THE RELATIONSHIP BETWEEN OIL PRICE AND AIRLINE STOCK PRICE

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THE RELATIONSHIP BETWEEN OIL PRICE AND AIRLINE STOCK PRICE

By

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ABSTRACT

This study aims to examine the relationship between oil prices and airline stock prices. with the increase of threats of oil price fluctuations and rising energy price for airline companies, it is important to important to consider oil as a pricing factor in asset pricing models. Furthermore the study contributes to literature by demonstrating how the relationship between oil price and stock price vary among companies depending on their characteristics.

Two multiple regression models are executed to investigate the nature of the relationship between oil price and airline stock price. The models consider crud oil denominated by daily OPEC basket prices, and the data for 40 airline companies from 27 countries.

The findings suggest that there is a significant negative relationship between airline stock prices and both oil price and exchange rate. The findings also suggest that there is a significant positive relationship between firm size and profitability and the effect of oil prices, as well as there is a significant negative relationship between operating leverage and liquidity and the effect of oil price. Conversely, there is a negative relationship between financial leverage and the effect of oil price but not significant and as for the operating efficiency the finding show a positive relationship but not significant too.

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CHAPTER ONE

1.1. Introduction

The increasing role of stock markets in the economy over the past years has encouraged researchers to investigate the relationship between the stock markets and the economy. The studies conducted have shown that there is a strong relationship between stock prices and the macroeconomic variables. It is assumed that the information about the economy is considered by investors when they estimate the discount rate and expected cash flow from stocks (Mookerjee and Yu, 1997; Victor and Kuwornu, 2011; Singh, et al., 2011; Chen et al., 1986; Pearce and Roley, 1983; and Kim and Wu, 1987). In addition, an efficient capital market hypothesizes that stock prices adjusted to all new information released in the market. Fama (1970) documented that in semi strong market, stock prices should reflect all relevant information including publicly available information.

Since 1972, the price of oil price has shown to be an influential factor in the economy. An increase in oil prices can lead to a rise in production costs, as oil is a basic input in the production process. Thus putting pressure on the companies' profit margins and eventually will affect the stock prices of the companies. Any fluctuations in oil prices are reflected directly on the other sectors in the economy. The effect of oil price changes varies according to the amount of the dependence of the sector on oil (energy elements) as a key part of inputs (Maghyereh, 2007). The increase in oil prices has an indirect effect on the stock market. The change in oil price can lead to a transfer of income from oil consumers to oil producers, a rise in the price level and inflation, a change in

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changes. The high ratio might lead companies to bankruptcy. Thus, the potential investors will not be attracted to invest in stock with high leverage. This will lead to reduce the demand in such stocks which eventually reduces the price of the stock.

Finally, the findings show that operating leverage and liquidity have a negative relationship with oil price change. The company with high fixed cost in its cost structure is more sensitive to the change in oil prices. Since the cost of oil price is a part of the variable costs of airline companies, the increase in oil price leads to increase the portion of variable costs which will then decrease the operational leverage and the profit margin of the company.

5.3 Limitation

The study is limited to one sector which is the airline industry. Therefore, it is unable to generalize its findings for all stock market segments. The model used to test the relationship between oil prices and stock prices is ignoring the other macroeconomic factors which may have an effect on stock prices such as inflation and interest rate and financial factors like market return, term premium and other internal factors.

There is no complete list of all airline companies worldwide. Therefore, the study used the companies who are members of IATA as the target population. This makes the findings not generalizable from the sample to the population of interest (all airline companies worldwide). Nevertheless, 84% of the total air traffic are members of IATA and the diversification in the sampling seems to support the findings in general.

REFERENCES:

- Arouri, M. E. H., & Fouquau, J. (2009). On the short-term influence of oil price changes on stock markets in GCC countries: linear and nonlinear analyses. *Arxiv preprint arXiv:0905.3870*.
- Al-Rjoub, S. (2005). Effect of Oil Price Shocks in the US for 1985-2004, using VAR, Mixed Dynamic and Granger Causality Approaches. *Applied Econometrics and International Development*, 5(3).
- Al-Fayoumi, N.A., (2009), Oil Prices and Stock Market Returns in Oil Importing Countries: The Case of Turkey, Tunisia and Jordan. *European Journal of Economics*, *Finance and Administrative Sciences*, 16. 86-101.
- Basher, S. A., & Sadorsky, P. (2006). Oil price risk and emerging stock markets. *Global Finance Journal*, 17(2), 224-251.
- Bailey, R. E. (2005). The Economics of Financial Markets. First Edition. *Cambridge University Press*. Cambridge .183-222
- Bjornland,H,C.(2009), oil price shocks and stock market booms in an oil exporting country, *Scottish Journal of Political Economy*, 56, 2. 232 253.
- Brown, K. C., & Reilly, F. K. (2009). *Analysis of investments and management of portfolios*: South-Western Cengage Learning.
- Chen N., R. Roll and S. Ross, 1986, Economic forces and the stock markets, Journal of Business 59, 383-403.
- Cologni, Alessandro and Matteo Manera (2007), "Oil prices, inflation and interest rates in a structural cointegrated VAR model for the G-7 countries" *Energy economics*.
- Cunado, J., and F. Perez de Gracia (2003), "Do oil price shocks matter? Evidence for

- some European countries" *Energy Economics* 25:137-154
- Doğrul, H. Günsel. and Soytas, Ugur. (2010)"Relationship between oil prices, interest rate, and unemployment: Evidence from an emerging market". Energy Economics. 32. 1523–1528
- Faffa, R. W., & Brailsfordb, T. J. (1999). Oil price risk and the Australian stock market. *Journal of Energy Finance and Development*, 4, 69-87.
- Fama Eugene F. 1970, "Efficient capital markets: a review of theory and empirical work" *The Journal of Finance*, 25, 2.
- Fukunaga, I., Hirakata, N., & Sudo, N. (2010). The effects of oil price changes on the industry-level production and prices in the US and Japan: National Bureau of Economic Research.
- Gogineni, S. (2008). The stock market reaction to oil price changes. *Division of Finance,*Michael F. Price College of Business, University of Oklahoma, Norman.
- Hamilton, J.D., (2003), What is an Oil Shock? *Journal of Econometrics*, 113. 363-398.
- Hamilton, J.D., 1988. A neoclassical model of unemployment and the business cycle. *Journal of Political Economy* 96, 593–617.
- Hamilton, J.D., 1999. What is an oil shock? Manuscript, UC San Diego.
- Hassan, Syeda Anam. and Zaman , Khalid . (2012). "Effect of oil prices on trade balance:

 New insights into the cointegration relationship from Pakistan" Economic

 Modelling. 29. 2125–2143.
- IATA, (2011). International Air Transport Association, Annual Report.

- Jiménez-Rodríguez, R., & Sanchez, M. (2005). Oil price shocks and real GDP growth: empirical evidence for some OECD countries. *Applied economics*, *37*(2), 201-228.
- Jones, C.M., and G. Kaul (1996) "Oil and the Stock Market", *Journal of Finance* 51:463-491
- Kim, M.K. and C. Wu, 1987, Macro economic factors and stock returns, *Journal of Financial Research*, 10, 87-98.
- King, B. F. (1966). Market and industry factors in stock price behavior. *the Journal of Business*, 39(1), 139-190.
- Kilian ,L. Park,C (2009) , the impact of oil price shocks on the u.s. stock market, international economic review Vol. 50, No. 4, November 2009.
- Lee, J. S., & Jang, S. C. S. (2007). The systematic-risk determinants of the US airline industry. *Tourism Management*, 28(2), 434-442.
- Le,T,H. Chang,Y.(2011) The impact of oil price fluctuations on stock markets in developed and emerging economies, *Singapore Economic Review Conference*.
- Lee, K. Ni, S. (2002), On the dynamic effects of oil price shocks: a study using industry level data, *Journal of Monetary Economics*, 49.823–852.
- McSweeney, E, J. and Worthington, A, C. (2008). A comparative analysis of oil as a risk factor in Australian industry stock returns, 1980-2006. *Studies in Economics and Finance*. 25. 2. 131-145.
- Maghyereh, A. Al-Kandari, A. (2007). Oil prices and stock markets in GCC countries: new evidence from nonlinear cointegration analysis, *Managerial Finance*, 33, 7. 449-460.

- Malkiel, B. G. (2003). The efficient market hypothesis and its critics. *The Journal of Economic Perspectives*, 17(1), 59-82.
- Mohtadi, H., & Agarwal, S. (2001). Stock market development and economic growth:

 Evidence from developing countries. *On line] Available at: http//www. uwm.*edu/mohadi/PA-4-01. pdf.
- Mookerjee, R., & Yu, Q. (1997). Macroeconomic variables and stock prices in a small open economy: The case of Singapore. *Pacific-Basin Finance Journal*, *5*(3), 377-388.
- Narayan,P,K. Sharma,S,S.(2011), new evidence on oil price and firm return, *journal of banking and finance*,35 .3253-3262.
- Ono, S. (2011). Oil Price Shocks and Stock Markets in BRICs. *The European Journal of Comparative Economics*, 8(1), 29-45.
- Owusu-Nantvi, V., & Kuwornu, J. K. M. (2012). Analysing the Effect of Macroeconomic Variables on Stock Market Returns: Evidence from Ghana. *Journal of Economics and International Finance*, *3*(11), 605-615.
- Papapetrou, Evangelia (2001), "Oil price Shocks, Stock Market, Economic Activity and Employment In Greece," *Energy Economics* 23:511-532
- Pearce, D.K. and V. Roley, 1983, Stock prices and economic news, Journal of Business 58, 49-67.
- Pearce, D, K. (1983). Stock price and the economy, *Economic Review*.
- Pahlevan Sharif, S., Ranjbar, A., & Arumugam, V. (2011). The Impact of Higher Oil Prices on Airlines Share Price: The Case of Malaysian Airlines.

- Sadorsky, P. (2004), "Stock markets and energy prices", *Encyclopedia of Energy*, 5. 707-17.
- Salomons, R.& Grootveld, H.(2003). The equity risk premium: emerging vs. developed market. *Emerging Markets Review*, 4(2),121-144.
- Scholtens, B., & Yurtsever, C. (2011). Oil price shocks and European industries. *Energy Economics*.
- Shanken, J. (1982). The Arbitrage Pricing Theory: Is it testable?. *The Journal of Finance*, (5) 1129-1140.
- Singh, T., S. Mehta, et al. (2011). "Macroeconomic factors and stock returns: Evidence from Taiwan." *Journal of Economics and International Finance* **2**(4): 217-227.
- Ramos, Sofia B. and Veiga, Helena .(2010) "Asymmetric Effects of Oil Price Fluctuations in International Stock Markets" Universidad Carlos III de Madrid.
- Tang, W., Wu, L., & Zhang, Z. X. (2010). Oil price shocks and their short-and long-term effects on the Chinese economy. *Energy Economics*, 32, S3-S14.
- Victor, Owusu-Nantwi, and Kuwornu, John K. M. (2011). "Analyzing the effect of macroeconomic variables on stock market returns: Evidence from Ghana" *Journal of Economics and International Finance* . 3(11). 605-615.
- Zvi, B., Alex, K., & Alan, M. J. (2003). Essentials of investments: New York.'Mc Graw Hill Companies.