IMPACT OF CASH FLOW, DIVIDEND PAYOUT AND INVESTMENT OPPORTUNITIES ON INVESTMENT UNDER FINANCIAL DISTRESS: EVIDENCE FROM NON-FINANCIAL SECTOR OF PAKISTAN STOCK EXCHANGE

By

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ABSTRACT

Thesis Title: Impact of Cash Flow, Dividend Payout and Investment Opportunities on Investment under Financial Distress; Evidence from Non-Financial Sector of Pakistan Stock Exchange

The purpose of study was to check the Impact of Cash Flow, Dividend Payout and Investment Opportunities on Investment under Financial Distress. The dependent variable in the study was investment and independent variables are cash flow, dividend payout and investment opportunities. Three control variables used in this study were Leverage, Return on assets and Financial expenses. The type of this study was empirical, with random sampling technique was used and all non-financial firms listed on Pakistan Stock Exchange are under the umbrella of population from 2007 to 2016. Data was gathered from different sources, as from Balance Sheet Analysis of SBP and financial statements provided on the websites of the firms.

In methodology, correlation and panel data regression was used for data analysis. To check the normality unit root test was used in this study for each variable. Two different regression models were used in this study. First regression model run only on the dependent variable and independent variables (excluding control variables) under financial distress and random effect model was used for this purpose. Second regression model was run on the dependent variable and independent variables (including control variables) under financial distress and fixed effect model was used for this purpose. According to the results, the relationship between cash flow and investment was positive and significant under financial distress. The relationship between dividend payout and investment was positive and insignificant under financial distress. The relationship between investment opportunities and investment was negative and significant under financial distress. On the other hand, control variables sales growth showed positive and significant relationship and efficiency also showed positive and significant relationship with investment under financial distress.

Keywords: Cash flow, dividend payout, Investment opportunities, investment and financial distress.

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LIST OF ABBREVIATION

Abbreviation	Complete Terms
PSX	Pakistan Stock Exchange
CF	Cash Flow
DPR	Dividend Payout Ratio
DPO	Dividend payout
EBITDA	Earnings before interest, taxes, depreciation and amortization
I	Investment
NFA	Net Fixed Asset
D	Depreciation
K	Total Book Value of Assets
IO	Investment Opportunities
FD	Financial Distress
FDR	Financial Distress Ratio
BSA	Balance Sheet Analysis
SG	Sales Growth
EFF	Efficiency

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DEDICATION

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CHAPTER NO.1

INTRODUCTION

1.1 Background of study

Financial literature widely discusses the investment decisions of companies. The relationship between cash flow, dividend payout and investment opportunities in investment have already been described by many researchers in different periods. The results of their studies were different in different times, but not even a single researcher, taken into consideration the effect of financial distress in their studies.

Investment is dependent variable and it represents the net investment as taken by Ascioglu, Hegde and McDermott (2008) in their study, whereas some researchers have taken gross investment like Athey and Reeser (2000) in india and Fazzari, Hubbard and Petersen (1987) in USA. It is amount of money invested in permanent or fixed assets like tools and equipment, plant and machinery, properties for firm i during time t. It is computed through net fixed assets closing plus depreciation less amount of book value of fixed assets at beginning of the year divided by net fixed assets at the beginning of the year. In any country when the rate of flow of investment and rate of growth of production is sluggish, it does not only effect the business but also the growth rate of economy, resulting workers are forced to take low wages and eventually it increases the unemployment rate which decline their living standards. Keeping in mind the value of importance of investment most of researchers enlighten the worth of investment in different scenario and in different fields of finance and economics. The main focus of this study is to check the impact of cash flow, dividend payout and investment opportunities on investment. Zahid et al. (2017) stated that investment means investment in physical assets like tools and equipment, machinery and plants, furniture and fixtures and motor vehicles. According to Modigliani and Miller (1958) , the value of firm is independent and does not affect by either it uses internal or external finance due to conventions of capital market free from asymmetric

information, no bankruptcy cost, no transaction and taxes costs. The empirical results of Myers and Majluf (1984) show that investors prefer to reinvest in the business on the basis of cost and the most preferable choice is the use of internal finance due to no cost financing without any barriers and contractual obligations. Straightforwardly, investor desire maximum profits from their investment so they look forward for the highest possible returns.

Chen et al. (2006) stated about cash flow as an important and significant variable which impacts on investment. Cash flow ratio is calculated as the summation of net income after tax plus depreciation expenses to the level of net fixed assets at the start of the year. Melander and Sandstrom (2017) checked the positive association between cash flow and investment of the firm. The time when they checked this positive relationship was the time of banking crises. Lewellen and Lewellen (2016) also checked the positive and strong association between cash flow and investment of the firm. This study was conducted in the United States in 2016. Sometime cash flow has insignificant impact on investment because of low opportunities of investment as measured by Zahid et al. (2017) in Pakistan. According to their study cash flow has positive but insignificant impact on investment under low opportunities of investment. The positive insignificant relationship of cash flow with investment was measured by them on listed manufacturing companies of Pakistan Stock Exchange. They also found the positive and significant relationship of cash flow with investment under high opportunities of investment by taking the data from 2004 to 2013. La Rocca, Staglianò and Laguir (2016) examined the sensitivity of investment to cash flow by working with financial constraint firms and financially unconstrained firms. They found the decrease in sensitivity of investment to cash flow. On the other hand, ratio of dividend payout also have important role in the performance of the firm and the investment decisions of the firm.

Dividend payment is very debatable issue in finance because it can greatly influence the investment of the firm. If the firm pays dividend to its shareholders then normally there are less chances of investment by the firm because of fewer amounts of remaining cash. On the other hand, if the firm holds the payment of dividend for reinvestment then in this way it can increase the level of investment of the firm according to Jung and Lee (2016). According to Chang and Lee (1982), there is a positive relationship between dividend payout and investment decisions for those firms which have high growth opportunities. For low growth firms, there is a negative relationship between dividend payout and investment decisions. According to many previous

studies, the company can get cash for investment from shareholders by issuing common stock. People only invest further in those cases where dividend payment are continuous or high. So, if company pay dividend to its shareholders then positive signal will go in public according to Edelstein, Liu and Tsang (2008) and people will invest in the company without any hesitation. In this way, company can increase the investment by issuing dividends and the relation that made between dividend payout and investment of the company will be positive. Dividend payout sometimes acts as a signal for the investors who want to invest their money or wealth in worthy institution or where dividend payments are continuous. If firms pay dividends to its shareholders then the positive signal will go outside the firms. In this way investors will feel that firm is performing well and have better liquidity to meet its obligations. On the other side of the picture, when the firm do not pay dividends to its shareholders then negative signal goes outside the firm. In this situation, the investor feels hesitation to invest in that company where dividend payments are not continuous or sometimes zero.

Investment opportunities is also very important variable in the literature of finance used by many researchers in their studies just because of its significant impact. Investment opportunities is the opportunities of investment that always remains a choice until its availed by the firm. Many researchers checked the effect of investment opportunities on investment of the firm. Investment opportunities of the firm further divided into two categories of high investment opportunities and low investment opportunities. According to Zahid et al. (2017), there is a positive and significant impact of investment opportunities on investment under high investment opportunities. In case of low opportunities, the impact of investment opportunities is also positive and insignificant on investment. Soebyakto, Dewi, Mukhtaruddin and Arsela (2017) conducted their study on manufacturing firms, and found the significant impact of investment opportunities on the investment. Nesbitt (2017) checked the positive and significant impact of investment opportunities in the middle market of the United States of America. Lupi, Myint and Tsomocos (2017) determined the impact of investment opportunity on the capital structure of the firm. They found that the chances of investment high where level of leverage of the firm are low. On the other hand, where the leverage of the firm is high, there are less chances of investment. Muniandy and Hillier (2015) determined the effect of investment opportunity on the performance of the firm. They conducted their study in South Africa and found the positive relationship or association between investment opportunities and the performance of the firm. On the other

hand, a negative relationship between the performance of the firm and opportunities of investment was determined by Jerry, George and Zhenzhong (2014). Investment decisions are different most of the time and depend on the growth opportunities of the firm by Martín, Manuel and Durán (2012).

Prawitz, Kim and Garman (2006) said that Financial Distress is a situation in which one mentally and physically feel not comfort. In financial distress it is checked that how a person manages his resources in order to meet the needs and desires of his life. The needs include payment of different bills (utility bill or others) and payment of debt. The term Financial distress is very much known and used in finance to show a situation when the agreement of creditors of a firm is wrecked or fulfill with trouble. If financial distress level not minimize in time, it will lead towards bankruptcy. Financial distress of the firm refers to the condition in which firm or company not able to pay off or meet its financial liabilities or obligation. In other words, the conditions in which firms or companies feeling difficulty to meet their financial liabilities. It is typically due to the non-liquid assets of the company and may be due to the high fixed cost. Some causes of distress are poor performance, poor money management, lack of control on activities, business failures and unexpected damage to property. For successful business the financial plan and making annual budget is very much necessary and in the absence of these factors the firm or company may bear high cost and chances to become a distress firm will be higher. In case of self-employed, the total performance or profit of the business depends on the decisions and skills of managers. In the absence of plans, budgets and strategies many issues will occur and the performance of the institution will affect badly and eventually firm will face distress. It can cause financial distress. If property of business damage unexpectedly, then business has to spend a handsome amount of money to meet this loss. And it can cause financial distress. In this study, the relationship of cash flow of the firm, dividend payout of the firm and investment opportunities on investment of the firm are checked under financial distress. In this study, there are three independent variables and one dependent variable. Some researchers checked the positive significant association among cash flow and investment. On the other hand, some researcher checked the negative relationship.

1.2 Problem Statement

Bhagat, Moyen and Suh (2005) found that the investment behavior of the firm is different under financial distress as compare to non-distress firms. Melander and Sandstrom (2017), Zahid et al. (2017), Charlton et al. (2002) and Athey and Reeser (2000) showed positive and significant impact of cash flow on investment. Jung and Lee (2016) and Chang and Lee (1982) found the positive and significant effect of dividend payout on investment. Lopes, Sanfilippo and Torre (2015), Zhenzhong (2014) and LI and WANG (2008) found that the negative and significant effect of investment opportunities on investment. Zahid et al. (2017) found that there is a positive and significant impact of investment opportunities on investment. If the firm have cash flow in distress then what is the behavior of the firm, either use this cash for investment or distribution of dividends. If the firm pay dividends to shareholders then what is the effect of dividend payout on investment under financial distress. On the other hand, there are different types of opportunities like high quality investment opportunities and low quality investment opportunities. In distress, how these opportunities effect on the investment level of the firm. According to Adam and Goyal (2003) stated that investment opportunity plays great and significant role in corporate finance in relation to the achievement of the company's objectives. The main focus of this study is to check the impact of cash flow, dividend payout and investment opportunities on investment behavior under financial distress in Pakistan non-financial sector listed in PSX.

1.3 Research Objectives

The main objectives of the research are as follows:

- To investigate the relationship between cash flow and investment under financial distress.
- To investigate the relationship between dividend payout and investment under financial distress.
- To investigate the relationship between investment opportunities and investment under financial distress.

1.4 Specific Research Questions

- What is the relationship between Cash Flow and Investment under financial distress?
- What is the relationship between Dividend Payout and Investment under financial distress?
- What is the relationship between Investment Opportunities and Investment under financial distress?

1.5 Contribution of the Study

In the corporate sector of Pakistan, this study has a valuable contribution. It discovers the association of cash flow, dividend payout and investment opportunities on investment decisions under financial distress in the Pakistani context. This research is based on latest data with large sample size and first time in Pakistan such a type of research is conducted by segregating financial distress firms out of all non-financial firms.

1.6 Significance of the study

This study is very unique and novel type in Pakistan. This study provides guidelines and set the new trends for the young new scholars in finance. The corporate sector of Pakistan and corporate investors of this country can get guidelines from this study. Managers of non-financial firms and corporate investors can get help or guidelines from this study. It also provides guidelines for the new scholars who want to research or study in this area. The capital structure of the firms and decisions of capital budgeting are greatly affected by financial distress, this is very important information for the investors who want reliable information regarding the current position of the firm and future position of the firm in terms of outcome and risk before investment. Corporate managers can also make better choices of financial resources to be used for different projects by retaining, distributing and growing value of funds. This research is helpful tool for investors to make better investment decisions through proper analysis of dividend, investment opportunities and cash flow.

The top managers of non-financial firm can easily analyze and understand their relation of flow of cash and capital spending and they can utilize it to forecast future. The top managers can predict that if they want to increase investment, then they have to increase their cash flow. They also know that there is a positive significant relationship between cash flow and investment. If cash flow increases then investment will also increase and if cash flow of the firm decreases, then it will put an adverse effect on investment and ultimately investment will decrease.

1.7 Limitations of the study

Best effort has been put to complete this work, but only non-financial firms listed on Pakistan Stock Exchange are taken in this study. On the other hand, financial sector like insurance companies, banks, service sectors which is now a days top business sector is excluded in this study and comparative study could not be conducted among financial and non-financial firms of

Pakistan Stock Exchange. Furthermore, in this study the impact of firm size, age, energy crises, managerial discussion, asymmetric information, government taxes on earning and ultimately on investment is excluded in this study. There are some questions in the computation of Tobin's Q regarding its validity to capture completely the opportunity of investment.

1.8 Organization of the study

Thesis is divided into five chapters. Chapter 1 presents the background information, problem statement, objectives, research questions, contribution, significance and limitations of the study. In Chapter 2 the literature review of all independent variables and dependent variable is discussed. In Chapter three research methodology and hypothesis are discussed. The Chapter 4 includes interpretation of the results of descriptive, correlation, unit root test and regression models. The Chapter 5 includes conclusion, discussion and recommendation of the study.

CHAPTER NO.2

LITERATURE REVIEW

2.1 Cash Flow (CF) and Investment

Melander and Sandstrom (2017) found that there is a positive relationship between cash flow and investment. In their study the dependent and independent variables were investment and cash flow respectively. They collected the data from private firms. They collected the large data for private firms on accounting related information and information about investment. They found the positive relation between both variables. During the first half of their sample they found that the sensitivity of investment cash flow is large. When they collected half sample and started to work on that sample, that was the time of banking crises. It was also the time of recession and at that time they found the positive results. They used the theory of balance sheet for the test and after collecting large data they put the theory to test and found the positive results. Their results suggested one more thing that if economic conditions are worse then firms will face financial constraint. Data analysis in their study was done by different statistical techniques, statistical tools, and statistical method.

Lewellen and Lewellen (2016) after controlling the firm's investment opportunities found that there is a strong relationship between investment and the cash flow. They also examined that there will be a negative impact on the investment decisions if the firm face financial constraint. They also examined that some time free cash flow creates problems in the investment decision. Because when firm have free cash flow then there is a greater opportunity for the firm to invest in any profitable project. This study was conducted from 1971 to 2009 in United States. The dependent variable in the study was cash flow as well as the independent variable that used by a researcher in the study was investment decisions. The methodology and statistical techniques used in this study was mean, standard deviation, correlation and descriptive statistics. The main

finding that extracted by researchers in the US was that the problem of free cash flow is important for investment decisions.

La Rocca, Staglianò and Laguir (2016) worked in constrained and unconstrained firms. They conducted their study for the manufacturing firms in Italy. The dependent variable was investment sensitivity and the independent variable in the study was cash flow.They found the decrease in the investment sensitivity to cash flow and they also determined that there is a little difference in the constrained and unconstrained firms in Italy regarding the matter of investment sensitivity. During the period of 1980 to 2010, they found that investment sensitivity decreased over time. And in the year of 2008 they find that investment sensitivity increased and 2008 was the period of financial crises.

Andrén and Jankensgård (2015) found that the sensitivity of investment-cash flow at the time when firm face no difficulty to access finance. In other words he checked the sensitivity of investment cash flow at the time of abundant finance. They determined that firms which face financial constraint, for that firm the sensitivity of investment cash flow is less. For those firms which do not face financial constraint the sensitivity of investment-cash flow is greater. The abundance period in their study was from 2005 to 2008. In that period, the investment cash flow sensitivity for unconstrained firm is greater than the firms which face financial constraint or in other words face difficult sometimes to get finance externally.

Chen and Chen (2012) worked on cash and investment sensitivity and find that sensitivity of investment-cash flow is disappeared or declined in recent periods. The error was present in the calculation of Tobin Q. And this error cannot completely explain the sequence in the sensitivity of investment cash flow. They found that the changes in corporate governance and market power also cannot explain decline or disappear. So, this was the limitation of his study and there is a need to do work on it. It was also a research gap of his study.

Bhagat, Moyen and Suh (2005) found the effect of cash flow on investment at the time when firms face financial distress. Cash flow was the independent variable and the investment was dependent variable. In methodology, the techniques used by them in their study to find the results was descriptive statistics, regression and correlation. They also found that the behavior of the financial distress firms and financially non-distress firms is very much different. The main

focus was on the financial distress firms. They checked the behavior of financial distress firms at the time of operating profit. They also checked the behavior of financial distress firms at the time of operating loss. They determined that at the time of operating profit the behavior of the firm is positive. On the other hand, They found the at the time of operating loss, 40% of the distress firms invest more as compare to previous years. It was very surprising that distress firms invest more when cash flow is less. The source of investment was shared. Distress firm issue shares and generate funds for investment at the time of operating loss and lower cash flow.

Chowdhury and Kumar (2016) examined the relationship between investment cash flow sensitivity and information asymmetry. They found that after applying different techniques, procedures and methods ofcollecting data that if an information asymmetry increase then it will also increase the sensitivity if investment cash flow. On the other hand, if the information asymmetry decreased then it will decrease the sensitivity of investment cash flow. Data analysis was done by multiple regression and other statistical techniques like standard deviation, correlation and mean of the data. Dependent variable and independent variable used in the study was investment cash flow sensitivity and information asymmetry. According to researcher results Investment cash flow sensitivity increased with the increase of information asymmetry and investment cash flow sensitivity decreased with the decrease of information asymmetry.

Neamtiu and Shroff (2014) examined the behavior of the investment of the firm when its manager feels the development of the firm more challenging and difficult. The manager feels that it is very difficult to grow up the firm in the current market scenario. Normally, managers invest in those projects which they most beneficial for the firm. They do not invest in those projects from which returns are not acceptable for the firm. By applying different capital budgeting techniques and Time value of money techniques they analyze that either, which project is most beneficial for the firm. Researchers basically in their study found that how ambiguity in macroeconomic impact the investment and the holdings of cash in the firm. They find that by applying the ambiguity theory that there is a positive relationship between ambiguity of macroeconomic and investment of the firm. On the other hand, they found that there is a positive relationship between ambiguity of macroeconomic and cash holdings of the firm. In their study independent variable was ambiguity of macroeconomic and dependent variable was cash holdings of the firm and investment of the firm. The methodology applied by the researchers in their study was multiple linear regressions. They also found that ambiguity exists

sometimes and it minimizes the worth of opportunities of investment. On the other hand risk increases the worth of opportunities of investment for the firm.

2.2 Dividend Payout (DPO) and investment

Jung and Lee (2016) checked the effect of the dividend covenant on investment of the firm. According to their results there is a positive relationship between dividend covenant and investment of the firm. Dividend covenant was independent variable and two variables were taken as the dependent variables operating performance and investment of the firm. According to different studies conducted by different researchers it is said that the influence of dividend promise on investment of the firm sometimes vanish the problem of under investment or less investment by the firm. On the other hand influence of dividend agreement on investment of the firm increase over investment. Data analysis was done by different statistical techniques, statistical tools and statistical method. After applying all statistical techniques, statistical tools, statistical methods they found that there is a strong positive relationship between dividend covenants and investment of the firm. If dividend payments increase then it will increase the level of investment in the firm. On the other hand, if dividend payment decreases or less distribution to the shareholders of the company than in this way there will be less investment in the firm.

Ersoy and Bekci (2015) found that the effect of dividend on investment decision with the individual investor in turkey. The survey method was used to collect data. Firstly, the demographic features were examined. They found that married people desire to invest in stock and men also desire to invest in stock. On the other hand single notice that the stock is like investment instrument, women also notices that stock is like a investment instrument and and people who are self-employed, they also perceive that stock is like a investment instrument. People at the age of 26 to 49 desires to invest in stock as compare to others. They also found that investor wants that there should be gradually increased in the dividend share as compared to the dividend policies. They also found that investor wants that firm should show the financial condition and dividend policies after taking long term plans into account. In order to know about the financial condition of the firm it is very necessary for the investor. Sometimes the investor feels hesitation to invest in the particular firm or company. That is why investor wanted a true

and fair view of financial statements. Data analysis was done through different statistical techniques and methods.

Aroni, Namusonge and Sakwa (2014) found the effect of dividend on the investment. The independent variable they used in their study was dividend and dependent variable was investment. The study was conducted in Kenya and the primary data were collected from approximately 311 respondents. The total population was 836.250 in Nairobi securities exchange. This study was conducted in March 2013 in Kenya. Data analysis was done by researchers through descriptive statistics and linear regression techniques. The main aim of the study was to determine that either dividend payout have any effect on decisions of investment. He found that there is a great correlation between dividend payout and investor decision. There is a positive and significant relationship between dividend payout and investment decision of the investor. In other words, there is a great influence of dividend payout on investment decisions. Investors mainly focus on those companies where dividend payments are guaranteed. In other words, it is said that investors are more responsive to those companies where dividend payments are high and feel hesitation to invest in those companies where dividend payment are low. So, according to result, there is a great correlation between dependent variable and independent variable.

Ali and Chowdhury (2010) found the effect of the dividend announcement on the price of shares of the company. They observed in forty four (44) days after the announcement of the dividend by the company that either prices of share change or not change. The main objective of this study was that either announcement of dividend gives any information on the market that results in the change in the prices of stock. This study was conducted in Bangladesh and observation covers the period of forty four (44) days. For the analysis of data the listed private commercial banks of Bangladesh were taken as a sample. Approximately twenty eight (28) listed private banks of Bangladesh were taken as a sample. According to their results, in the period of forty four (44) days after the announcement of a dividend the share prices reduced in eleven (11) listed private commercial banks, the share price rose in six listed private commercial banks and there were no change in the remaining eight (8) listed private banks of Bangladesh. Eventually, it is concluded that there is no information conveyed by dividend announcement and it does not impact on the prices of the shares of the companies and firms. The question or problem statement was basically that either dividend announcement contains any secret information that effect on the prices of

stock of different companies or firms. According to the results of the research the share prices in some companies increased, in some companies decreased and some companies showed no change regarding share prices. So, it was clear from the research that the dividend announcement does not convey or gives any secret information that results in a change in the share price. This study was conducted on listed financial companies (private commercial banks). Data was collected regarding private commercial banks from Dhaka stock exchange. The results show that there is no the significant relationship between dividend announcement and share price. This is due to insider trader who have private information any time and they spread the wrong information in the market for their own benefit. They spread all the information regarding share prices before the announcement of dividend and after that at the time of announcement no new information carried by dividend. People follow insiders because they have private and extra information that are not available for outsiders and they mislead the people for their own benefit. Insider trader always spreads asymmetric information in the market and people trust them because they follow them. In this way, people are misleaded by insiders by accepting their wrong information and people face many difficulties when they take actions on the basis of information spread by the insiders.

Gill, Biger and Tibrewala (2010) found the determinants that effects the dividend payout ratios in United states of America. The dividend payout ratio was used as dependent variable and approximately six (6) proxy variant were used by the researcher. Those six proxy variables are profitability of the firm, cash flow, corporate taxes, sales growth, market to book value and debt to equity ratio. The total population was approximately 500 companies and approximately the financial reports of approximately 266 companies were usable. So, 266 companies were taken as a sample. Data collected by securities and exchange board of United States of America (USA).. The relation or link amongst the sales growth and dividend payout ratio could not be developed. This study was conducted on non-financial of United states of America. They found that some variants have a significant positive relationship with a dividend payout. In other words, some independent variables effect significantly on payout ratio. On the other hand, some variable effect negatively on dividend payout ratio. In other words, some variables showed a negative relationship with a dividend payout ratio. There was one variable in the study for that researchers could not define relationship or effect.

Amidu and Abor (2006) worked at the listed companies of Ghana in order to find out the determinants of dividend payout ratio of the firm or company. They worked in the firms or companies that were listed at that time in Ghana stock exchange. They selected listing non-financial or companies on the Ghana stock exchange for collection of data. In methodology they used ordinary least square method (OLS) in order to estimate the equation of regression. The proxy used by the researcher for agency cost was the institution holding. They also used some proxies for investment opportunities. The proxies used by researchers for investment opportunities where sales growth and market to book ratio. This study was conducted in Ghana and covers the period of six years. The main purpose of this study was to find all those elements or factors that directly or indirectly affect the decisions of dividend payout policy of the firm and companies. After applying all methodologies they found that there is positive relationship between the ratio of dividend payout of the firm or company and profitability of the company. They also found a significant positive relationship between cash flow and ratio of dividend payout of the firm. Another positive relationship between tax and dividend payout ratio was also found by the researchers. According to their results there was a negative relationship between dividend payout ratio and risk that the firm or companies face in different situation and conditions. Their findings also showed that there was also a negative relationship between institutional holding and the ratio of dividend payout. According to their findings and results in a negative relationship was also observed between growth and dividend payout ratio of the firm. There was one more negative association or relationship found or determined by the researcher between dividend payout ratio and market to book worth.

Chang and Lee (1982) found the relation between dividend payout and investment of the firm. For this purpose they divided the companies according to their growth. Two growth level (high and low) used by them. According to their results, there was a positive relationship between dividend payout and investment for those firms who have high growth level. For low growth firms, there is a negative relationship between dividend payout and investment.

Edelstein, Liu and Tsang (2008) worked in management of retained earnings and signals of dividend payout in United States of America. In real estate investment, there is restricted by law to distribute approximately 90% of the taxable income to the shareholders of the company or form. They found that after the survey that firms who face difficulties in meeting the requirement of dividend, involve in the management of retained earnings. It is understood that when the firm

not set aside income as retained earning then the firm will definitely face the difficulty in paying the dividends. Some companies participate in the management of retained earnings by reducing revenue. On the other hand, some companies participate in the management of retained earnings by increasing the expenses of the company or firm, In both cases the taxable income of the firm will reduce by participating in the activities of management of retained earnings. They also found that firms who have less cash flow, normally face difficulty in getting finance externally. In other words, those firms face financial constraint who has less cash flow. In this situation firms maintain their flow of cash by selling some fixed assets of the company. They found that managers participate in the activities of management of retained earning when there are less sources of finance for a company or firm. They also found the positive impact or effect of retained earnings and they also said that investors not fully realize the reduction of income. Data analysis was completed through descriptive statistics, standard deviation, correlation and mean value of collecting data. Data collected by a concerned stock exchange where the study was conducted.

Azhagaiah and Priya (2008) checked the effect of dividend policy on the capital of shareholders. This study was conducted on organic and inorganic chemical companies. The basic objective of the study was to check the relationship between dividend payout policy and wealth of shareholders. The purpose of the study was also to find out the effect of variation in the policy of dividend on the capital of shareholders in those firms who pay dividend and those firms who do not pay dividends in the organic sector and the inorganic sector of India. They also checked the effect of past performance of the firms and earning that retained by the firms on the wealth of shareholders in not absence of dividend policy regarding dividend payment in the organic sector and the inorganic sector of chemical companies of India. Data was collected from CMIE (Centre for Monitoring Indian Economy). To interpret the data, analytical methods were used by researchers. Random sampling technique were used by researcher for data. For data collection it was decided that data will be collected from listed companies of National stock exchange. In the national stock exchange the number of companies was only twenty one (21). So, companies for data analysis were taken from the stock exchange of Bombay. The total population was at that time approximately one hundred fourteen (114). So, out of a total population of one hundred and fourteen companies of the organic sector and the inorganic sector of chemical companies of India, the only twenty eight companies were taken as a sample. From organic sector of chemical

companies of India only nineteen (19) companies were taken. On the other hand, from the inorganic sector of chemical companies of India only nine (9) companies or firms were taken. This study covers the period of approximately ten (10) years from 1996 to 2006 in India. They found that there is a significant effect of dividend policy on the capital of shareholders of the firm in the organic sector of India. On the other hand, there is no effect of dividend payout on the wealth of shareholders of the company in the inorganic sector of India.

Rozeff (1982) presented the model for dividend payout by which some costs increased and some costs decreased. First of all dividend payments increased which causes the decrease in agency cost which is very important for the company. The transaction costs which occur in external financing decreased by this model of dividend payout. He determined that there is a great impact on investment policy on dividend policy. He used growth as determinant of dividend payout ratios. Beta and the agency costs also used by researchers in his study as determinant of dividend payout ratios. Agency costs arises basically due to conflict between management and shareholders. He suggests that dividend payments is one way to reduce the agency cost which arises from the conflict between management and the shareholders of the company. He found that there is a positive relationship between dividend and the firm value. If the dividend payments will high, then the firm value will also high and if the dividend payment will lower than the firm value will also lower. If dividend payments to the shareholders are high, then it is a positive signal for the investor to reinvest in the company for growth of his wealth.

La Porta and Silanes (2000) worked on this question that why dividend paid by companies to shareholders in the aspect of agency cost. They make two models regarding this, one "the outcomes" model and the second was “the substitute” model. According to outcome model dividend paid to shareholders of the company because the shareholders of the company or firm pressurize the management to pay dividends on their investments. So, in this way company have to pay dividends in order to meet their requirements. On the other hand, according to substitute model company or firm pay dividends to its shareholders in order to increase the image or reputation of the company. The substitution model based on signaling theory, according to this theory when the company pays dividends to its shareholders then investors receive positive signal and investors do not feel any hesitation to make an investment in the company. Investors feel that company is paying dividend its means the condition of the company is best and company is running well by the management. On the other hand, when the company does not

give dividends to its shareholders then the investor receives the negative signal and they feel great hesitation to invest in the company. They think that company's condition is not good and the company is not profitable. The sample of approximately four thousand (4000) companies was taken for analysis. They compare the different dividend pattern of almost 4000 companies in the world.

Zakaria, Muhammad and Zulkifli (2012) found the effect of dividend policy on change in share price. Data collected for construction and material listed companies of Malaysia. There was approximately 94% change in share price recorded in these companies for the period of 2005 to 2010. The share price was taken as the dependent variable in the study and they checked the effect of dividend yield, dividend payout ratio, investment growth, the size of the firm leverage and earnings volatility on share price. They found that there is a significant relationship between share price and dividend payout ratio and they also found that there is a significant effect of the size of the firm on share price. In other words, there was a significant relationship between the size of the firm and share price. They also determined that more the size of the firm more significant effect of the size of the firm on share price. Researchers found the insignificant effect of three variables dividend yield, investment growth and earnings volatility on change in share price. One of the most important independent variable leverage showed the negative effect on change in share price according to researchers. Approximately one hundred and one (101) companies were taken as a sample. This study covered the period from 2005 to 2010. In the sample of one hundred and one (101) companies the construction and material companies that were listed in Kuala Lumpur stock exchange were taken. In other words non-financial companies like constriction companies, material companies were taken for data collection. In the sample of 101 firms or companies some companies or firms were excluded and the final sample was about seventy seven (77) companies or firms. Data analysis was done by the least square regression method. The software used for analysis was E-views software.

Sruthi, Rani and Lavanya (2017) found the impact of dividend policy determinants, stock split and bonus shares in investment decisions. The methodology and techniques used by them were correlation and descriptive statistics in their study. They found the positive relationship between them. From when joint stock company came into existence the dividend policy become a serious issue for the companies all over the world. The dividend is basically the distribution of profits that firm earns in a particular period. The main purpose of the firm is to maximize the

shareholders' investment in the company by right utilizing of resources. If the firm is giving timely payments to the shareholders then this goal can be achieved. Otherwise firm may face financial distress due to lack of interest of investors in the firm.

Efni (2017) found the value of a company is not dependent on the dividend policy. Dividend policy cannot change the overall value of the company. The basically dividend policy just changes the timing of dividend payment and the total amount of money that will be received in the future will be no different. He found that there will be no impact of dividend policy on the risk of the firm because the property of the firm mostly controlled by the family and the institution. On the otherhand, investors do not focus on dividend payments and they do not understand that dividend payment are how much important in increasing the value of the company. The focus of investors is just only increasing the value of the company. In his study, he found that the value of a company is dependent on the risk. If the risk is high then the value of the company will also high and if the he risk is low, then the property and real estate of the company will drown. In his study the theory of Bird in the hand and signaling theory prove wrong and these two theories could not apply in his study.

Oladipupo and Okafor (2013) checked the effect of working capital management on dividend payout ratio and corporate profitability of the firm. The first objective of the study was to measure the implications of management of working capital and ratio of the dividend payout of the firm. The second objectives of the study were to measure the extent of relationship of profitability of the firm and management of working capital of the firm with a ratio of dividend payment of the firm. Data was collected from non-financial firm of Nigerian Stock exchange. Approximately twelve (12) non-financial companies were taken as a sample or for collection of data. This study covers the period of five (5) years from 2002 to 2006. In methodology, they used Pearson moment product correlation method or technique was used for data analysis. Ordinary least squares (OLS) method or technique was also used for data analysis. They observed that short cycle of trade and the ratio of the debt of the company leads towards the high corporate profitability of the firm. They determined that there was a negative association between leverage of the firm and profitability. In other words, the impact of leverage on the profitability of the firm was negative. They also found the insignificant impact of management of working capital on the profitability of the firm or in other words, there was an insignificant effect shown by management of working capital by a researcher.They also found the strong positive

impact of net cycle of trade on the ratio of dividend payout of the firm. On the other side, profitability showed positive impact on the ratio of dividend payout of the firm. Some variables showed a negative relationship like growth rate in earnings showed the negative effect on the dividend payout ratio of the firm or company. According to overall results, management of working capital and profitability of the firm showed the insignificant impact statistically on the dividend payout ratio (DPR) of the firm. In their study, they used dividend payout ratio as dependent variable and on the other hand, profitability of the firm and working capital management used as independent variables.

Ajanthan (2013) checked the relationship between profitability of the firm or company and dividend payout. He found that there is a positive relationship between dividend payout and profitability of the company. There was a strong relationship and positive relationship that the researcher found at that time. So, according to his suggestion a manager should pay more attention while designing the policy of dividend that how , when and how much dividend should pay to shareholders. The companies chosen for data analysis were all listed on the Combo stock exchange. This study was conducted in Sri Lanka and listed hotel and restaurant firms were chosen to check the relationship between dividend payout and profitability of the firm. The researcher used one dependent variable, one independent variable and two controls variable. In his study, he used profitability (Net profit after tax) as dependent variable and dividend payout as independent variable. On the other hand, revenue and total asset were used as control variable in the study. The main objectives of the study were to establish the relationship between dividend payout and profitability of the listed hotels and restaurants of Combo stock exchange in Sri Lanka. Another objective of the study was to make the extent of the relationship between dependent variable and independent variable. According to his findings there was a strong positive relationship between dividend payout and profitability of listed hotel and listed restaurants. There was also a positive relationship between revenue (Amount of sales) and profitability of different listed firms of combo stock exchange. The second control variable that was total assets, he found the positive relationship with second control variable (total assets). So, all variables either independent variable or control variable showed the strong positive relationship with the profitability of the listed hotel firms and restaurant firms of Combo Stock Exchange in Sri Lanka.

Francis and Hasan (2011) checked the effect of corporate governance on dividend payout policies. According to previous studies manager do not want to pay dividend to shareholders of the company. They think that in this way the cash of the company will be less and it will create problems for the company in future. In other words, it can create agency cost. Managers will use the limited resources of the company for their own benefit in order to meet their own requirement. In this way firm will face great loss of reputation, because when the firm will not pay dividends to its shareholders then the negative sign will go in the minds of the shareholders and as well as the investors. They used only manufacturing in the population for data analysis. They exclude all those firms who have assets less than five Lacs dollars (500,000) and all those companies who have a book value of equity less than (250,000). This study was conducted in the United States of America (USA) and only specific firms were included in the population for data analysis.

Mirza and Azfa (2010) checked the impact of cash flow in the firm or company, and ownership structure of the corporate policy of dividend for the shareholder of the company. Dividend is widely debatable topic the world of literature of finance. On the other hand, dividend is very important for the value of the firm. Dividend effects on many matters of the company like conflict between management of the company and shareholders of the company, company reputation, or goodwill and wealth of the shareholders. To check the effect of the structure of ownership and the flow of cash in the company they select the listed companies of Karachi Stock Exchange. Approximately one hundred (100) companies were taken from KSE as a sample for analysis. This study covers the period from 2005 to 2007 or three years. In methodology, ordinary least squares (OLS) method was used for estimation of the regression equation. According to their results there was a negative relationship between ownership structure (Individual ownership and managerial ownership) and payment of dividend. On the other hand, there was a negative relationship between the sensitivity of cash and dividend payments. This study also showed the negative relationship between amongst the size of the firm and payments of dividend. The results also showed a negative association between leverage of the firm and cash dividends. Operating cash flow showed positive association or the impact of operating cash flow of dividend payments of the firm was positive. On the other side, profitability showed a positive relationship with cash dividends. They showed that only three variables act as a determinant of dividend policy. Cash flow in the firm, the size of the firm, ownership either

individual or managerial was only three variables that are the determinants of dividend behavior. On the other side of the picture, leverage of the firm and sensitivity of cash did not act as a determinant of dividend policy.

Mitton (2004) worked on corporate governance and dividend payout in order to determine the relationship between dividend payout and corporate governance of the firm or company. He found that there was a direct and positive relationship between dividend payout and corporate governance of the company. If there is strong corporate governance in the company or firm, then dividend payment will be higher. In other words, stronger dividend payments leads towards higher dividend payments. He also found that there was a negative relationship between dividend payment and opportunities of growth in the presence of good corporate governance. The results of the research also showed that firms earn more profit in the presence of stronger corporate governance. This study was conducted on approximately nineteen (19) countries and three sixty five (365) firms were taken as a sample for analysis of the data. To measure the strength of corporate governance he used the ratings of corporate governance. The rating of corporate governance was developed by Credit Lyonnais Securities. This security gives the ratings of corporate governance of different companies or firms. The rating range was from 1 to 100 and by this rating a researcher analyzed that which firm or company have greater corporate governance. In his study, he showed the investor protection at country level and at firm level he showed the corporate governance. These two aforementioned mechanism helped to reduce agency cost which causes the conflict between management and shareholder.

Gugler (2003) investigates the association among benefits and the ownership and control structure of the firm. He conducted his study for a leading group of Austrian firms in the period from 1991 to 1999. They find that state-controlled firm partake in benefit smoothing, and on the other hand family controlled firms do not. Firms that controlled by the state are more agreed to cut benefits and on the other hand firms that controlled by family are less agreed to cut benefit when cuts are supported. The benefit lead of bank-and remote controlled firms lies amidst state- and family-controlled firms. This is solid with the ordinary "situating" of information asymmetries and authoritative association costs. The above results hold for firms with incredible wander openings. He found that associations with low improvement openings in a perfect world regurgitate cash autonomous of who controls the firm. Data analysis was done by different statistical techniques including descriptive statistics, correlation and multiple linear regression.

2.3 Investment Opportunities and investment

Zahid et al. (2017) found the relationship between investment opportunities and cash flow on investment. They used cash flow and investment opportunity as independent variable and investment as the dependent variable. In methodology, they used descriptive statistics, correlation and linear regression for the analysis of the data. Data was collected through balance sheet analysis of SBP and websites of companies. Data was collected for only listed manufacturing companies of Karachi Stock Exchange. According to their results, there is a positive and significant impact of investment opportunities on investment under high investment opportunities. In case of low opportunities, the impact of investment opportunity is also positive and insignificant on investment. On the other hand, cash flow showed a positive and significant relationship with investment under high investment opportunities and a positive but insignificant in case of low investment opportunities.

Muniandy and Hillier (2015) found the effect of independence of board and opportunity of investment in the performance of the firm. On the other hand, there was also positive relationship amongst the firm performance and opportunities of the investment. The dependent variable used by researchers in the study was the performance of the firm. On the other hand, two main independent variables were used by researchers in the study. The two independent variables used by them were the independence of the board and opportunities of the investment for the firm.Total five controls, variable were used by a researcher in the study. In methodology, descriptive statistics, correlation, regression and standard deviation of the data were used by researchers.Cross sectional techniques were used by the researcher for analysis of the data. Data collected from listed manufacturing or nonfinancial firms of Johannesburg Stock exchange. Different eras were used by researchers in their study for data analysis. This study was conducted in South Africa during 2008 to 2009 and 2011 to 2012.

Jerry, George and Zhenzhong (2014) measured the negative relationship between investment opportunity and firm performance. In their study, they used investment opportunity as independent variable and firm performance as the dependent variable. Accounting performance measures and market base measures were used by a researcher in the study. Regression techniques were also used by a researcher in the study to run the hypothesis. After applying different techniques and methods the results were negative. There were negative relationship between investment opportunity and firm performance. The cause of this negative relationship

was due to conflict between management and the shareholders. When a conflict between management and shareholders arises then it leads towards the agency cost. The negative relationship occurs when management on the behalf of shareholders invest or utilize money in unnecessary projects for the sake of their own benefits and not for the sake of company's benefit or shareholders benefit.

Martín, Manuel and Durán (2012) found that investment decisions are different when there are growth opportunities for the firm. They worked on two variables, mainly and that was investment opportunities firm value. If there are opportunities of growth for the company and management of the company and they avail those opportunities on behalf of shareholders in the interest of shareholders or in the interest of company then it will put a positive impact on firm value. If the management of the company avail growth opportunities not for the sake of the company or for the sake of shareholders then it will put negative impact on value of the firm. This study was conducted in Mexico in the period from 2005 to 2011. Data collected from only those companies which were listed at that time. The sample was collected from listed companies in Mexico. Approximately 83 companies were taken as sample at that time. In their study, they used investment opportunity as independent variable and performance of the was dependent variable.

Chen, Sun, Tang and Wu (2011) checked the effect of government intervention on the investment behavior of the company. They checked that either government creates resistance in efficiency of investment. They checked the government intervention at two different levels by using the data of China. They compare the investment nepotism in the company or firm. In other words, either top level staff or management hired by big political references. They found that if there is a political concern in the company or firm, then it will greatly harm the investment efficiency of the company or firm. If directors and top level manager are appointed by recommendations of political leaders then it is possible that managers and directors will not work for the interest of shareholders and stakeholders. They will work for their own benefit, utilize the resources of companies in those projects from which they can get benefit. According to their results political concerns effects negatively on investment efficiency in state owned enterprises. They could not find such type of any evidence or result for non-state owned enterprise. They found that government intervention in state owned enterprises effected negatively and can harm the investment efficiency of the business. This study covered the period from 2001 until 2006

and data was collected by A share listed firms of china. Investment efficiency was taken as the dependent variable. On the other hand, the study was conducted on the non-financial firms in China.

Adam and Goyal (2008) found that there is a positive impact of investment opportunity and firm value. Through investment opportunities company can achieve its objectives or goals that are set at the time of incorporation or commencement of business. If there are high investment opportunities and if the management of the company on behalf of shareholders avail this at the right time then it will lead high growth rates. And if there are low investment opportunities then there will be chances of low growth rates. In their study, they used value of firm as dependent variable and investment opportunity as independent variable. Data analysis was done by using some statistical tools and techniques such as descriptive statistics, regression and correlation.

LI and WANG (2008) checked the relationship between opportunities of investment , structure of shareholders amongst the opportunities of investment. On the other hand, there is also a negative relationship between opportunities of investment and yield of the dividend of the firm. They also found the significant positive relationship between the concentration of shares of the firm or company and financing of debt. The relationship between concentration of the shares and the yield of the dividend of the firm or company was also measured after controlling the size of the firm and income of the firm or company. They also found that the compensation that given by corporations to the executives or to the top level management effects positively to the opportunities of the investments. On the other hand, these compensation effects negatively on the concentration of ownership. This study was conducted in China and covers the period from 2001 until 2005. They collected data from the non-financial listed companies. Approximately the sample of 4927 companies was taken by researcher for data analysis.

Soebyakto, Dewi, Mukhtaruddin and Arsela (2017) checked the effect of investment opportunity on the value of the firm. They checked the effect under the mechanism of corporate governance. In their study the dependent variable was firm value and they used investment opportunity as independent variable. There were some moderating variables includes in the study by researchers. The moderating variables are frequently in a meeting of the audit committee, totally independent board of commissioners, ownership at managerial level and ownership at institutional level. The study was conducted for the period from 2009 to 2012. The study focus

was purely on manufacturing firm of industry. They did not include non-manufacturing firms in his study. They used purposive sampling technique in order to collect sample. After setting the criteria for collection of samples only 15 companies selected for sample. The methods and statistical techniques used by the researcher was multiple regression analysis. The aforementioned moderating variables did not affect the earning quality of the firm but significantly affect the value of the firm.

Sargsyan (2017) determined that the effect of size of Foreign direct investment on growth of economy in Armenia and the rest of the world. Economy moves towards progress with foreign direct investment. Because in this way dollar reserves of the country increases and stability come in the matters of economy. The stability of the country depends on the foreign currency reserves or dollar reserve to some extent. So, when the dollar will increase in the country, then definitely stability in the matters of economy will come. The Foreign direct investment is very much important for every country. Specially, small countries and underdeveloped or developing countries. By foreign direct investment a country can achieve its economic growth and economic objectives. He found that change in foreign direct investment facilitated the growth in Armenia to major extent as compared to the rest of the world. He also determined that this indicator will play important role in the country by creating the most favorable climate of investment and it will provide the basis or guidelines for the development of the policy.

Nesbitt (2017) checked the effect of investment opportunities in the United States middle market. He found that to invest in the United States middle market securities is more profitable than to invest in any other securities like any stock exchange or in any bank. The first objective of the study was to measure the profits of previous years in the securities of the middle market of United States of America. The second objective of the study was to compare the profits of middle market securities and the profits of any other securities either stock exchange security, bank security or any other public and private securities. The main focus of the study was direct lending and the third objective of the study was to access the current choices and opportunities available for private investors or public investors in the middle market in the United States of America. This study was conducted in America and the main purpose of this study was to bring attention of public and private investor towards middle market securities of the United States of America. Data was collected from filings of SEC and it was approximately eleven (11) years' data. The SEC was covering around fifty two (52) public and private companies. According to

results, it is shown to investors that United States lending of the direct middle market is very attractive choice or opportunity for investment just because of their higher returns on the investments of public companies and private companies. This study almost was covering the period from 2004 to 2015.

Lupi, Myint and Tsomocos (2017) checked the effect of opportunities of investment in the structure of capital in the firm. In addition, this study conducted on those firms where where competition between firms was very high. In that case they checked that how the opportunity for firms or competition between firm for investment in a specific sector or industry effects on capital structure of the firms. For an analysis of the data pharmaceutical companies and airlines of European were used. They determined that leverage factor effected on the firm ability. The ability of the firm to capture new opportunities of the investment. Most of the time leverage effected on the ability of the firm in that situation when there are less opportunities available for the firm. Companies where the level of leverage is high, there are less chances of investment in different securities and projects. On the other hand, high chances of investment available for companies where leverage level is low. If companies have very high rate of leverage or very low rate of leverage than it can create resistance in investment. By applying different parameters, if the company or firm reduces the change in cash flow, then the ability of investment of the company will improve. If a very flexible company or firm who have less volatility in his cash flow can avail more investment opportunities. In this way the opportunities of investment for other companies who have less flexibility will be reduced.

Giriati (2016) checked the effect of investment opportunity on dividend payout ratio in his study. Normally companies pay dividends more than an investment. He conducted his study in Malaysia for the period from 2009 to 2013. In his study, he used investment opportunity as independent variable and dividend payout ratio as the dependent variable. His study was based on four years. Data analysis was done through different statistical techniques such as descriptive statistics, standard deviation and correlation. After applying all procedures, methods and different statistical techniques he determined that there is a negative relationship between investment opportunity and dividend payout ratio. The reason is that why firm invests less and pay dividend more.

Cici, Dahm and Kempf (2018) determined the impact of trading efficiency that operated by fund families on the investment behavior of the company and fund performance of the company. They found that trading efficiency can be measured through gross outcome of the fund mutual families. The Gross outcome of fund mutual families includes the cost of trading and the profit on trading of index funds of families. They also found that those fund mutual families who work or trade efficiently by applying different parameters, their trading cost ultimately decreased and the performance of fund increased and the managers of that type of families showed intention to invest more instead of holding of cash. Different databases were used for data collection like Direct database of the Morningstar, database of Active Share and database of CRSP United States Stock. On the other hand, database of Mutual Fund Holdings and database of the free US Mutual Fund were also used for the collection of data. In methodology, the Placebo test, regression analysis and correlation of the variables, standard deviation of the data and mean value of the data were used for analysis of the data.

Anwar and Akhtar (2018) checked the effect of decisions of another company regarding investment or investment decision of the firm. Data was collected from published audited reports of the companies. This study, approximately covers the period of 11 years from 2005 to 2015. In methodology the fixed effect model of GMM, descriptive statistics, correlation, empirical models were used for the analysis of the data. This study was conducted on the non-financial firms of Karachi Stock Exchange. For this study, only non-financial sector of the Karachi Stock Exchange were taken into consideration. After narrowing the sample the only 13 sectors of manufacturing companies were taken for analysis of the data. Approximately four independent variable were used in the study and one dependent variable. Investment decision was taken as a dependent variable in the study. On the other hand, Free cash flow of the firm, growth of the firm, leverage of the company and return on shares of the company were taken as the dependent variable. Finally, the researchers found that the investment decision taken by peers or other companies has significant impact on the corporate company's investment decisions. In other words, the investment policies of peers or competitive companies have significant impact on the policies of the corporate company's decisions on investment.

Nariman and Ekadjaja (2018) checked the effect of different independent variables on the firm's earning quality. Totalsix independent variables were used in this study. The size of the board, independence of the board of the firm, opportunity of investment, the size of the firm,

institutional shareholding and leverage were used as independent variables. The accounting system that runs in the company based on the accrual system of accounting. According to them if the accrual of the company will high, then the stated net profit in the financial statement comprises low quality. On the other hand, if the accrual of the company will low, then the quality of earning will high. This study was conducted on the non-financial firms of Indonesia. Firms which were listed on the Indonesian Stock Exchange were taken as a sample. Manufacturing industry of Indonesian Stock Exchange was the main focus of the collection of the data. This study was conducted in Indonesia for the period from 2013 to 2016 or approximately 4 years. The purposive technique of sampling were used for taking the sample. In methodology, the double linear regression model, correlation, descriptive statistics, standard deviation, mean value of the data and other different statistical techniques were used for the analysis of the data. The research software used in the study was eviews 9.0. They found thatthe size of the board has a positive impact on earning quality of the firm. Some independent variable showed positive results, on the other hand, some independent variable showed negative results. According to the results, the independence of the board of the firm also has positive associations with earning quality of the company or the effect of independence of board on earning quality of the firm was positive. Opportunity of the investment also showed positive association with the earnings quality of the firm or company. The size of the firm also play important role in the case of earning quality of the firm. According to findings, there was a positive association between the size of the firm and the earnings quality of the company. Institutional shareholdings showed the positive effect at that time on the earnings quality of the listed firms in the Indonesian Stock Exchange. The last variable leverage did not show the positive impact, leverage show the negative impact on the earnings quality of the listed manufacturing firms or non-financial firms of the Indonesian Stock Exchange. In other words, the effect of leverage was insignificant on quality of incomes of the listed companies of the Indonesian Stock Exchange.

Tahir and Mahmood (2015) checked the impact of policy of dividend on the firm and the effect of investment decision of the company on financing decisions or decisions that taken by a company of the firm related to finance. Two proxies were used by researchers in the study was the opportunity of investment and actual investment in the firm. These aforementioned two proxies used by a researcher in the study for investment decision. There were two independent variable in the study and one dependent variable. Two independent variables were investment

decision and the policy of dividend of the company. On the other hand, financing decision was used as the dependent variable in the research. In order to meet the objectives of the study the data required for approximately ten (10) years. This study was conducted in Pakistan and the data collected for the period from 2004 to 2013. This study was conducted on the financial firms or non-manufacturing firms Karachi Stock Exchange. Data collected from the annual financial statement of the different banks,which were selected in the sample from Karachi Stock Exchange. There was a use of two control variables in the study. The control variables were the firm's size and the 'profitability of the firm. In methodology the multiple regression, correlation of the data, the standard deviation of the data and mean value of the data were used for estimation of variables and for the analysis of the data. They found that the effect of investment decisions sometimes on the financing decisions was significant and sometimes there was no impact of investment decisions on financing decisions. Basically, the effect of investment decision on the dependent variable was depended on the risk condition that the firm face in different conditions. They found that there was no effect of growth of total assets on decisions about financing under the conditions when firm faces high level of risk. On the other hand, they determined the negative effect of growth of total assets of the firm on the decision of financing in those conditions when firm face less risk. On the other side of the picture, opportunity of investment puts a negative effect on decision of financing or there was a negative association between investment opportunity and decision about financing. On the other hand, there was no impact of policy of dividend as well as decisions of investment on the financing decisions.

Utama and Sulistika (2015) found the impact of the internal factors of the organization or firm and external factors on the opportunities of growth or their set of opportunities of investment. The size of the firm, the income or profitability of the firm, leverage of the company and the degree of internationalization was all internal factors taken into consideration or account by the researchers. On the other hand, gross national product and the rate of inflation in the country were used as external factors by the researchers. So, the question was that, either, these aforementioned internal factors and external factors can influence on the opportunities of growth or set of investment opportunities for the firm. The results showed after applying all methodologies that the size of the firm has a positive impact on opportunities of growth or investment opportunity set. Profitability of the firm also showed the positive significant impact on the investment opportunity set. On the other hand, some variables showed negative effects on

the investment opportunity set of the firm. Degree of internationalization showed the negative association with set of opportunity of investment. Financial leverage also showed the negative relationship with opportunity of investment or the effect of financial leverage on the opportunities of growth was negative. After applying different statistical techniques, it was concluded that growth of gross national product of the country showed positive association or positive effect on the growth opportunities of the investment. The last factor inflation rate showed the negative association on growth opportunities of investment. The total six (6) independent variable were used in the study and one dependent variable. The Investment opportunity set was used by the researcher as the dependent variable. On the other hand, the degree of internationalization, the size of the firm, the profitability of the firm, financial leverage, growth of gross national product and the rate of inflation were used as independent variable in the study. Data was collected from the annual financial statements of listed companies of Indonesian Stock Exchange. This study covers the period of approximately nine (9) years from 2000 to 2008. In methodology, the empirical model, Chow Test and Hausman Test and test of Redundant Fixed Effects were used for the analysis of the data.

Aivazian, Ge and Qiu (2005) checked that either investments decisions of the company are influenced by the leverage or leverage has any impact on decisions of investment. They found that there was a negative effect of leverage on the decisions of the investment. According to their results, the firms who have low growth opportunities and the firms who have high growth opportunities the pattern of impact of leverage is different. They found that firms who have low growth opportunities, in those firms the negative effect of leverage on decisions of investment was significantly stronger. On the other hand, firms who have high growth opportunities, in those firms the strength of this negative effect of leverage on decisions of investment was less as compare to those companies in which growth opportunities are low. Data collected from Compustat Annual File of Canadian 1999 and this file covered the data from 1982 to 1999. Normal age of the company at that time was 8.2. This study, conducted on the manufacturing or nonfinancial firm or companies of the industry. The annual data file had the information on approximately 1035 companies of Canadian industry. This study was conducted in Canada during the year of 2005 and the total population for the sample was approximately 1035 companies. Out of this total population only 863 companies were taken as a sample. For data analysis fixed effect model and random effect model were used for analysis of the regression of

equation of investment. In their study, they used one independent variable and one dependent variable. Investment decisions were used by the researcher as the dependent variable. On the other hand, leverage was used as the independent variable.

2.4 Financial distress and investment

Lopez, Sanfilippo and Torre (2015) found the impact of financial distress on investment decisions or behaviors of the companies. In their study, they includes different countries of Europe for analysis just because of their different institutional environment. Data analysis was done by them through panel data estimation and Generalized method of movement. They found that impact of financial distress on the investment decisions of the companies sometimes depends on the investment opportunities that are available to the companies. Propensity of investment is basically depends on that, how many opportunities are available to the company. If the company has greater opportunities, then it will act like healthy firms and will avail the opportunities in order to overcome the difficulties that company face due less finance. If there are less opportunities available for a company than the managers of the company normally show a greater propensity to under invest in the different project. The managers only invest in those projects which are beneficial for the company in the long term because managers have limited choices of investment.

Richardson, Taylor and Lnais (2015) checked the effect of financial distress on the avoidance of tax under financial crises. When the benefits increase the marginal costs the firms have the incentive to involve in the matter of avoidance of tax. The question related to global financial crises is that, is there any difference if the firms avoid the taxes before the global financial crises and after the global financial crises. The main purpose of this study was to check the association between financial distress and the avoidance of tax under the global financial crises. This study was conducted in Australia on listed manufacturing or nonfinancial firms or companies of the Stock Exchange. Initial sample was taken around 300 companies from the Australian Stock Exchange and after that, approximately 203 firms were taken as a sample for the study. This study was done on Australian firms for the period from 2006 to 2010 on listed manufacturing or nonfinancial firms. They found that financial distress significantly associated with the avoidance of tax. In other words, the effect of financial distress on the avoidance of tax was positive or the relationship between financial distress and the avoidance of tax was positive under the financial crises of the globe. The dependent variable in the study was tax avoidance used by the

researchers. On the other hand, the independent variable used by the researcher in the study was financial distress. The independent variable financial distress measured by a researcher in the study through Z-Score model of Altman consists of different financial ratios. Many control variables were used by a researcher in the study was the total age of the firm, the size of the firm, leverage of the firm, intensity of capital, intensity of research and development, intensity of the stock of material and efforts of the industry sector.A regression model was used in the methodology.

Idris, Krishnan and Azmi (2017) found the relationship between financial literacy of the youth and financial distress of the youth. This study was conducted in Malaysia and the approach used by researchers to find out the relationship between financial literacy of the youth and financial distress of the youth was quantitative. Questionnaires were taken from the previous studies in order to determine the association between financial literacy and the distress of the youth of Malaysia. The results extracted after receiving the response from approximately 430 youths that there was a weak positive association amongst the financial literacy of the youth of Malaysia and financial distress of the Malaysian youth. According to many previous researches, the financial distress is the element that can cause for the reduction in the performance. So, in order to protect the youth from financial distress, there is a need to enhance the financial literacy of the youth. The dependent variable in the study was financial distress. On the other hand, the independent variable used by the researchers was financial literacy.The population of this study was a youth of Malaysia that was working in various or different departments in Malaysia. The total population in the form of youth was 1,095,578 and the sample taken in the form of questionnaires was 628,370 in Malaysia. The total population of Kuala Lumpur (capital of Malaysia) was 191,000 and the sample that taken from the capital of Malaysia was 123,577. The random sampling technique used by researchers in the collection of sample. In methodology, Pearson correlation, pre test and pilot study were conducted for the analysis of the received data. Likert scale was also used by researcher in their study for the analysis of the data. The research software SPSS was used by researchers for final results. From the total of 539 respondents, only 470 questionnaire were received. According to results, if the financial literacy in the youth of Malaysia will increase then the financial distress level will decrease.

Brédart (2014) checked the effect of board sequence on the financial distress of the firm. For this purpose, data collected from three hundred and twelve (312) companies of the United States of

America. The same question asked from all these firms that, either, the sequence or configuration of the board of directors in the firm effects on the financial distress of the firm. He found that firms that opted the protection of legal have a significantly different sizes of the board as compare to those firms which do not opted the legal protection. The viewpoint of corporate governance was used in order to analyze the size or sequence of the board in the firms and its effect on the firm's financial distress. The significance of this study was that, this study provides the guidance or instruction to the financial institution and the shareholders of the company or firm. The dependent variable used in the study by researchers was the financial distress of the firm. On the other hand, total four independent variable were used in the study. Chief Executive Officers duality, the size of the board, the independence of the board and the board activity were all used by him as independent variable. Two control variables were used by the researcher in the study. Return on equity and solvency ratio were used by him in his study. In methodology, regression model of logitbinary, descriptive statistics, regression and correlation between variables were used by the researcher in the study. The logit model of regression was used to identify the difference in the different boards. He found that there was a negative association between board size and the financial distress of the firm. On the other hand, the association among corporate governance and the firm's financial distress was not investigated correctly.

Shahwan (2015) found that impact of corporate governance of the firm on the company's performance and financial distress of the firm. This study was conducted on the listed companies in Egypt. The main aim of the study was also to determine that how good corporate governance is practicing in the listed companies of Egypt. For the purpose of examination of corporate governance practice, he constructed the index of corporate governance and divided this index into four main dimensions. The first dimension in the index was transparency and disclosure, the second dimension was the configuration of the board of directors, the third dimension was a relationship with investors and the right of shareholders of the firm and the fourth or last dimension in the index was ownership and structure of control in the firm. This study was done on non-financial firms on the Egyptian Stock Exchange. Approximately, total 86 companies were taken as a sample in the study for the analysis of the data. The corporate efficiency or effectiveness was assessed by Tobin's Q. On the other hand, in order to measure the financial distress the Z-Score Altman's Model was used by the him. He found that after the analysis of the data, the implication of corporate governance in the Egyptian companies was low. According to

the results, there was no positive association between corporate governance and performance of the firm. On the other hand, there was a negative relationship between financial distress of the firm and corporate governance or corporate governance affects negatively of the financial distress of the firm. The sample taken for this research was too small and the results determined by the researcher were according to that. There is a need to increase the population in order to get the better results. This research will be helpful for those people who are interested in the impact of corporate governance.

Fodio and Onah (2013) found the positive relationship between two variables cash flow and investment. This study was conducted in Nigeria. The purpose of the study was to check the sensitivity of investment with regard to cash flow. This study was conducted by them for the period from 2004 to 2008 and they collected the data for 16 listed firms of Nigeria. The consequences of the study were significant positive. It is also said that internal finance has great effect on investment. They also determined that the relationship between both variables changed with the change of industry. In some industries like food and beverages the relationship between cash and investment was negative. The data collected from only manufacturing firms in Nigeria and the concern of researcher mainly on four industries. Market prices were taken from the Nigerian stock exchange. The methodology used by the researcher was ordinary least square method in order to test the relationship between dependent variable investment and independent variable cash flow. The research software SPSS used for the analysis of data. This study used three independent variables cash flow, classification of industry and the size of the firm. They found that there is a positive relationship between cash flow and investment. On the other hand, they found the negative effect of firm size on investment and the effect of third variable was determined by them positive.

Ardestani, Rasid and Mehri (2013) found the factors that effects dividend payout policy of the firm. Investment opportunity set and corporate financing were used as independent variable and these are the factors that influence dividend payout policy of the firm. All the studies related to dividend payout were conducted in developed countries. They determined the effect of opportunity of investment and corporate financing on the dividend payout strategy of the firm. This study was conducted on the industrial sector of Malaysia. Approximately 62 companies were taken as a sample for a study that were listed at that time in the stock exchange of Bursa Malaysia. They used dividend payout policy as dependent variable and on the other hand

investment opportunity set and corporate financing were used as independent variable in the study. They measured the investment opportunity by Tobin's q and on the other hand corporate financing measured by financial leverage, firm. In other words, there was a significant relationship between the investment opportunity set and dividend payout policy of the firm. Debt maturity was also the factor that effect greatly on dividend payout policy and again there was a significant relationship between dividend payout policy and debt maturity or debt maturity effect significantly on dividend payout policy of the firm. Control variables also used in the study by researchers and those control variables are the proxies of risk and the profitability of the firm or company. To determine the dividend policy in the industrial product sector of Malaysia there was a great and significant role of profitability of the firm and risk. This study was conducted on non-financial firms in Malaysia.

Tykvová and Borell (2012) investigated the risk of financial distress of the firms in the event of the buyout. The period of research selected by researchers was from 2000 to 2008. During this period, researchers investigated the risk of financial distress of the firms who are acquiring by other companies or other companies taking control on the firms. They also found that either buyout companies face financial distress or non-buyout companies face financial distress. In addition, they also found that how often the buyout companies face financial distress than non-buyout companies. They found that the investor invest in those companies which are less financially distress as compared to non-buyout companies. On the other hand, they found that the risk of distress increased after the buyout. They found that non-buyout companies face less distress, because distress risk increase after the buyout. According to their results, companies or firms who have private equity finds at back normally face less financial distress as compared to non-buyout companies. Such type of companies have not higher bankruptcy rate as compared to non-buyout companies. Data was collected from the database of Amadeus in European countries. Approximately data were collected from 15 European countries. The financial statements of those companies were used for data analysis that were operating at that time in those countries. The dependent variable used by a researcher in the study was Z-Score, O-Score and bankruptcy. On the other hand, many independent variable were used in the study like consumer price index, law of bankruptcy, growth, credit, buyout with experienced investors, buyout with inexperienced investors, buyout within the period where market conditions were favorable , buyout occur in that time where market conditions were unfavorable and characteristics of the buyout.

Matthias and Abraham (2003) found the relationship between cash flow and investment. In other words, they checked the effect of cash flow on corporate investment. This study was conducted in Trinidad and Tobago. The period covered by this study was 1986 to 2000. They collected the data of approximately 18 listed companies. They determined that a significant positive relationship between cash flow or internally generated funds. They also determined that the decision that taken by firms either financial or real are not independent. Their sample based on size, industry and dividend payout ratio and they find the same result means positive result. Approximately 18 listed companies included by a researcher in the study. Data were taken from Trinidad and Tobago stock exchange. In the year of 2000, approximately twenty eight (28) companies were listed on the stock exchange of Trinidad and Tobago. Non-financial companies were taken as sample at that time. In methodology the Q model for investment was applied by researchers. They apply the Q model of investment on unbalance data. Total 18 companies were taken from stock exchange for data analysis. Different statistical tools, techniques, and methods like regression, standard deviation and the most important Q model applied by the researcher in their study. They found that there is a strong positive relationship between cash flow or internally generated cash and investment. Cash flow in their study was independent variable and investment was dependent variable.

Attig and Cleary (2014) examined the effect of corporate social responsibility on sensitivity of investment cash flow. They found that when corporate social responsibility increased then it also increased the sensitivity of investment cash flow. On the other hand, they determined that when corporate social responsibility decreased then it also decreased the sensitivity of investment cash flow. They found the direct relationship between corporate social responsibility and sensitivity of investment cash flow. Their results suggest that sensitivity of investment cash flow is totally dependent on the increase and decrease corporate social responsibility. They also found that the effect of corporate social responsibility is totally depends on the area and the community where it is done. They also found that most of the time corporate social responsibility reduces the frictions that prevail in the market. Companies face less resistance to get finance externally after showing corporate social responsibility. Corporate social responsibility factor increases the image of the company and investors feel good to invest in the company. So, in this way excess of finance or generation of finance become easy for the company or firm.

Tinoco and Wilson (2013) worked on the prediction of bankruptcy of the firms and prediction of financial distress of the firms by using different market variables, different variables of accounting and various variables of macroeconomic. The sample was taken for this study was around 3020 companies and the data of companies was collected for the period from 1980 to 2011. Approximately 23,218 observations were done on an annual basis and per day was 8 observations. The main aim of the study was to predict the risk of bankruptcy and the risk of financial distress by combining or using the data of market, accounting and macroeconomics. According to the results, the researchers got a benefit in prediction of financial distress and risk of bankruptcy by combining accounting data, the data of market and macroeconomics. The financial distress was measured through the Altman's Z-Score model. The three independent variables were used in the study by them. Accounting ratio variable, market variable and the macroeconomic variable were used as independent variables. On the other hand, prediction of bankruptcy and financial distress were used as dependent variables in the study. In methodology, Z-Score model of Altsman, regression, correlation, standard deviation, descriptive statistics and different other statistical techniques and methods used for the analysis of the data.

Kajola and Desu (2015) found the factors that affect the decision of dividend payout policy. This is a very debatable topic from last six decades. This study was conducted on non-financial companies that were listed in Nigerian Stock exchange. The study covers the period from 1997 to 2011. Data analysis was through the fixed effect model, random effect model and through panel data technique. They found three main factors that affect the decisions of dividend payout policy. Three main factors are the size of the firm, profitability and leverage that affects decisions of dividend payout policy. Data was collected through manufacturing firms of the Nigerian Stock Exchange. The results suggested that the board of directors should consider the profitability of the firm, the size of the firm, leverage and changes in the payments of dividend at the time designing or making the policy of dividend payout. The main or primary aim of study was to examine all those factors that determine the decisions regarding dividend policy of approximately 25 manufacturing companies of firms of Nigerian stock exchange. There were total seven independent variables used in the study. Seven independent variables are profitability of the firm, liquidity, tangibility, growth opportunity, size of the firm, leverage and dividend volatility. The dividend payout policy was the dependent variable that used in the study. They

found that first four independent variables effected positively on dividend payout policyand they could not define the importance if other three variables for dividend payout policy.

Bond and Pai (2018) checked the effect of dividend reinvestment on the payout of the firm. Their result shows that there is a positive relationship between dividend payout and dividend reinvestment plans. In their study, they used dividend reinvestment plan as independent variable and dividend payout as the dependent variable. Data analysis was done through different statistical techniques like regression, correlation, mean value of data and other statistical techniques, tools and methods. They collected data from non-financial or manufacturing firm that listed on the stock exchange. They found that dividend reinvestment significantly or positively affect the payout of the firm or companies regarding dividend. They determined that by reinvestment of dividends firms or companies pay high dividends. On the other companies or firms that do not reinvest the dividend, do not pay high dividend. Companies or firms pay an extra dividend to the shareholder with normal dividends in the case of dividend reinvestment. If people agree to reinvest their amount of dividends than it will be in favor of them in future in shape of extra dividends with normal dividends.

Khan and Anuar (2015) found the effect of dividend payout on the profitability of the firm. This study was conducted in Pakistan by taking manufacturing firms from the Karachi stock exchange as data Centre. Data was collected from non-financial firms of KSE (Karachi Stock Exchange) 100 index. This study covers the period from 2008 to 2012 and data collected for this period of balance sheet analysis of the State Bank of Pakistan (SBP). The methodology used for this study was a panel data analysis, mean value of the data, standard deviation, correlation, descriptive statistics and other statistical techniques, statistical tools and statistical methods. According to the results there is a strongly significant relationship between dividend payout and firm profitability. On the other hand, there is an insignificant relationship between leverage and profitability of the firm and insignificant relationship between the size of the firm and dividend payout ratios (DPR), leverage and size of the firm as independent variables in the study. Return on asset in the study was used as a proxy for profitability of the firm. Random Effect Model, Hausman Effect Model, Vector Inflationary Test and Heteroscedasticity Test were also used in the study for data analysis. Approximately 48 firms were taken for collection of data. Those firms excluded from the sample that did not pay the dividends regularly to shareholders.

Tsai, Lee and Sun (2009) worked on the prediction of financial distress by applying different factors of industry, opinions of auditors and various macroeconomic variables. This study was conducted in Taiwan and the views of approximately two auditors were taken into consideration.Those two auditors were not traditional auditors and other auditors audited the investment based on long time period. They realized the income in the financial statements which were not audited. According to the results of discrete-time hazard models, the contribution added by the other auditor in the prediction of financial distress. According to other auditor's opinion the income that was stated in the financial statement by the accountants of the company was wrong and it can cause higher risk of financial distress. On the other hand, they determined that macroeconomic variables significantly explain the risk of financial failure or financial distress of the firms. This study was conducted in Taiwan on the listed companies of Taiwan Stock Exchange for the period from 1987 to 2006. During this period,the period from 1987 to 2004 was training period. On the other hand, the period from 2005 to 2006 was testing period. Different samples were taken in both training period and testing period. The sample for training period included 172 distressed firms and 1475 non distressed firms. On the other hand, in the period of testing the number of distressed firms was 36 and the number of non-distressed firms was 1478. Approximately 2862 yearly observations were done by researchers in the period of training and in the period of testing, the total yearly observations were done by researchers around 3049.

Eisdorfer (2008) worked on the risk shifting behavior in the decisions of investment in those firms who are financially distressed. He found that the risk shifting incentive of shareholders can change the negative relationship between the investment of the firm and volatility. He also found the different characteristics of firm in case of shifting of risk. On the other hand, he also found the value of investment distortion. Data collected from CRSP and from the COMPUSTAT. These are the sources from where firms taken as a sample. The independent variable used in the study by researchers were value of the asset, the volatility of asset, intensity of investment, market to book ratio of the firms, leverage of the firms, debt maturity of the sample firm and cash flow of the firms. In methodology, Robustness Tests, Feasible Generalized Least Squares (FGLS) regression, correlation, standard deviation of the data, the mean of the data, percentile of the data and different other statistical techniques were used for the analysis of the data. According to the results, there was weaker or positive relationship between intensity of

investment and volatility in those firms who are financially distressed. On the other hand, he also found that investment of those firms who are financially distressed will create less worth in the period of very high uncertainty. Approximately the data of forty (40) years were collected for the analysis of the data.

Aggarwal and Zong (2006) found the relationship between cash flow or internal funds of the company or firm with investment. Normally internal funds have no impact on investment of the company. In case of efficient market, they found that there is no impact of internal funds on investment of the company. On the other hand, in inefficient markets, there should be a positive relationship between internal funds of the company and investment of the company. According to the packing order theory the relationship is same as it was in the case of inefficient market means a positive relationship between internal funds of the company and investment of the company. According to previous studies, if firms facing financial constraint (feeling resistance to get finance externally) then the sensitivity of the investment of the company or firm will be more to the company to internal cash flow will be low as compare to the high constraint firms. Some other studies show opposite means in case of high constraint firms the sensitivity of the investment in internal funds will be lower. On the other hand, the sensitivity of the investment to internal funds will be higher in case of less constraint firms. So, different studies show different results according to their work. Data was collected from different countries for comparison of the situation. Four large industrialize countries were chosen for comparison. Four big industrialize countries include Germany, United States of America, United Kingdom and Japan. They found that there is positive significant relationship between internal funds and investment of the company. The data was collected for four big industrialized countries from Compustat and Global Vantage database. This study was conducted in four countries to check the behavior in their economies. Data was collected for three years from 1999 to 2001. Statistical techniques, tools and methods were applied to time series data. On the other hand, statistical techniques, tools and methods was also applied to cross sectional data. Statistical techniques, statistical tools and statistical methods include regression, correlation and standard deviation of the data. They found that investment levels of the firm were influenced positively by internal cash or internal funds of the company or firm. They also found that if firm face more financial constraint, then this relationship will be more positive. On the other hand, if firm face less financial constraint, then this relationship will be less positive. So, it is clear that the degree of positiveness depends

on financial constraint of the firm or company, either high financial constraint or low financial constraint.

Uğurlu and Aksoy (2006) conducted their study in Turkey and identified the predictors of financial distress. The discriminant models and logit models were used to identify these predictors. The sample of the study was approximately 54 companies in which twenty seven companies were filler and twenty seven companies were non filler. This study was conducted in Turkey on listed companies of Istanbul Stock Exchange. This study covers the period of around seven (7) years from 1996 to 2003. The period of economic growth was from 1996 to 1999. On the other hand, the period of economic crises was from 2000 to 2002. They used two methods for the prediction of financial distress. They found that the logit model has more predictive exactness than the model of the discriminant. Approximately total six predictors were found same in the study by researchers in discriminant model and logit model. Earnings before interest, tax, depreciation and amortization/ total asset was the most important predictor of financial distress in discriminant model and logitmodel. The operating profit margin was the second predictor of financial distress identified by logit model. On the other hand, the third predictor of financial distress determined through logit model was proportion of trade credit.

Elloumi and Gueyie (2001) found the relationship between corporate governance and financial distress of the firms in Canada. This study was conducted in Canada on the listed companies regarding financial distress. After the analysis of 46 distressed firms and 46 non distressed firms they found that there was a significant effect of the configuration of the board of directors of the on financial distress. In other words, the configuration of the board of directors of the firm can describe the risk of financial distress in the firms. On the other hand, the ownership and directorship of the outside directors can also affect the likelihood of risk of financial distress. The sample of the study consists of total 92 traded firms of Canada. This study was conducted on non-financial firms in Canada. In the total of 92 firms, half firms were distressed and half were non distressed firms. In other words, 46 companies were non healthy and 46 were healthy firms. They found that firms were distressed just because of their negative earnings per share. This negative earnings per share was in the last 5 years. Two dependent variables used by the researchers in this study. The dependent variables were financial distress status of the firm and characteristics of corporate governance. Different independent variables used by the researcher in the study for distressed firm and non-distressed firms. Earnings per share of the firm, leverage

of the firm, the liquidity of the firm, outside ownership of the company and chairman duality. Two control variables were also used in the study by researchers. The configuration of the audit committee and block holdings externally for the firm.

CHAPTER NO. 3

RESEARCH METHODOLOGY

3.1 Research Methodology

The type of this study is empirical, with random sampling technique is used and all non-financial firms listed on Pakistan Stock Exchange are under the umbrella of population from 2007 to 2016. One listed firm is taken as unit of analysis in the study. Correlation and panal data regression are used as statistical techniques. The results are calculated by using E-View software.

3.2 Sources of Data Collection and Sampling

Secondary data is taken or collected from different sources, as from Balance Sheet Analysis of SBP and the company's financial statements available on their websites. Initially, out of 411 non-financial listed companies of Pakistan Stock Exchange only 144 firms taken as a sample. Segregation or collection of sample is based on dividend payments. Any firm or company which is listed in Pakistan Stock Exchange and paid dividends in any three years from 2007 to 2016 is the part of sample.

3.3 Conceptual Framework / Theoretical Framework

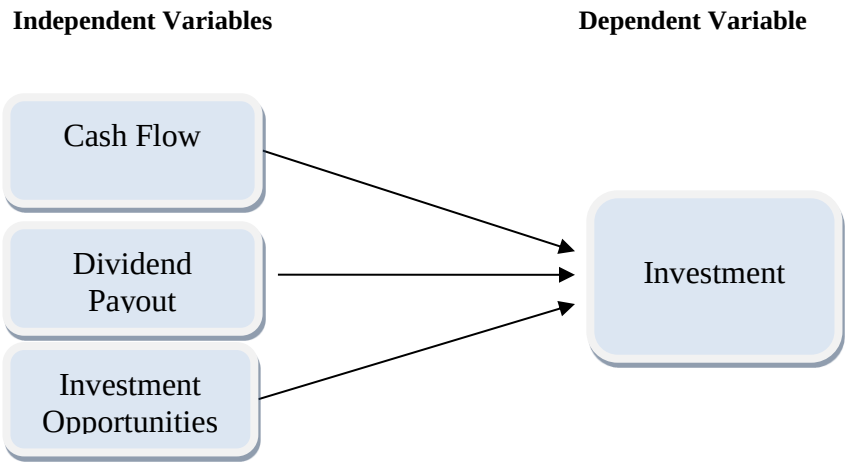

Figure (3.1)

The next task after obtaining the information regarding financial distress firms is to determine the relationship of Cash Flow, Dividend Payout, and Investment Opportunities of non-financial firms on investment under financial distress. In figure (3.1) Investment is dependent variable, whereas Cash Flow, Dividend Payout, Investment Opportunities are independent variables. There are some control variables that used in this study are sales growth and efficiency

3.4 Identification of Variables

Three types of variables are used in this study:

3.4.1 Dependent Variable

- Investment

3.4.2 Independent Variables

- Cash Flow
- Dividend Payout
- Investment Opportunities

3.5 Construction of Variables

All variables that are present in the model of construction are defined below and their computations are also discussed below.

3.5.1 Investment

The act of investing is basically committing money in any project, business and real estate with the expectations of gaining an additional amount of income or profit. Many businesses invest their cash flow in any business or project for maximizing the wealth or for obtaining the profit on investment. The increase in investment is measured by López, Sanfilippo and Torre (2015) is as follows:

$$I_{it} = \frac{Inv_{it}}{K_{it}}$$

Investment is measured as fixed assets variation between period t and $t-1$, following this expression:

3

$$Inv_{it} = NFA_{it} - NFA_{it-1} + D_{it}$$

- NFA_{it}: Net fixed assets (current year).
- NFA_{it-1}: Net fixed assets (previous year).
- D: Depreciation expenses.
- K_{it}: Total book value of assets.

3.5.2 Cash Flow

The total amount of cash come in the business and the total amount of cash out from the business. In other words, inflow of cash in the business or outflow of cash from the business. López, Sanfilippo and Torre (2015) measured Cash flow as earnings before interest, taxes, depreciation and amortization (EBITDA) over the replacement value of the firm's assets:

$$CF_{IT} = \frac{EBITDA_{IT}}{K_{IT}}$$

- *EBITDA*: Earnings before interest, taxes, depreciation and amortization

3.5.3 Dividend Payout

The amount of money that is given by a company to its shareholders in the form of dividends. It is decided by company that how much amount of money will be distributed to its shareholders in the form of dividends and how much portion of money from profit or income will keep as retained earnings. Amidu and Abor (2006), and Ardestani, Rasid and Mehri (2013) measured the dividend payout by a dividend payout ratio simply by dividing dividend paid to net income after tax.

Dividend Payout Ratio = Dividend Paid/ Net income after Tax

3.5.4 Investment Opportunities

Investment Opportunity means anything that is tangible or intangible, that is offered by someone, offered by anyone for sale or trade in part or wholly on representation, either implied or sometimes express about future, present or past returns or incomes. Investment opportunity is the combination of owned assets (an asset in place) and the choice of investment in the future with a positive net present value. Adam and Goyal (2003) and Ardestani, Rasid and Mehri (2013) measured IO by the ratio of Tobin Q. Investment opportunity is measured through the ratio of Tobin Q.

Investment Opportunity (Tobin Q) = (Total market value of equity + Book value of debts) / Total book value of assets

By using this measure, the increase in investment and decrease in investment of financially distressed firms can be controlled.

3.5.5 Efficiency

Efficiency signifies the level of performance that describes using the least amount of input to achieve the highest amount of output. In other words by using minimum resouces to achieve the maximum outcome is called efficiency. Efficiency refer to the use of all inputs in producing any given output, including personal time and energy. Efficiency of management can be measured by asset turnover ratio:

EFF = Efficiency = Sales / Total Assets

3.5.6 Sales Growth

Sales growth can be defined as the change in sales value between current year sales and previous year sales dividing by the previous year sales. Huselid (1995) measured sales growth by the following formula

SG = Sales Growth=($SG_{it} - SG_{it-1}$) / SG_{it-1}

SG_{it} : Current year sales growth

SG_{it-1} : Previous year sales growth

3.6 Hypothesis of the Study

This study examines the impact of cash flow, dividend payout and investment opportunities on investment under financial distress. Dependent variable in the study is investment and the independent variables are cash flow, dividend payout and investment opportunities. As discussed earlier in literature that investment is largely depend on the flow of cash in the firm. There are strong positive association between cash flow and investment, according to Melander and Sandstrom (2017). On the other hand, investment is also driven by the opportunity of investment. According to literature, relation between dividend payout and investment sometimes positive and sometimes negative. The purpose of this study is to check the effect of these aforementioned independent variables on the dependent variable under financial distress. In order to meet the objectives of the study, some hypothesis are made regarding independent variables and dependent variable.

The following hypotheses may be developed on the basis of the above discussion:

Hypothesis 1:

H_0: There is no significant impact of Cash Flow on Investment under financial distress.

H_1: There is significant impact of Cash Flow on Investment under financial distress.

Hypothesis 2:

H_0: There is no significant impact of Dividend Payout Ratio on Investment under financial distress.

H_1: There is significant impact of Dividend Payout Ratio on Investment under financial distress.

Hypothesis 3:

H_0: There is no significant impact of Investment Opportunities on Investment under financial distress.

H_1: There is significant impact of Investment Opportunities on Investment under financial distress.

3.7 Types of Analysis

Descriptive statistics, correlation and panel data regression is taken with fixed and random effect. Panel data model normally estimated by three different methods that are Ordinary least square model, fixed effect model and random effect model. If pay some attention to the assumptions of these aformentiond three methods then each method have different assumptions and it is also the cause of their differentiation.

- **Ordinary Least Square (Common)**

In ordinary least square model, there is constant intercept across the section and series of time. In analysis of data, normally use ordinary least square for estimating or determining the unknown parameters in a model of linear regression. The purpose is reducing the differences between the observations that are collected in some arbitrary data set and the predicted responses by the linear approximation of the data. In ordinary least square method, culture of both group of firms and individual firms are considered. Ordinary least square method apply to those scenarios where culture of both group of firms and individual firm are same.

- **Fixed Effect Model**

In fixed effect model, there is not constant intercept across the section and a series of time. In this model, intercept is group specific which means only in some groups intercept is constant across the section and series of time. In statistics, a model of fixed effects is a statistical model in which the parameters of model are fixed or non-random quantities. Fixed effect model apply to those scenarios where culture of some individual firms are fixed or same and culture of some individual firms are different.

- **Random Effect Model**

In random effect model, there is not constant intercept across the section and series of time. In this model, intercept is also not group specific or fixed but behavior of intercept in random effect model is random.The statistical name of a random effects model is variance components model, is a statistical model where the parameters of model are different or random variables. The use of random effect model in econometrics is the analysis of panel data or hierarchical when one consider no fixed effects (it allows for individual effects). The Random effect model apply to those scenarios where culture of both groups and individual are different or random.

3.7.1 Descriptive Analysis

A descriptive statistic is a summary statistic that quantitatively describes or summarizes features of a collection of information, while descriptive statistics in the mass noun sense is the process of using and analyzing those statistics.

3.7.2 Correlation Analysis

Correlation analysis is used to check the relationship between dependent variable and independent variables. It may be positive or it may be negative in result. Positive relationship between variables means that there is a direct relationship between variables. On the other hand, negative relationship between variables means that there is inverse relationship between variables.

3.7.3 Regression Analysis

Regression results indicate that the effect of independent variable on dependent variable. It may be significant effect or insignificant effect of independent variables on dependent variable. If the P-value of independent variable is less than α=0.05 then it called significant relationship. Significant effect further categorize into two positive significant effect and negative significant effect. If the coefficient of independent variable in the model is positive and if the P-value of independent variable is less than α=0.05 then it called positive significant relationship. If the coefficient of independent variable in the model is negative and if the P-value of independent variable is less than α=0.05 then it called negative significant relationship. Positive significant (coefficient is positive and P-value of independent variable is less than α=0.05) effect of independent variable on dependent variable means that if the value of independent variable increases, it also increases the value of dependent variable. On the other hand, negative significant (coefficient is negative and P-value of independent variable is less than α=0.05) effect of independent variable on dependent variable shows that there is a reverse relationship between independent variable and dependent variable. It means, if the value of independent variable increases then the value of dependent variable will decrease. Sometimes the relationship of independent variable is positively insignificant (coefficient is positive and P-value of independent variable is greater than α=0.05) with the dependent variable. The Positive insignificant effect of independent variable on dependent variable means if the value of independent variable increases or decreases then there will be no significant effect of increasing or decreasing value of independent variable on dependent variable. On the other hand, sometimes independent variables have negative insignificant (coefficient is negative and P-value of independent variable is greater than α=0.05) effect on dependent variables. The negative insignificant effect of independent variable on dependent variable means that if the value of independent variable increases or decreases, then there will be no significant effect of this increasing or decreasing value of independent variable on dependent variable.

3.8 Models Used for Estimation

Two models are used in this study for estimation. First model is Specific Model 1 and the second one is specific model 2. To investigate the effect of cash flow, dividend payout, investment opportunities on investment a Specific Model 1 is used. Specific Model 2 is also developed for checking the effect of cash flow, dividend payout, investment opportunities on investment, but specific model also include three control variables.

3.8.1 General Model

General Model includes one dependent variable investment denoted by I_{it}, i is the firm and t is time period. This model includes three independent variables cash flow (CF**)**, dividend payout DPO and investment opportunities (IO). This is General Model and financial distress dummy is used in this model at this point. General Model 1 is used to determine the relationship of independent variable cash flow, dividend payout and investment opportunities, sales growth and efficiency on dependent variable investmen. The model used in this study has already been used by Kadapakkam et al. (1998); Athey and Reeser (2000); Degryse and De Jong (2006) and Zahid et al. (2017).

$$\mathbf{I_{it} = \beta_0 + \beta_1 CF_{it} + \beta_2 DPO_{it} + \beta_3 IO_{it-1} + \beta_4 SG + \beta_4 EFF + \varepsilon_{it}}$$

I_{it} = Investment $= I_{it} = \frac{Inv_{it}}{K_{it}}$

$Inv_{it} = NFA_{it} - NFA_{it-1} + D_{it}$

- NFA_{it} : Net fixed assets (current year).
- NFA_{it-1} : Net fixed assets (previous year).
- D: Depreciation expenses.
- K: Total value of asset.

$\mathbf{CF_{it}}$ = Cash Flow = $\frac{EBITDA_{\pi}}{K_{\pi}}$ *FD

- EBITDA: Earnings before interest, taxes, depreciation and amortization
- K: Total book value of assets.

DPO = Dividend Payout Ratio = Dividend Paid/ Net Income after Tex

IO(Tobin Q) = (Total market value of equity + Book value of debts)/ Total book value of Assets

SG = Sales Growth=($SG_{it} - SG_{it-1}$) / SG_{it-1}

SG_{it} : Current year sales growth

SG_{it-1} : Previous year sales growth

EFF = Efficiency = Sales / Total Assets

β_0 = Shows the constant affecting investment on financial distress

(ε_{it}) =Corresponds to error term

3.8.2 Specific Model

Specific model includes one dependent variable investment denoted by I_{it} (i is the firm and t is time period). This model includes three independent variables cash flow (CF**)**, dividend payout (DPO) and investment opportunities (IO). This Specific Model also included two control variables sales growth and efficiency. This is specific model and financial distress dummy is used in this model at this point. This specific model is used to determine the relationship between independent variable cash flow, dividend payout and investment opportunities on investment under financial distress. The effect of control variables sales growth and efficiency on investment under financial distress is also checked by this model.

$$I_{it} = \beta_0 + \beta_1 CF_{it} + \beta_2 DPO_{it} + \beta_3 IO_{it-1} + \beta_4 SG + \beta_4 EFF + \beta_5 FD(D) + \varepsilon_{it}$$

Distress firms are measured by taking DIF as proxy of financial distress, after calculating the z-score value of DIF dummy is inserted in order to calculate financial distress firms as assigning "1" to the z-score value between 1.8 to 3 and otherwise "0".

3.8.2.1 Financial Distress

Financial distress is basically that situation in which promise between buyer to seller or debtor to the creditor is broken or fulfill with very much difficulty. If a firm continuously facing financial distress and not trying to change or for improvements then it can move to the next step that is bankruptacy.

Some causes of distress are poor performance, poor money management, lack of control on activities, business failures and unexpected damage to property. Regardless of the situation, the

lack of a financial plan and budget can lead to problems. There might be spending hundreds of dollars unnecessarily every month. For the self-employed, income depends on skills the entrepreneur has and the market in which business exist.

On the other hand, without a solid contingency plan of business, the loss of business also means the loss of income and it can cause financial distress. If property of business damage unexpectedly, then business has to spend handsome amount of money to meet this loss and it can cause financial distress.

3.8.2.2 Measures of Financial Distress

Normally different measures are used for financial distress. In this study, Z-score model of Altman and Financial distress ratio are used.

- **Z-score model of Altman**

Chang et al. (2016) used Altman's model in which the bankruptcy or failure risk of a firm is based on a linear combination of accounting ratios. Z-Score model is used for segregation between those firms which face financial distress and those firms which do not face financial distress.

Z-Score model is based on five main ratios and the most important point here is that these five ratios severely affected on the position of working capital in the company, performance or return of the company and asset efficiency in generating sales. The Altman Z-score model is used to estimate credit strength of any company and chances of the company's bankruptcy. The data is taken from BSA and financial statement of companies on their websites for these five ratios. The five ratios used in this model are ratio of profitability, ratio of leverage, ratio of liquidity, ratio of solvency and ratio of activity for the purpose of prediction whether a company has great chances of solvency or not. The first financial distress variable (DIF_1) is based on Altman Z-score is calculated as follows:

Z-Score = 1.2A + 1.4B + 3.3C + 0.6D + 1.0E

Where:

A = working capital / total assets

B = retained earnings / total assets

C = earnings before interest and tax / total assets

D = market value of equity / total liabilities

E = sales / total assets

NYU Stern Finance Professor Edward Altman, developed the Altman Z-score formula in 1967, and it was published in 1968. In 2012, he released an updated version called the Altman Z-score Plus that can be used for public and private companies in order to find their credit strength or credit risk. This updated or latest model can also be used for manufacturing and non-manufacturing firms for the sake of determining their financial health. In this study, Z-Score model is used on all non-financial firm of Pakistan stock exchange.

If the value of Z-Score is greater than 3 then it is considered that the firm is healthy firm and when Z-Score value less than 1.8 then it's considered that firm is bankrupt or insolvent. On the other hand, Z-Score value from 1.8 to 3 is a distress zone and any firm has a value of Z-Score in this range have the characteristics of distress firm. An investor invests in those companies where Z-Score value closer to 3 or above 3 and avoid to invest in those firms where Z-Score value closer to 1.8 or below 1.8.

CHAPTER NO. 4

DATA ANALYSIS AND RESULTS DISCUSSION

The main focus of this chapter is to interpret the results of descriptive statistics, correlation, panel data regression and different tests that are used in this study for the analysis of the data. On the basis of these results, contributions of this study are defined and a conclusion is made.

4.1 Data Analysis

Descriptive statistics, correlation and techniques of panel data are used in this study to determine the relationship of Cash flow, Dividend payout, Investment opportunities on Investment under financial distress.

4.2 Descriptive Analysis

The purpose of descriptive statistics in this research is to present the quantitative analysis in a suitable manner. It is very easy to describe the large sample by using descriptive statistics.

Table (4.1)

Descriptive Statistics

	Minimum	Maximum	Mean	Median
INV	-0.585	1.215	0.117	0.082
CF	-1.395	3.098	0.241	0.154
DPO	0	0.137	0.018	0.009
IO	0.305	3586.9	403.2	251.8
SG	-0.845	1.43	0.115	0.094
EFF	0.08	6.39	1.353	1.185
FD(D)	0	1	0.427	0

The descriptive statistics Table (4.1) is showing the descriptive statistics of all the dependent and independent variables. Descriptive statistics provides the information about Mean values, Standard deviation values, Minimum and the Maximum values of each dependent variable and independent variable. Another name of panel data is cross sectional time series data or longitudinal data.

The mean value of dependent variable investment is 0.117, maximum value is 1.215 and minimum value is -0.585. On the other hand, mean value of independent variable cash flow is 0.241, maximum value is 3.098 and minimum value is -1.395. Investment opportunities is also independent variable and mean value of this variable is 403.2, maximum value is 3586.9, minimum value is 0.305 and standard deviation is 144.7398. The mean value of independent variable dividend payout is 0.018, maximum value is 0.137 and minimum value is 0. Independent variable sales growth mean value is 0.115, maximum value is 1.43 and minimum value is -0.845. The mean value of independent variable efficiency is 1.353, maximum value is 6.39 and minimum value is 0.08. Financial distress is also independent variable and mean value of this independent variable is 0.427, maximum value is 1 and minimum value is 0.

4.3 Correlation Analysis

Table (4.2)

Correlation Matrix

	INV	**CF**	**DPO**	**IO**	**SG**	**EFF**	**FD(D)**
INV	1						
CF	0.141	1					
DPO	0.096	0.539	1				
IO	0.086	0.406	0.597	1			
SG	0.206	0.203	0.1	0.027	1		
EFF	0.041	0.439	0.28	0.226	0.152	1	
FD(D)	-0.187	-0.459	-0.497	-0.39	-0.152	-0.244	1

Pearson Correlation significant level is less than *0.05

The Table (4.2) shows correlation coefficient between the dependent and independent variables of all models. In Table (4.2), correlation matrix discloses the important relationships among the independent variables (INV, CF, DPO, IO, SG, EFF and FD) and dependent variable investment. Table (4.2) shows that the highest correlation is between dependent variable investment and independent variable cash flow is 0.141. Its means the independent variable cash flow is most closely related to investment. On the other hand, if any firm or company has greater cash then firm will invest that cash in any profitable project. So, there is a positive correlation between independent variable cash flow and dependent variable investment according to Table (4.2).

There is also a positive correlation between in control variable sales growth and dependent variable investment is 0.206. The correlation between independent variable dividend payout and dependent variable investment is also positive and this value is 0.095. There is positive correlation between control variable efficiency and dependent variable investment is 0.041. The correlation between financial distress and dependent variable investment is negative and value of this correlation is -0.188. There is also positive correlation between independent variable investment opportunities and dependent variable investment is 0.087. It is also determined that there is no high correlation between any two independent variables. Correlation matrix also presented that there is no high correlation between any two control variables.

4.4 Unit Root Test

The Unit root test is very essential before the regression model. The main objective of the unit root test is to check whether data is stationary or not. If different trend present in the data, then the effect of these different trends can make adverse effect on the overall results of the study. It should be ensured that the data is stationary otherwise the results will be considered as fictitious. So, in order to avoid the fictitious results; this study has applied unit root test for each variable.

4.4.1 Unit Root Test of Variables under Financial Distress

Table (4.3A)

	Levin, Lin & Chu t*			Im, Pesaran and Shin W-stat		
Variables	Statistics values	Sig.	Conclusion	Statistics values	Sig.	Conclusion
INV	-37.1322	0.0000	**	-19.9262	0.0000	**
CF	-15.9219	0.0000	**	-5.86368	0.0000	**
DPO	-11.4374	0.0000	**	-4.10346	0.0000	**
IO	-20.6595	0.0000	**	-4.66431	0.0000	**
SG	-26.0581	0.0000	**	-12.3113	0.0000	**
EFF	9.52571	0.0000	**	2.70458	0.0000	**

**Stationay, ***Not Stationa

Table (4.3B)

	ADF - Fisher Chi-square			PP - Fisher Chi-square		
Variables	Statistics values	Sig.	Conclusion	Statistics values	Sig.	Conclusion
INV	922.799	0.0000	**	1163.8	0.0000	**
CF	445.073	0.0000	**	479.975	0.0000	**
DPO	399.235	0.0000	**	477.309	0.0000	**
IO	467.063	0.0000	**	522.84	0.0000	**
SG	659.893	0.0000	**	781.309	0.0000	**
EFF	333.762	0.0000	**	397.639	0.0000	**

**Stationary, ***Not Stationary

Table (4.3A) and (4.3B) are expressing the results of unit root test. The results indicate that the dependent variable investment is stationary at level because the P-value of investment is 0.0000 in all four methods (Levin, Lin & Chu t*, Im, Pesaran and Shin W-stat, ADF - Fisher Chi-square and PP - Fisher Chi-square) and it is less than α=0.05. So, the null hypothesis is rejected because there is no trend in the analyzed data so that's why accepted alternative hypothesis because of data is stationary. On the other hand, dependent variable investment under financial distress is also stationary at level because the P-value of investment is 0.0000 in all four methods (Levin, Lin & Chu t*, Im, Pesaran and Shin W-stat, ADF - Fisher Chi-square and PP - Fisher Chi-square) and it is less than α=0.05. All the independent variables (cash flows, dividend payout and investment opportunities) under financial distress show stationary at level because the P-value of all independent variables is 0.0000 in all four methods (Levin, Lin & Chu t*, Im, Pesaran and Shin W-stat, ADF - Fisher Chi-square and PP - Fisher Chi-square) and it is less than α=0.05. On the other side of the picture, all control variables (leverage, return on asset and financial expense) show the same pattern like independent variables. The table 4.5 indicates that all control variables also showed stationary at level because the P-value of all control variables is 0.0000 in all four methods (Levin, Lin & Chu t*, Im, Pesaran and Shin W-stat, ADF - Fisher Chi-square and PP - Fisher Chi-square) and it is less than α=0.05.

4.5 Panel Data Analysis

4.5.1 Selection of Method from Panel Data Analysis (excluding control variables)

In order to know that which method is appropriate for the data, firstly Fixed/Random test is conducted by choosing the redundant fixed effect and made hypothesis.

Ho: When the constant are Common apply Pooled ordinary least square

H1: When the constant are not Common apply Fixed or Random effect

Table (4.4)

Redundant Fixed Effects Tests

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.343565	-1,431,132	0.0067
Cross-section Chi-square	200.821758	143	0.001

From the output of the Ordinary least square method, the chi-square is significant. So, rejected the null hypothesis and accepted the alternative.

The next stage is to conduct the Hausman's test in order to check that either fixed effect model is fit for the data or random effect model is fit for data. In order to know that which method is appropriate for the data, Fixed/Random Test is conducted on the equation by choosing the Hausman's test and made hypotheses.

Ho: Random effect is best fit model

H1: Random effect is not best fit model

Table (4.5)

Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq.Statistic	Chi-Sq.d.f.	Prob.
Cross-section random	92.858667	5	0.0000

From the output of Hausman Test, the Cross-section random is significant. So, rejected the null hypothesis.

4.5.1.1 Regression Results of Fixed Effect Model without Financial Distress (Model 1)

Table (4.6) shows the effect of three independent variable (cash flow, dividend payout and investment opportunities) on dependent variable investment under financial distress.

Table (4.6)

Regression Model 1

$$I_{it} = \beta_0 + \beta_1 CF_{it} + \beta_2 DPO_{it} + \beta_3 IO_{it-1} + \beta_4 SG + \beta_4 EFF + \varepsilon_{it}$$

Dependent Variable: Investment

Variable	Coefficient	t-Statistic	Prob.
C	0.222411	10.0683	0.0000
CF	0.074501	4.000613	0.0001
DPO	0.644409	2.50922	0.0122
IQ	-0.000129	-5.856696	0.0000
SG	0.137653	6.202554	0.0000
EFF	0.028622	-4.027288	0.0001
Year 2008	0.157192	8.663718	0.0000
Year 2009	0.044246	2.363001	0.0183
Year 2010	0.081324	4.399802	0.0000
Year 2011	0.155363	8.265181	0.0000
Year 2012	0.089996	4.98953	0.0000

Year 2013	0.106194	5.799915	0.0000
Year 2014	0.150728	8.248312	0.0000
Year 2015	0.084899	4.739946	0.0000
Year 2016	0.085599	4.852665	0.0000
R-squared	0.133067	F-statistic	2.372233
Adjusted R-squared	0.124172	Prob. (F-statistic)	0.0000

Table (4.6) indicates the results of 144 firms observations that are based on 10 years data of Pakistan Stock Exchange from 2007 to 2016. The minimum level of average investment according to regression model is 0.222411. If all the predictors assumed to be zero that is the minimum value of average investment which prevails in the non-financial firms of PSX during the period from 2007 to 2016 and this value is significant because the P-value of constant is 0.0000 and it is less than α=0.05.

The coefficient of cash flow (CF) of all firms stated 0.074501 and it is positive relationship with investment. It means one unit change in cash flow brings 0.074501 units changes in average investment. This relationship of cash flow with investment is significant because its P-value is 0.0001 and it is less than α=0.05. It means if firm have cash flow then investment of the firm will increase because for investment firm have the enough cash flow.

The coefficient of dividend payout of all firms stated 0.644409 and it is positive relationship with investment. It means one unit change in dividend payout brings 0.644409 units change in average investment. This relationship of dividend payout is significant because its P-value is 0.0122 and it is less than α=0.05.

The coefficient of investment opportunities (IO) of all firms stated -0.000129 and it is negative relationship with investment of the firm. It means one unit change in investment opportunities brings -0.000129 units change in average investment. This relationship of investment

opportunities with investment is significant because its P-value is 0.0000 and it is less than α=0.05.

The coefficient of sales growth of all firms stated 0.137653 and it is positive relationship with investment. It means one unit change in sales growth brings 0.137653 units change in average investment. This relationship of dividend payout is significant because its P-value is 0.0000 and it is less than α=0.05.

The coefficient of efficiency of all firms stated 0.028622 and it is positive relationship with investment. It means one unit change in efficiency brings 0.028622 units change in average investment. This relationship of dividend payout is significant because its P-value is 0.0001 and it is less than α=0.05

In the year of 2008 the minimum investment of firms was 0.157192 without taking the effect of any independent variable and is different from the investment of 2007 that was 0.222411 without including the effect of any independent variable. In the year of 2009 the minimum investment of firms was 0.044246 without taking the effect of any independent variable and is different from the investment of 2008 that was 0.157192 without including the effect of any independent variable. In the year of 2010 the minimum investment of firms was 0.081324 without taking the effect of any independent variable and is different from the investment of 2009 that was 0.044246 without including the effect of any independent variable. In the year of 20011 the minimum investment of firms was 0.155363 without taking the effect of any independent variable and is different from the investment of 2010 that was 0.081324 without including the effect of any independent variable.

In the year of 2012 the minimum investment of firms was 0.089996 without taking the effect of any independent variable and is different from the investment of 2011 that was 0.155363 without including the effect of any independent variable. In the year of 2013 the minimum investment of firms was 0.106194 without taking the effect of any independent variable and is different from the investment of 2012 that was 0.089996 without including the effect of any independent variable. In the year of 2014 the minimum investment of firms was 0.150728 without taking the effect of any independent variable and is different from the investment of 2013 that was 0.106194 without including the effect of any independent variable.

In the year of 2015 the minimum investment of firms was 0.084899 without taking the effect of any independent variable and is different from the investment of 2014 that was 0.150728 without including the effect of any independent variable. In the year of 2016 the minimum investment of firms was 0.085599 without taking the effect of any independent variable and is different from the investment of 2015 that was 0.084899 without including the effect of any independent variable.

The value of R-square is 0.133067 and Adjusted R-square is 0.124172 that explain approximately 13.31% change in average investment explained by cash flow, dividend payout, investment opportunities and it shows the strong impact due to these predictors. The Adjusted R-square stated their relative degree of freedom is large and that's why there is a difference between R-square and Adjusted R-square. F-statistics shows F= 2.372233 and its P-value is 0.000000 and it is less than α=0.05. According to P-value of F-statistics it is cleared that overall model is successful because it stated highly significant. So, the relationship between independent variables cash flow and dependent variable investment is significant under financial distress. The relationship between independent variable (dividend payout, investment opportunities) and dependent variable investment is insignificant under financial distress.

4.5.2 Selection of Method from Panel Data Analysis (including control variables)

In order to know that which method is appropriate for the data, firstly Fixed/Random test is conducted by choosing the redundant fixed effect and made hypothesis.

Ho: When the constant are Common apply Pooled ordinary least square

H1: When the constant are not Common apply Fixed or Random effect

Table (4.7)

Redundant Fixed Effects Tests

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.343565	-1,431,132	0.0067
Cross-section Chi-square	200.821758	143	0.001

From the output of the Ordinary least square method, the chi-square is significant. So, rejected the null hypothesis and accepted the alternative.

The next stage is to conduct the Hausman's test in order to check that either fixed effect model is fit for the data or random effect model is fit for data. In order to know that which method is appropriate for the data, Fixed/Random Test is conducted on the equation by choosing the Hausman's test and made hypotheses.

Ho: Random effect is best fit model

H1: Random effect is not best fit model

Table (4.8)

Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq.Statistic	Chi-Sq.d.f.	Prob.
Cross-section random	92.858667	5	0.0000

From the output of Hausman Test, the Cross-section random is significant. So, rejected the null hypothesis and accepted the alternative.

4.5.2.1 Regression Results of Fixed Effect Model under Financial Distress (Model 2)

Table (4.9)

Regression Model 2

$$I_{it} = \beta_0 + \beta_1 CF_{it} + \beta_2 DPO_{it} + \beta_3 IO_{it-1} + \beta_4 SG + \beta_4 EFF + \beta_5 FD(D) + \varepsilon_{it}$$

This is specific model and financial distress dummy is inserted in this model. Distress firms are measured by taking FD(D) as proxy of financial distress, after calculating the z-score value of FD(D) dummy is inserted in order to calculate financial distress firms as assigning "1" to the z-score value between 1.8 to 3 and otherwise "0". The zero answer did not add effect on the investment level of the firm. On the other hand, answer one (1) added some effect on the investment level of the firm. The answer zero (0) means the firm was not in financial distress and at that time there were no effect of financial distress on the investment level of the firm. The answer one (1) means the firm is in financial distress and at that time there was some effect of financial distress on the investment level of the firm. In short the financial distress dummy is added some effect on the investment level of the firm at the time of financial distress.

Dependent Variable: Investment

Variable	Coefficient	t-Statistic	Prob.
C	0.302051	11.89955	0
CF	0.045326	2.360392	0.0184
DPO	0.194312	0.722743	0.4700

IO	-0.000127	-5.817617	0.0000
SG	0.124548	5.646025	0.0000
EFF	0.029356	-4.181112	0.0000
FD(D)	-0.072445	-5.657166	0.0000
Year 2008	0.217765	10.40341	0.0000
Year 2009	0.105564	4.938406	0.0000
Year 2010	0.126738	6.377924	0.0000
Year 2011	0.203393	10.00736	0.0000
Year 2012	0.134397	6.923751	0.0000
Year 2013	0.146351	7.547727	0.0000
Year 2014	0.191925	9.866164	0.0000
Year 2015	0.13191	6.752738	0.0000
Year 2016	0.127873	6.752349	0.0000
R-squared	0.149734	F-statistic	2.632104
Adjusted R-squared	0.140317	Prob. (F-statistic)	0.0000

Table (4.9) shows the effect of three independent variables (cash flow, dividend payout and investment opportunities) and two control variables (sales growth and efficiency) on dependent variable investment under financial distress.

Table (4.9) indicates the results of 144 firms that are based on 10 years data of Pakistan Stock Exchange from 2007 to 2016. The average investment in 2007 according to regression model is 0.302051. If all the predictors assumed to be zero that is the minimum value of average investment which prevails in the non-financial firms of PSX during the period from 2007 to 2016 and this value is significant because the P-value of constant is 0.0000 and it is less than α=0.05.

The coefficient of cash flow under financial distress CF of all firms stated 0.045326 and it is positive relationship with investment. It means one unit change in cash flow brings 0.045326 units changes in average investment. This relationship of cash flow with investment is significant because its P-value is 0.0184 and it is less than α=0.05. It means if firm have cash flow then investment of the firm will increase because for investment firm have the enough cash flow.

The coefficient of dividend payout (DPO) under financial distress of all firms stated 0.194312 and it is positive relationship with investment. It means one unit change in dividend payout brings 0.194312 units change in average investment. This relationship of dividend payout is insignificant because its P-value is 0.4700 and it is greater than α=0.05.

The coefficient of investment opportunities under financial distress (IO) of all firms stated -0.000127 and it is negative relationship with investment. It means one unit change in investment opportunities brings -0.000127 units change in average investment. This relationship of investment opportunities with investment is significant because its P-value is 0.0000 and it is less than α=0.05.

The coefficient of sales growth under financial distress (SG) of all firms stated 0.124548 and it is positive relationship with investment. It means one unit change in sales growth brings 0.124548 units change in average investment. This relationship of sales growth is significant because its P-value is 0.0000 and it is less than α=0.05.

The coefficient of efficiency under financial distress (EFF) of all firms stated 0.029356 and it is positive relationship with investment. It means one unit change in efficiency brings 0.029356

units change in average investment. This relationship of return on asset is significant because its P-value is 0.0000 and it is less than α=0.05.

The coefficient of financial distress (FD) of all firms stated -0.093052 and it is negative relationship with investment. It means one unit change in financial expense brings -0.093052 units change in average investment. This relationship of financial distress is significant because its P-value is 0.0000 and it is less than α=0.05.

In the year of 2008 the minimum investment of firms was 0.217765 without taking the effect of any independent variable and is different from the investment of 2007 that was 0.302051 without including the effect of any independent variable. In the year of 2009 the minimum investment of firms was 0.105564 without taking the effect of any independent variable and is different from the investment of 2008 that was 0.217765 without including the effect of any independent variable. In the year of 2010 the minimum investment of firms was 0.126738 without taking the effect of any independent variable and is different from the investment of 2009 that was 0.105564 without including the effect of any independent variable. In the year of 2011 the minimum investment of firms was 0.203393 without taking the effect of any independent variable and is different from the investment of 2010 that was 0.126738 without including the effect of any independent variable.

In the year of 2012 the minimum investment of firms was 0.134397 without taking the effect of any independent variable and is different from the investment of 2011 that was 0.203393 without including the effect of any independent variable. In the year of 2013 the minimum investment of firms was 0.146351 without taking the effect of any independent variable and is different from the investment of 2012 that was 0.134397 without including the effect of any independent variable. In the year of 2014 the minimum investment of firms was 0.191925 without taking the effect of any independent variable and is different from the investment of 2013 that was 0.146351 without including the effect of any independent variable. In the year of 2015 the minimum investment of firms was 0.13191 without taking the effect of any independent variable and is different from the investment of 2014 that was 0.191925 without including the effect of any independent variable. In the year of 2016 the minimum investment of firms was 0.127873 without taking the effect of any independent variable and is different from the investment of 2015 that was 0.13191 without including the effect of any independent variable.

The value of R-square is 0.149734 and Adjusted R-square is 0.140317 that explain approximately 14.97% change in average investment explained by cash flow, dividend payout, investment opportunities, leverage, return on asset, financial expenses and it showed the strong impact due to these predictors. The Adjusted R-square stated their relative degree of freedom is large and that's why there is a difference between R-square and Adjusted R-square. F-statistics shows F= 2.632104 and its P-value is 0.000000 and it is less than α=0.05. According to P-value of F-statistics it is clear that the overall model is successful because it stated highly significant. So, the relationship between independent variables (cash flow, investment opportunities) and dependent variable investment is significant under financial distress. The relationship between independent variable dividend payout and dependent variable investment is insignificant under financial distress. On the other hand, the relationship between all control variables (sales growth and efficiency) and dependent variable is significant under financial distress.

CHAPTER NO. 5

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

5.1 Conclusion

Modigliani and Miller (1958) has generated to the birth of a debate in their irrelevance theory regarding the cash flows and external financing could be completely replaced with one another and in their results of the theory to this point, numerous models have been planned to explore the investment behavior in the reaction to the accessibility of cash flows and cost linked with both cash flows and external finances in an unsatisfactory capital marketplace consisting of a variety of resistances similer to, agency issues, information asymmetry etc. This study is based on three definite objectives. Those objectives are 1) to investigate the relationship between cash flow and investment under financial distress 2) to investigate the relationship between dividend payout and investment under financial distress 3) to investigate the relationship between investment opportunities and investment under financial distress. The objectives of this section is to precise the overall work and summarize its main findings and conclusions. In order to complete the aforementioned objectives, this research is based on quantitative data along with all necessary information that support to accomplish these objectives. The objective of use of this technique is to investigate the relationship between cash flow and investment, dividend payout and investment, and investment opportunities and investment of Pakistani firms listed in Pakistan Stock Exchange (PSX) under financial distress. In chapter 3, hypothesis were generated to investigate the impact of three predictor variables (Cash flow, Dividend payout and Investment opportunities) on single dependent variable investment under financial distress. These findings revealed that the investment level in Pakistani firms is influenced due to internally generated cash flow as well as the generation of profits in future. On the other hand, investment level in

Pakistani firms also influenced by more dividend payments to the shareholders as well as investment opportunities.

5.2 Discussion

The relationship between cash flow and investment is positive and significant under financial distress as explained by Melander and Sandstorm (2017), Zahid et al. (2017), Lewellen and Lewellen (2016), Charlton et al. (2002) and Athey and Reeser (2000). They all revealed that cash flow and investment are positively and significantly related. So, the null hypothesis is rejected as there is no significant impact of cash flow on investment under financial distress. The relationship between dividend payout and investment is positive and significant but under financial distress the relationship between dividend payout and investment is positive and insignificant . As explained by by Jung and Lee (2016) and Chang and Lee (1982) that the effect of dividend payout on investment is positive and significant. This is because that they check the effect of dividend payout on investment not under financial distress. So, the null hypothesis is accepted as there is no significant impact of dividend payout on investment under financial distress. Investment opportunities showed negative and significant effect on investment under financial distress as explained by Lopes, Sanfilippo and Torre (2015) that there is a negative and significant relationship between investment opportunities and investment and Jerry, George and Zhenzhong (2014) that there is a positive and significant relationship between investment opportunities and investment and LI and WANG (2008) that there is a positive and significant relationship between investment opportunities and investment. So, the null hypothesis is rejected as there is no significant impact of investment opportunities on investment under financial distress.

Control variables sales growth showed positive and significant relationship with dependent variable investment under financial distress. On the other hand, control variable efficiency and showed positive and significant relationship with dependent variable under financial distress.

5.3 Recommendation and Future Concerns

In future financial sector like insurance companies, banks, service sectors which is now a days top business sector can be taken in this study and comparative study may also be conducted among financial and non-financial firms of Pakistan Stock Exchange. Furthermore, in this study

the impact of firm size, age, energy crises, managerial discussion, asymmetric information, government taxes on earning and ultimately on investment can also be taken in this study. There are some questions in the computation of Tobin's Q regarding its validity to capture completely the opportunity of investment. For computation of the opportunity of investment the Euler equation can also be used for this purpose.

5.4 Theoretical and Practical Implication

This study is very unique and novel type in Pakistan. This study provides guidelines and set the new trends for the young new scholars in finance. The corporate sector of Pakistan and corporate investors of this country can get guidelines from this study. Managers of non-financial firms and corporate investors can get help or guidelines from this study. It also provides guidelines for the new scholars who want to research or study in this area. The capital structure of the firms and decisions of capital budgeting are greatly affected by financial distress, this is very important information for the investors who want reliable information regarding the current position of the firm and future position of the firm in terms of outcome and risk before investment. Corporate managers can also make better choices of financial resources to be used for different projects by retaining, distributing and growing value of funds. This research is helpful tool for investors to make better investment decisions through proper analysis of dividend, investment opportunities and cash flow.

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APPENDIX

Descriptive Analysis

The descriptive statistics is used to present the quantitative analysis in a suitable manner. A large sample of data can be easily described by the descriptive statistics.

Descriptive Statistics

Table 0-1

	Minimum	Maximum	Range	Mean	Median	Std. Dev.	Skewness	Kurtosis	N
INVESTMENT	-0.585	1.215	1.799	0.117	0.082	0.201	1.321	6.498	1420
CF_TA	-1.395	3.098	4.493	0.241	0.154	0.357	2.680	16.654	1420
DIV_TA	0.000	0.137	0.137	0.018	0.009	0.025	1.829	6.371	1420
Q	0.305	3586.9	3586.6	403.2	251.8	462.9	2.719	13.488	1420
GROWTH_SALES	-0.845	1.430	2.275	0.115	0.094	0.257	0.822	5.767	1420
ATOR	0.087	6.484	6.397	1.340	1.171	0.820	1.834	8.765	1420
EFF	0.080	6.390	6.310	1.353	1.185	0.824	1.797	8.545	1420
FSIZE	4.920	8.571	3.651	6.654	6.565	0.651	0.353	3.081	1420
Z_SCORE	0.231	82.395	82.164	7.497	4.222	9.155	3.228	18.254	1420
FD_Z	0.000	1.000	1.000	0.427	0.000	0.495	0.296	1.088	1420

Correlation Matrix

Table 0-2

	INVT	CF_TA	DIV_TA	Q	Gwt	ATOR	EFF	FSIZE	Z_SCORE	FD_Z
INVT	1									
CF_TA	0.141	1								
DIV_TA	0.095	0.539	1							
Q	0.087	0.407	0.598	1						
GWT	0.206	0.201	0.100	0.028	1					
ATOR	-0.066	0.434	0.260	0.210	0.150	1				
EFF	0.041	0.439	0.270	0.227	0.151	0.997	1			
FSIZE	0.050	0.071	0.122	0.091	-0.041	-0.097	-0.090	1		
Z_SCORE	0.053	0.400	0.579	0.849	0.025	0.152	0.164	0.044	1	
FD_Z	-0.188	-0.459	-0.498	-0.390	-0.152	-0.236	-0.244	-0.068	-0.411	1

Unit Root Tests

Panel unit root test: Summary

Series: INVESTMENT

Date: 11/13/18 Time: 04:03

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-37.1322	0.0000	144	1296
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-19.9262	0.0000	144	1296
ADF - Fisher Chi-square	922.799	0.0000	144	1296
PP - Fisher Chi-square	1163.80	0.0000	144	1296

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: CF_TA

Date: 11/13/18 Time: 04:04

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-15.9219	0.0000	144	1294
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.86368	0.0000	144	1294
ADF - Fisher Chi-square	445.073	0.0000	144	1294
PP - Fisher Chi-square	479.975	0.0000	144	1294

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: DIV_TA

Date: 11/13/18 Time: 04:04

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-11.4374	0.0000	134	1184
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.10346	0.0000	134	1184
ADF - Fisher Chi-square	399.235	0.0000	134	1184
PP - Fisher Chi-square	477.309	0.0000	134	1184

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: Q

Date: 11/13/18 Time: 04:05

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

			Cross-	

Method	Statistic	Prob.**	sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-20.6595	0.0000	144	1295
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.66431	0.0000	144	1295
ADF - Fisher Chi-square	467.063	0.0000	144	1295
PP - Fisher Chi-square	522.840	0.0000	144	1295

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: GROWTH_SALES

Date: 11/13/18 Time: 04:05

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-26.0581	0.0000	144	1294
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-12.3113	0.0000	144	1294
ADF - Fisher Chi-square	659.893	0.0000	144	1294
PP - Fisher Chi-square	781.309	0.0000	144	1294

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: ATOR

Date: 11/13/18 Time: 04:06

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.60149	0.0000	144	1296
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.72961	0.0032	144	1296
ADF - Fisher Chi-square	335.030	0.0294	144	1296
PP - Fisher Chi-square	385.314	0.0001	144	1296

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: EFF

Date: 11/13/18 Time: 04:06

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.52571	0.0000	144	1296

Panel unit root test: Summary

Series: FSIZE

Date: 11/13/18 Time: 04:06

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.03927	0.0000	144	1296
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	1.99715	0.9771	144	1296
ADF - Fisher Chi-square	300.289	0.2972	144	1296
PP - Fisher Chi-square	464.247	0.0000	144	1296

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.70458	0.0034	144	1296
ADF - Fisher Chi-square	333.762	0.0328	144	1296
PP - Fisher Chi-square	397.639	0.0000	144	1296

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: Z_SCORE

Date: 11/13/18 Time: 04:07

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-20.0579	0.0000	144	1295
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.61658	0.0044	144	1295
ADF - Fisher Chi-square	411.489	0.0000	144	1295
PP - Fisher Chi-square	448.969	0.0000	144	1295

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary

Series: FD_Z

Date: 11/13/18 Time: 04:07

Sample: 2007 2016

Exogenous variables: Individual effects

User-specified lags: 0

Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.99819	0.0000	78	702
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.68459	0.0036	78	702
ADF - Fisher Chi-square	204.033	0.0059	78	702
PP - Fisher Chi-square	252.675	0.0000	78	702

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

Redundant Fixed Effects Tests

Equation: EQ02

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.600561	(143,1132)	0.0000
Cross-section Chi-square	235.890686	143	0.0000

Dependent Variable: INVESTMENT

Method: Panel Least Squares

Date: 11/13/18 Time: 03:12

Sample (adjusted): 2008 2016

Periods included: 9

Cross-sections included: 148

Total panel (unbalanced) observations: 1313

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.261371	0.021209	12.32341	0.0000
CF_TA	0.135952	0.023089	5.888166	0.0000
DIV_TA	0.818114	0.333414	2.453747	0.0143
D(Q)	-0.000124	2.10E-05	-5.915873	0.0000
GROWTH_SALES	0.185791	0.021501	8.641026	0.0000
ATOR	-0.162280	0.016025	-10.12665	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.262650	Mean dependent var	0.111264
Adjusted R-squared	0.166032	S.D. dependent var	0.198428
S.E. of regression	0.181208	Akaike info criterion	-0.469182
Sum squared resid	38.09019	Schwarz criterion	0.134436
Log likelihood	461.0180	Hannan-Quinn criter.	-0.242814
F-statistic	2.718427	Durbin-Watson stat	2.172234
Prob(F-statistic)	0.000000		

Correlated Random Effects - Hausman Test

Equation: EQ02

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	126.009743	5	0.0000

Model 1 With FD dummy variable

Dependent Variable: INVESTMENT

Method: Panel Least Squares

Date: 11/13/18 Time: 03:09

Sample (adjusted): 2008 2016

Periods included: 9

Cross-sections included: 148

Total panel (unbalanced) observations: 1311

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.109320	0.012956	8.437941	0.0000
CF_TA	0.065677	0.024437	2.687542	0.0073
DIV_TA	0.199126	0.359203	0.554355	0.5794
D(Q)	-0.000149	2.18E-05	-6.813454	0.0000
GROWTH_SALES	0.114303	0.021087	5.420663	0.0000
FD_Z	-0.070034	0.015086	-4.642215	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.209266	Mean dependent var	0.110750
Adjusted R-squared	0.105473	S.D. dependent var	0.197843
S.E. of regression	0.187118	Akaike info criterion	-0.404836

Sum squared resid	40.54542	Schwarz criterion	0.199525
Log likelihood	418.3700	Hannan-Quinn criter.	-0.178173
F-statistic	2.016193	Durbin-Watson stat	2.336932
Prob(F-statistic)	0.000000		

Model 2

Redundant Fixed Effects Tests

Equation: EQ03

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.343565	(143,1132)	0.0067
Cross-section Chi-square	200.821758	143	0.0010

Correlated Random Effects - Hausman Test

Equation: EQ03

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	92.858667	5	0.0000
Prob(F-statistic)	0.000000		

Dependent Variable: INVESTMENT
Method: Panel Least Squares

Date: 12/02/18 Time: 00:49
Sample (adjusted): 2008 2016
Periods included: 9
Cross-sections included: 144
Total panel (unbalanced) observations: 1281

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CF_TA	0.074501	0.018622	4.000613	0.0001
DIV_TA	0.644409	0.256817	2.509220	0.0122
D(Q)	-0.000129	2.19E-05	-5.856696	0.0000
GROWTH_SALES	0.137653	0.022193	6.202554	0.0000
EFF	-0.028622	0.007107	-4.027288	0.0001
@YEAR=2008	0.157192	0.018144	8.663718	0.0000
@YEAR=2009	0.044246	0.018724	2.363001	0.0183
@YEAR=2010	0.081324	0.018484	4.399802	0.0000
@YEAR=2011	0.155363	0.018797	8.265181	0.0000
@YEAR=2012	0.089996	0.018037	4.989530	0.0000
@YEAR=2013	0.106194	0.018310	5.799915	0.0000
@YEAR=2014	0.150728	0.018274	8.248312	0.0000
@YEAR=2015	0.084899	0.017911	4.739946	0.0000
@YEAR=2016	0.085599	0.017640	4.852665	0.0000

R-squared	0.133067	Mean dependent var	0.112560
Adjusted R-squared	0.124172	S.D. dependent var	0.198147
S.E. of regression	0.185437	Akaike info criterion	-0.521329
Sum squared resid	43.56840	Schwarz criterion	-0.464986
Log likelihood	347.9114	Hannan-Quinn criter.	-0.500174
Durbin-Watson stat	2.051515		

Dependent Variable: INVESTMENT
Method: Panel Least Squares
Date: 12/02/18 Time: 00:51
Sample (adjusted): 2008 2016
Periods included: 9
Cross-sections included: 144
Total panel (unbalanced) observations: 1279

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CF_TA	0.045326	0.019203	2.360392	0.0184
DIV_TA	0.194312	0.268853	0.722743	0.4700
D(Q)	-0.000127	2.18E-05	-5.817617	0.0000
GROWTH_SALES	0.124548	0.022059	5.646025	0.0000
EFF	-0.029356	0.007021	-4.181112	0.0000
FD_Z	-0.072445	0.012806	-5.657166	0.0000

@YEAR=2008	0.217765	0.020932	10.40341	0.0000
@YEAR=2009	0.105564	0.021376	4.938406	0.0000
@YEAR=2010	0.126738	0.019871	6.377924	0.0000
@YEAR=2011	0.203393	0.020324	10.00736	0.0000
@YEAR=2012	0.134397	0.019411	6.923751	0.0000
@YEAR=2013	0.146351	0.019390	7.547727	0.0000
@YEAR=2014	0.191925	0.019453	9.866164	0.0000
@YEAR=2015	0.131910	0.019534	6.752738	0.0000
@YEAR=2016	0.127873	0.018938	6.752349	0.0000

R-squared	0.149734	Mean dependent var	0.112035
Adjusted R-squared	0.140317	S.D. dependent var	0.197549
S.E. of regression	0.183166	Akaike info criterion	-0.545189
Sum squared resid	42.40695	Schwarz criterion	-0.484745
Log likelihood	363.6482	Hannan-Quinn criter.	-0.522492
Durbin-Watson stat	2.047410		

Model 3

Redundant Fixed Effects Tests

Equation: EQ04

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.259042	(143,1130)	0.0273
Cross-section Chi-square	189.385968	143	0.0057

Correlated Random Effects - Hausman Test

Equation: EQ04

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	85.520196	7	0.0000

Dependent Variable: INVESTMENT

Method: Panel Least Squares

Date: 11/13/18 Time: 03:29

Sample (adjusted): 2008 2016

Periods included: 9

Cross-sections included: 148

Total panel (unbalanced) observations: 1313

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.296322	0.279451	-1.060373	0.2892
CF_TA	0.133768	0.021870	6.116495	0.0000
DIV_TA	0.358485	0.318182	1.126668	0.2601
D(Q)	-0.000144	2.05E-05	-7.055800	0.0000
GROWTH_SALES	0.174920	0.020472	8.544401	0.0000
ATOR	-1.013964	0.087608	-11.57390	0.0000
EFF	0.893019	0.088351	10.10761	0.0000
FSIZE	0.074922	0.041303	1.813934	0.0699

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.340001	Mean dependent var	0.111264
Adjusted R-squared	0.252229	S.D. dependent var	0.198428
S.E. of regression	0.171588	Akaike info criterion	-0.576960
Sum squared resid	34.09436	Schwarz criterion	0.034548
Log likelihood	533.7745	Hannan-Quinn criter.	-0.347634
F-statistic	3.873692	Durbin-Watson stat	2.115343
Prob(F-statistic)	0.000000		

Model 3 with FD as Dummy

Dependent Variable: INVESTMENT

Method: Panel Least Squares

Date: 11/13/18 Time: 03:32

Sample (adjusted): 2008 2016

Periods included: 9

Cross-sections included: 148

Total panel (unbalanced) observations: 1311

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.005797	0.279961	-0.020707	0.9835
CF_TA	0.100280	0.022260	4.504837	0.0000
DIV_TA	-0.142608	0.326051	-0.437379	0.6619
D(Q)	-0.000148	2.02E-05	-7.339784	0.0000
GROWTH_SALES	0.176076	0.020150	8.738263	0.0000
ATOR	-1.025378	0.086289	-11.88309	0.0000
EFF	0.887097	0.086965	10.20058	0.0000
FSIZE	0.042787	0.041087	1.041380	0.2979
FD_Z	-0.085736	0.013977	-6.134318	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.357561	Mean dependent var	0.110750
Adjusted R-squared	0.271346	S.D. dependent var	0.197843
S.E. of regression	0.168881	Akaike info criterion	-0.607949
Sum squared resid	32.94149	Schwarz criterion	0.008262
Log likelihood	554.5107	Hannan-Quinn criter.	-0.376842
F-statistic	4.147324	Durbin-Watson stat	2.102524

Prob(F-statistic)	0.000000

Model 4 Model with interactions of FD (Old Method)

Redundant Fixed Effects Tests

Equation: EQ05

Test period fixed effects

Effects Test	Statistic	d.f.	Prob.
Period F	5.534616	(8,1263)	0.0000
Period Chi-square	44.069795	8	0.0000

Correlated Random Effects - Hausman Test

Equation: EQ05

Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	3.285001	7	0.8574

Dependent Variable: INVESTMENT*FD_Z

Method: Panel EGLS (Period random effects)

Date: 11/13/18 Time: 04:21

Sample (adjusted): 2008 2016

Periods included: 9

Cross-sections included: 144

Total panel (unbalanced) observations: 1279

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	0.001828	0.009466	0.193119	0.8469
CF_TA*FD_Z	-0.012351	0.023506	-0.525441	0.5994
DIV_TA*FD_Z	0.941683	0.429438	2.192828	0.0285
D(Q)*FD_Z	-0.000143	2.75E-05	-5.185708	0.0000
GROWTH_SALES*FD_Z	0.131762	0.018016	7.313539	0.0000
ATOR*FD_Z	-1.515963	0.098482	-15.39327	0.0000
EFF*FD_Z	1.483319	0.098098	15.12083	0.0000
FSIZE*FD_Z	0.010796	0.001460	7.396246	0.0000

Effects Specification

	S.D.	Rho
Period random	0.026203	0.0655
Idiosyncratic random	0.098944	0.9345

Weighted Statistics

R-squared	0.269700	Mean dependent var	0.008161
Adjusted R-squared	0.265678	S.D. dependent var	0.115294
S.E. of regression	0.098799	Sum squared resid	12.40654
F-statistic	67.05428	Durbin-Watson stat	1.879093
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.282004	Mean dependent var	0.027041
Sum squared resid	12.81978	Durbin-Watson stat	1.877850