

Relationship between Oil Prices and Stock Market Index: A Case of Pak, India & China

Waqar Hassan¹

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Abstract

Cost of oil affects the profit and loss of the organization as oil is immediate or circuitous expense of operation. In this way, the ascent in crude oil costs will be relied upon to bring about the decline in income, which brought about a decrease of prompt stock market index. The goal of the examination is to get precise answers of exploration inquiries said in particular settings of Pakistan, India and China. This paper utilized regression, Durbin Watson test and correlation analysis to discover the answers of exploration inquiries and goals. The time of study is 21 years (From Jan 1995 to June 2015 on the bases of month to month variations) of dependent and predictor variables. It could be seen that the model is superbly fitted to the regression. In all instances of these three stock trades there is sure relationship between oil costs and stock exchange 100 index.

Index terms— oil prices, emerging market, stock market index, stock market return.

1 Introduction

Stock market plays a vital role in surveying any nation's financial circumstance through enhanced stock return appeared by the higher interests of the organization as a consequence of monetary development. Stock market is a standout amongst the most pertinent and most essential measurements for administration and shareholders of an association. In view of the scholars and the candidates need to improve the administration procedure that might want to offer to balance out the execution components of examination that influence stock market index return rushing to ensured and predominantly look into database (Malik, 2007).

High oil costs are managing serious macroeconomic modification nation is running an extensive deficiency of outside trade saves. The objective in this paper is to reveal insight into the way of the effect of the oil stun in the full scale monetary circumstance for Pakistan. You can utilize the open economy to dissect the effect of crude oil cost in Pakistan on yield development. In this paper, the State Bank is seeking after the expansion target actualizing the money related approach so as to keep up the development of yield and value dependability working alongside the capacity of fiscal strategy on the estimation (Sharif E., 2005).

Worldwide oil costs subsequent to 2003 shows about stable ascent, as it was twofold in April 2006 than cost in January 2004 (Becon, 2005). Request, supply, theoretical considers and rise their interrelationships crude oil value all prompts a consistent ascent in oil costs.

In the most recent couple of years, worldwide interest for oil has developed in light of the solid financial execution in the improvement in Asia particularly China and India. World interest has developed at a rate of 1.3%, while (blend) for People Republic China and India at a rate of 7% in 2003 from 1990, and around 40% of development popular (Hamilton J., 2008).

Another component that adds to the solid interest is a low level of stocks and their reproduction in industrialized nations in the instability of the time of supply. What's more, a portion of the Asian nations have started to construct their very own store (Koranchelian, 2005).

Likewise, this area will express a few perspectives on the likelihood of high oil costs impact on large scale economy level of Pakistan. Progressed of any inconsistencies in the supply and relies on upon the cost of the oil

creating nations, huge numbers of the case this have an expansive influence of economy and imports crude oil keeping in mind the end goal to meet the powerless business. After a sudden surge in crude oil costs subsequent to 2003, as a special case creating nations depend vigorously on oil imports confronting the risk of expanded unsteadiness of the full scale economy (Arif & Khalid, 2015).

This short note with world's crude oil costs saw the value patterns of local heater and rapid diesel oil as an outline since perception of 2002, and that need to concentrate on heater oil and fast diesel oil value patterns constitute the aggregate creation, breaking down the commitment to the generation, heater oil 29.4% and diesel 31% with top offer emerging from the reality in Pakistan (Hamilton & Herrera, 2002).

Pakistan's securities exchange in spite of its little size is a developing stock exchange, with the potential significance for financial specialists of the world. In any case, Pakistan relies on upon oil imports keeping in mind the end goal to run the monetary machine as an aftereffect of crude oil value stun, which may have the impact of destabilizing the residential money related markets. An adjustment in the cost of crude oil implies that you influence the instability of money markets return (Amir, 2008).

This study considers the non-straight relationship between crude oil costs and yield. In the event that the non-direct relationship exists than what is limit level after it gets to be negative. As indicated by the arrangement of this paper, first (I) portion explains about introduction, second (II) about literature review, area III will depict the methodology; Section IV clarifies the experimental discoveries. At long last, Section V will finish up the study with results and recommendations.

2 a) Objectives of the research

The objective of the research is to get accurate answers of research questions mentioned above in specific contexts of Pakistan. Is oil prices and stock price related? This is the first question that will confirm the relationship; there may be positive or negative relationship, if relationship exists than it will be yes to answer the question. The second objective of the research is to find out the answer of this question if oil prices declines what will be the impact on stock price? There may be decline in oil prices and it may increase the stock prices, its one possibility on the other hand there may be decrease in stock price with decrease in oil prices.

3 b) Gap statement

In different countries of the world, a ton of exploration has been finished with the study of stock market index. Considering this examination there is no work done in this term of office of day and age by any scientist on Pakistan, India and China (from 1995 to 2015), when contrasted with the crude oil cost.

4 II.

5 Literature Review

This segment clarifies the strategies and systems utilized by various specialists while considering the same theme or point moreover. This segment gives the exact thought regarding diverse sorts of techniques and results. This segment gives the thought regarding: (Alou & Amaze, 2009). They concentrated on two noteworthy crude oil markets like WTI and Brent, and three propelled securities exchange: France, the United Kingdom and Japan. The outcomes, expands the variable net oil costs have demonstrated that assumes an imperative part in deciding both the move probabilities between the genuine return unpredictability and administration (Alou & Amaze, 2009). Sharif et al. (2005) inspected the connection between the stock returns and oil costs of oil and gas part of the United Kingdom. They relationship between two variables was set up altogether positive (Sharif, Khan, & Javed, 2005).

Ciner (2001) indicated proof of non-direct causal impact of crude oil cost in the universal securities exchange (Ciner, 2001).

Chang and Alder (2010) utilized the confirmation of most ward restrictive connection examination between the major money related markets that indicated crude oil market and the FTSE100, NYSE, S&P 500 including the Dow Jones record (Chang & Alder, 2010).

As far as the Petroleum, Exporting Countries Bjorn (2008) analyzed the dynamic relationship between six GCC markets. An expansion of 10% of the crude oil cost before the effect of oil costs cease to exist step by step shows that at first has made return of 2.5% Norwegian stock. They investigated week after week time frame from 1997-2000, utilizing the VEC model, they discovered solid confirmation of association and between these business sectors (Bjorn, 2008).

Jacobsen and Matt (2008) tried whether the yearly change in the cost of crude oil would have the capacity to foresee the arrival of the worldwide securities exchange. Utilize the information from the eighteen created and thirty developing markets, they find huge consistency in 12 out of 18 created nations. Developing markets demonstrated same impact with lesser significance (Jacobsen & Matt, 2008).

With a specific end goal to examine the response of stock market index of the GCC nations, Agoura Le Diana and Delilah (2010) led their study on oil value stun. This exploration utilized the direct and nonstraight models. Their discoveries demonstrated that securities exchange returns responded essentially to change the cost of crude

oil in UAE, Qatar, Oman, Saudi Arabia and Bahrain. Change in crude oil cost for Kuwait found that it doesn't influence stock market index return (Diana & Delilah, 2010).

Ravichandran and Alkathlan (2010) utilizing day by day information amid the time of March 2008 to April 2010 upon crude oil cost and securities exchange to check that it impact the adjustments in the crude oil cost concerning stock market index cost in Gulf Cooperation Council for long haul returns (Ravichandran & Alkathlan, 2010). Iwayemi (2011) utilizing the quarterly information of 1985-2007, which demonstrated that the stun of oil costs don't significantly affect the greater part of the macroeconomic variables like oil fares and effect of oil value stun in Nigeria. Granger-causality test, motivation reaction capacity and difference decay investigation the greater part of the outcomes demonstrated that the diverse measures of direct and positive oil stun yield, government spending, not the reason for expansion, and the genuine cost of raw petroleum. It has a vast negative oil stun, following found that cause the real crude oil costs and yield (Iwayemi, 2011).

6 III.

7 Research Methodology

In chapter 2 have discussed literature review from different articles to find out the results of our study regarding the relationship between crude oil prices and stock prices of Shanghai Stock Exchange 100 index (SSE-100), Bombay Stock Exchange 100 index (BSE-100) and Karachi Stock Exchange 100 index (KSE-100). This chapter will discuss the empirical finding and results of the study.

8 a) Variables of research

Two types of variables were used on these three countries like, India, China and Pakistan.

9 d) Regression

The general form of each type of regression is: Linear Regression: $Y = a + bX + u$ Where: Y= the variable that we are trying to predict (Stock market Index) X= the variable that we are using to predict Y (Oil Prices) a= the intercept b= the slope u= the regression residual

In multiple regressions, the separate variables are differentiated by using subscripted numbers. Ho: there is NO relationship between dependent (Stock market index) and independent (Crude oil prices) variables H1: there is positive correlation between dependent (Stock market index) and independent (Crude oil prices) variables ? = 5% Decision Criteria = Reject Ho, if P value is less than ?. Or "Accept" Ho, if P value is greater than ?.

10 Oil price and stock market index from 1995 to 2015

11 India

The standard for analysis will depend on 95% level of significance. In results of regression if a P values is less than ?. It means, if the correlation among the variables will be more than 95 than relationship will be accepted otherwise rejected.

IV.

12 Analysis a) Methods for Analysis

This paper is about the relationship between crude oil prices and stock market index prices in China, India and Pakistan. To determine the relationship and interdependence of both types of variables, regression, Durbin Watson test and correlation analysis will tell about positive, negative, weak or strong relationship between the variables. Square and Adjusted R Square are 35.90% and 35.60%, it is not good to have the values of R square less than 60% This also tells that how much output variable's variance is explained by the input variable's variance. The adjusted R square explains the accuracy of regression equation. In case of Pakistan, the value of R square is 0.078 means 7.8% variation is explained. Our first indicator of generalizing is the adjusted R Square value (7.43%).

13 b) Correlation results

14 Correlation and descriptive

In case of India (India): Here, the value of R square is 0.8855 means 88.55% variation is explained. In general, the higher the R-squared, the better the model fits your data. Our first indicator of generalizing is the adjusted R Square value (88.50%), which is adjusted for the number of variables included in the regression equation. This is used to estimate the expected shrinkage in R Square that would not generalize to the population because our solution is over-fitted to the data set by including independent variables.

After that F significance value which is approximately to zero (0.000) in all cases (Pakistan, India and China) tells that the results are not by chance, in other words there is zero probability of 'by chance' results.

15 ii. Interpretation of P-Values in Linear Regression Analysis

154 The p-value for each term tests the null hypothesis that the coefficient is equal to zero (no effect). Here p-value
155 is (0.000) approximately equal to zero. A low p-value (< 0.05) indicates that you can reject the null hypothesis.
156 In other words, a predictor that has a low p-value is likely to be a meaningful addition to your model because
157 changes in the predictor's value are related to changes in the response variable. In all three cases, P value is 0.00
158 which is lower to 5%. It indicates that it is statistically significant as it is lower than 5%.

16 iii. Interpretation of Durbin-Watson

160 According to Durbin Watson test, there correlation between variables in all three cases like China, India and
161 Pakistan, the values of Durbin-Watson test are near to zero that represents that there is positive relationship
162 between variables.

17 iv. Summary of the results

164 Summarizing the output by correlation, regression and Durbin Watson test analysis that the index points have
165 positive correlation with crude oil prices in all three countries, taken as crude oil independent variable but the
166 relationship is not too strong in the case of shanghai stock exchange have positive correlation only up to 0.5155.
167 Crude oil prices have positive correlation with Indian stock exchange prices On the other hand; the case of
168 Pakistani stock exchange is not different from Indian BSE, these both stock exchanges have positive correlation
169 with oil prices.

18 d) Hypothesis statement

170 H_0 =there is no interdependence between crude oil prices in international market and stock market index H1
172 =there is interdependence between crude oil prices in international market and stock market index V.

19 Conclusive Remarks

174 In case of China and Pakistan and India, we can say that decreasing oil prices would also decrease the stock return
175 in these countries. Analyzing the results, it could be seen that the model is perfectly fitted to the regression
176 analysis. Studying the results one could say that the regression analysis is best for the analysis. In case of
177 Chinese stock exchange, Indian stock exchange and Karachi stock exchange, Stock markets depends on the oil
178 prices. It means these stock markets are dependent markets, we can say increasing the oil prices in the market
179 will increase the price index of all three stock exchanges and decreasing the oil prices would decrease the stock
180 market index. In other words we can say that oil prices transmit to the emerging stock market, in all three cases
181 there is positive correlation among the variables defined as oil prices and stock market return All three statistical
182 tools show same results as positive relationship between variables.

183 Shanghai Stock Exchange: reject null hypothesis saying that there is interdependence between crude oil prices
184 in international market and SSE-100 index.

185 Bombay Stock Exchange: reject the null hypothesis and accept the alternate hypothesis saying that there is
186 interdependence between crude oil prices in international market and BSE-100 index.

187 Karachi Stock Exchange: reject null hypothesis saying that there is interdependence between crude oil prices
188 in international market and KSE-100 index. Shangai stock exchange and Karachi stock exchange depends on
189 the oil prices; it is recommended that other factors could be found that relates to the stock market return. It
190 is recommended that other stock exchange must be studied to know that results same or not? While it is clear
191 that decreasing the oil prices does not increase the stock market return.

20 Model

1 2

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Figure 1:

Relationship between Oil Prices and Stock Market Index: A Case of Pak, India & China			
Pearson Correlation	Correlations		
	BSE100		
	BSE1000		
Sig. (1-tailed)	Oil .941		
	Prices		
	BSE100		
N	Oil .000		
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2016			
Year Descriptive Statistics Mean Std. Deviation Variables Entered Variables Removed 1916.3954 925.45021			
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BSE100 Third and last, there is observation upon the oil 2871.8253 2068.76452			
Oil Prices prices in international market, and the stock prices in 52.7596 34.57832			
Karachi Stock Exchange. There is positive correlation			
among the variable, depending upon this resultant			
figure of approximately 0.27 between crude oil prices			
and Karachi Stock Exchange's 100 index.			
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[Note: c) Results for regression i. R-squared & Adjusted R Square In case of China: If the adjusted R]

Figure 2: B

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