- Thesis Title: **"Impact of Oil Price and Its Volatility on CPI and Stock Market Index in Pakistan: Bivariate EGARCH Model"**

Name of Student: **Abida Naurin** Supervisor Name: **Dr. Abdul Qayyum**

## ABSTRACT

Oil is becoming as an important determinant which affects the macroeconomic activities and the stock market indices in unusual patterns among various parts of the globe particularly since the first oil crisis in 1973. Also Petroleum products are recognized to be the essential source of energy and power throughout the world and gaining substantial importance as a tool for endurance and security of developed nations. The research study targets to explore the impact of oil price and its volatility on CPI and Stock market index in Pakistan from the period 1980:M1 to 2014:M12. In this study we used the financial time series econometrics techniques; first applied the Box-Cox transformation on the data which suggested log transformation is required for all three series. As data used will be monthly, Beaulieu and Miron (1992) seasonal unit root test is used if stationarity is present in the data. All variables hold unit root at zero frequency and become stationary at first difference. Further to confirm if co-integration relationship exists between the variables we have estimated Engle and Granger (1987) two-step method. And finally Bivariate EGARCH model is applied to scrutinize the impact of oil price volatility on CPI and Stock market index. Bollerslev and Wooldridge (1992) proposed this model which is projected by using Maximum likelihood method. The direct relationship between CPI and Oil prices through Bivariate EGARCH model is our conclusion. We have also found the asymmetric impact of news on the change in consumer price index. In situation of Pakistan it is direct and significant statistically; the direct and significant value suggests that positive rumors and news are inclined to exaggerate the CPI volatility rather than in case of negative news. Hence the findings of bivariate model suggested the direct association between oil prices and Stock market Index. It means SPI is positively affected by oil prices. In case of Pakistan, asymmetric impact is positive but statistically insignificant at $\alpha$=.05 (Level of significance). But in case of oil price volatility Bivariate EGARCH model, it is negative and statistically insignificant. The summation of Beta Coefficients of ARCH and GARCH suggests that the volatility shocks in the SPI have been highly continual and became extinct rather slowly in case of Pakistan.