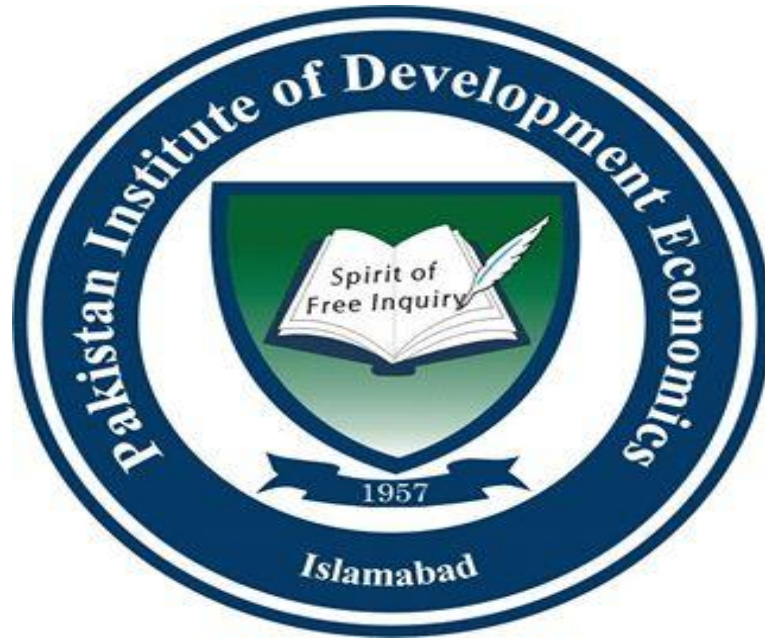


**HOW CASH FLOW NEWS AND DISCOUNT RATE NEWS
IMPACT THE STOCK RETURNS OF ENERGY FIRMS OF
PAKISTAN**



Submitted By

Rabia Kausar

PIDE2015FMPHILEAF06

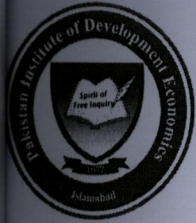
06/Mphil-EAF/PIDE/2015

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A Thesis submitted to the Pakistan Institute of Development Economics, Islamabad for partial fulfillment of the requirement for the degree of Master of Philosophy in Economics and Finance

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CERTIFICATE

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

DEDICATION

To my dearest parents, my family, friends
and respected teachers who motivated,
supported and encouraged me in every aspect of my life

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List of Abbreviations

MARI	Mari Petroleum
PRL	Pakistan Refinery Ltd
SHELL	Shell Pakistan Ltd
ARL	Attock Refinery Ltd
NRL	National Refinery LTD
PSO	Pakistan State Oil
SNGPL	Sui Northern Gas Pipelines
SSGC	Sui Southern Gas Pipeline
JPGL	Japan Power Generation LTD
KEL	Kohinoor Energy LTD
AEL	Altern Energy Limited
SGPL	Singapore Power Limited
CF	Cash Flow news
DR	Discount Rate News
R	Return

ACKNOWLEDGEMENT

First of all I am grateful to the Allah for the good health and wellbeing that were necessary to complete this thesis

I would like to express my sincere gratitude to my supervisor Dr Abdul Qayyum for his continuous support, patience, motivation, and immense knowledge throughout my research work. His guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my thesis.

Thanks to my class mates and other students at PIDE for their help and moral support. It is my privilege to thank my friend Bushra Sharif. I cannot forget her moral support and encouragement throughout my research period. I would like to thanks my all hostel friends for providing me peaceful environment for research.

I am grateful to my parents for their uncountable prayers for me and I am nothing without them. I am thankful to my husband for showing patient and supportive behavior throughout my research work and study. I am grateful to my mother in Law for her prayers and support I would like to thank my elder sister Iram Kausar for guidance in tough time of my research work. I would thank to all my sisters Sadia, Bushra and Rubab for their concern.

Abstract

This study has used the Model of Volunteeno (2000) and calculated the cash flow news and discount rate news of listed energy firms of Pakistan from 2000 to 2015. As this study has used the balanced panel data technique and estimated the random effect model after employing the Hausman Test. The results of this research show that only discount rate news is significance and positively related with unexpected stock return returns of energy firms which describe that increase in variability in the discount rate news increase the variability in unexpected stock returns. As cash flow news is insignificance which conclude that there is no permanent effect occur in the unexpected stock return due to change in book value and earning. Moreover these firms are large; it's also concluded that large firms are not affected by the cash flow news

CHAPTER 1

INTRODUCTION

1.1 Introduction

Stock market is always a mystery for researchers. Sometimes it behaves randomly, sometimes it shows some pattern, sometime it move positively and sometimes it moves negatively. There are different theories for understanding and interpretation of the stock market.

Prediction of stock return is done by the different methods. At first stock prices are predicted by the chartist and they predicted the stock price with past trend because they believed that history repeat itself and latter intrinsic value analysis was used to predict the stock returns. After that random walk theory shows that the stock prices have random behavior and efficient (Fama, 1965). As the time past the stock prices are predicted with different variables e.g. earning, GDP fluctuation, interest rate, loss, profitability, dividend yield ratio, book to market ratio and many others.

Different researchers explored firms past experiences and predicted the stock returns. As Banz's (1981) explored that higher stock returns were earned by small firms as compare to large firms. Bondt and Thaler (1985) explained better performance of long time loser as compare to long time winners while Jegadeesh and Titman (1993) explained that past short-term winners have outperformed past short term losers. Rosenberg, Reid, and Lanstein (1985) analyzed the-market-equity of companies and determined that greater

average returns are earned by higher book value firms than low book value firms. Profitability and leverage are positively related with the stock returns which were checked by the Haugen and Baker (1996) and Bhandaris (1988).

Dividend is one factor to predict the variation in the stock return of firms which is described by the random walk theory. With future news about the dividend growth rate the price of stock return can be predict. (Compbell, 1991) but Marsh and Merton (1986) and Fama and French (1988) estimated the correlation between the stock prices and dividend they concluded that the dividend only can predict one year prices.

As Compbell and shiller (1988) decomposed the annual stock returns between two components with dividend ratio model in Cash flow news and discount rate news. As cash flow news was used to predict the long terms impact on the aggregate stock return whereas discount rate news explained the short term variation but with analysis of various past literature, the importance of discount rate news was more enhanced than the cash flow news.

After using the log dividend price ratio model Vuolteenaurnho (2002) used the new model which was not based on dividend but on Return over equity. As some growth firms does not pay the dividend and reinvest their profits, so it difficult to predict the unexpected stock returns with the help of dividend. As calculation of cash news was based on the book value and earning whereas discount rate news was based on interest rate and excess return of previous years instead of dividend. Cash flow news has everlasting shock on the stock returns, so it is more reliable for the small firms because these firms show more variability in earning and book value.

Cash flow news is more important in the reference of small firms because large firms have many advantages. As these firms had developed the trust in the market whereas new and small firms have to work hard to develop this trust. For this purpose these firms should have the smooth and positive cash flow.

Stock returns decomposition in two components was also done with some other methods. As Cohen et al, (2002) used the log dividend price ratio model for derivation of stock returns. Whereas Chen et al (2013) used the implied cost of capital and found that cash flow news has more significance as compare to discount rate news and estimated that at the one-year horizon, 36% variation is recorded at aggregate level due to the cash flow news whereas 48% variation recorded at the firm level. Whereas in earlier research the discount rate

Cohen et al, (2002) checked the importance of cash flow news and discount rate news at institution level and described that positive cash-flow has more significance because it increase the discount rate news which inflate the risk and induces selling by individual to institutions. Moreover institutional reaction to cash flow news is lower among small firms whereas discount rate new does not affect the stock return directly. As with increase or decline in the discount rate affect the commodity market which affect the money borrowing and lending and indirectly affect the stock market.

As these two variables are very important for explanation of stock returns and for the buy and sell of shares. As cash flow news impact the stock prices with book value and profitability and discount rate news impact the stock return with interest rate. Positive cash flow news boosts stock return. Whereas as random variation in discount rate affect the prediction of stock return and make it more volatile. This study has found out the

answer about the importance and significance of these two variables on energy firms in Pakistan.

1.2 Significance of Study

As a large number of research papers are telling us about predictability and behavior of stock returns of different firms of Pakistan which give us a guide line to invest in stock market accordingly. Compbell and Shiller (1988) decomposed the stock returns into the discount rate news and cash flow news and tell as a new way to predict the stock market. This study has applied the decomposition method of stock return of Compbell and Shiller(1988) and predicted the variation in the stock return with the fluctuation in cash flow news and discount rate news. As cash flow news and discount rate news are calculated with previous value of firm`s book value, earning and Treasury bill rate. No one has implied this technique. Through this study little effort has done to predict the stock returns with help of cash flow news and discount rate news.

1.3 Objectives of Study

- To check impact of cash flow news on the unexpected stock returns of energy firms of Pakistan
- To check impact of discount rate news on the unexpected stock returns of energy firms of Pakistan

1.4 Hypotheses of study

H_{0,1}= Unexpected Stock return of energy firms is not affected by cash flow news

H_{1,1}= Unexpected Stock return of energy firms is affected by cash flow news

H_{0,2}= Unexpected Stock return of energy firms is not affected by discount rate news

H_{1,2} Unexpected Stock return of energy firms is affected by discount rate news

1.5 Conclusion

As stock return prediction is important for investment purpose, Compbell and Shiller (1988) decompose the variance of stock return into cash flow news and discount rate news on the base of dividend growth model. Later financial researcher conclude that dividend pay random or not paid at all in large firms ,so dividend is not good predictor to determine the stock return variability, So Vuolteenaho (2002) introduced the new method to calculate the cash flow news with earning and book value of firm. Many other methods was introduced by different researcher for example implied cost method, but this study has used the model of Vuolteenho (2002). As different analysis are done on Pakistan stock return market with different variables but after review of stock return literature in Pakistan no one has predicted the stock return variation with help of cash flow news and discount rate news. This study has done little effort to explore the stock return variability with help of these two variables.

CHAPTER 2

SALIENT FEATURE OF ENERGY FIRM

2.1 Introduction

This chapter will be discussed about reason of choosing companies from the energy sector. Section one is describing about the salient features of energy firms. Section two is describing about history of chosen firms. Third is describing about the conclusion.

This study has used the energy firms because Pakistani market is observing energy crisis, so these firms have more potential as compare to other firms. Moreover these firms need investment from public sector. This study would provide the guide line to investors that how they can invest in these firms safely with optimally profit.

This study has taken the 12 energy firms which had been listed in Pakistan Stock Exchange market since 1997. From the beginning many companies entered in the stock market but some firms merged into other companies whereas some were delisted from the stock market. There are very few companies which book values are positive and there assets are more than there liabilities. There are following companies which are chosen by this study has based on the positive book value. There is brief history of these firms.

2.1 Oil and Gas Exploration Companies

2.1.1 Mari Petroleum

Pakistan Stanvac Petroleum Project owned the Mari Gas Field which was shaped in 1954 between Government of Pakistan and M/s Esso Eastern. They divided their ownership in the ratio 49% and 51%.

In 1957, there was first discovery regarding the gas exploration. It was in lower Kirthar 'Zone-B' Limestone Formation. The 1967 and 1983 were the premier Production years. Fauji Foundation was got all shares by the M/s Esso, then it became a public limited company. The main purpose to make it public limited company is get capital for the Projects.

Mari Company is primarily a production company. Company supply the gas after discovering the Habib Rahi Reservoir and focus on the extension of Habib Rahi Reservoir.

In 2001, the business of Company extended and started production. Mari Company is playing a lead role in production of oil and gas exploration and production sector. There are many new projects and agreement signed by the Mari Company to enhance its productivity. (Financial Report of Mari Company 2016-17)

2.1.2 Pakistan Refinery

Pakistan Refinery Limited (PRL) established in Pakistan. Then it became a Public Company in May 1960 and a registered company on the Pakistan Stock Exchange. The company perform cleaning on the sea side of Karachi. Hydro skimming method of refinery is used by PRL. Cleaning of various imported and local crude oil is done by the company to fulfill the requirement of country. Capacity of processing various petroleum

products is 50,000 barrels per day. The Motor Gasoline, High Speed Diesel, Furnace Oil, Jet Fuels, Kerosene Oil and Naphtha can process in the refinery.

(Financial Report of Pakistan Refinery 2016-17)

2.2.3 Shell Pakistan Ltd

The brand name of shell is known from 100 years. In 1899 when Asiatic Petroleum established the two companies: Royal Dutch Petroleum and Company Shell Transport Company and kerosene oil was started to import from Azerbaijan into the subcontinent. As look back the history of shell in Indo Pakistan is very ancient. In 1903 the partnership was divided into two companies one was Shell Transport & Trading Company and other was the Royal Dutch Petroleum Company

In 1928, new company Burmah Shell Oil Storage & Distribution company of India was established after merging the two companies Royal Dutch Shell plc and the Burmah Oil Company Limited in India. The name of company became Burmah Shell Oil Distribution Company of Pakistan after Pakistan came into being. In 1970, Pakistan investors' shares increased by 51%, and gave new name to company which was Pakistan Burmah Shell (PBS) Limited Whereas 49% in equal proportions was controlled by the Shell and the Burmah Groups. In February of 1993, as economic liberalization took place and the Burmah divested from PBS, In years 2001-2, the shares have been successively increased by the Shell Petroleum Company. Now Pakistan have share interest with the shell group 76% and company is know with name of Shell Pakistan Ltd (SPL)

(Financial Report of Shell Pakistan Ltd 2009-10)

2.2.4 Attock Refinery

Attock Refinery Limited (ARL) was established as a Private Limited Company in November, 1978. Attock Refinery expanded after getting all shares of Attock Oil Company Limited (AOC). Main function of the company is concerning with cleaning of rough oil and supplying of cleaned petroleum products. After the registration of its shares on the Pakistan Stock Exchange Limited, it became a Public Limited Company in June, 1979. Central Depository Company of Pakistan Limited (CDC) also gave its registration to Attock Refinery Limited.

Attock Refinery has fine business for the years and it is a premier company to refine the crude oil in the country. After the experience of more than 90 years, the business of the refinery gradually upgraded through the extensive plant.

(Financial Report of Attock Refinery Limited 2015-16)

2.2.5 National Refinery LTD

On 19 August 1963, a new public limited company was established on the name National Refinery Limited (NRL). It is a Government orientated company and administration of NRL was over the Economic Reforms Act 1972.

The Government of Pakistan gave control of the National Refinery Limited to the national institution of Natural Resources and Petroleum & in November 1998.

Government privatized NRL in 2003. The Pakistan sold 51% shares and transferred the supervision to a financier. Attock Oil Group got the company management after winning the competitive bidding NRL on July 2005.

(Financial Report of National Refinery Limited 2009-10)

2.2.6 Pakistan State Oil

The Pakistan State OIL (PSO) is well known company over the years. Government established the PSO after merging two companies one was Dawood Petroleum and other was Premiere Oil Company.

After establishment of Petroleum Storage Development Corporation (PSDC), company renamed as State Oil Company Limited (SOCL) on August 23rd 1976.

At the end of year 1976 new name Pakistan State Oil was given by the owner of these two companies which were merged. Oil is playing a lead role in supply of oil. Moreover PSO has many upcoming investments projects.

(Financial Report of Pakistan State OIL 2016-17)

2.2.7 Sui Northern Gas Pipelines

Sui Northern Gas Pipelines Limited (SNGPL) came into being in 1963 and it was Private Company. SNGPL rehabilitated into a public limited company in 1913. Now it is listed in Pakistan Stock Exchange (PSX).

There is 5.3 million consumers of northern areas get the gas supply from the Sui Northern Gas Pipelines Limited (SNGPL). Its vast network includes wide areas of North Pakistan.

11 sites of SNGPL have been quoted under the "SMART2" Program by Pakistan Environmental Protection Agency (PAK-EPA). SNGPL sold the worth Rs. 216,652 million gas to commercial, domestic, general industry, fertilizer power and cement Sector during Jul 2011 - Jun 2012. Moreover, the company has signed many projects of extension.

(Financial Report of Sui Northern Gas Pipelines 2016-17)

2.2.8 Sui Southern Gas Pipeline

The **Sui Southern Gas Company (SSGC)** was formed in 1954 but it fully came into form in 1989. Many companies merged with SSGC which are Sui Gas Transmission Company Limited, Karachi Gas Company Limited and Indus Gas Company Limited. This company's main role is to transmit and distribute natural gas in the southern areas. The company also has a plant to make gas meters. As Schlumberger Industries did the agreement with SSGC. It is a registered company under the Pakistan Stock Exchange and has many investment projects.

(Financial Report of Sui Southern Gas Pipelines 2016-17)

2.3 Electricity generation and Supply Companies

2.3.1 Japan Power Generation LTD

Japan Power Generation Limited was incorporated in 1994 and it is a public limited company after listed on Pakistan Stock Exchange under the Companies Ordinance, 1984

JPGL generate and supply the power to nationwide under the act of Pakistan's Energy Policy of 1994. The Production capacity of company is 135MW and plant positioned in Lahore. It is built on the 25 acres and has 30 day fuel storage capacity. This company in these days is in default due to high liabilities.

(Financial Report of Japan Power Generation LTD 2016-17)

2.3.2 Kohinoor Energy LTD

Kohinoor Energy Limited was come into existence in April 1994. The main role of the company is power generation. Capital of rupees Rs 1695 million is shared by the Saigols Group of Companies and Toyota Tsusho Corporation. The sole customer of KEL is WAPDA. According to the capacity of KEL, Diesel generators generate electricity of 15.68 MW each. As company is running on the smooth road and have many investment projects in future.

2.3.3 (Financial Report of Kohinoor Energy LTD 2016-17)

2.3.4 Altern Energy Limited

Altern Energy Limited came into being on 17 January 1995. It is a Public Limited Company. It is listed in Pakistan Stock Exchange Limited and public can purchase it ordinary shares.

The main purpose of the company is generated and supply electric power to only one consumer WAPDA. It has thermal Power Plant with the capacity of 32 mega watt. The company is located in Lahore. As increasing demand of electricity will increases the need of investment in this company.

2.3.5 S.G. Power Limited

S.G power Limited was developed on 10 February 1994. The main role of the company is to supply the enough electricity for the S.G fiber Company .it was registered in Pakistan Stock Exchange on 28 March 1996. It has only one consumer and its prosperity is related with s.g fiber Limited

(Financial Report of S.G. Power Limited 2016-17)

2.4 Conclusion

As all the companies are going to the prosperity as compare to their history. History of firm showed that all the companies have big projects and have potential to produce more energy. More investment can increase production and supply of energy more efficiently. Investment should be done after complete analysis of firm history, so the investors who invest their money with help shares get the positive profit as compare to the loss.

CHAPTER 3

LITERATURE REVIEW

3.1 Introduction

The literature review is divided into three sections. First section describes about the theory and second section explains about the empirical work and the some overall literature review from Pakistan. The last section tells about conclusion of whole literature.

3.2 Theatrical Literature Review

Campbell and Shiller (1988) examined the aggregate stock prices in the reference of dividend. Dividend ratio model was used to bring the results about prediction of stock price and dividend. Four versions of linearized models, differing in the measure of discount rates were veteran for US time series 1871/1986 and 1926/1986. Conclusion of paper described the three results. At first expected dividend growth in future was granger causes by dividend price ratio. Second variation in stock price was not usefully explained by interest rate of short period, consumption growth and the volatility of stock return themselves. Third dividend price ration was not fully defined the variation in stock price only discount rate was little contributed for explanation of variation.

Campbell and Shiller (1988) forecasted present value of future real dividend with help of long historical average of real earning. Vector Auto regressive methodology was applied on roughly weighted average of moving- average earning and current real price of aggregate US stock market data (1871-1986). The result of the present value model of

stock prices indicated that long horizon stock returns are highly forecast able. Moreover future real dividend was also forecasted by the long moving average of real earning.

Campbell (1991) decomposed the returns of stock between two components cash flow news and future expected return. After investigation of monthly panel data of New York stock exchange from 1927 to 1988, some facts arose that 1% in add to in expected return was linked with the capital loss 4 to 5%. Moreover news about future cash flow was only contributed a third half of variability of unexpected stock returns whereas rest of variance was due to news about future expected return. These two components were negatively correlated, which amplified the volatility of stock return.

Campbell. and Ammer (1993) checked the relationship of excess stock and long run bond return. After using VAR on long term monthly data from 1952 to 1987, the result of this paper indicated that weak connection flanked by the stock market and bond market return. There were three reasons behind this result. Firstly only news about interest rate was common in both stock market and bond market but interest rate had the little variation. Second the assumption of strong association between news about future excess return about bond and stock, which was developed by Fama and French (1989), was not enough to create a large encouraging covariance between the two returns of asset because news about future excess bond returns was not the key element of bond returns. Third, inflation inflate the stock return on upward whereas bond market to downward.

Firm level stock return was decomposed by the Volunteeno (2002). Significance of cash flow news and discount rate return news at firm level returns of stock was estimated with vector autoregressive model with panel data from 1954 to 1996. The results of paper

indicated that firm-level stock returns were defined by cash-flow news whereas expected-return news was one-fifth of the cash-flow-news variance. Moreover estimation of data indicated the optimistic association between cash flow news and shocks to expected return. An expected return for typical stock was increased by the good news about cash flow. This connection appeared to be bigger for smaller stocks and approximately zero for the leading stocks. Last point, cash-flow news was effortlessly loss its importance in portfolios than discount rate news. The discrepancy of discount rate news is around 0.5 of the discrepancy of cash-flow news.

3.3 Empirical Literature Review

Cohen.R (2002) explained the trading between individuals and institutions by using a vector auto regression. After analysis the fact indicated that with encouraging cash flow news, Institutions acquire shares from (sell shares to) individual which contradicts the underreaction phenomenon. Price momentum strategies were not followed by the Institutions. Whereas when prices are risen (fallen) without response of cash flow news, institutions trade (buy) share to individuals. Institutions show less response to cash flow news in the case of small stock. Institutions which grip on average 36% of a typical stock, procure an additional 4% of the outstanding shares in creates 1% spreadness shock to expected future cash flows.

Vuolteenaho and Campbell (2004) divided the magnitude of stock return with the market portfolio into two beta model, one beta tells regarding future cash flow and other beta market's discount rate. After VAR analysis long run data US data from 1929 to 2001, the results defined that ICAMP explained that the "bad" cash-flow magnitude should have a

superior value of risk than the "good" discount-rate and challenged the CAPM since 1963 which described that growth stock and greater past magnitude stock have predominately good beta with low risk price. High cash-flow betas were found in worth stocks and little stocks as compare to growth stocks and outsized stocks, and this can clarify their superior average returns. This research is very useful for rational investors who hold stock returns for long time.

Callen and Segal (2004) paper expanded the variance decomposition framework of Campbell [1991], Campbell and Ammer [1993], and Vuolteenaho [2002]. After employing Ordinary least square and VAR technique from data 1962 to 2000, results of paper indicated following facts. Inclusion of new variable accrual news was significantly dominated over expected-return news in composing firm-level stock returns. Furthermore, estimation showed that the accrual news was more important than cash flow news in composing current stock Overall, the three models investigated in this paper consistently indicated that variation in expected future accruals are a chief driver, if not the chief driver but the main composer of current stock returns.

Jiang and Lee (2007) investigated the three models to measure the cash flow news and expected return returns news and introduced the new model of loglinear cointegration model. The research paper introduced new model which was mixture of log book-to-market ratio and log dividend yield and explained upcoming productivity and excess stock returns. With data from 1946 to 2004 and run all model performance was checked. The performance of new model was better as compare to the previous two models log dividend yield model and the log book-to-market model in condition of cross-equation restriction tests and forecasting performance comparisons. It's indicated that the

dispersion might contain helpful data that is not enclosed in either the dividend yield or the book-to-market ratio separately.

Eisdorfer A (2007) reexamined Campbell's (1991) variance decomposition framework on financial distress firms. This study had taken the data from CRSP and COMPUSTAT for all companies which were registered on the American stock market between 1976 and 1996 and brought result which indicated that impact of cash-flow news and discount rate news with reference to real bankruptcies showed that cash flow news became more prominent for the most recent return before bankruptcy. Moreover, more bankruptcies happen after a market reduction due to negative shocks to expected cash flows news and encouraging shocks to discount rates news. The variability decomposition results, companies in financial distress showed the smaller sensitivity than strong companies to changes in short run equity volatility. Higher momentum prices are related with pervious non negative return and low sentiments.

Lin. Y, Hsu.Y and Chen. S(2009) investigated reason behind the fluctuation in stock return and excess stock return. After decomposed the stock return into cash flow news and discount rate news by Campbells (1991), this study had also checked the reaction of liquidity risk, market liquidity and abnormal trading volume to cash-flow news, expected stock return news, expected excess stock return news and interest rate news. The finding demonstrated following four facts, firstly the main determinant of stock return and an excess return of stock in market was cash flow news. Second, the dividend payout ratio was able to forecast stock return and excess stock return. . Last, in the model of returns stock discrepancy, negative correlation was found among unexpected market liquidity, unexpected liquidity risk and expected stock return news, but not correlation found

between the cash-flow news and expected stock return news. At the last under the model of unexpected market liquidity, excess stock return variance and unexpected liquidity risk were inversely associated to cash-flow news, interest rate news and expected excess stock return news.

Botshekan. M, Kraeussl. R and Lucas. A (2010) developed newest four-fold beta breakdown and estimated cash flow and discount rate beta in up and down markets. The finding of the research by CRSP over 1963-2008 data demonstrated that down market cash flow magnitude and down market discount rate beta keep the chief importance. After different robustness checks, cash flow beta was related to small-sized companies and main determinant in pricing whereas for bigger companies, variability in the risk is not seem both in up and in down market case and the cash flow rate news element appeared to dominate to the discount rate element.

Garrett. L and Priestley (2012) examined new model which based dividend smoothing technique. After empirically exploration data of the S&P 500 from 1927 to 2009 1927 to 2009, many facts were declared by this research. Firstly dividend was strongly predicted and this predictedability used to predict the cash flow news which was comparatively more significant in term of asset price variations. Secondly cash flow betas variability explained with the size as compare to the value premium puzzle if cash flow news is anticipated directly from the predicting dividend growth model. Thirdly more variability arose when cash flow directly estimated.

Chen et al. (2013) described significance of the cash flow news in the investment horizon. This research introduced the new method for calculation of discount rate news

and cash flow news with the data 1985 to 2010 which was not relied on predictive regression but the forward looking method. This forward looking method was little affected with drawback of predictive regression. Secondly results of this research concluded that cash flow news was more vital than discount rate news beyond the two year horizon.

Lin.y et al (2014) introduced new component for the explanation of unexpected stock returns and decomposed the unexpected stock return into expected return news and intellectual capital news. Intellectual capital news further divided into the two components recorded and unrecorded intellectual capital news. After exploration of annual and monthly Prices (CRSP) for 2002 to 2011, the finding of paper indicated that intellectual capital news was the key determinant of stock returns and excess stock returns. Moreover results showed that unrecorded intellectual capital news was the key determinant of stock returns and excess stock return. Overall, this study suggested that the U.S. stock market still underreacted to intellectual capital news; especially unrecorded intellectual capital news.

Umut Celiker et al.(2016) investigated the connection between aggregate cash-flow news, discount rate news and variation in stock prices with Panel Var. This research contributed new vision in this topic that Momentum profits were related to the optimistic cash flow news and remained higher still in down market and low sentiment period but it is poorly related to the discount rate new. This research rejected the Cooper et al. (2004) and Antoniou et al. (2013) who believed the significance momentum profits depended on non-negative past market returns and demonstrated momentum was weaker when sentiment was pessimistic.

3.3 Literature Review of stock return from Pakistan

In the context of Pakistan Stock return analysis is getting important with industrialization. Investors need information about the relationship of different factors with stock return for the investment purpose, so a number of Pakistani researchers have done their study on stock return relationship with other macroeconomic variables. They found that inflation, Gold price, interest rate, foreign exchange reserves, exchange rate and return on equity are negatively related with the stock returns (Nishat and Shaheen 2004, Akbar and Ali 2008, Sohail & Hussain 2009, Zahid 2010, Shahzadi & Chohan 2012, Khan 2014, Khan 2014, Rabia and Adnan 2015) whereas money supply, industrial production, effective exchange rate and GDP are positively related to the stock returns (Sohail & Hussain 2009, Khan 2014). On the other hand Ahmed and Rosser (1995) explained complex dynamics of Pakistan stock market with the presence of speculative bubbles and Haroon and Shah (2013) found days effect on stock returns and conclusion show that positive Friday effect and negative Monday effect exist in Pakistan stock return market.

Some other researchers investigated the significance other variables on the stock returns of Pakistan. As Khan et al. (2012) results showed that interest rate and inflation rate have insignificant effect on stock returns whereas. Safi Ullah and Rizwan (2008) found relationship between stock returns and trading volume, i.e., returns cause volume and volume causes returns. Their research showed that volume of trade always affect the future stock returns

. Fauzia & Attiya (2009) investigated relationship of trading volume and return volatility with Garch M model and found that the previous day trading volume affects

significantly current stock return significantly. Moreover their study described that returns of yesterday and volume has explanation power in clearing up the current market returns.

Some researchers have done their research on impact of political and catastrophic events of Pakistan on the stock return. Taimur and Khan (2015) described political and catastrophic events have no impact in long run but it affects in the short run just for 5 days. Ali and Afzal (2012) checked the impact of the financial crisis on stock returns of Pakistan and Indian's firms and concluded that financial crisis ended gentle downward impact on stock returns and exaggerated the instability in Pakistani and Indian stock exchanges but this effect was bigger on Indian stock market. Suleman (2012) analyzed impact of bad and good news on the different sector of Pakistan and result of his study showed that bad news beta was greater than the good news beta and in some sectors news effect was not significant for example oil and gas, financial, health care sector

3.4 Conclusion

After analysis the literature, as stock return variation is described by the different variables for example cash flow news, discount rate news and accrual news. All these variables are calculated with their previous value. Some paper supports cash flow news and some supports the discount rate news for explanation of variation of the stock return.

The facts came after reviewing literature is that cash flow news is responsible for permanent shock in the stock return whereas discount rate news brings short run shock

CHAPTER 4

METHODOLOGY

4.1 Introduction

The section one of this chapter describes about financial model and section two is describe about the econometric technique and the last section tells the data source and companies.

4,2 Financial Model

Return is most important factor for real investment in different firms. Moreover in the capital market, good news about share prices amplifies the investment. News is measured by the different methodology for example Garch and EGarch Model but all these models are univariate model for the prediction of return.

At the first time Campbell (1991) and Campbell and Ammer (1993) used the dividend growth model of Campbell and Shiller (1988a) to decompose the aggregate stock return into two variables which was discount rate news and cash flow news. As in the developed economies, some growing firms don't pay the dividend and reinvest profit in the firm again, so dividend growth model is not appropriate model for the return decomposition. For the solution of this problem Volunteeno (2002) was used the accounting based present value formula. This rule used ROE (earning over book equity) instead used of dividend growth as the base of cash flow news. For finding of these two variables Vuolteenaho (2000) developed the model for the log book-to market ratio (denoted by θ)

$$\theta_{t-1} = k_{t-1} + \sum_{i=0}^{\infty} \rho^i r_{t+i} - \sum_{i=0}^{\infty} \rho^j (e_{t+i} - f_{t+i}) \quad 4.1$$

The above equation is showing the initial model for variables. After taking the expectation of equation flowing equation is established by Volunteeno (2002)

$$r_t - E_{t-1}r_t = \Delta E_t \sum_{i=0}^{\infty} \rho^j (e_{t+j} - f_{t+j}) - \Delta E_t \sum_{i=0}^{\infty} \rho^i r_{t+i} + k_t \quad 4.2$$

Three variables are involved in the equation unexpected return, Cash Flow news and discount Rate News. These entire variables have calculated in this study on the energy firms of Pakistan according to following Econometric technique

4.3 Econometric Technique

Econometric technique is applied according to type of data. There are many types of data for example cross sectional data, panel data and time series data. Time series data deals with signal subject over the long time period. A data which deals with many subjects (such as individuals, firms, countries, or regions) at the same point of time, or without regard to differences in time is called cross section data and when cross section data and time series data are merged its become the panel data. Panel data is study of multiple phenomenons over multiple time periods. As this study has collected data of different variables of 12 energy firms over the time periods from 2000 to 2015 from the State Bank of Pakistan, So this data is considered as the panel data and this study has used the panel data technique which is described below. This study has used the balanced panel data

4.4Balanced Panel data Model

Panel data was come to known in 1940 when Lazarsfeld and Fiske, 1938; Lazarsfeld, 1940 defined this technique in his research analysis of market on public opinion. As they checked the association between radio advertising and product sales and they took interview of a ‘panel’ of consumer overtime. In the panel data OLS regression cannot obtain the “consistent” estimator because of specific effect of panel data, to obtain consistent estimators in the panel data two models are used, one is fixed effect model and other is random effect model. The second half of the twentieth century was refined the Panel data modeling and estimation techniques. At the first time Fixed effect model was used by Kuh (1959), Mundlak (1961) whereas Hoch (1962) and Balestra and Nerlove (1966) and Wallace and Hussain (1969) were used the random effect model.

Panel data provides more information and can also estimate some unobserved effect. Panel data is more reliable data as compare to cross section and time series data because with the panel data technique, unobserved effect can measured which is overlook in the cross section and time series data. On the bases of unobserved effect panel data model is distinguish in two methods one is random effect model and other is fixed effect model. Wooldridge (2002) states that the component unobserved effect could be treated as a random variable or as a parameter that is to be estimated. Accordingly, unobserved effect is divided into a “random effect” and a “fixed effect”,

To measure the two unobserved effect, two methods are used to estimate the estimator

1. Fixed Effect Model
2. Random Effect Model

This study has developed the model on the bases of the Volunteeno(2002) and applied the econometric technique on the balanced panel data

$$r_{it} - E_{t-1}r_{it} = f(N_{rit}, N_{cfit}) \quad 4.3$$

This study is following balanced panel data model.

$$r_{it} - E_{t-1}r_{it} = \alpha + \beta_{it} N_{rit} + \gamma_{it} N_{cfit} + \mu_{it} \quad 4.4$$

4.5 Variable Calculation

4.6 Cash Flow News

This study has calculated the variable according to the data availability. Cash flow news has calculated with book value of firms and interest rate. As we know book value obtains with total asset minus the total liabilities whereas Treasury bill rate has taken as interest rate in this study. This study has calculated the cash flow news with book value and earning.

$$N_{cfit} = \Delta E_t \beta_i (e_{ti} - f)$$

$$e_{ti} = \log(1 + X_t/B_{t-1})$$

X_t = earnings

B_{t-1} = book equity

f_{t+j} = interest rate

The above equation is called the cash flow news and this study has obtain the values of all total assets and total liabilities of all energy firms and then calculated the book value and then profit after tax and interest has taken as earning. After obtain this variable all companies earnings have divided by the previous book value and get the e_{ti} after adding the one and taking log. Then exclude the interest rate from e_{ti} and take expectations with the following adaptive equation

Adaptive expectation as the way of forming expectations in which the future value of variable of interest is solely dependent on its past values.(chow 2011 gertchev 2007,gujarati,pearce, 1986)

$$p_t^e = p_{t-1}^e + \hat{S}(p_t - p_{t-1}^e)$$

After taking the difference of this expectation, this study has got the cash flow news.

4.6.1 Discount rate news

$$N_{rt} = \Delta E_t \gamma_i r_{ti}$$

$$r_{ti} = \log(1 + R_t) - ft$$

Whereas discount rate news has obtained with return and interest rate. This study has got the returns from the prices of all firms and then plus one and got the log. After taking log, interest rate subtracted from log equation. Then has taken the adaptive expectation of equation and at the last difference of expectations is called the discount rate news

4.6.2 Stock Return

Stock return would be calculated by the fama(1965) method

$$\text{Return} = \Delta \log P_t \times 100$$

After finding the stock returns same expectation method implied to find the unexpected stock return.

4.7 Fixed Effect Model

A fixed effect model can be defined as statistical model which controls the unobserved heterogeneity when heterogeneity is constant over time and correlated with independent variables (Chen Hsiao 2014). For example if the research is done on customer choice in different region of a country then the people's religion, colour and height etc will not change with time, so fixed take it constant.

If the association between μ_{it} and Cash flow news and discount rate news is zero. The fixed model would be more appropriate model

4.8 Random Effect Model

Random effect model is applied on assumption of zero correlation between individual specific effect and independent variables. Random effects methods belong to the family of "general least squares" (GLS) estimators; techniques which utilize an unrestricted variance estimator as a transformer as a way to overcome problems related to serial autocorrelation. For example if the research is done on the effectiveness some certain drug on different region in a country then with time effectiveness of drug would change with weight and age, so the random effect model would be more appropriate.

If the correlation between μ_{it} and Cash flow news and discount rate news is not zero. The random model would be more appropriate model

4.9 Hausman Test

Hausman test is developed by Hausman(1978) and it is used to select the appropriate model in panel data. In pane data selection of model should be base on information about specific effect of components and exogeneity of the independent variables. With the hausman test we can select the best model between the fixed effect model and random effect model. The null hypothesis of Hausman Test is

H_0 = The random effect model is appropriate and $Cov(\alpha_i, X_{it})=0$

H_1 = The Fixed effect model is appropriate and $Cov(\alpha_i, X_{it})\neq 0$

The following Chi square test is used to test the appropriate model

$$Chi\ Square\ Test = \frac{(\beta^{RE} - \beta^{FE})' (\beta^{RE} - \beta^{FE})}{[Var(\beta^{RE}) - Var(\beta^{FE})]} \quad 4.5$$

If probability of chi square test comes lesst 5 percent significance level then Null hypothesis will be rejected and appropriate model would be the fixed affect model vice versa. The following table is describing model selection according to the null hypothesis.

4.1 Table of Hypothesis of Hausman Test

Model	Random effect model used	Fixed effect model used
Correct Hypothesis		
$H_0 = \text{Cov}(\alpha_i, x_{it}) = 0$ Exogeneity	Consistent, Efficient	Consistent, Inefficient
$H_0 = \text{Cov}(\alpha_i, x_{it}) \neq 0$ Endogeneity	Inconsistent	Consistent Possibly, Efficient

Hausman, J. A. (1978)

4.10 Diagnostic Test

R square and F- test has used to check the overall significance of the model. There are three test to check the heteroskedasticity in panel data which are Breusch- Pagan(1980) Lm test, Pesaran (2004) scaled Lagrange Multiplier Test and Pesaran (2004) CD. Pesaran (2004) scaled Lagrange Multiplier Test and Pesaran (2004) CD are used when large cross section exist and time period is short whereas Breusch- Pagan(1980) Lagrange Multiplier Test used generally to check the heteroskedasticity in the data.

4.11 Data Source

Values of Shareholder equity, Total asset, Total liability and earning of firms are taken from the State Bank of the Pakistan and Share prices are from the business recorder from year 2000 to 2015. Some stock prices have taken from the websites of The Business Recorder

4.11 Companies Name

Company Names	
Mari Petroleum	Sui Southern Gas Pipeline
Pakistan Refinery	Japan Power Generation LTD
Shell Pakistan Ltd	Kohinoor Energy LTD
Attock Refinery	Pakistan State Oil
National Refinery LTD	S.G. Power Limited
Sui Northern Gas Pipelines	Altern Energy Limited

Website of Pakistan Stock Exchange

4.12 Conclusion

This chapter described basic financial model of this study. This study based on the volunteeno variance decomposition model. This chapter described detail about the estimation of cash flow news and discount rate news. Balanced panel data is used in this study, so the hausman test used to find the appropriate panel data model. Fixed effect model and Randon effect model are used to estimate the parameter of panel data in presences of unobserved effect.

CHAPTER 6

RESULTS AND DISCUSSION

5.1 Introduction

This chapter is about the results and discussion. Section one is about the descriptive statistic of the data. Section two is discussing about the result of Hausman test. Section third is describing about the results of main variables. Section fourth is describing about the variance covariance matrix

5.2 Descriptive Statistic

Table:5.1 Descriptive statistic of all variables (million rupees)

	Book Value	Earning	Dividend	Return	Cash Flow News	Discount rate news
Mean	11391.87	2613.207	784.0088	4.682502	-0.003115	-0.077875
Median	7413.500	1601.450	423.6475	3.209771	0.017551	-0.069894
Maximum	82310.30	32969.19	5831.600	68.71785	0.734927	0.166361
Minimum	-5032.73	-15734.98	0.000000	-62.28382	-1.304594	-0.537172
Std. Dev	12823.83	5347.179	978.6611	20.12500	0.245499	0.109724
Skewness	3.037864	1.715275	2.219594	-0.532104	-2.455385	-1.344659
Kurtosis	15.14091	12.42546	9.256696	4.536649	13.43715	6.304056
Jarque-Bera	1075.177	586.8798	343.3071	20.38068	776.1235	105.8704
Probability	0.000000	0.000000	0.000000	0.000038	0.000000	0.000000

Data Source: State bank of Pakistan

The above table explained about the descriptive statistic of different variables. Book value, earning, dividend and return's mean and median are positive which show the good position of all the companies. Maximum and Minimum points of book value show that which company is more progressive as compare to other companies. Maximum book value form all the companies is 82310.30 million rupees which is from the Mari Petroleum Company and minimum book value - 5032.73 million rupees which shows Japan Power Generated Limited is only the default company. The minimum point of

dividend is zero and its show that some companies don't pay the dividend which are Altern Energy LTD, S.G Power LTD and Japan Power Generated Limited. The Maximum point of the dividend is 5831.600Rs (million) which is given by the Pakistan State Oil. The Maximum point of return is 68.71% which is obtained by the Pakistan Refinery and minimum point is-62.283% which is obtained by Attock Refinery. All the variables are rejecting the null hypothesis of Jarque-Bera normality test which shows that financial market of energy firms is efficient. The mean value of dividend shows that overall dividend of companies are positives whereas some companies are giving and some are not. The value of cash flow mean and discount rate news are negative which show that interest rate is more powerful than the book value, earning and return.

5.2 Hausman Test

Hausman test is used to select appropriate effect between the fixed and random effect according to the variability in data

5.2 Test cross-section random effects			
Test Summary	Chi-sq Statistic	Chi-Sq d.f	Prob
Cross-section Random	0.014772	2	0.9926

Data Source: State bank of Pakistan

Financial Report of companies

Bussiness Recorder

Hypothesis of Hausman test is

H_0 = The random effect model is appropriate and $Cov(\alpha_i, X_{it}) = 0$

H_1 = The Fixed effect model is appropriate and $Cov(\alpha_i, X_{it}) \neq 0$

As the probability of null hypothesis is 0.9926 which do not reject the null hypothesis of random effect on all the confidence intervals at 2%, 5% and 10%, so random effect

5.3 Results of Return over equity Model

$$r_{it} - E_{t-1}r_{it} = \alpha + \beta_{it} N_{rit} + \gamma_{it} N_{cfit} + \mu_{it}$$

$$r_{it} - E_{t-1}r_{it} = -0.703931 + 192.3031N_{rit} - 3.013396N_{cfit} + \mu_{it}$$

$$[-1.128864] \quad [48.31466] \quad [-1.258052]$$

The above equation tells that discount rate news is only significant variable after utilizing the data of 12 energy firms. Cash flow news can be significant for other industries. Our results shows that Pakistan energy sector more relies on the short run variation of discount rate news as compare to the permanent effect of cash flow with change in book value and earning. Parameter of discount rate is quite high which show the more variation in returnis explained by discount rate news. The positive sign show that variation in discount rate induces the variation in unexpected stock return.

Campbell and Shiller (1988a) also defined stock return variation with the dividend price ratio and explained that discount rate news was little contributed for explanation of variation. Then Campbell (1991) news concerning future cash flow was only contributed a third half of discrepancy of unexpected stock returns whereas rest of variability was owing to news about discount rate news. As size is also matter to explain the variations in unexpected stock returns. As small size firms shows more variation according to the variation in flow news whereas big size firms don't show much variation with cash flow

news. As Botshekan. M, Kraeussl. R and Lucas. A (2010) cash flow beta was related to small-sized companies. The determined that cash flow news is main determinant in pricing in small size firm.

After utilizing the panel technique on energy firms, cash flow news is insignificant. According to above research papers cash flow news beta is related to small size firm and all these energy firms have less fluctuation in book value and earning due large in size. Book value and earning are explaining cash flow news, so it would be main reason for not explaining the unexpected stock return whereas discount rate news is computed with interest rate which is significant and describe the short term variation in unexpected stock return.

As R-Squares and Adjusted squares is equal to the 0.929747 and 0.929003 which is describing that fitted model explains variation well and the value of F- test is equal to the 1250.633 which is rejecting the null hypothesis of only intercept model. The R-squared and F-test tells goodness of fit which prove that model is significance.

5.4 Variance Covariance Matrix

5.3 Table of Variance Covariance Matrix		
	Cash Flow News	Discount Rate News
Discount Rate News	0.731844	15.84217
Cash Flow News	5.737398	0.731844

Data Source: State bank of Pakistan

Financial Report of companies

Bussiness Recorder

The above table shows the variance and covariance of cash flow news and discount rate news. As table shows that cash flow news has less variance as compare to the discount rate news. As explained before big companies have less variability in cash flow news. The covariance between the cash flows news and discount rate news is positive and less than 1 which indicated both increment in one news cause the increment in other news and both increase the volatility of unexpected stock return. As Volunteeno (2002) explained expected return (discount rate news) for typical stock was increased by the good news about cash flow. This association appeared to be bigger for smaller stocks and zero for the bigger stocks.

5.5 Diagnostic Tests

The value of the Durbin Waston is equal to the 2.468427 which is approximately equal to 2 and indicated the problem of Autocorrelation does not exist in the data

Table of hetroskedasticity test is given in the Appendix and test statistic value of the Breusch-Pagan (1980) LM tell that there is no heteroskedasticity exist in the data, so estimator is not only unbiased but also have efficiency. The results of other test are also giving us the same information but these are more applicable for the small T then the cross section

5.6 Conclusion

After utilizing the panel technique on energy firm, results shows that there is only one significant variable which is discount rate news. Significance of discount rate news is

telling that unexpected stock returns of Pakistan energy firm vary with discount rate instead of cash flow news. As discount rate news describe the short term variation.

CHAPTER 6

CONCLUSION AND POLICY RECOMMENDATION

6.1 Conclusion

The results of this research shows that Discount rate news is significant and positive variable in explanation of unexpected stock return variation whereas the cash flow news is insignificance which show that there is transitory impact discount rate news occur on the unexpected stock returns of energy firms of Pakistan whereas the permanent change of book value and earning do not bring variability in the unexpected stock return of energy firm. As energy firms have more capital, so these firms show less variability in the book value and earning which may be the big cause of insignificancy of cash flow news

6.2 Policy Recommendation

As discount rate is tool of monetary policy if government will bring the stability in the discount rate then it would create the stability in overall stock returns. Government should properly inform before change the discount rate

Pakistan is facing energy crisis in these days and energy firms need investment from general public. A common person cannot invest in the stock market until proper understanding of stocks and shares price. Investors can earn money with two methods one with prices and other with dividend. Profit earning with the fluctuation in prices is tricky. Especially in Pakistan where some broker and investment banks are available with uncertain market due to political instability and terrorisms. Moreover only some

companies are offered the dividends and shares for sell, so before investing money in any company investors should investigate the detail of company.

6.3 Limitation

This study has some limitation. This study has used the energy firms which are large, so this model can be checked on combination of some small and some big firms. It may bring change results. As if more data will available better analysis can be done on the bases of different econometric technique. For measurement of expectation Vector Autoregressive Model, Implied cost of capital and Revisions in Analysts' forecast methods are used in different research papers but these technique cannot used here due data is not available for more years. Cash flow news and discount rate news impact on unexpected stock returns is checked in this study but impact of accrual, recorded and non recorded capital news can be checked in other researches.

References

Abdul. G. K. (2014) The relationship of capital structure decisions with firm performance: A study of the engineering sector of Pakistan International, *Journal of Accounting and Financial Reporting* , 2: 1,2162-3082.

Ahmed, E., and J.B. Rosser Jr (1995) Nonlinear speculative bubbles in the Pakistani stock market, *Pakistan Development Review*, 34:1,25:41.

Balestra, P., & Nerlove, M. (1966) Pooling cross section and time series data in the estimation of a dynamic model: The demand for natural gas. *Econometrica, Journal of the Econometric*, 585-612.

Banz, R. W. (1981) The relationship between return and market value of common stocks. *Journal of financial economics*, 9(1), 3-18.

Bondt, W. F., & Thaler, R. (1985) Does the stock market overreact?, *The Journal of finance*, 40(3), 793-805.

Botshekan, M., Kraeussl, R., & Lucas, A. (2012) Cash Flow and Discount Rate Risk in Up and Down Markets: What Is Actually Priced?, *The Journal of Financial and Quantitative Analysis*, 47(6), 1279-1301.

Callen, J., and D. Segal. (2004) Do Accruals Drive Firm-Level Stock Returns? A Variance Decomposition Analysis, *Journal of Accounting Research*, 42:527-60.

Campbell, John Y and John Ammer. (1993) What moves the stock and bond markets? A variance decomposition for long-term asset returns, *Journal of Finance*, 48, 3-37.

Campbell, John Y and Robert J. Shiller (1988b) Stock prices, earnings, and expected dividends *Journal of Finance* 43, 661-676.

Campbell, John Y and Robert J. Shiller (1988a) The dividend-price ratio and expectations of future dividends and discount factors, *Review of Financial Studies* 1, 195-228.

Campbell, John Y and T. Vuolteenaho (2004) Bad Beta, Good Beta, *American Economic Review* 94:1249-75.

Campbell, John Y, (1991) A variance decomposition for stock returns, *Economic Journal*, 101, 157-179.

Celiker , U. Kayacetin , V. Kumar, R. and Sonaer, G (2016) Cash Flow News, Discount Rate News, and Momentum, *Journal of Banking and Finance*, 0378-4266(16)30135-2.

Chen, Long, Zhi Da, and Xinlei Zhao (2013) What Drives Stock Price Movements? *Review of Financial Studies* 26 :4, 841–76.

Cohen, R.B., Gompers, P.A. and Vuolteenaho, T (2002) Who underreacts to cash-flow news? Evidence from trading between individuals and institutions, *Journal of financial Economics*, 66:2, 409-462.

Eisdorfer, A. (2007) The Importance of Cash-Flow News for Financially Distressed Firms, *Financial Management*, 36(3), 33-48.

Fama, E., and Kenneth. F (1988) Permanent and temporary components of stock prices, *Journal of Political Economy*, 96, 246-273.

Fama, E.F (1965) Random Walks in Security Prices, *Financial Analysts Journal* 41:55–59.

Fauzia and Attiya (2009) Relationship between Stock Return, Trading Volume and Volatility: Evidence from Pakistani Stock Market, *Asia Pacific Journal of Finance and Banking Research*, 3: 3.

Garret, I., and Priestley, R (2012) Dividend Growth, Cash Flow and Discount Rate news, *Journal of Financial and Quantitative Analysis*, 47(5), 1003-1028

Haugen, R. A., and Baker, N. L (1996) Commonality in the determinants of expected stock returns. *Journal of Financial Economics*, 41(3), 401-439.

Hausman, J. A. (1978) Specification tests in econometrics. *Econometrica: Journal of the Econometric Society*, 1251-1271.

Hoch, I. (1962). Estimation of production function parameters combining time-series and cross-section data. *Econometrica: Journal of the Econometric Society*, 34-53.

Hsiao, C. (2014). *Analysis of panel data* (No. 54). Cambridge university press.

Mari Company. (2017). Financial Report of Mari Company.. Retrieved from <http://mpcl.com.pk/about/history/>

Pakistan Refinery. (2017). Financial Report of Pakistan Refinery.. Retrieved from <https://www.prl.com.pk>

Shell Pakistan Ltd. (2010). Financial Report of Shell Pakistan.. Ltd Retrieved from <http://www.shell.com.pk/about-us.html>

Attock Refinery Limited. (2016). Financial Report of Attock Refinery.. Limited
Retrieved from <https://www.arl.com.pk/profile.php>

National Refinery LTD. (2015). Financial Report National Refinery LTD.. Retrieved
from www.nrlpak.com

Pakistan State Oil. (2017). Financial Report of Pakistan State Oil.. Retrieved from
<https://www.psopk.com/>

Sui Northern Gas Pipeline. (2017). Financial Report of Sui Northern Gas Pipeline..
Retrieved from www.sngpl.com.pk/

Sui Southern Gas Pipeline. (2017). Financial Report of Sui Southern Gas Pipeline..
Retrieved from www.ssgc.com.pk/

Japan Power Generation. (2017).. Financial Report of Japan Power Generation..
Retrieved from www.jpjgpk.com/

Kohinoor Energy LTD. (2016-17). Financial Report of Kohinoor Energy LTD.. Retrieved
from www.kel.com.pk/

Altern Energy Limited. (2016-17). Financial Report of Altern Energy Limited.. Retrieved
from <http://www.alternenergypk.com/>

S.G. Power Limited. (2016-17). Financial Report of S.G. Power
Limited..<http://sgpower.com.pk/financial.html> S.g

Jegadeesh, N., & Titman, S (1993) Returns to buying winners and selling losers:
Implications for stock market efficiency, *The Journal of finance*, 48(1), 65-91.

Jiang, Xiaoquan, Bong-Soo Lee.(2007) Stock Returns, Dividend Yield and Book-to-Market Ratio: A Log Linear Cointegration Model, *Journal of Banking and Finance*,31: 2, 455- 475.

Khan,et al. (2012) Impact Of Interest Rate, Exchange Rate And Inflation On Stock Returns Of Kse 100 Index, *International Journal of Economics and Resreach*, 142:155, 2229-6158.

Kuh, E. (1959) The validity of cross-sectionally estimated behavior equations in time series applications, *Econometrica: Journal of the Econometric Society*, 197-214.

Lazarsfeld, P. F. (1940). " Panel" Studies, *The Public Opinion Quarterly*, 4(1), 122-128.

Lazarfed, P., and Fiske, M (1938) The Panel as a new tool for measuring opinion, *Public Opinion Quarterly*, 2(4),596-612

Lin, Y. M., Hsu, Y. S., & Chen, S. L. (2009). Cash-flow news, market liquidity and liquidity risk. *Applied Economics*, 41(9), 1137-1156.

Marsh, Terry A. and Merton, Robert C.1986 "Dividend Variability and Variance Bounds Tests for the Rationality of Stock Market Prices," *American Economic Review*, 76, 483-98.

Muhammad, A. (2012) The relationship of stock prices and macroeconomix variables revised, *Evidence from Karachi stock exchange*

Muhammad, A. H., and Nida. S (2013) Investigating Day-of-the-Week Effect in Stock Returns: Evidence from Karachi Stock Exchange – Pakistan, *Pakistan Journal of Commerce and Social Sciences* , 7:2, 381-393

Muhammad, T. S. (2012) Stock Market Reaction to Good and Bad Political News, *Asian Journal of Finance & Accounting*, 4: 1,1946-052.

Muhammad. S. (2014) Macroeconomic Variables & Its Impact on KSE-100 Index *Universal Journal of Accounting and Finance*, 2:2, 33-39.

Muhammad.T., and Shahwali. K (2015) Impact Of Political And Catastrophic Events On Stock Returns, *VFAST Transactions on Education and Social Sciences*, 6:1,2309-3951.

Mundlak, Y. (1961) Empirical production function free of management bias, *Journal of Farm Economics*, 43(1), 44-56.

Nishat, M. and R. Shaheen (2004) Macroeconomic factors and Pakistani equity market. *The Pakistan Development Review*, 43:4, pp. 619-637.

Rabia. A., and Adnan.B (2015) International Impact of Oil and Gas Prices on Stock Returns: Evidence from *Pakistan's Energy Intensive Industries, *Review of Social Sciences*,3 :4.

Rafaqet. Ali., and Muhammad. A (2012) Impact of global financial crisis on stock markets: Evidence from Pakistan and India, *Journal of Business Management and Economics*, 3:7. 275-282.

Rosenberg, B., Reid, K., & Lanstein, R (1985) Persuasive evidence of market inefficiency, *The Journal of Portfolio Management*, 11(3), 9-16.

Safi Ullah.K., and Faisal. R (2008) Trading Volume and Stock Returns: Evidence from Pakistan's Stock Market, *International Review of Business Research Papers*, 4 :2,151-

Shahzadi. H., and Chohan, M. N (2012) Impact of Gold Prices on Stock Exchange: A Case Study of Pakistan, *Working paper series, Karachi Stock Exchange*, 10 :2, 1-14.

Sohail. N., and Zakir. H (2009) Long-run and short-run relationship between macroeconomic variables and stock prices in Pakistan the case of Lahore stock exchange. *Pakistan Economic and Social Review*, 47: 183-198.

Vuolteenaho, T. (2002) What drives firm-level stock returns?, *The Journal of Finance*, 57:1, 233–264.

Wallace, T. D., and Hussain, A (1969) The use of error components models in combining cross section with time series data. *Econometrica, Journal of the Econometric Society*, 55-72.

Appendix

Appendix A

Panel analysis of Energy firms				
Variables	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-0.703931	0.623574	-1.128864	0.2604
Cash Flow News	-3.013396	2.395287	-1.258052	0.2099
Discount Rate New	192.3031	3.980222	48.31466	0.0000

Appendix B

Table of Heteroskedasticity			
Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	1.6990	66	0.234012
Pesaran scaled LM	0.17627		0.314010
Pesaran CD	1.54087		0.874060

Data Source: State bank of Pakistan

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