Impact of Crude Oil Prices on the Bombay Stock Exchange

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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. For the checking that 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; Cointegration

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 assests. 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 (Figure 1 and Table 1).

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 prove 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 MH, Upton CW 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, Huang and 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

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

Table 1: Indian stock exchange.

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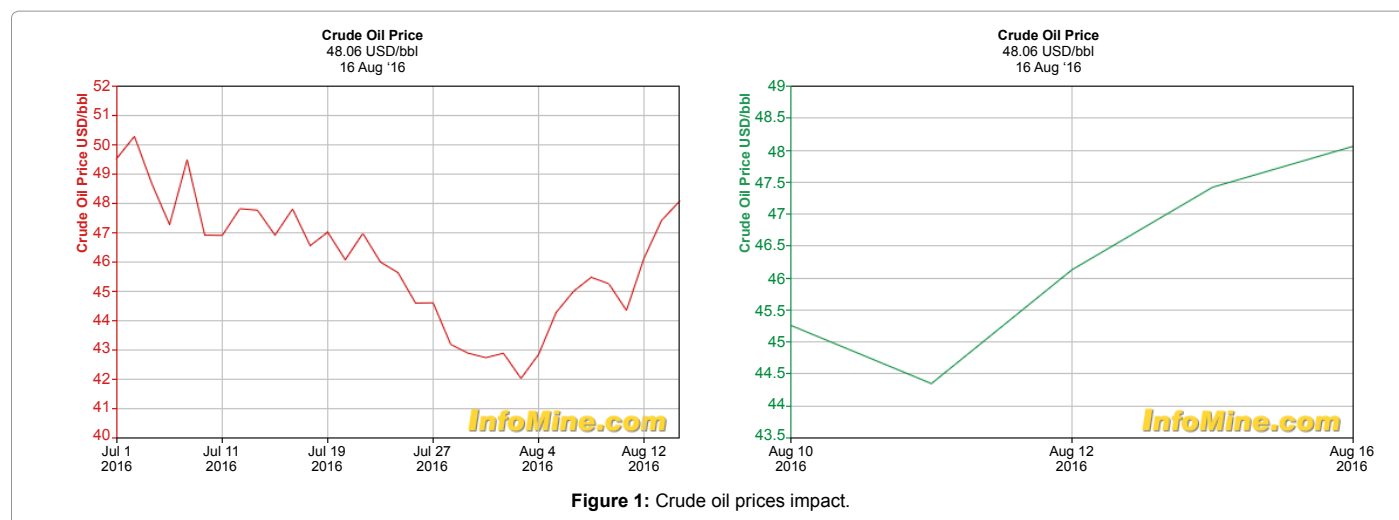
Figure 1: Crude oil prices impact.

that there is no positive relationship between the variables. They have applied the variance decomposition between the variables [3].

Sharma and Mahendru 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 and Sharma 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 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, Landerretche O, Neilson C 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 BS, Gertler M, Watson M 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 have 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 GH examined the impact of crude oil 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].
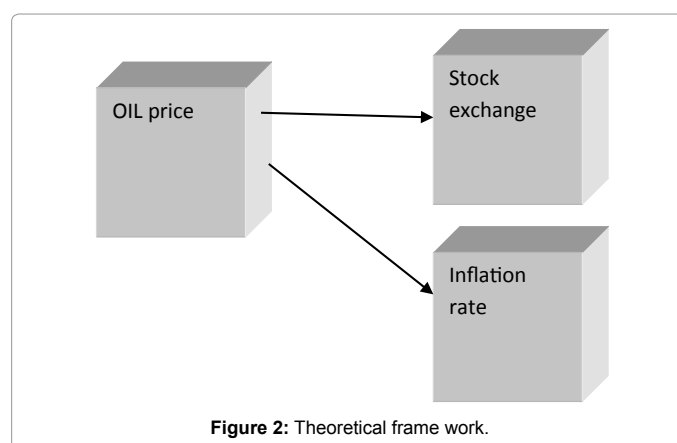

Figure 2: Theoretical frame work.

Gaps in literature

1) In the prior studies did not discuss about the impact on 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 are 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

Theoretical frame work is given in Figure 2.

Methodology

We have taken the secondary data from Dec 2008 to August 2013. In this paper, we have taken the Shangi and Bombay stock exchange

as the independent and oil prices and dependent variable [11,12]. We have applied the multiple regressions for this purpose.

$$Y = a + \beta 1 X1 + \beta 2 X2 + \beta \ (1)$$

In the Table 2, we have analyzed that data is stationary or not, the results has shown that data are stationary at level 1. In Table 3, AIC shows that quadratic, intercept trend. Table 4 shows that both null hypotheses are accepted. Table 5 shows that there is positive relationship between oil prices and stock market (Tables 2-5).

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, there is positive relationship between oil prices and stock exchange [13]. 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.

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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

Table 2: Augmented Dickey-Fuller Test 1st difference.

Data Trend:	None	None	Linear	Linear	Quadratic
Rank or	No 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

Table 3: Johansen cointegration test summary.

Eigenvalue	Likelihood Ratio	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

Table 4: Johansen cointegration test.

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 var	0.005722
			S.D. dependent var	
Adjusted R-squared	0.131822		0.125456	
S.E. of regression	0.116895		Akaike info criterion	-1.411357

Table 5: Johansen cointegration test using variable, coefficient, std. error.