
|-------------|-------------|------------|-------------|----------|
| OIL         | 0.418989    | 0.153468   | 2.73012     | 0.0083   |
| Inflation   | -2.849768   | 1.28075    | -2.225094   | 0.0297   |
| C           | 0.029398    | 0.019042   | 1.543904    | 0.1276   |
| R-squared   | 0.158131    |            |             | Mean dependent var0.005722 |
| Adjusted R-squared | 0.131822 | 0.125456 | Akaike info criterion-1.411357 |
| S.E. of regression | 0.116895      |            |             | S.D. dependent var |

Conclusion:

Most of the studies have proved that oil is the key indicator of the economy of all the countries. Demand of oil is increasing day by day and it has impacted on its oil prices. According to Kilian (2006) there is positive relationship between oil prices and stock exchange. Increase in crude oil has worst impact on the importers countries. Due to oil prices the prices of transport also increase. Therefore, our paper is trying to expose that increase prices of crude oil caused the inflation rate. This paper is showing that oil crisis impact on the economy of the country and development. The different researchers are being showed that there are some other variables, which impact on the economy but they are not appearing .But in this paper has shown that oil prices are known as the uncontrollable variable .Our study is showing that market prices are affected with these up and downs.
Recommdations:

1) Government should have made proper policy in the conditions of crisis.

2) In all the variables, oil pieces are known as the uncontrollable variable, therefore there is need of implemented new programs.

3) Forecasting is known as the best way to control such types of variables.

4) Government should found out alternative in the condition of uncertainty.

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