

Oil Prices Influence on Stock Market in Srilanka

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ABSTRACT

This study examined the relationship between oil prices, interest rate, exchange rate and other macroeconomic variables and stock market in Srilanka. Monthly data of oil prices, interest rate, and total oil consumption of the country, exchange rate and stock market indices are modeled into a linear regression model. The secondary data of this research for diesel prices obtained from Petroleum cooperation in Srilanka, data of oil consumption obtained from the ministry of energy, the data of exchange rate and the interest rates obtained from the central bank of Srilanka. Pearson correlation and regression were used to test the relationship between that both diesel prices and interest rates have significance relationship with stock market in Srilanka. However, when the relationship is positive to the diesel prices, the relationship of the interest rates is negative. The finding also indicated that total oil consumption and the exchange rates are positive relationship with the stock market operation in Srilanka, that finding also indicated that a very strong relationship between diesel prices and exchange rate.

Keywords

oil prices, exchange rate, stock market index, interest rate

INTRODUCTION

The effect of oil prices on a country's economy has been and continues to be a keen interest to many people, particularly economists. Throughout the history, oil has played a critical role to shape countries development. Given the importance of oil and the attention oil prices receive, a considerable economic literature has been devoted to study the impact of oil prices on macroeconomic

variables such as inflation, growth rates and exchange rates in one country

Therefore, if oil plays an important role in the economy one would expect oil prices to affect stock markets [1], and oil shocks on real cash flows can partly account for fluctuation in aggregate stock prices [2].

The aim of this study is to investigate the relationship between oil prices, exchange rates and stock market return in Srilanka. The investigation of such relationship in such a country is interesting for several reasons. First, while higher oil prices would affect stock markets positively in oil exporting country by increasing the government revenues and though increasing the public expenditure on infrastructure. changes in oil prices is presumed to affect stock markets negatively. This negative impact of oil prices on stock prices (returns) can be explained in two ways:

1. Higher oil prices reduce the amount of disposable income that consumers have left to spend on other goods and services, and increase the cost of production for manufacturing firms that are oil dependent. If this production costs have not been covered by consumers, profits and then dividends, key drivers of stock prices, will also decrease and
2. According to the equity pricing model, the price of equity at any point in time is equal to the expected present value of discounted future cash flows [1]. Increasing oil prices are often indicative of inflationary

pressures. Thus, central banks try to control the inflation by increasing interest rate which also directly impact the discount rate used in the equity pricing formula and then decrease share prices.

Previous finders examined the relationship between oil price shocks and stock markets in the US and 13 European countries using monthly data during the period 1986-2005. This study finds that oil prices play a crucial role in the stock market of oil importing countries, and also examined the relationship between oil price and stock market returns for 22 emerging economies for the period from 1998 to 2004. He shows very weak evidence that oil price shocks affect stock market returns in emerging economies.

RESEARCH METHODOLOGY

This study adopted an empirical research design. The population of study was the listed manufacturing companies in Colombo stock

Exchange. Since there are only 40 listed manufacturing companies at the Colombo stock Exchange, the whole population was considered and the All share price index(ASPI) was used. The monthly data for 60 months from January 2009 to December 2013 was compiled for the various variable used in the study. Secondary data was collected for the period 2009 to 2013 and fitted into a linear regression model. Data analysis was guided by the research objectives. The results of the linear regression were as shown in Table 2.

Pearson's vicariate correlation coefficient was used to test the relationship between the independent and the dependent variables.

The correlation coefficient was calculated to determine the strength of the relationship between the independent and the dependent variable. Analysis of the variance test was then used to analyze whether the relationships were statistically significant

. The results were as shown in table 1.

Table 1: Pearson's Correlation Test Results

		ASPI	Diesel Prices	Total Oil	Exchange	Interest Rates
ASPI	Pearson Correlation	1	.316*	.236	.055	-.375**
	Sig. (2-tailed)		.023	.092	.698	.006
	N	40	40	40	40	40
Diesel Prices	Pearson Correlation	.316*	1	.678**	.721**	.621**
	Sig. (2-tailed)	.023		.000	.000	.000
	N	40	40	40	40	40
Total Oil	Pearson Correlation	.236	.678**	1	.603**	.418**
	Sig. (2-tailed)	.092	.000		.000	.002
	N	40	40	40	40	40
Exchange	Pearson Correlation	.055	.721**	.603**	1	.536**
	Sig. (2-tailed)	.698	.000	.000		.000
	N	40	40	40	40	40
Interest Rates	Pearson Correlation	-.375**	.621**	.418**	.536**	1
	Sig. (2-tailed)	.006	.000	.002	.000	
	N	40	40	40	40	40

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Survey
Table 2: Linear Regression Test
Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.766a	.586	.551	365.746741
a. Predictors: (Constant), Interest Rates, Total Oil, Exchange , Diesel Prices				

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8905811.880	4	2226452.970	16.644	.000b
	Residual	6287221.895	47	133770.679		
	Total	15193033.776	51			
a. Dependent Variable: 20 Share						
b. Predictors: (Constant), Interest Rates, Total Oil, Exchange , Diesel Prices						

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2496.998	873.268		2.859	.006
	Diesel Prices	37.317	6.163	.988	6.055	.000
	Total Oil	.000	.002	-.015	-.117	.907
	Exchange	-20.064	13.402	-.211	-1.497	.141
	Interest Rates	-69.764	9.969	-.850	-6.998	.000
a. Dependent Variable: 20 Share						

Source: Field Survey



CONCLUSIONS AND RECOMMENDATIONS

The findings showed that the diesel oil prices positively and significantly influences the performance of the Colombo Stock Exchange. The results indicated that interest rates have a negative and significant influence on the performance of the Colombo Stock Exchange. However the results also indicated that total oil consumption and exchange rates though positively influencing the performance of the Colombo Stock Exchange, that influence is not significant.

The results from the regression showed that the model fitted was a good fit with an R of 0.766 and an R squared of 0.586.

All the objectives of the study were arrived at since it was also found that Diesel prices did not have the highest influence on the performance of the Colombo Stock Exchange. Interest rate was found to have the highest influence.

It's important to also mention that all the other macroeconomic variables, that is, exchange rate, interest rate and total oil consumption were found to have a strong relationship with diesel prices with the exchange rate having the highest influence on diesel prices. This is significant in that it can help the policy makers in deciding on the variables to control in trying to caution the country from the effects of oil price shocks.

From the findings of this study, we recommend that further research be carried out to include the other petroleum products like super petrol and kerosene. Also the period of study should be increased to about 10 year period to increase the accuracy of findings. We also recommend that further research be carried out to investigate how this petroleum prices influence the stock returns of the different sectors of the Srilankan economy.



REFERENCES

- [1] Huang, R.D., Masulis, R.W., Stoll, H.R., "Energy shocks and financial markets", *Journal of Futures Markets* 16, 1–27, 1996.
- [2] Jones, C., Kaul, G., "Oil and the Stock Market", *Journal of Finance*, 51, pp. 463-491, 1996
- [3] Papapetrou, E., "Oil price Shocks, Stock Market, Economic Activity and Employment In Greece." *Energy Economics* 23, pp. 511-532, 2001.
- [4] Sadorsky, P., "Oil price shocks and stock market activity", *Energy Economics* 21, pp. 449-469, 1999.
- [5] Ravichandran K, "Impact of Oil Prices on GCC Stock Market" *Research in Applied Economics*, 2010, Vol. 2, No. 1, 2010
- [6] Jones, Donald W., Paul N. Leiby, Inja K. Paik, "Oil price shocks and the macroeconomy : what has been learned since 1996" *Energy Journal* 25(2), 2004.
- [7] Bernanke, B.S., Gertler, M., Watson, M.W., "Systematic monetary policy and the effects of oil price shocks", (with discussion) *Brookings Papers on Economic Activity* 1, pp. 91-148, 1997.
- [8] Bhar, Ramaprasad, Nikolova, Biljana, "Oil Prices and Equity Returns in the BRIC Countries", "The World Economy" 2009.
- [9] Chittedi, Krishna Reddy, "Global Stock Markets Development and Integration: with Special Reference to BRIC Countries" *'International Review of Applied Financial issues and Economics'*, Vol. 2, Issue 1, March, 2010
- [10] Chittedi, Krishna Reddy, "Integration of International Stock Markets: With Special Reference to India", *GITAM Journal of Management*, Vol. 9, No. 3, 2011.
- [11] Hamilton, J.D., "Oil and the macroeconomy since World War II. *Journal of Political Economy* 91, pp. 228-248, 1983.
- [12] Rotemberg, J. J., Woodford, M., "Imperfect competition and the effects of energy price increases on economic activity", *Journal of Money, Credit and Banking* 28, pp.



549-577, 1996.

- [13] Finn, M.G., "Perfect Competition and the Effects of Energy Price Increase on Economic Activity", *Journal of Money, Credit and Banking* 32, pp. 400-416, 2000.
- [14] Miguel, C. de, B. Manzano, J.M. Martin-Moreno, "Oil price shocks and aggregate fluctuations", *Energy Journal* 24(2): 47-61, 2003.
- [15] Hamilton, J.D., "A Neoclassical Model of Unemployment and the Business Cycle", *Journal of Political Economy* 96, pp. 593-617, 1988.
- [16] Hamilton, J. D., "What is an Oil Shock?" *Journal of Econometrics*, 113, pp. 363-98, 2003.
- [17] Driesprong, G., Jacobsen, B., Maat, B. (October, 2003). Striking oil: Another puzzle. *Rotterdam School of Management*
- [18] Bjørnland, H.C., "Oil price shocks and stock market booms in an oil-exporting country", *Scottish Journal of Political Economy* 56, pp. 232-254, 2009.
- [19] Park, J., Ratti, R. A., "Oil price shocks and stock markets in the U.S. and 13 European countries", *Energy Economics*, 30, pp. 2587-2608, 2008.
- [20] Hammoudeh, S., Aleisa, E., "Dynamic relationships among GCC stock markets and NYMEX oil futures", *Contemporary Economic Policy*, 22, pp. 250-269, 2004.
- [21] Henriques, I. Sadorsky, P., "Oil prices and the stock prices of alternative energy companies", *Energy Economics*, 30, pp. 998-1010, 2008.
- [22] Bashar, Z., "Wild oil prices, but brave stock markets! The case of Gulf Cooperation Council (GCC) stock markets", *Middle East Economic Association Conference*, Dubai, 2006.
- [23] Maghyreh, A., "Oil price shock and emerging stock markets: A Generalized VAR Approach", *International Journal of Applied Econometrics and Quantitative Studies*, 1(2), pp.



27-40, 2004.

- [24] Sadorsky, P., "The empirical relationship between energy futures prices and exchange rates, Energy Economics, 22, ap. 253-266, 2000.
- [25] Nandha, M., Hammoudeh, S., "Systematic risk, and oil price and exchange rate sensitivities in Asia-Pacific stock markets. Research in International Business and Finance, 21(2), 326-341, 2007.
- [26] Ciner C., "Energy Shocks and Financial Markets: Nonlinear Linkages", Studies in Non- Linear Dynamics and Econometrics, 5, pp. 203-212.
- [27] Anoruo, E., Mustafa, M., "An empirical investigation into the relation of oil to stock market prices", North American Journal of Finance and Banking Research, 1(1), pp. 22-36, 2007.
- [28] Kilian, L., "Exogenous Oil Supply Shocks: How Big Are They and How Much Do They Matter for the US Economy?", Review of Economics and Statistics, 90, pp. 216-40, 2008.
- [29] Miller, J.I., Ratti, R.A., "Crude oil and stock markets: Stability, instability, and bubbles", Energy Economics, 31, pp. 559-568, 2009.
- [30] Narayan, K., P., Narayan, S., "Modeling the impact of oil prices on Vietnam's stock prices", Applied Energy, 87, pp. 356-361, 2010.
- [31] Zhang D., "Oil shock and economic growth in Japan: A nonlinear approach", Energy Economics, Vol. 30, Issue 5, ap. 2374-2390, 2008.
- [32] Cologni, A., Manera M., "Oil prices, inflation and interest rates in a structural cointegrated VAR model for the G-7 countries", Energy Economics, 30, pp. 856-88, 2008.
- [33] Chen, N.-F., Roll, R., S.A. Ross, "Economic Forces and the Stock Market", Journal of Business, 59, pp. 383-403, 1986.