Oil Prices Fluctuations and Stock Returns-A Study on Asia Pacific Countries

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Abstract

Oil is playing a significant role in development of the Emerging economies. This study has been conducted to determine the relationship between oil price fluctuations and stock returns of the Asia Pacific countries. Assessment of the relationship has been made through Vector Auto Regressive (VAR), Vector Error Correction Model (VECM) and Granger Causality Test. The results of the study have found significant short run relationship between oil price fluctuations and stock returns for Asia Pacific Countries. Error decomposition of stock returns has revealed that the first lagged values of the stock returns results in the variance or error in the stock returns. Granger causality test has revealed that oil prices granger cause stock returns of only Pakistan and Sri Lanka.
Investors are suggested to take investment decision and invest in the Asian Pacific countries keeping in mind the other macroeconomic variables like interest rate, inflation and Growth etc.

1. Introduction
Oil consumption patterns of the world economy have been experiencing rapid changes over the last 3 decades (Salah and Sajal, 2007). Before 1973 oil prices doesn’t change, a few U.S oil companies were controlling the supply and set prices all over the world. But this whole scene changed when Yom Kippur war was started on Oct 6, 1973. Afterwards, the control of crude oil slipped from U.S to OPEC, and variation in crude oil started. (Gerben, Jacobsen & Benjamin 2005). There are certain reasons for this change in oil consumption patterns of the world. In developed economies, oil consumption is declining due to increase in efficiency in the production functions and consumption of the oil in the emerging economies is increasing due to rapid trend of industrialization (Basher and Sadorsky 2006). There is negative impact of increase in prices of oil on investments, consumption and stock returns (Aliyu, Shehu-2009). Oil consumption of the developing economies is increasing due to shifting of high cost production facilities from developed countries to low costing developing economies (Salah and Sajal, 2007).

The impact of oil price fluctuations on stock returns is zero or positive for oil producing and exporting countries (Arouri and Fouquau 2008). Small Developed economies like Turkey are not influenced by the change in the oil prices or demand & supply of crude oil (Alper, Emre and Torul 2008). The reason behind positive correlation between oil price fluctuations and stock returns for these oil producing countries is due to the fact that the oil is constituent of revenue instead of cost production for these countries. An increase in the oil prices will lead to increase in the revenue which in turn increases the returns of the stock.

Stock returns of US and European countries are negatively affected due to fluctuations in the oil prices. Oil prices have a strong negative impact on the real stock returns in the U.S. and thirteen European countries in the period of 1986 to 2005 (Park and Ratti 2007). This is because of the reason that most of these developed economies are the importer of the crud oil and an unfavorable change leads to increase in the cost of production which ultimately results in the decrease of stock returns for the Developed economies like US.

Scope of this study is expanded to 11 Asian Pacific countries which are Australia, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Pakistan, Sri Lanka and Taiwan. Monthly data of these countries from 2000 to 2009 has been used for this study. One of the reasons for conducting this research is that there are studies available related to developed economies but as far as studies related to Asian and emerging economies are concerned, they are very rare. Another reason to conduct study in this particular sector of the world economy is the increase in the consumption patterns of this particular region (i.e. Asia Pacific). An inclining trend in the consumption of oil of the Asia Pacific countries has been reported in the Energy review which has been conducted by British Petroleum in 2008. It has also been reported that China was the largest consumer of the oil in 2008 and its consumption was accounting for 9.6% of the total world consumption. Currently Asia Pacific countries are accounting for almost 30% in the total world oil consumption.

The objectives of this study are to determine the presence of any significant relationship among the oil price fluctuations and stock market returns of the Asia Pacific countries and to check whether oil prices fluctuations are causing changes in the stock market returns or stock market returns are causing fluctuations in the oil prices. One of the objectives is also to make addition in the literature because literature related to this important economic region is scarce.

Rest of the study is arranged in a manner that next section is the Literature review of the related studies which is followed by Research Methodology, Empirical Findings and Conclusion.
2. Literature Review
There are number of studies which have been conducted in order to see the impact of oil prices and macro economic variables on the stock returns. Some of them are discussed in this section to highlight the significance of the topic for different countries. Basher and Sadorsky (2006) have conducted research on the relation of oil price risk and emerging stock markets. They conducted the research with emphasis on attitude of the emerging economies towards the rapid industrialization. Selection of emerging economies was also a rational decision and that was based on the fact that developed economies of the world are energy efficient and they have low consumption of the oil products. On the other side while emerging economies tend to use more and more oil and oil products to support their industries. And that is the reason their stock markets are subjected to high oil prices risk. For assessment purposes they have developed a multiple regression model. Data streams for the purpose were collected from different sources and those were Morgan Stanley International world Index for data related to the stocks returns and for oil related data was extracted as daily returns on the West Texas Intermediate (WTI) crude oil future contracts. All data streams were taken on daily basis and have been collected for 21 emerging economies. The findings of study were clearly mentioning the presence of positive relationship of the impact of oil prices risk on the stock market returns of the emerging economies.

Nandha and Hammoudeh (2006) have studied the relationship of Beta risk and returns of the stock market in the presence of oil prices and exchange rate sensitivities of the stock markets of the 15 Asia Pacific Countries. The rationales behind conducting this were demand for oil in these countries was increasing significantly and it has been reported that increase in the demand for oil of the Asia Pacific region is more than the increase in the world demand in 2004 and some of these 15 Asian countries were the best performer in the stock market in 1990s. The purpose of study was to determine the sensitivity of short term stock market returns subjected to domestic risk, oil prices risk and exchange rate risk and also to compare the relative factor sensitivity distribution between oil price fluctuations and systematic risk. For assessment purposes they have developed the methodology in parts. In first part they have checked that the data stationery or not through the Augmented Dickey Fuller (ADF) test and then applied International APT model on each stock. The findings of the study were that 13 out 15 countries of the Asia Pacific countries have Beta signs and are highly sensitive towards the domestic risk when world stocks are experiencing mixed trends. As for sensitivity to oil prices is concerned, Philippines and South Korea are sensitive to oil price risk in the short run and oil prices were expressed in local terms. Nine countries showed sensitivity towards the exchange rate risk. While for relative factor sensitivity distribution, it has been conclusively said that the countries are more sensitive to oil prices when expressed in local terms instead of systematic risk.

Mujahid, Roohi and Mustafa (2005) have conducted a study to check out the stock market volatility due to fluctuations in the oil prices. The purpose of the study was to check the sensitivity of the of the stock market returns with respect to oil price fluctuations. They have restricted their scope of study only to the Pakistani stock market. The rationale for this was that oil price fluctuations might cause significant increase or decrease in the value of those companies to which oil is major part of the cost of production whether in the form of direct or indirect cost. It was also argued that oil prices in Pakistan are changed very frequently which might have some positive relation to stock market returns due to changing variable cost of production. GARCH model was used for estimation purposes in this study. One important amendment in the model was the addition of daily trading volume at the Karachi Stock Exchange as a proxy variable. Oil prices were taken as independent variable while stock returns were used as dependent variable in the model. The study has been concluded by nullifying the presence of any significant relationship between the oil prices and stock returns and it was argued that it was the extensive use of Liquefied Petroleum Gas (LPG) which had outperformed the effect of oil price fluctuations on the stock exchange returns.
Robert (March 2008) have study the impact of macroeconomic variables on the stock market returns of emerging economies under the title of “Effect of Macroeconomic Variables on Stock Market Returns for Four Emerging Economies: Brazil, Russia, India, And China (BRIC)” . The goal of the study was to check the time series relationship of the stock market prices of emerging economies and macroeconomic variables. Selection of BRIC countries for the study was made due to certain reasons and those reasons were that the BRIC countries which were identified by the Wilson and Purushothaman (2003), expected than to be larger in Dollar term to the G6 countries in the coming forty years. Currently BRIC countries are accounting for 40% of the GDP for all emerging economies. Box-Jenkins Autoregressive Integrated Moving Average (ARIMA) model was used for estimation purposes. They applied model on the 1 month MA (Moving Average), 3 months MA, 6 months MA and 12 months MA stock prices data. They have used exchange rates and oil prices as intervening variables. They have used stock markets data on monthly basis. Study was concluded by arguing that international macroeconomic factors did not affect the stock market prices of the stock markets of Brazil, Russia, India and China.

Cunado and Garcia (2004) have studied the impacts of macroeconomic variables on the economic activity in Asian countries. They argued that after World War II there was sharp increase in the energy products. Increase in oil prices results in decline in the consumption which in turn cause decrease in the demand of oil. When demand decreases exports will also decreases which results in decline in the economic activity. Another effect is that higher prices mean higher cost of production and potential output of importing countries decreases. Over the past three decades, researchers significantly examine that due to oil prices shocks inflation, economic fluctuation and overall productivity of the firms affected. The purpose of this study is to analyze the relationship between the macro-economic variables and changes in oil prices. The research includes the six Asian countries for applying statistical approaches. For this purpose 27 year data is collected for six countries from year 1975 to year 2002, data is collected on monthly basis. Granger causality test and co-integration model are used for estimation purposes. Variables of study were exchange rate, inflation rate, oil price and real economic activity. This study concluded that when oil prices measured in domestic currency their impact is higher because of the exchange rates and other macro-economic variables. Also found that there wasn’t any long-term relationship between the oil prices and economic activities which has revealed that these relationships were short-run relationships. In the short run Granger test found that due to changes in the oil prices effects the economic growth in Japan, South Korea and Thailand. Oil prices have significant effect on the Inflation in all analyzed countries. Malaysia showed less significant relationship than the other Asian countries, and that was due to the fact that Malaysia was an oil exporting country.

Abosedra and Ghosh (2007) have studied the relationship between growth and oil future prices in developing countries. They have found that over the past 30 years the demand for oil in developed countries has decreased due to the decrease in the oil intensity of these economies, but on contrary, oil intensity of the developing countries has increased. Reason for raising demand is expansion of their manufacturing sector. This study has examined the co-integration and causality between the economic growth and oil prices of developing countries. Granger causality model is used while calculating the statistical variables. Study finds the absence of co-integration relationship between the oil prices and the economic growth. But in the short-run there is unidirectional causality exists from oil prices to the growth of developing countries, Pakistan is one of them. Basically these countries rely more on the future oil prices for production decisions. Also depends on the behavior of oil exporting countries like demand & supply, and expert’s opinion about the future prices of crude oil. So the prices of oil play a great role in developing countries because their industry mostly depends on the oil and their prices.

Arouri and Fouquau (2008) have studied the short term relationship of oil price changes and stock returns of GCC. GCCs (Qatar, Oman, UAE Bahrain, Kuwait, Saudi Arabia etc) are the major emerging markets; oil prices have a great effect upon the stock markets of these countries. There is a great change reported in the oil prices of these countries in the last few years. Only three studies were
found that took these Gulf countries into consideration and checked the impact of oil prices on stock returns. The Saudi market returns are not affected by the increase or decrease in oil prices. GCC countries are usually the exporter of oil therefore increase in oil prices of these countries has a positive effect on the stock returns of these countries unlike to the oil importer countries. It also explains that the other GCC markets are less dependent on oil export and are more influenced by domestic factors. In this study, the data of six member’s countries that are Qatar, Oman, UAE, Bahrain, Kuwait and Saudi Arabia was taken on the weekly basis from 2005 to 2008. Vector-auto regression model is used in this study for estimation purpose. The results of this study have indicated that there are reasonable links between the oil prices and stock market returns in Qatar, Oman, and UAE. In Bahrain, Kuwait, and Saudi Arabia change in oil prices do not affect stock market returns. The stock market of these countries is more affected by the other economic forces rather than the changes in oil prices.

Park and Ratti (Aug 2007) have assessed the relationship between oil prices and stock returns in the context of US and thirteen European countries. Their findings were that there is a tremendous fluctuation in oil prices after the 1970s. Oil prices shocks are the major factor that affects U.S economy badly and many researches had been conducted that show relationship among oil prices and macroeconomic variables. Relatively less work is done that shows the effect of oil prices on real stock returns. One of the findings shows that there is a measurable effect of oil prices on stock returns before the Yom Kippur war. Another study shows a negative relationship among the two variables in U.S and one of the studies did not find significant relationship between the two variables. This study examines the relationship between oil prices and stock returns of the U.S and thirteen European countries (which are Germany, Belgium, Spain, Greece, Sweden, U.K., Finland, Italy, Denmark, Norway, Netherlands, Austria and France). Monthly data was considered from 1986 to 2005 for estimation purposes. A multivariate vector auto regression model is used in this study. Oil prices have a strong negative impact on the real stock returns in the U.S and thirteen European countries in the selected period of 1986 to 2005. Except Norway because Norway is the crude oil exporter therefore for Norway, increase in oil prices has a strong positive impact on the real stock returns and vice versa.

3. Research Methodology

The study is conducted to check the importance and nature of relationship between microeconomic variables and stock returns. For estimation purposes Vector Auto Regressive (VAR) model, Vector Error Correction Model (VECM) and Granger causality test is applied in the current study:

Granger causality test is a bivariate test for the estimation of relationship between the time series variable. The model used in this study is as follows:

\[ Y_{Stock\ Returns\ t} = \alpha + \beta_{Y_{Stock\ Returns\ t-1}} + \epsilon_t. \]

Here Stock Returns have been taken as dependent variable and oil prices have been taken as independent variable. In this model we are trying to find that oil prices are granger causing stock returns. Lagged values of stock returns have also been used as independent variable. The model can also be devised to check the other possibilities i.e. the stock returns are granger causing the oil prices. In this case model is as follows:

\[ Y_{Oil\ Price\ t} = \alpha + \beta_{Y_{Oil\ Price\ t-1}} + \epsilon_t. \]

Vector Auto Regressive (VAR) model is a multivariate dynamic model which is used for the estimation of relationship between the multiple time series variables. The only problem with the VAR model is that it ignores the long-term relationship and concentrates on the short-term influences of the variables. The VAR model has been applied here for the more accurate results. The model used for this purpose is as follows:

\[ Y_t = \alpha + \beta_1 X_t + \beta_2 Z_t + \beta_3 Y_{t-1} + \epsilon_t. \]
Here $Y_t$ is the dependent variable which is stock returns in this particular case while $X_t$ is the oil prices, $Z_t$ is exchange rate in dollar terms and $Y_{t-1}$ is lagged value of the stock returns which signifies the possibility that stock returns may be caused or affected by itself. An important thing which should be kept in mind while applying the VAR model is that data should be stationary otherwise we can’t apply the model. In order to check stationarity we have applied Augmented Dickey Fuller (ADF) test on data which has revealed that our data become stationary on first difference.

Vector Error Correction Model (VECM) is a part of the VAR model and is used to verify the presence of any significant short run relationship between the time series data. This model identifies the error/disequilibrium caused in the dependent variable by independent variables and also tells the time required by the dependent variable to recover equilibrium position. VECM model used in this study is as follows:

$$\Delta Y_{Stock \ Returns, t} = \beta_1 + \beta_2 \Delta Z_{oil \ prices, t} + \beta_3 \left( Y_{t-1} - \theta Z_{oil \ prices, t-1} \right) + \epsilon_t.$$

Our research hypotheses are:

$H_0$: There is no significant negative relationship between the oil price and stock returns of Asia Pacific countries.

$H_1$: There is significant negative relationship between the oil price and stock returns of Asia Pacific countries.

Estimations are made by using monthly data of the Stock indexes, oil prices and exchange rate from the period 2000 to 2009. Stock index of all eleven countries are derived from Yahoo finance. Exchange rate was taken in dollar terms and oil prices were also in per barrel in dollar terms.

4. Empirical Findings

Estimation work was started by applying the Co-integration test on the data which has indicated the presence of significant long run relationship among the variables. In order to apply co-integration test, there is a condition of stationary data. i.e. data must be stationary. Stationary of data has been checked using Augmented Dickey Fuller test (Unit root test). ADF test findings have revealed that data is non stationary but it became stationary by taking $1^{st}$ difference of the data. Co-integration test has indicated that the relationship exists among variables. The table 4.1 shows the results of the co-integration test.

**Table 4.1:** Results of Co-integration test for Asia Pacific countries

<table>
<thead>
<tr>
<th>Countries</th>
<th>SR=C+OP+ER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>1=0.0021-0.058634-0.558237</td>
</tr>
<tr>
<td>China</td>
<td>1=0.016875+4.686614-4.769548</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1=-0.004015-45.71723+1.303334</td>
</tr>
<tr>
<td>India</td>
<td>1=0.00634-6.0144-1.6896</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1=0.0007-4.318025+0.06753</td>
</tr>
<tr>
<td>Japan</td>
<td>1=-0.002653-7.18233-0.22266</td>
</tr>
<tr>
<td>Korea</td>
<td>1=0.00704-6.983058-2.2038</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1=0.00266-2.8621-1.6985</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1=0.00506-2.66954-0.144891</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>1=-0.001697+1.74643+0.98731</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1=-0.019292+34.22464+5.694963</td>
</tr>
</tbody>
</table>

Test has shown negative relationship between oil prices and stock returns for most of Asian pacific countries except China, Sri Lanka and Taiwan. The presence of the positive relationship among the variables for China is due to one solid reason that Chinese industries are producing goods at large scale and are achieving economies of scale, which leads to the lower cost of production. This whole process ultimately outperforms effects of changes in oil prices. For China, Sri Lanka and Taiwan, the presence of positive relationship between the oil prices and stock market returns, is argued by Mohan
Nandha and Robert Faff (2006) as a result of regulated oil prices (i.e. oil prices are determined by the regulating authorities instead of forces of demand and supply).

While for other Asian Pacific Countries relationship among the oil prices and stock returns is negative, which can be theoretical explained by this logic that increase in oil prices will results in the increase in the over all cost of production of goods. This results in the decreases the revenue and investor will never invest a company whose revenues are decreasing. Ultimately stock returns will decrease.

Co integration test has revealed that VAR and VECM models may be applied on data. Vector Auto Regressive (VAR) Model has revealed that there is insignificant relationship among the variables. The nature of relationship between the oil prices and stock returns is Negative i.e. Increase in oil prices is results in decrease in the Stock returns and vice versa. Table 4.2a and 4.2b shows the results of the VAR model for Asian Pacific countries.

<table>
<thead>
<tr>
<th>Countries</th>
<th>EX(-1)</th>
<th>EX(-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR TWN</td>
<td>-0.11475</td>
<td>-0.26918</td>
</tr>
<tr>
<td>SR SL</td>
<td>0.224505</td>
<td>-0.29654</td>
</tr>
<tr>
<td>SR PAK</td>
<td>-0.07538</td>
<td>-0.2541</td>
</tr>
<tr>
<td>SR MLY</td>
<td>-0.14993</td>
<td>-0.08748</td>
</tr>
<tr>
<td>SR KOR</td>
<td>0.005055</td>
<td>-0.2355</td>
</tr>
<tr>
<td>SR JPN</td>
<td>0.109192</td>
<td>-0.1063</td>
</tr>
<tr>
<td>SR INDO</td>
<td>-0.07023</td>
<td>-0.18331</td>
</tr>
<tr>
<td>SR IND</td>
<td>-0.46252</td>
<td>-0.20938</td>
</tr>
<tr>
<td>SR HK</td>
<td>-0.66969</td>
<td>-0.95504</td>
</tr>
<tr>
<td>SR CHN</td>
<td>0.084216</td>
<td>-0.72094</td>
</tr>
<tr>
<td>SR AUS</td>
<td>-0.00235</td>
<td>-0.00205</td>
</tr>
</tbody>
</table>

VAR model has shown significant relationship between the Exchange rate and Stock returns for countries India (at 1st difference), Australia and Pakistan (at 2nd difference). The nature of relationship between Exchange rate and Stock returns was negative also, i.e. Increase in Exchange rate will cause decrease in the Stock returns. India’s exchange rate influences the stock returns by its previous value to as compare to the Pakistan and Australia that influence by its second value to the stock returns.

VECM model has revealed that there is a short run relationship among the Oil prices and Stock returns. Six out of Eleven Asian Pacific Countries have shown significant relationship between the oil prices and stock returns. Time for rectification of error in dependent variable is in months as monthly data is used in the study. Table 4.3 shows the findings of the VECM model for the variables.
Highlighted cells in the table 4.3 identify the Asian Pacific countries which are showing significant relationship between the stock returns and oil prices. The results show that there is a short run relationship between the oil prices and stock returns and in the last column of the table recovery period has been mentioned which is time required by the dependent variable (i.e. stock returns) to recover from the disequilibrium position to equilibrium position which is resulted due to change in independent variable (i.e. oil prices). For instance, stock returns take almost one month to recover equilibrium position in Pakistan. Similarly Sri Lanka, Australia and Hong Kong have recovery period of almost three months.

Variance decomposition for Stock returns indicate that, it is the previous values of stock returns which are causing error in the stock returns. In Pakistan 61% variance in stock returns is caused by the previous values of stock return itself, 38% by the exchange rate and almost 1% by the oil prices. In Sri Lanka 89% variance caused by the lag values of stock returns, 10% by the exchange rate and almost 1% by the oil prices. Similarly in other countries stock return is major component that causes variation to the dependent variable, second component is exchange rate in most countries and then oil prices. About 8% variation by the oil prices in the Australia and Korea. Table 4.4 shows the Error decomposition of the stock returns of Asian Pacific countries.

The Granger Causality Test results presented in Table 4.5 has revealed significant results for only two countries. Oil prices are granger causing stock returns of the sock markets of the Pakistan and Sri Lanka only while Granger causality test has showed insignificant results for the remaining 9 Asian Pacific countries, i.e. oil prices do not granger causes the stock returns of most of Asian Pacific countries excluding Pakistan and Sri Lanka. In Pakistan oil prices causes the stock returns that means the oil prices influence the stock returns in the short run. As Pakistan is an importing country so world wide changes in oil prices influence the stock returns due to fluctuations in the oil prices world wide.
Table 4.5: Granger Causality test results

<table>
<thead>
<tr>
<th>Countries</th>
<th>$H_0$(OP) F-Statistic</th>
<th>Probability</th>
<th>$H_0$(SR) F-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>1.05903</td>
<td>0.30558</td>
<td>9.79119</td>
<td>0.00222</td>
</tr>
<tr>
<td>China</td>
<td>0.04881</td>
<td>0.82553</td>
<td>2.14929</td>
<td>0.14534</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>0.27299</td>
<td>0.60233</td>
<td>7.23764</td>
<td>0.00819</td>
</tr>
<tr>
<td>India</td>
<td>0.99462</td>
<td>0.32069</td>
<td>15.6429</td>
<td>0.00013</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.47143</td>
<td>0.4937</td>
<td>19.9</td>
<td>1.90E-05</td>
</tr>
<tr>
<td>Japan</td>
<td>0.00557</td>
<td>0.94065</td>
<td>1.23019</td>
<td>0.26966</td>
</tr>
<tr>
<td>Korea</td>
<td>0.3571</td>
<td>0.55129</td>
<td>23.2497</td>
<td>4.40E-06</td>
</tr>
<tr>
<td>Malaysia</td>
<td>0.47143</td>
<td>0.4937</td>
<td>19.9</td>
<td>1.90E-05</td>
</tr>
<tr>
<td>Pakistan</td>
<td>3.88756</td>
<td>0.05103</td>
<td>14.1822</td>
<td>0.00026</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>4.82591</td>
<td>0.03002</td>
<td>12.5982</td>
<td>0.00056</td>
</tr>
<tr>
<td>Taiwan</td>
<td>0.07998</td>
<td>0.77783</td>
<td>16.9748</td>
<td>7.10E-05</td>
</tr>
</tbody>
</table>

5. Conclusion
This study empirically checks the presence of any significant relationship between the stock returns and oil prices of Asian Pacific Countries. We have adopted a mixed approach and verified the existence of relationship through various Econometric Models which include VAR, VECM, Variance Decomposition and Granger Causality.

Granger Causality test has revealed that there is no significant relationship between oil prices and stock returns for all the countries except Pakistan and Sri Lanka. In these two countries oil prices were granger causing the stock returns. Stock returns for remaining nine countries, Granger test doesn’t show any significant relationship between the variables. Co-integration test has indicated the presence of the long run relationship between the variables for all Asian Pacific countries.

VAR model has indicated insignificant relationship between the stock returns and oil prices but found significant relationship between the stock returns and the exchange rate for Australia, India and Pakistan. VECM Model has shown significant relationship between the Stock returns, Oil prices and Exchange rate for six countries. These countries are Australia, China, Hong Kong, Indonesia, Sri Lanka and Pakistan. For rest of the countries the relationship was insignificant.

After VECM, results of Variance decomposition shows that the lagged values of stock returns results in the variance of stock returns. Almost in nine out of eleven Asia Pacific countries, variance in the Stock returns was resulting due to the previous value of stock returns. Exchange rate is also playing a significant role in two countries named china and Pakistan. Oil prices are significantly causing variation in the stock returns only in China and Korea i.e. almost 8%.

On the basis of our research findings, we suggest that corporate investor should invest in Asian pacific countries for long span of time but at the same time other macro economic variables must be kept in mind. Most of Asian pacific countries are developing countries; more opportunities are available for the investors to invest in these countries.

References
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