

CAPITAL UNIVERSITY OF SCIENCE AND  
TECHNOLOGY, ISLAMABAD



# The Impact of Earning Volatility and Cash Flow Volatility on Firm Value: Evidence from Pakistan

by

Muhammad Shahid

A thesis submitted in partial fulfillment for the  
degree of Master of Science

in the

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*This work is dedicated to my beloved parents who have encouraged me to achieve this milestone and to my respected supervisor Dr. Ahmad Fraz, who has been a constant source of inspiration.*



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ISLAMABAD

**CERTIFICATE OF APPROVAL**

**The Impact of Earning Volatility and Cash Flow Volatility  
on Firm Value: Evidence from Pakistan.**

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## *Abstract*

This study aims to investigate the impact of earning volatility and cash flow volatility on firm value. The study has employed the data of 60 non-financial firms listed at Pakistan stock exchange for the period of 2003 to 2017. Earning volatility and cash flow volatility is calculated by creating rolling window of eight quarters. The systematic risk is measure by using market model on three years monthly data. The results of the study indicate that increase in earnings volatility and cash flow volatility have significant negative impact on firm value, Whereas systematic risk has significant positive impact on firm value. The control variable, return on assets has positive and significant effect on firm value while leverage and the total assets have negative and significant impact on firm value. The results are consistent with risk management theory and suggest managers efforts to produce smooth financial statements add value to the firm.

**Keywords:** Tobin Q, Earning Volatility, Cash Flow Volatility, Systematic Risk.



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# Chapter 1

## Introduction

Business risks the likelihood firms have lower than expected profit or experience a loss instead of taking a Profit. Business risk is influenced by various factors, including sales volume, per-unit price, input costs, competition, and the overall economic climate and government regulations. These are all the factors which can affect the firm value. A company with a higher business risk should choose a capital structure that has a lower debt ratio to ensure it can meet its financial obligations at all times. Business risk or firm-specific risk is associated with the firm value if a firm face lowers business risk, then it has fewer earnings and cash flow volatility than which firm faces high exposure to business risk. This study provides some pieces of evidence that earning volatility is highly costly and having the relationship to less firm value. Manager, analysts and institutional investors of the firms apparently focus only earning of concern firms rather than cash flow. Earning volatility plays as a sign of financial stability or instability of firms in addition to cash flow volatility. There are many justifications why earning volatility is an important factor for the firm value. In most volatile firms, business analysts and institutional investors tend to avoid and their recommendation for investors to also avoid investing these firms. The probability of forecast error increases when firms have more volatility in their earnings and cash flows. [Brennan and Hughes \(1991\)](#), Same as (?) discover institutional investor keep away from these companies, which are facing huge variations in earnings and cash flows. More volatility in earnings also enhances the chance of negative earnings; in reaction, managers

have engaged in considerable smoothness.

Earning smoothness decreases the firms' huge probability of default and also borrowing cost. According to the CAPM Systematic risk affect the firm. Further other empirical evidence shows firm-specific risk also plays a vital role regarding the value of firms. Firm value is the Tobin q number of shares multiple market price of the share divided by total assets of the firm. This study finds out if both types of risk (Systematic and un-systematic) increase then what they have an effect on Tobin Q which is the proxy of the firm value, There are two major risks which many companies face the first one is the business risk and the second is the financial risk. This study regarding business risk in which includes earning volatility, cash flow volatility and systematic risk and unsystematic risk is also a subtype of business risk. Earnings volatility refers to how steady, or unsteady, the earnings of the firms are. An analyst and investor may analysis with annual earnings figure, may quarterly earnings figures.

The firm, whose earnings fluctuates more than others; it is a great deal for investors to ignore the risk of volatility which may occur hugely loses in their investment. This volatility in earnings makes it very hard for senior management to plan future. More specifically, when funds must lend for long-term business needs and investment, It means serious trouble for the firm which is face volatility regarding collection of funds, even may be resulting in the takeover of assets by moneylenders (creditors) and ultimate, bankruptcy of firm at this stage. The firms did not continue their operations and it is the only solution to sell out the assets and pay off the liabilities consequently, directors efforts to maximize earnings, but also soothe the earnings. Stabilize financial statements means reduce the instabilities and thereby lower its volatility. Every time earning volatility is not bad. In the same way, not all steady is the best signal. At the end of the financial year if the firm created a very minor, Inadequate amount of profit, its incomes would be extremely stable, but for the purpose of investment such a company would be unattractive when a firm is finally starting to turn around and grow its earnings, at this stage the earnings volatility surges since there has a reasonable and unexpected variation in earnings of the firms. This type of volatility is called positive

volatility. Thus, as with each other economically measure, volatility requirement is to be assessed in the right and precise context.

Literature has argued that corporate risk management theory and investors are augmenting if a firm keeps reliable cash flows. Froot et al. (rare) assertion that smoothness in cash flows can enhance the value through decreasing firm dependence on expensive exterior finance. Empirically (Schrand, 1999) explain that cash flow instability, expensive and it disturbs a firm's investment strategy by enhancing the probability and the expenses of generating outside capital. The unique frequent subject of this work is that businesses with smoother financial statements must be additionally highly priced and valued. Earnings volatility happens due to many reasons. A firm whose earnings tight to the state of the economy of the country, like as the merchants, and might produce random outcomes when the economy face recessions and customers aren't spending on branded items alike they normally were done. Although no direct evidence exists, but earlier research discovers that cash flow volatility is costly, the financial reports volatility is linked to firm value. Such a linkage is significant since, in a tendency for risk management of matters, smooth financial performance must be priced at a premium to extra volatility ones. Thakor (2003) recommend that a firm may have stable earnings so as to minimize the informational benefit of knowledgeable investors over unaware investors, and therefore defend these investors they might be needed to trade for liquids. Finally, it is also investigating these companies which have the smoothness of earnings bear the minor cost of funds even after accounting for CFV. There are many additional ways where financial uncertainty relates to the value of the firm. In a manner to the Capital Assets Pricing Model, diversified risk and firm value adversely connected, meanwhile more discount rates yield a lower firm value. Further, recent experimental work recommends that systematic risk not only does affect value, but the two unsystematic risks may be priced. It might be possible an adverse relation between systematic risk and the value of the firm, along with a negative and the important relationship between unsystematic risk and the value of the firm. This research additionally enhances the works by concentrating on the value effect of two other categories of risk, specifically, cash

flow volatility and earnings volatility. This study directly tested the hypothesis that firms stable financial statements are more valued at a premium compared to these firms which having volatile financial statements. And although this study does not directly investigate in this work what reasons behind earning volatility and cash flow volatility, this study has tested the hypothesis that financier gives more worth to those firms who have with stable cash flows.

The objective of the study by providing further empirical evidence in attempting the answer of three questions regarding Smooth financial statements; the first question is that investor gives importance to earning volatility and second question cash flow volatility is also the concern of investors or not regarding the firm value. The third objective to find that the systematic and firm-specific risk affect the firm value. This study provides strong evidence of earnings volatility or cash flow volatility, which one affects that the value of the firm most.

## 1.1 Theoretical Background

Previous work shows that there are many other reasons which are the effect the firm value. The firm value represents the shareholder's equity plus long-term liability divided by short plus long-term assets. Equity holder always preference to these companies which generate earnings per share and return on stock smooth which is known as a dividend, it can be influenced by investors, assume as an investors point of opinion, if earnings per share are on the higher side, then it might be possible the amount of dividend is too much high on stock other than low earnings per share. If the dividend is high is high from investor expectations then, it attracts the investor. Then shareholder can purchase more stock and due to an increase in market demand of shares, the price of the share increases and it higher the firm value. If earnings per share of the firm is low, then the dividend is small as compare to its share price, then the investor who concern with dividend they sell out their share and supply of the shares increase and it decrease firm value because the earning per share is not fulfilling the expectation of the investor its show that the investor has concern with earning per share of an organization

but companies don't fulfill the expectation when its earnings per share not smooth and fluctuate rapidly in the next announcement. A company with strong earnings per share might see the market price of its stock rise. This higher stock price might create a positive impression of the company's products in the minds of customers, resulting in greater demand, increased sales and ultimately higher earnings. The inverse might also occur. Poor EPS might depress stock prices. If companies manage the business in a good way, then the prices of the share are better in the stock exchange as compare to other company and if companies unable to manage the business in a good way then company share prices are not good as compared to other company.

Share prices are directly affecting the value of the firm because the low share price means the low value of the firm. Earning volatility means the rate of variation of earnings per share of the firm over a given period of time, higher volatility becomes the cause of the higher risk of loss or gain. If the earning per share is volatile then it is very difficult to determine that what the share price of the company is in the future. If earning per share variation in a positive way then its a good sign. If the earning per share is volatile then it is very difficult to determine that what the share price of the company is in the future. If earning per share variation in a positive way, then its a good sign. If earnings per share are high as compared to share price its mean is that the financial manager takes wealth maximization decision. A dividend irrelevance theory is presented by ?. They assume that when an investor considers the return on investment then he only thinks about company earnings. The investor has no concern with dividend because investment decision is dependent on only the investment policy of the company. The inventor has also determined that a perfect market occurs where market prices do not affect by a single buyer or seller.

The dividend irrelevance theory has some assumptions.

- Irrelevance theory works when the capital market is perfect and everyone has complete information about the stock. The transaction cost is zero and no one can take advantage of other with the same risk.



- It is assumed that there is no tax. There is no tax difference amid capital gains and dividend.
- It is supposed that investment strategy of a company fixes and reinvest the retain earnings and this does not affect the risk of a company so due to this reason remain constant and also suppose that there is no flotation cost is exist.

According to MM model, it is proved that the value of a firm is not influenced by the capital structure and net operating income, it is also presented that the value of the firm only depends on the behavior of the investor. It is dependent on investor perception if an investor thinks that I have a good opportunity to invest in this business then it increases the value of a company because it depends on the behavior of the investor. There are some assumptions about this theory, investors are free to purchase and sell the commodities and capital markets must be perfect, nobody can gain unexpected profit with the same risk as compared to another investor who has the same risk. It is also assumed that investors are well informed about the risk which is related to securities. It is also assumed in this model no transaction cost and no taxes are involved in this theory, companies pay a hundred percent dividend to Shareholders Company never use the strategy of retained earnings. According to this theory assumption, it is proved that an investor can in two companies which have different risk and can generate the same return from both of the organizations.

Net operating income is known as income before taxes and interest and also before factory overhead expenses. According to the net operating income theory, it is completely differing to net income theory. In this theory, it is assumed that the value of a firm is totally negatively linked with the capital structure of a business. There is some assumption regarding this theory, the first assumption is that the capital cost of a business is only related to the risk of a business otherwise cost of capital remain constant. The value of a business is only determined by calculation of the cost of capital of a business, the cost of outside financing debt is unchanged and taxes do not exist on corporate income. The Shareholders risk increase when

business increases borrowing, debt, as we can say that the capital structure of a business is not affected by the value of an organization. Most companies used net income approach because these approaches define the linkage between the capital structure of a company and the value of a business. According to this theory, the value of a business is and a company's directly affected by the capital structure of an organization because the capital structure and a value of a company are connected with each other. Cost of capital means what a company bears at the expense making a product and until to sell a product.

There is some assumption regarding the net income approach of capital structure, the first assumption is that observation of an investor is not affected by continually increase in debt of a company, the second assumption is that the equity cost of a business has always been higher than the debt cost of a company, and the third assumption is that there is no involvement of taxes on a company's corporate income. It is also assumed that the cost of capital of a company can be decreased by increasing in debt of a company. The value of a business can be increased by reducing the capital cost of a business and sustain the earnings of a company. When a business increases its outside finance then its become a cause of the decrease in the capital cost of an organization, and it only occurs when a company only depends on debt.

The capital structure means a mix combination of a company's total capital, which can be in the form of equity, surplus, and reserve and also include the loan from commercial banks other financial institution different type of securities and debentures, the value of a company only depend on the cost of capital and earning of a company. As we know that the core objective of a company financial manager to maximize the wealth of the company's shareholders. The capital structure of an organization has no impact on net income of a firm but it can affect the residual earnings of shareholders. This purpose of a firm is only achieved when a firm designs a good and unique capital structure. It is very difficult to make to make a good and unique capital structure. A good capital structure is a backbone of a company's growth because if capital structure is not good, then it creates a conflict between management and shareholder who is known as agency problem and it

also affects the company growth. A good capital structure is only achieved when a firm creates a balance between shareholder expectation and capital or finance requirement of an organization.

## 1.2 Research Gap

The companies in Pakistan operate in an uncertain and dynamic environment, for which company not only needs to adapt its management to these changes, but also be financially able to cope up with these. This requires companies to be able to identify the target smoothness in the financial statements and then be able to identify the factors which can impact a firm's ability to reach these targets. The earnings volatility, cash flow volatility and both types of risk may affect the Value of the firm. The changing nature of the financial environment influences the firms to make financial statements smother, means to have such a structure which is able to adjust according to the changing requirements. The available literature shows that there is a vital impact of the volatility (earning and cash flow) upon the firms value. Keeping in view the voluminous trading securities, based on the high frequency and high speed in parallels time horizon, this study found a few works both of earning and cash flow volatility, especially in the context of Pakistan.

## 1.3 Problem Statement

There is vast volatility in financial statements. To examining the influence of earnings volatility and cash flow volatility as the determinant factor of the investors decision making about the investment in the firm's stock. Earning volatility and cash flow volatility of the non-financial sector of Pakistan is the central issue to be addressed. The center of attention in the study is whether earning volatility or cash flow volatility affect positively or negatively, which may lead to the basic guidance for allocation/re-allocation of scarce resources.

## 1.4 Research Questions

This study has the following research questions:

1. Does earning volatility have an effect on the Firm Value?
2. Is there cash flow volatility have an impact on the firm value?
3. Does systematic risk affect the Firm value?
4. What is the effect of firm-specific risk on Firm Value?

## 1.5 Objective of the Study

This study has the following objectives:

- To explore the relationship among earning volatility, cash flow volatility and Firm Value.
- To investigate diversified and un-diversified risk affects the firm value.

## 1.6 Significance of the Study

It is argued that the study of earning volatility and cash flow volatility is important because these are affecting the firm value. No previous work in Pakistan has investigated directly such relationship between the value of the firm and stability of financial statements. This is very meaningful as well as giving a strong explanation for the wider risk management actions that firms are involved. The findings of this investigation are reliable with the actions of many market participants who seem to give intention on the earnings as a strong sign of financial smoothness and stability. This study helps out the managers to make efforts to create and

maintain a stable and smooth financial statement which adds value for the firms. This study also is helpful for managers make better understand the association between earning volatility, cash flow volatility and firm values. The findings of the study serve as a tool to make the best decision on which firm to do invest. Individual investors also are able to forecast the future value of the firm simply looking into volatility of earnings and cash flows. Companies in Pakistan operate in an unpredictable and dynamic environment, for which Company not only needs to adjust its management to these variations but also financially be able to manage up with these. Another contribution of this study is that it brings together all type of variables, which have never been brought together in a research before in case of Pakistan such as systematic risk and Firm-specific risk variables.

This study allows the firms in Pakistan to have an overall view of all the factors which can impact their aim to attain target smoothness in financial statements to add value for the firms. This requires companies to be able to identify the target smoothness in the financial statements and then be able to identify the factors which can impact a firm's ability to reach these targets. The changing nature of the financial environment influences the firms to make Financial Statements smother, means to have such a structure which is able to adjust according to the changing requirements. Once this is done, firms must also be able to identify the time period) which they require to reach those targets. This study also allows the firms to be able to deal with all the issues mentioned above. This study is also helpful for managers to make better understand the association among stock liquidity and dividend policies. The findings of the study serve as a tool to make better dividend payout policy to attract the investors. Individual investors also are able to forecast the future dividend payout by simply looking into liquidity of the stock.

## **1.7 Plan of Study**

The plan of the study is chapter 1st introduction about earning volatility, cash flow volatility and firm value, this chapter also contains theoretical background,

problem statement, research objective research questions and the significance of the study. The 2nd chapter includes existing literature and their findings. The 3rd chapter covers the data descriptions, measurement of variables and methodology of the study. The 4th chapter is of results, their interpretations, and discussions. Lastly, the 5th part entails of conclusion policy recommendations and future directions.

# Chapter 2

## Literature Review

### 2.1 The Effect of Earnings Volatility on Firm Value

[Badrinath et al. \(1989\)](#) investigated the effect of earnings volatility on the firm value and finds out that institutional investors usually tend to avoid companies that are perceived to be risky or firms with high earnings volatility, instead, the firms with smooth earning streams are usually preferred. The volatility in firms earning can result in the error surprises and it might end up increasing the firms estimated cost of capital and the consequent reduction in the firms value. Certain tests that were performed in previous studies were unable to find the clear negative association of earnings volatility with the firm value, but it is also evident that many companies tend to avoid the volatility in their earnings by adjusting their real activities. The measure of earnings is important as it highlights the performance of the firm and the volatile environment of a firm and in case of volatile earnings, it could result in the negative association with the cash flow that may lead to the decline in the firms performance.

[Minton and Schrand \(1999\)](#) argued in their study that earning volatility and cash flow volatility has a negative impact and the results of their studies suggest that the volatility in earning is negatively associated with the firm value and market value. There is evidence from the literature to support the hypothesis that earning

volatility is negatively associated with the firm value as studied by (Faccio and Lang, 2002). Moreover, firms also can affect the firm value directly by earnings smoothing that is linked with the earnings volatility.

Iyer and Harper (2017) investigated the reported earnings and their associations with the discretionary accruals, the results show that firms with high prospects usually smooth reported earnings to affect the firm value. Study of previous empirical work tells that volatile earning is usually avoided by the analysts and the firms as the likelihood of forecast errors is increased considerably, argued by the (Brennan and Hughes, 1991).Badrinath et al. (1989) performed a similar study and assessed that the companies with large variations in their earnings are usually avoided by the institutional investors. The chances of negative earnings surprises are also increased with high earning volatility, which results in the engagement of managers in extensive earnings smoothing. Basu (1997) argues that there is not much consensus in the literature that earning volatility provide viable information or show any association with the market value of the firm due to neutral conventions and accounting applications such as conservatism Dechow and Dichev (2002). Schipper (1991) earnings volatility discussed along with cash flow and firm value. Volatile earnings are smoother with positive cash flows. It is well understood in the market that steady cash flow is the crucial process of volatile earnings. Earnings volatility is related to underinvestment in capital uses. Earnings volatility has additionally expanded the expenses of getting to capital markets that could be utilized to cover money shortages. Thus, all the more expensive access, thus, compounds the underinvestment issue. Steady with speculations that foresee more educated exchanging when open data is less useful Howatt et al. (2009). From a previous couple of years, the volatility of the standard stock return has radically outpaced add up advertising instability. In this way, peculiar return volatility has drastically expanded. Nonetheless, discoveries educated exchanging is weakened in settings in which hypothesis recommends that optional smoothing or the volatility of profit is probably going to be educational. Steady with a productive market, this outcome is reflected by an expansion in the peculiar instability of first money streams. Individuals contend that these discoveries are inferable from the more



extraordinary broad rivalry. Different cross-sectional and time-arrangement tests bolster this thought. One part of collections is to move or modify the acknowledgment of money streams after some time with the goal that the equal numbers (income) better measure firm execution. In any case, accumulations require suppositions and appraisals of future money streams (Howatt et al., 2009).

Bidask spreads, and the likelihood of educated exchanging are higher both when income is smoother than money streams and furthermore when profit is more unstable than money streams. Extra tests recommend that chiefs' arbitrary decisions that prompt smoother or more volatily earnings than money streams confuse data, all things considered Cao and Narayanamoorthy (2011).

Shipe (2015) Income instability alludes to how steady, or unsteady, the profit of an organization is. An expert may work with yearly or quarterly income figures. An organization whose income changes an impressive arrangement is a risky venture. Such volatile profit makes it difficult for the administration to prepare. Mainly when stores must be obtained for long-haul speculations, the anticipated income to respect obligation commitments may not appear. This can mean substantial inconvenience, notwithstanding bringing about the seizure of benefits by loan specialists, and, in extraordinary cases. Like that administrators attempt to boost profits, as well as to standardize the profit. Normalizing a variable means limiting changes and subsequently lessening its volatility. Earnings volatility changeability after some time in a laborer's income is fascinating for its potential welfare results and as a work showcase result. Within sight of liquidity limitations, families most likely will be unable to smooth utilization when looked with unstable income.

Another variable that examiners nearly track is the instability of the stock cost. Since stocks exchange and are estimated on each business day, significantly more stock value information gathers than income information. Consequently, examiners do not have to sit tight for quite a long time before they can ascertain the volatility of a stock's cost. For the most part, the steady the profits of an enterprise, the more steady the cost of its stock. Financial specialists lean toward stocks with stable costs and a consistent uptrend. This makes monetary arranging simpler and limits the danger of a sudden, cataclysmic misfortune (Howatt et al.,

2009).

It is considered an important factor of capital structure because it governs the probability of financial distress. [De Bondt and Forbes\\*](#) (1999) more volatile are the earnings of the firm, more difficult and uncertain, it becomes to make the interest payments and meet debt obligations, so firms with higher earnings volatility should use lower debt. Almost all of the researchers who have conducted the study on this aspect of the capital structure have found a negative relation between volatility and leverage such as [Booth et al.](#) (2001).

[Choi and Richardson](#) (2016) according to these studies, there can be two perspectives to understand the relationship between earning volatility and leverage, either the debt financiers require higher return due to volatile earnings, so debt financing more costly to the firm. The other perspective is that due to uncertain earnings, the firm not able to manage regular repayments. In both cases, leverage and volatility are inversely related.

[Antoniou et al.](#) (2008) agency Theory predicts a positive relationship among volatility and leverage; it is because the problem of underinvestment gets resolved due to increased earnings volatility.

[Zhuosi](#) (2006) not all earnings volatility is awful. So also, not all strength is excellent. If an organization was making a little, unacceptable measure of benefit a seemingly endless amount of time, its income would be profoundly steady. However, such an organization would be an ugly speculation prospect. At the point when an enterprise is at last beginning to turn things around and develop its benefits, the income instability will be incremental because there will be an exciting and sudden change in profit. Such instability is certain. In this manner, as with each other money-related measure, instability must be assessed inside the correct setting.

Profit can be volatile for some reasons. Organizations, whose benefits are fixed to the condition of the economy, for example, retailers, could create erratic outcomes when the economy moderates and shoppers are not spending on mark name things like they typically do. Sustenance organizations could create volatile outcomes when the cost of wares, for example, grains and deliver, rise and expenses go

up. Polica and mak, (2015) looked to patch up the bookkeeping model insurance agencies utilized for revealing different kinds of protection contracts. If embraced, the change was relied upon to prompt volatility starting with one quarter, then onto the next among insurance agencies and other money-related establishments. Frank and Goyal (2009) they find that earnings volatility has a noteworthy negative impact on a company's capital structure. Our outcome could get from two primary differences. First, utilize yearly fluctuation of benefit returns as volatility measure. Conversely, they utilize a contingent earnings volatility measure created by De Second; utilize a direct relapse to locate the solid components. Conversely, they consider the way that our relevant variable (obligation proportion) is an extent variable and the contingent desire is a nonlinear capacity of the independent factors.

A company's estimation of money and interest for trade rely upon changes out the association's outward and inward conditions. Since the utilization and estimation of money are time fluctuating, the ideal level of money property is likewise continually evolving. The progressive idea of ideal money property ought to inspire firms to modify money towards the ideal level efficiently. The advantages of altering money towards its ideal level can be significant, including diminished overinvestment prompting exhausted money holds, constrained money storing, and smoothing the impacts of the financial cycle by guaranteeing the measure of money is adequate to withstand tough circumstances. These advantages propose that: if a firm continually changes money property to pursue the ideal money level and consequently expands the instability of money possessions, there ought to be a comparing increment in firm esteem (Das et al., 2013).

De Veirman and Levin (2011) Furthermore, the connection between earnings volatility and firm value ought not to be homogenous crosswise over firms. More youthful and smaller firms have constrained access to moderate outer capital, and in this manner, money is a more significant advantage for them. In the meantime, smaller firms likewise tend to be less beneficial. Because of the popularity yet restricted supply of money, altering money to its ideal level is particularly imperative for those organizations. Subsequently, the connection between earnings

volatility and firm esteem ought to be considerably more grounded for littler and more big firms. Locate a more grounded relationship between earnings volatility and firm an incentive for more youthful firms contrasted with more established firms. As firm size expands, the size and essentialness of the connection between money instability and firm esteem diminish monotonically. Innovative firms need to exploit venture openings rapidly because of the power of rivalry in their enterprises and the steady formation of new items and administrations. The fast changes in the outer condition and venture openings in cutting-edge businesses infer that the ideal money level is more unstable in innovative firms than in low tech firms. Cutting-edge firms that effectively alter money to its ideal level should profit more than low-tech firms whose ideal money level is not as unstable.

Earnings volatility ought to be imperative to firm esteem. Profit instability is not quite the same as standard volatility since a parallel occasion expands it. Profit is declared either before the market opens or after the market close and volatility is ordinarily at its pinnacle just before the declaration. This is because of the vulnerability of the stock course and the extent of the move after the profit declaration. Since instability is pulverized directly after the declaration, they get a kick out of the chance to offer a premium for income plays. They have discovered that end profit play on the open after the declaration brings about the best execution over the long haul. The significance of earnings volatility for an association's esteem has for entirely some time been perceived in the bookkeeping and back writing. Such volatility can affect either through its connection to the markdown rate or expected money streams (profit) in valuation models. The most current examination has concentrated on the connection between the markdown rate or cost of capital. One built up the result is a definite connection between Earnings volatility and several measures of the cost of capital (Das, Hong & Kim, 2012).

[Beaver and Manegold \(1975\)](#) give confirm that the difference between the earnings to value proportion is the bookkeeping variable that is most connected with an association's beta coefficient. Minton and Schrand, (1999) locate that verifiable earnings volatility is firmly connected to the beta coefficient, profit payout proportion and offer value instability. [Gebhardt et al. \(2001\)](#) demonstrate that earnings

volatility - estimated as the standard deviation of profit per share - is firmly connected with the ex-risk cost of capital suggested from the lingering pay display. Investors, proprietors, and officials like their income smooth and put forth an admirable attempt to accomplish enduring profit that develops quarter-over-quarter. In any case, one methodology for dispensing with profit instability that is frequently underutilized is supported bookkeeping. On the off chance that an organization has a dynamic supporting system and does not matter fence bookkeeping, the quarterly pick up, and misfortunes of its fences are reflected in income. At the point when support bookkeeping is utilized, and a substance can demonstrate that the fence and supported things are associated, changes in the estimation of the supporting instrument are then not secluded in profit (Jayaraman, 2008).

Utilizing subordinates to deal with an organization's introduction to various dangers (i.e., financing cost hazard, outside trade chance, product chance, and so on.) is a typical hazard administration strategy utilized by numerous organizations. Utilizing support bookkeeping to represent the subordinates can expel from the profit the effect of changes in an incentive on the subsidiary and help limit income instability. For whatever length of time that the quantifiable relationship between the supporting instrument and the supported thing exists, an organization can exploit the advantages accessible with fence bookkeeping. The bookkeeping standard that a substance takes after decides the subtleties of fence bookkeeping that must be met and taken after. At the center of any credit, the relationship is essential that loaning foundations stretch out credit to organizations given the credit value of the organization. Credit value is surveyed through numerous variables including an organization's future income consistency and the probability that the organization had the capacity to benefit the obligation time frame over-period for the life of the advance. Much like what was clarified in the official pay area, income that is affected by occasions that are not identified with typical tasks, for example, intermittent increases and misfortunes from supporting movement, can reduce the consistency of future profit from the bank's point of view and impact their loaning choices (Harash et al., 2014).

**H1:** There is a significant negative relation between earning volatility and firm

value.

## 2.2 The Effect of Cash Flow Volatility and Firm Value

A big sample of non-financial firms has been studied to find out the evidence of cash flow volatility linked with the firm value. Cash flow volatility is negatively associated with the firm value or Tobins Q and the association is found out to be significant when the market to book ratio is utilized as a measurement. 30% to 37% reduction in firm value was observed when the cash flow volatility is associated with an increase in one standard deviation in the cash flow volatility, (Thomas and Zhang, 2002). A recent study suggests that if the cash flow volatility is more costly then the effect on firm value had negative as documented by (Schrand & Minton, 1999). They studied the evidence from the results of them and find out that hedging may also have a positive effect on firm value, but the study also complements the cost of cash flow volatility that has a negative impact on the firm value for being much costly (Leuz et al., 2003).

Minton and Schrand (1999) that higher cash flow volatility is related to lower common associate degrees of investment in capital expenses, R&D, and advertising. This affiliation shows that "firms do no longer use external capital markets to absolutely cash flow shortfalls but instead permanently forgo investment. Cash flow volatility is also associated with better prices of having access to outside capital. Moreover, those higher expenses, as measured with the aid of a few proxies, imply an extra sensitivity of investment to cash flow volatility. Thus, cash flow volatility not most effective increased the probability that a "firm will want to get an entry into the capital markets, it also increases the cost of external financing.

Cormier et al. (2013) also find out that after accounting for the cash flow volatility, lower cost of capital is observed with greater earnings smoothing. Thomas and Bernard, (1990) argue that there is an association between the cash flow volatility and stock returns that reflect the nave fixation on the return earnings by investors.

A recent study based on the evidence from the study of corporate executives indicates that financial markets usually prefer smooth earnings and cash flows (Harvey, Gopal, & Graham, 2005).

The Study results suggest that almost 97% of the responses were in favor of smoother cash flow and smooth earnings. These results clearly support the hypothesis that cash flow volatility is avoided by the firms because it is inversely associated with the value of firm and Tobins Q. Moreover, studies also suggest that hindering the volatility and volatility reduction models such as hedging or reinsurance should also be determined individually for the different type of firms according to their working environment and growth opportunities. For example, when the market risk premium is high due to the cash flow volatility, firms should manage the risks and volatility with less intently as compared to the periods when the market risk premium is high. Other studies also suggest that cash flows that show volatility do not usually reveal private stats and information, unlike the earning volatility that reveals private information with regards to the firm (Melumad & Kirschenheiter 2002).

Basu, (1997) the whole scenario put by the literature study to find any significant relationship between firm value and cash flow volatility indicate that there is a significant impact of cash flow volatility on Tobins Q and firm value. Smooth cash flow maintained by a firm is considered to be better as per the CRM (Corporate Risk Management) Theory. Smooth cash flow, according to (Scharfstien, Stein, & Froot 1993), can add value by minimizing the reliance of a firm on external finance which is more costly.

(Badrinath, &.G, 1989) also argued that firms investment policy can be affected by cash flow volatility as it is costly and it increases the likelihood of raising external capitals along with the costs. Study of previous empirical work tells that volatile earning is usually avoided by the analysts and the firms as the likelihood of forecast errors is increased considerably, and a similar study assessed that the companies with large variations in their earning are usually avoided by the institutional investors. The chances of negative earnings surprises are also increased with high earning volatility, which results in the engagement of managers in extensive

earnings smoothing.

Olsen, Francis and Lafond, (2004) also find out that after accounting for the cash flow volatility, lower cost of capital is observed with greater earnings smoothing. In addition to the association of earnings volatility to the cash flow volatility, it might also be associated with the firm value. Financial uncertainty relates to the firm value in a number of ways and as per the CAPM, systematic risk or idiosyncratic risk also affects the firm value. There are certain independent variables that can be associated with the firm value and firm performance where the firm value is the dependent variable. The measurement of these variables is important since it signifies and highlights the financial stability of a firm. Moreover, Firms risk management policies and managerial decisions also directly affect the actual financial stability of the firms financial statement. Other latest aspect of works has absorbed on relating hedging actions to firm worth and on investigating the evidence behindhand hedging, specifically, the CFV is expensive for the companies.

[Allayannis and Weston \(2001\)](#) discovers that the usage of currency derivatives is an alternative for hedging progresses worth significantly. They find out evidence that cash CFV is highly expensive and that it's long lasting disturbs investment. They also find out a solid adverse linking among CFV and regular stages of investment in asset expenditures, Research & development and advertisement expenditures, and positive connotation among CFV and expenses of retrieving outside capital. These results recommend that CFV raises equally the chance of the expense of retrieving outside capital marketplaces.

[Myers and Majluf \(1984\)](#) demonstration that external capital more costly than internal capital. Consequently, firms that require greater outside capital relative to internal capital may have lower funding, all else the same, assuming firms comply with the simple net present value (NPV) decision rule for capital budgeting. That lower analyst following implies greater statistics asymmetry and a better cost of gaining access to fairness capital firms with better cash flow volatility has better equity capital costs. Together, the two effects of cash flow volatility mean that discounts on cash flow volatility through chance management, sports can lessen a



firm's anticipated under investment' fees.

Froot et al. (1993) two sorts of capital shape alternate are examined: provider change offers, and recapitalization. The effects indicate that both stock costs and firm values are positively related to adjustments in debt degree and leverage; senior protection prices are negatively related to these capital shape alternate variables. This evidence is regular with the fashions of most effective capital structure and with the speculation that debt degree changes launch information approximately modifications in company value.

This researchers is paid to current works by directly tested hypothesis firms with smother Financials are prized at superior comparative towards firms, with an unstable financial although monitoring for additional elements of firm value, such as the size of a firm, the leverage (Debt to Equity ratio), profitability, and growth (capital expenditure /sales), along with other sorts of risk, such as un-diversifiable risk and diversified risk. More specifically, if the CFV is highly expensive as recognized by (Myers, 1977) then it must be negatively distress value of the firms.

This hypothesis covers the findings (Olawale et al., 2017) by an explanation of this question of why the positive effect of hedging on firm value. This is a vital consequence as it recognizes the spread tool concluded Firm value can be influenced by risk management. i.e. by making the smooth sequence of firms financial statements. Additionally, this consequence also proof taking place the expenses of the CFV, it has documented the negative effect of CFV on the firm value. They also examine the hypothesis of EV negatively disturbs firm value. FRM also affects CFV, and in short and long turn, earnings volatility. Yet, the firm can also affect EV traditionally by placing in earnings smooth via accrual estimates. This literature has reported a large number of explanations why the rest of these firms may want to show smoother earnings. For example, small EV may increase professionals' following and increase value.

Lang et al. (2002) charm a higher number of formal investors (Badrinath et al. 1989), or/and decrease the outward borrowing costs Trueman and Titman (1988), Several speculative models have been established quarrelling that revenue smooth spreads to administrators wish to sign their private information about upcoming

incomes to investors (Melamud, 2002) Specified these opinions, if revenue smoother through accruals are prized by investors before they suppose EV to be adversely associated to firms value after accounting for CFV. The historical observed study in risk management has responded to a sequence of main questions. For instance, Smith (1993), have studied currency, interest rates, and commodity hedging events by firms crossways sectors or private a precise manufacturing sector and the level to which these events are consistent with existing hedging theories.

Smith and Stulz (1985) Associated work has inspected additional prevarication activities which as the usage and connection of business financial results and accumulation management Barton (2001). The portfolio smooth relative between CFV and one month to five months or up to six-year earnings at the fixed level with numerous control of return explanatory variables that contain the FamaFrench 4 factors of size, market, book to market and price momentum, earnings momentum (Chang et al., 1996), illiquidity and earnings yield. Fama and MacBeth (1973) regression measured for the FamaFrench 4 factors, volatility experiences a monthly profit 20% or less as a result of volatility. The rating reason of CFV is due to un-diversified volatility and diversified volatility after that total cash flow is disintegrated interested in un-diversified or diversified cash flow proportional to the sectors mean, they find out that both systematic volatility and unsystematic volatility are valued similarly with the all over volatility. In detail, these are three instabilities change with each other. If anticipated CF is disparate to the equity holders risk,  $q$  must be adversely associated with diversified risk for the reason that cash flows are reduced at a greater rate for companies with bigger and higher diversified risk and they would suppose un-systematic risk to have no relative with organizations value.

Our suggestion is consequently unpredictable with the opinion that probable cash flows are un-connected to risk and displays as a substitute that predictable CF must rise with systematic risk if the capital marketplace discounts cash CF using the CAPM model. Additional, our indication demonstrations that anticipated CF increase with diversified risk to a level greater than would be compulsory to balance the effect of the rise in market risk on the discount rate to retain the existing

value of CF constant as market risk increases [Bhagat et al. \(2015\)](#).

[Figlewski \(1997\)](#) modern finance theory suggests numerous explanations why anticipated CF might be linked to the risk of cash CFV. The value of the firms is frequently decomposed into the worth of resources in place and the worth of GO. There is a significant work that highlights the option belongings of growth forecasts. Cash flow is the real growth opportunities from assets. Companies which are face large and greater cash flow volatility would have extra appreciated growth chances all different kept endlessly. The actual choices, growth opportunities consequently recommends that a company's Tobin Q increased with the firm's systematic and unsystematic risk.

[Bali and Cakici \(2008\)](#) companies with vital total volatility have a tendency to present both enormous un-systematic volatility and vast un-diversified volatility. The meaninglessness of the outcomes to the cash-flow breakdown is possible because cash-flow is not straight operated, and consequently corporations not inspired to peg down their own cash-flows to the industry (sector) mean accordingly to, their experiences to industry (Sector) cash flows. The final piece of suggestion is that the cash-flow instability outcome is the changed from the un-systematic return volatility result affected the group and firm levels and that neither decision drives the other, while they are extremely connected at the portfolio level, tall cash-flow volatility portfolios show very tall un-systematic volatility.

Though, in categories of portfolios on CFV organized for un-systematic return volatility, the CFV conclusion clusters in average to medium return volatility firms. The return of volatility effect groups in average to medium CFV firms. The cash-flow volatility consequence is diverse from the return volatility result in firms of the highest 29% to 32% of cash-flow volatility, only top 29% to 32 of idiosyncratic or un-systematic return volatility. Additionally, regulatory for CFV, FamaFrench four-factor spread among the smallest unstable cash-flow quintile and the greatest volatile cash flow quintile is .69% a month at 1% significance level. This spread scope is alike to un-conditional spread after there is no regulator is enforced. The CFV effect is diverse from the return volatility that affect at the firm level [Fama and MacBeth \(1973\)](#) their consequences an extensive variety of strength checks.

Ang et al. (2006) conclusions that cash flow volatility, emphasizing the sensitive consequences to the approximation gaps of volatility, budget systems for the portfolio returns, breakpoints for portfolio categorization, to extend and volatility controls. Haugen et al. (1996) reported that the income yield (earnings to price ratio) is positively associated with future returns.

$H_2$ : Cash flow Volatility significant negative associated with firm value.

### 2.3 The Effect of Systematic Risk on Firm Value

Higher discount rates usually yield a lower value so, according to the CAPM, systematic error is negatively associated with the firm value or it should have a negative effect when it is related to the firm value or Tobin Q. Also, the further empirical study that was done recently suggests that the systematic risk could have a major consequence on the firm value and not just this, idiosyncratic risk can also be priced and have an impact on the firm value as argued by (Shin and Stulz (2000)). Because omitted control variables to calculated risk management and firm risk, there is a important change in measuring the risk factor for hedging and non-hedging firms as neglecting those variables may hinder important differences among firms behavior and the environment in which hedging and non-hedging firms operate. Econometric procedures and simultaneous equations are often used by some authors to analyze this problem Graham and Rogers (2002)

Firms also use derivatives to reduce systematic risk as strongly suggested by the univariate results. According to the Capital Asset Pricing Model (CAPM), the implications of the corporate hedging decisions and risk assessment has been given a detailed study and treatment and it suggests that the essential and important factor that matters in the risk management is the systematic risk (Logue and Oldfield, 1977): and (Lessard, 1979)). The authors evidently argued that the value of a forward contract would be zero due to imperfections like default risks and transaction costs, that would have an impact on the firm value and Tobins Q. The economic significance, when there are economic conditions like high market risk

premium and the risk-free rate, are pronounced at those times and the significant economic relationship between the systematic risk and the market value of the firm can be articulated.

Firms in the industry might possess small or large growth opportunities depending on the environment they are working in where investors tend to look for a stock and firm with a particular risk profile to compensate the other background risks that can affect the stock price ((Orlitzky et al., 2003). The process of risk management and its association with the market value of the firm is basically the understanding of the different possibilities (upside as well as the downside) and risks that firms usually face. The upside or downside potential due to systematic risks can significantly affect the firms value as the portfolio.

Kiselakova et al. (2015) investigate risk and their impact on firm performance. They used secondary data for the purpose of the study examines the different types of risk on firm performance. The selected countries of Europe (Germany, Austria, France, Italy, United Kingdom and Poland) are incorporated. The selection based on the devolved and emerging countries They also examine internal risk which arises from the internally of the organization.to explore the effect there are many variables used i.e. systematic risk unsystematic risk inflation country risk financial structure (leverage). Financial result no one can predict either economic or enterprises. Results of the calculations established that higher impact of unsystematic risk on a value of the risk than systematic risks. For confirmation, this result is building Enterprise Risk Model (ERM), which contained certain financial indicators, systematic and unsystematic risk and forecast models.

Buckley and Ghauri (2004) show that international firms decrease their market risk because of the expansion advantage of getting cash flows in exceptional nations. It is posited in this text that international corporations may additionally boom their market danger appreciations to an increase inside the preferred deviation of CV from the international market, which offsets the decrease correlation associated with diversification. Evidence of a substantial high-quality dating among the extent of systematic risk in a firm and the degree of that company's international market is provided. This evaluation is regular with located practices utilization of

better markdown rates in assessing global plans.

$H_3$ : Systematic Risk is significantly impact to the firm value.

## 2.4 The Effect of Un-Systematic Risk on Firm Value

Just like the systematic risk, studies suggest that un-systematic risk or idiosyncratic risk is also having an adverse consequence on the firm value ((Shin and Stulz, 2000)). It is evident from the recent studies and literature that un-systematic risk also matters and it can be significantly associated with the firm value and firm performance (Santa Clara and Goyal, 2003: and Xu and Malkiel, 2002). On the other hand, ((Logue and Oldfield, 1977) argue that as per the CAPM, the un-systematic risk can be diversified away and the association with the firm value could be hindered in the process of creating portfolios of the investors.

Barth et al. (2001) argue that un-systematic risks increase when there are any mergers and the market value of the firm is significantly associated with the un-systematic risks. The negative impact of the un-systematic or idiosyncratic risk is evident from the literature studies that parallel existing asset pricing works, which finds a signal that systematic risk also matters and it affects the Tonins Q (McShane et al. (2011)). Goyal and Santa-Clara (2003) also find out that un-systematic risk matters and associated with the firm value.

Reinsurance or hedging does not change the value of the stock or the firm value due to the reduction in total risk, systematic and un-systematic as suggested by the risk management textbooks. As per this suggestion and recommendation, there should not be a significant relationship between risk management program and the market value of the firm but this is only a hypothesis based on certain evidence from the study of several non-hedging firms. On the other hand, the empirical study of the literature suggests that un-systematic risk is associated with the stock value of the firm (Verrecchia, 1989). That being stated, other experimental outcomes likewise reveal conditions where a decrease in the total risk prompts

either a decrease or an expansion in the stock value. Other outcomes of the study propose that a firm with large assets and minimum un-systematic risk that is huge in connection to its future prospects and opportunities might experience a lower cost of valuable capital (in light of the fact that of a lower stock beta) when the risk management of working income is reduced ((Fazzari et al., 2000)). While the result would be opposite when asset value of some insurance firm is small as compared to the value of future prospects. There is a strong statistical relationship between the total risk and the beta, which also have an effect on the market value of the firm. So it can be said that there is an indirect relation between the firm value and un-systematic risk as well, according to the results suggested by the previous studies.

$H_4$ : Firm-specific risk inversely significant effects to the firm value.

## 2.5 The Effect of Size (Total Assets) on Firm Value

Firm size is one of the indicators of the good growth of the firm as this variable has an effect on the firm value and performance. A big firm with a large number of total assets is a signal of good growth of the firm and attracts the investors as well, which results in the increase in the market value of the firm. A big firm ensures the better profitability and the idea of big profit accomplishment in the future could result from the increase in the stock prices of the firm which is directly linked to the firm value. Pandey and Chotigeat (2004) argue that capital structure and size directly affect the firm value. A study done by (Berger and Di Patti, 2006) suggests that firm value is associated with the size of the firm. Firms and companies are usually controlled by the majority shareholders who can be made changes in the firms policies and management and tend to align their interest with the outside investors in the growth of the company and their wealth

(Lopez, (1999). The results suggest that when the interest of shareholders who control the company are perfectly aligned with the outside investors, it helps in growing the total assets and size of the firm which would consequently have the positive impact on the market value of the firm.

Rajan and Zingales (1995) integrates four variables to determine their relationships with capital structure, and finds a positive relationship between size and Tobin Q. Rajan and Zingales (1995) Huang (2006) also report a positive relationship between Tobin Q and size for the firms in China. Anwar and Sun (2013) report a negative relationship between size and Q of Firms. Harris and Raviv (1991) state that there is the positive relationship between size and firm value (Tobin Q) because larger firm are highly diversified and they tend to finance them through external financing as well, which allows them to reach their target capital structures. Loof (2004) also argue that large-sized firms adjust more quickly to their capital structure.

Nivorozhkin (2004) argues that there is the negative relationship between size and Tobin. Karadeniz et al. (2011) done a study to see the indirect relation of firm size to the firm value. The study suggests that an optimum capital structure affects the firm value and there is a significant relationship between them. So, it can be said that the firm size and good reputation via optimum capital structure might help to increase the firm value.

Rajan and Myers, (1998) find out that controlling shareholders of the company tend to invest the liquid assets to grow the size of the company and to increase its total assets, which ultimately lead to the good reputation of the company due to which outside investors are attracted and the market value of the firm also increase. So it can be said from the literature studies that size or total assets of a firm have an impact on the growth of the Tobins Q and market value of the firm.



## 2.6 The Effect of Return on Assets on Firm Value

Return on assets (ROA) is considered to be one of the main factors on which market value mainly depends. Literature studies depict the association of ROA on firm value and performance. [Asiri and Hameed \(2014\)](#) formed a model and study the relation of various variables and ratios with the market value of a firm. The results suggest that smaller firms and their market value is usually explained by three factors, i.e. Return on assets, beta of the firm and financial leverage. While the firm value of large firms is usually depicted and statistically explained by the ROA and Financial Leverage. Regardless of the sector in which a firm operates, investors usually take an interest in the profitability of a company by analyzing the ROA and the financial leverage of the firm.

Beaver, (1989) argue and studies the return on assets as a profitability measure which attracts or repels an investor thus partially explains and depicts the market value of the firm. Return on assets provides a valuable framework to analyze the performance of a firm in a long run. Following the ROA trajectory and the insights play an important role in determining the firm value in the long-term.

[Khatab et al. \(2011\)](#) conducted a study to find the relation between the profitability of commercial banks and their liquidity for the better understanding of effective liquidity management impacts. The study argues that the return on assets (ROA) is significantly associated only with the liquid ratio. Moreover, the results from the studies also suggest that ROA can also be affected by the quick ratios and current ratios. The empirical studies of previous literature find out that each variable (ratio) has an impact on the return on the assets that had affected the market value of the firms. Based on these results, a hypothesis can be made that return on assets (ROA) has an impact on the Tobins Q. The effect of Return On Assets (ROA) to Tobin's Q, populations to be studied in this research is a meal and beverage are covered within the Indonesia Stock Exchange (BEI) in 2007-2011, the time horizon of 5 years of studies via a sampling approach in this take a look at turned into a purposive sampling method, the method of analysis used descriptive records and simple linear regression analysis. The consequences of the have a look at, the value of the effect on Tobin's Q ROA of 14.6% and

ROA outside factors that have an effect on Tobin's Q of eighty-five. Four percent Return on Assets (ROA) full-size effect on Tobin's Q.

[Lakonishok and Shapiro \(1986\)](#) research the historic courting for the duration 1962-1981 among inventory marketplace returns and the following variables: beta, residual preferred deviation (or general variance), and length. They conclude that neither the conventional measure of danger (beta) nor the alternative hazard measures (variance or residual widespread deviation) can explain the cross-sectional variation in returns; best length appears to count. When January returns are eliminated, even the dimensions variable loses its statistical importance.

## 2.7 The Effect of Leverage on Firm Value

There is a very little or no significant piece of evidence of a relationship between capital structure and firm value. Change in capital structure hardly have any effect on the firm value, but a recent test on optimal capital structure suggest that as attributed to the debt tax shield effect, the capital structure is associated with the leverage and the reported evidence signifies a positive relation in optimal capital structure (Miller and Modigliani, 1958). The firms that were examined in the study (Miller-Modigliani) were all regulated firms that might suggest that the association of the capital structure to the firm value were caused by the regulatory working environment of the firms and the findings do not clearly depicts a clear and significant association of these parameters. Since the optimal capital structure study by Miller-Modigliani, there is no empirical literature that clearly shows the association of change in capital structure with the size of its debt tax shield and firm value. A recent study examined the two forms of capital structure change that are re-capitalization and issuer exchange offers. The result signifies a positive relation between stock prices and firm value of the leverage and debt level [Masulis \(1984\)](#). Debt level changes affect the firm value, as the hypothesis suggests in the study and the evidence is consistent with the optimal capital structure model.

Previous empirical studies suggest that most of the capital structure theories articulate by capital structure choices have a significant relationship between them

and are also indirectly related to the Tobins Q and market value of a firm. Another study done by [Myers \(1984\)](#) uses the results from (Brealey, and Donaldson, 1961) to evidently back the hypothesis that firms usually tend to raise its capital structure in terms of debts, retained earnings and from implementing new equities, that also affect the firm value. So it can be concluded from the aforementioned studies that there could be a positive impact of raising the capital structure on the market value of the firm. Furthermore, profitability and capital structure can also be correlated as suggested by (Majluf and Myers, 1984) which can also have an indirect relation with the firm value. The effect of alternate in debt degree a company values. Two sorts of capital shape alternate are examined: provider change offers, and recapitalizations. The effects indicate that both stock costs and firm values are positively associated with adjustments in liability degree and leverage; protection prices are adversely relationship of these capital shape alternate variables. This suggestion is regular with the fashions of most effective capital structure and with the speculation that debt degree changes launch information approximately modifications in company value.

Eli et al. (2007) estimated the linkage of Research and Development and capital structure and firm value. They investigate these relationships in different time horizon and across the sectors. They used sales debt to equity ratio capital expenditure over the sale, its called growth opportunity research and development over advertising expenses as the independent variable and firm value depends variable. The results show capital expenditure significantly affect the firm value in this study different method of regressions apply and the results show that R&D expenditure played a vital role regarding firm value.

With a like ideal model used by ([Kothari et al. \(2002\)](#)), they find out for the large sample that research and development and capital expenditure displays huge outcome on the unpredictability of upcoming income the measure of an organizations risk engaged here than capital expenditures. So this outcome observed by capital expenditure and research and development industries and normally both expenditures not done by many companies at a time. Their results are alien to the history of main technological and scientific development industries. Serve the sample of

an early duration of (1972-1985) and a late duration (1985 to 2000). They also find that the large link of capital expenditures with firm value and earnings of the firm when earnings increase also understood that the value of the firm enhances rapidly. This study represents in late duration the research and development and capital expenditures greater than the period of 1972-1985).

The confirmation is also reliable with the knowledge that in the United State financial conditions and the economy as an entire here was a swing in the relationships among Research and development and capital expenditures at that time the revolution in it.it also introduced and extended a hole in the risk allied with these two significant events. Additional suggestion concerns United State generally accepted accounting principles for CAPITAL expenditures and research and development expenditures. The prior investigation, such as ([Lev and Sougiannis \(1999\)](#)) has claimed for altering generally accepted accounting principles in courtesy of giving research and development as CAPEX by requiring capitalization of research and development.

Kothari et al. (2002) argued against any such type of capitalization. This investigation delivers confirmation that Capital expenditure and researches and development (R&D) expenditures have great, positive and reliable impacts on the value of the respective organizations. [Sydler et al. \(2014\)](#) like info on present cash flows, statistics on marketing and R&D expenditure seem to assistance stockholders form suitable opportunities regarding the scope and inconsistency of future cash flows. As a consequence, expenditure on marketing and R&D can be observed as a method of investment in intangible assets with probably optimistic effects on upcoming cash flows. While the significant market value effects of advertising and generally parent, or all COMPUSTAT database firms, such collective sign has the possible too vague expressive changes across firm size modules and industry.

## 2.8 The Effect of Growth Opportunity on Firm

Hubbard and Bromiley (1994) performed studied and the study result suggests that growth opportunities is the most common objective and an important factor mentioned by the top managers in the survey. Growth opportunity play an important role in determining the line of action for the firm by the top managers and the variable is associated with the market value of the firm as suggested by the previous literature studies. Kaplan et al. (2001) Norton and Kaplan (92, 93, 1996) studies these variable and argue that a wide range of goals must be set by the firms including sales growth to efficiently reach the financial objectives of the firm and to increase the market value of the firm.

Carlsson and Eliasson (1994) Eliasson, (1987) argues that planning system of a firm and to provide a visible and useful benchmark for the managers in order to motivate them, the system generally starts from setting the sales targets and emphasis on sales growth is partially associated with the firm value. Growth opportunities play a central role in Agency theory and according to this theory, sales growth plays an important role for the personal benefits of managers as it increases the cash flow and guarantee the employment of managers which also results in the increase in the salaries due to greater management responsibilities but the theory and this research failed to determine a clear relation between growth opportunity or sales growth with the performance of the firm.

Rumelt and Wensley (1981) Rumelt and Wensley, (1981) find out that growth opportunity influences the profitability because of some unobserved variables and market share growth also correlate with the returns. Summarizing the literature studies gives only a partial picture of the sales growths association with the firm value and performance. There could be more sales and an increase in total sales but a decline in the market share of the firm in a growing industry. Similarly, the previous literature investigates that sales growth does not always result in the increase in returns to the stock holders (Jensen (1993)).

## 2.9 The Effect of Advertising to Sale Ratio on Firm Value

Advertising and other marketing variables also affect the firm performance and it is an important variable that needs to be understood by the analysts, managers, and researchers. It is evident from the study that firm managers make advertising decisions and physical capital investment in advertising to increase the firm value. As per the neoclassical theory of the investment, the only backlash in the model is the presence of two capital inputs and their adjustment costs. [Liu et al. \(2009\)](#) Whited, Liu, and Zhang, (2009) presented a model and building on this model, the marketing variables such as advertising to sale ratio and physical capital investment are found out to be positively associated with the firm value.

The advertising and sales have a positive effect on the firms market value and the high advertising to sales ratio result in the increase in firm value and high average stock returns. Moreover, ([Joshi and Hanssens \(2010\)](#)) (Joshi and Hanssens, 2010) studied the relation between firm performance and advertising intensity and the results of the study suggest there is a positive relationship between these variables. [Chauvin and Hirschey \(1993\)](#) performed a study and finds out that research & development, and advertising expenditures have a consistent large positive influence on the firm value and its future cash flow.

[Conchar et al. \(2005\)](#) Investigated positive impact of advertising on the firm value and the performance. In a recent empirical study, the relation between firm market value and advertising & sales comes out to be positive using the OLS ([Qureshi, 2007](#) [Siong 2010](#)) used the OLS reports to study the relationship between marketing variables such as advertising and capital investment and the results suggest a statistically positive influence of marketing variables on the market value of the firm. [Kundu et al. \(2010\)](#) compiled and used the data of more than 150 firms and finds out that Tobins Q is positively related with the advertising expenditures and there is a significant relationship between these variables.

# Chapter 3

## Data Description and Methodology

### 3.1 Data Description

The current study aims to explore the impact of Earning volatility, Cash flow volatility on firm value for 60 non-financial companies listed at Pakistan Stock exchange. The sample period is about 15 years from 2003 to 2017. Firms with incomplete financial data are not included in the sample; because they cannot serve as the purpose of the study, as well as all proxies, cannot be applied to incomplete data. Only non-financial companies are used for analysis because the year closing of non-financial companies in 30th June whereas the year closing of financial companies is end of December and, also the capital structure of non-financial firm is different and all other decisions of a financial sector are well regulated and significantly different from the companies in non-financial sectors ((Bassey et al., 2014). At the same time, this study can be used in the financial sector as well by making some fundamental changes. The tests are based on lagged and forward year information. That's why few years observations are lost in regression.

## 3.2 Panel Data Analysis

Panel data analysis is used when the data has both cross-sections and time series Data, same applies to this study. There are three different models used in panel data analysis. Each has a different assumption regarding the intercept. The first model of the common coefficient has constant intercept across all cross sections and time Period. The second model is the Fixed Effect Model which describes that the intercept is different for all cross-sections. The third one is a Random Effect Model, in which the intercept is different for all the cross sections along with random over time. Two different tests are used to determine which of the three models should be used for application in panel data analysis. The Fixed Effect Redundancy test is used to identify which of the two models of the common coefficient model and the fixed effect model can be applied. If the result is significant in the case of this test, then the fixed effect model has used, but if the result is insignificant then the common coefficient model will be used. The Hausmen test is used to determine which of the two models of the fixed effect model and the Random effect model should be used for the study. If the result of this test is significant, then fixed effect model has used and in case of insignificant results, the Random effect model has used for the analysis of data.

**H0:** Common effect model is relevant .

**H1:** Fixed effect model is relevant.

If the answer is significant the reject the null hypothesis and if the answer is insignificant the use fixed effect model.

**H0:** Random effect model is appropriate.

**H1:** Fixed effect model is appropriate.



If the answers is significant than reject the entire null hypothesis and if the answer is insignificant, then use null hypothesis. In this study the answer is significant so use fixed effect model.

### 3.3 Sources of Data

In this study secondary data is used for analysis. Annual data is used for analysis. Only those companies are selected which companies closing date is 30th June. The data for other variables are collected from the annual financial statements of firms. The Data is collected from the following sources:

- Pakistan Stock Exchange website, PSX
- Business recorder website
- State bank of Pakistan website
- Websites of companies used in the analysis
- Scs Trade

TABLE 3.1: No. of Companies and Respective Industries

No	Sector Names	Number of Companies
1	Cement	12
2	Textile Spinning	3
3	Pharmaceutical company	4
4	Chemical	5
5	Oil & Gas Marketing Companies	3
6	Glass	2
7	Engineering	4
8	Technology & and Communication	2
9	Sugar Industry	5
10	Automobile Assembler	2
11	Cable & Electrical Goods	2
12	Fertilizer	1
13	Miscellaneous	4
14	Paper & Board	1
15	Food & Personal Care Products	7
16	Transport	1
17	Tobacco	2
Total	17	60

### 3.4 Control Variables

Prior work suggests that there are many other factors which are the effect the firm value. Lang and Stulz 1994) and Allayannis and Weston (2001), The fixed effect examinations control for other determinants that theory recommends and previous empirical work has revealed, to has an important effect on firm value. These variables are control variables because the previous literature shows these also affect the firm value.

Variables	Proxy	Measured By
Size	Log Total Asset	Log Of total Assets
Profitability	Return on Assets	Net Profit/ Total Assets
Growth Opportunity	CAPEX	Capital Expenditure to sales
Leverage	Capital Structure	Debt To Equity Ratio
ATS	Advertising to sale	Advertising Expenditures over sales

### 3.5 Measurement of Variables

#### 3.5.1 Dependent Variable

#### 3.5.2 Tobin Q

Where TQ, dependent variable in the study, which is the value of the i firm in time t and it is calculated by the ratio of the market value of the equity and total book value of liability to net assets. I have taken net assets, including long term and short term. The value of the company is defined as the total worth of the company. It has also been calculated by the market capitalization. Q is the proxy of firm value Utilize the market-to-book ratio to calculate Q. It is computed

total number of shares multiplying by its market price of the end of the fiscal year (market price of the Equity) plus the book value of long-term liability and divided by total assets of the firm, for the market value of equity (Shin and Stulz 1999).

$$TobinQ = \frac{MPS \cdot NOS + LTD}{T.A}$$

**MPS** = Market price of the share.

**NSO** = Number of the share outstanding which are reported in companies Financial Statements.

**LTD** = LTD is Long term debt obligations.

**T.A** = T.A is a total asset which firms hold to generate revenue.

## 3.6 Independent Variable

### 3.6.1 Estimation of Earnings Volatility and Cash Flow Volatility

The common method is for estimation a time-series model for earnings and cash flows, and computes the time-series volatility only for the stationary component of the data. There is an massive work in accounting (see, e.g., Brown (1993) and references therein) suggesting that usually, earnings are strongly tenacious and show seasonality. To justification for such time-series properties, I have estimated a model of earnings and cash flows that accounts for this persistence with lagged values of earnings and cash flows, as well as quarterly dummy variables. Our estimation equation for each firm is:

$$E_t = \alpha + \beta_1 E_{t-1} + \sum_{q=1}^4 \beta_q 1_{quarter} + \epsilon_t$$

Earnings volatility is calculated through the standard deviation of the quarterly earnings of the company. Quarterly earnings collected based on earnings per share

from operations. There are minimum 36 values for each company and maximum 60 values. First of all, monthly values of quarterly earnings from operations taken from the financial statements of the companies. Dummy variables are created for each year and each firm. Then through equation find out residual to avoid the seasonality because earnings are persistent and exhibit seasonality. After finding out of residual, then calculated the standard deviation of each year and taken the values of Q4 to use as Earning volatility (see e.g., Brown 1993; (Albrecht and Richardson, 1990); Michelson, Jordan-Wagner, and Wootton, 1995

In this model the constant term,  $\alpha$ , along with the AR (1) coefficient captures serial association and any time-series tendency in earnings. This study has estimated the above model for each firm individually based on our full sample of fifteen years of quarterly earnings data (2003-2017). Using the results from this regression for each firm, computed the sample standard deviation of the estimated residuals.

$$\text{Volatility of earnings} = \text{Stdev}(\epsilon_t)$$

### 3.6.2 Earnings Volatility

EV is the Earning volatility of i company at the time t. Many proxies are used by the researcher to measure earning volatility, but in this study used the standard deviation of quarterly earnings. Earning volatility means how steady and unsteady earning of the firms. The residuals of the quarterly earnings per share, which is estimated using this equation.

$$E_t = \alpha + \beta_1 E_{t-1} + \sum_{q=2}^4 \beta_q 1_{quarter} + \epsilon_t$$

Then

$$\text{Volatility of earnings} = \text{Stdev}(\epsilon_t)$$

### 3.6.3 Cash Flow Volatility

Cash Flow volatility means that cash flow volatility refers to the amount of uncertainty or risk related to the cash flows from operations. A higher volatility means companies net operating cash flows are highly unpredictable and unstable. It means firms can face the shortage of the cash flows dramatically over a short time period in either direction. A lower volatility means that cash flows not fluctuate dramatically, and tends to be steadier.

Cash flow volatility is calculated through the standard deviation of the quarterly cash flow of the company. Quarterly cash flow collected based on net cash flow from operations ((Minton et al., 2002)). There are minimum 36 values for each company and maximum 60 values. First of all, monthly values of quarterly cash flow from operations taken from the financial statements of the companies. Dummy variables are created for each quarter of each firm. Then through equation find out residuals to avoid the seasonality because cash flow is persistent and exhibit seasonality. After finding out of residuals then find the standard deviation of each year and taken the values of Q4 to use as cash flow volatility. We can also utilize the coefficient of variation as in Minton and Schrand, (1999).

$$CFV_t = \alpha + \beta_1 CF_{t-1} + \sum_{q=2}^4 \beta_q 1_{quarter} + \epsilon_t$$

Then

$$\text{Volatility of Cash flows} = \text{Stdev}(\epsilon_t)$$

**CFV** = Standard Deviation of Residual of Quarterly Operating Cash flows.

### 3.6.4 Systematic Risk

SR is the Systematic risk of i company in the time t. The systematic risk is the un-diversified risk which cannot be eliminated, but can be minimized through diversification. To calculate Systematic risk monthly values of the share prices

are collected and Constructed as beta squared multiplied by the variance of the market return. This measure follows the same construction as for the other market risk measures.

$$r_{it} = \alpha + \beta_j r_{mt} + \epsilon_{ij}$$

$r_{ij}$  is the log return of firm  $j$  for day  $i$  and  $r_{m i}$  is the log return of the CRSP value-weighted index for day  $i$ . This study report results using ordinary-least-squares estimates of the market model. Systematic risk is the product of  $\beta_j$  and the variance of the value-weighted index return. Unsystematic risk is the variance of  $\epsilon_{ij}$ . Entire risk is the amount of systematic risk and unsystematic risk.

### 3.6.5 Beta

Beta is the measure of systematic risk. The market model is used to calculate Beta for the firms. In market model, 3 years monthly returns of Pakistan stock exchange value-weighted index used to calculate Beta. For example, in this study required Beta for the firm, for the year of 2003 then there are used monthly returns of the value-weighted index and firm between the periods of 2000 to 2003, (36 months values of returns used to calculate beta for the year of 2003 to onward).

### 3.6.6 Firm-Specific Risk

Type of risk which is solely related to the firms, which firms stockholders invested. This risk is not diversified. Firm-Specific Risk is computed as the residual risk from the market model as in (Shin and Stulz, 2000).

### 3.6.7 Return on Assets (ROA)

Return on assets is a ratio which tells investors about the financial performance of the company. It is calculated by using net profit divided by Total Assets. Its also defined that how companies are efficient using their resources to generate profit.

$$ROA = \frac{N.P}{A.T.A}$$

Whereas

**N.P** = N.P is net profit which firms generate over the year from the usage of resources which companies own.

**A .T.A** = Average total assets are calculated plus the previous 2 years value of total assets and divided by 2. This item represent the average value of the assets. This is the Company annual data shows current assets plus property, plant, and equipment, plus other non-current assets (including intangible assets, deferred charges, and investments and advances.

### **3.6.8 Capital Expenditures**

This item represents that amount which companies are spending to acquire upgrades, enhance the technology of their assets. In this expenditure, buildings, equipment and new project and investment are included.

**Capital Expenditure** = PPE Current year - PPE Previous year + Depreciation

### **3.6.9 Long-Term Debt**

Long term liabilities include the debt obligations which are due more than one year from the firm's balance Sheet date or due after the current operating cycle.

### **3.6.10 Market Risk**

The standard deviation of the Pakistan Stock exchange value-weighted market return based on three years of monthly returns over the preceding three years of the observation unit.

### 3.6.11 Size

The size is calculated through the log of total assets of the firms. ((Kumar and Waheed, 2014)).

## 3.7 Methodology

This study used the least square method to check the relationship of earnings volatility and cash flow volatility on the value of the firm accompanied by other variables. I formed the linear equation on the basis of the literature review, which this study has done in the previous chapter and test those factors which play an important role in the value of the firm.

### 3.7.1 Earnings Volatility and Firm Value

$$\begin{aligned}
 (\ln)TQ_{it} = & \beta_0 + \beta_1(\ln)CFV_{it} + \beta_2(\ln)SR_{it} + \beta_3(\ln)FSR_{it} + \beta_4(\ln)TA_{it} + \beta_5ROA_{it} \\
 & + 2\beta_6GO_{it} + \beta_7CS_{it} + \beta_8ATS_{it} + \epsilon_t
 \end{aligned}
 \tag{3.1}$$

### 3.7.2 Cash Flow Volatility and Firm Value

$$\begin{aligned}
 (\ln)TQ_{it} = & \beta_0 + \beta_1(\ln)CFV_{it} + \beta_2(\ln)SR_{it} + \beta_3(\ln)FSR_{it} + \beta_4(\ln)TA_{(it)^2} + \beta_5ROA_{it} \\
 & + 2\beta_6GO_{it} + \beta_7CS_{it} + \beta_8ATS_{it} + \epsilon_t
 \end{aligned}
 \tag{3.2}$$

Whereas

$(\ln)TQ_{i,t}$  = Log of Tobin Q which is the proxy of firm value.

$(\ln)CFV_{i,t}$  = Cash flow volatility.

$(\ln)EV_{i,t}$  = Log of Earnings volatility.



$(\ln)SR_{i,t}$  = Log of Systematic Risk.

$(\ln)FSR_{i,t}$  = Log of Firm Specific Risk.

$(\ln)TA_{i,t}$  = Log of total.

$ROA_{i,t}$  = Return on assets.

$CS_{i,t}$  = Leverage ratio (debt to Equity ratio).

$ATS_{i,t}$  = Advertising to sales ratio.

Prior research shows earnings and cash flow volatility is measuring the same phenomena due to this reason. Allayannis and Weston (2001) they find that CFV has an adverse result on firm value in all of their examinations, (they are unable to find a similarly negative effect for earnings volatility at the same time). These results are robust to several alternative measures of earnings volatility as well as more direct measures of earnings smoothing like the ratio of earnings volatility to cash flow volatility and the association between contemporaneous changes in accruals and changes in cash flows ((Leuz et al., 2003)) In cross-sectional tests, they find that generally cash flow volatility has a negative effect on Firm value. However, in other time-series, or panel tests, cash flow volatility is often insignificant, while earnings volatility remains strongly significant (and negative). This horserace” regressions between earnings and cash flow volatility yield an interesting result. Rountree et al. (2008) test, earning volatility and cash flow volatility in 2 different equations.

### 3.8 Variance Inflation Factor (VIF) Test

If the correlation between independent or predictor variables is very high, then the issue of multicollinearity arises and it may affect the regression results because instead of affecting the dependent variables independent variables start effecting each other and overall results get affected. The check the multicollinearity issue VIF variance inflation factor is used.

# Chapter 4

## Data Analysis and Discussion

### 4.1 Descriptive Statistics

The descriptive statistics show the behavior of data. Statistical behavior of data panel. Data of the independent variables and dependent variables for the period of (2003 to 2017) is presented in Table 1. The summary statistics about Tobin Q shows the mean value is 1.41927 of Pakistan firms. The minimum value of Tobin Q is 0.51768 and maximum value of Tobin Q is 2.98931 while the standard deviation of T-Q is 0.65648. EV is earnings volatility the mean value of earning volatility is 5.51107 while the standard deviation of EV is 8.77756. The maximum and minimum values of earning volatility EV are 66.80348 and 0.098342. CF is the abbreviation of cash flow. The value of standard deviation of CF is 119.6035 while the average value of cash flow is 34.38334. The minimum value of CF is 0.022206 and maximum value of cash flow CF is 1981.808. The minimum and maximum value is highly variation with each other. SR shows the systematic risk. The average value of SR is 0.007309 while the maximum and minimum values of SR are 0.052393 and 0.008876. The standard deviation of SR is 0.00824. FSR is a firm specific risk. The standard deviation of FSR is 0.167532 and mean value of firm specific risk FSR is 0.063879. The maximum value of FSR is 1.317367 and minimum value of firm specific risk is 0.00000000116 there is a highly variation between maximum and minimum values. T-A show the total assets of firms. The average value of total assets T-A is 18.8769 while the minimum and maximum

TABLE 4.1: Descriptive Statistics for the Period of the 2003-2017

Variables	Mean	Median	Maximum	Minimum	Std. Dev.
T-Q	1.41927	1.26846	2.98931	0.51768	0.65648
EV	5.511077	2.800438	66.80348	0.09834	8.77756
CFV	34.38338	0.831323	1981.808	0.02221	119.604
SR	0.007309	0.005155	0.052393	0.0089	0.00824
FSR	0.063879	0.018036	1.317367	1.20E-09	0.16753
T-A	18.87692	5.070014	324.1868	0.41271	40.1572
ROA	7.131465	3.523303	67.58851	-17.642	11.7319
CS	1.9537	1.2607	32.0055	0.0072	4.8251
GO	0.156434	0.065635	7.471473	-4.0764	0.82711
ATS	0.08232	0.00119	7.9446	0.0000	0.47658

*Note: This table shows Descriptive statistics for various independent variables and dependent variables. The dependent variable is Tobin q which the proxy of firm value. The independent variables are Ev is the earning volatility of the firms CFV is cash flow volatility. SR is the systematic risk which calculated using Beta. FSR is the firm specific risk which solely related to firms: T-A is the size of the firms which is equal to log of total assets. ROA is the rerun on asset which is net profit over total assets. GO is the growth opportunity which is Capx over sales CS the capital structure of the firms. ATS IS the advertising expense over sales. While CFV is scaled by 1 million and total assets are scaled by 10 million.*

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values of T-A are 0.41271, 324.187 and Standard deviation of total assets T-A is 40.1572. ROA means the return on assets. The maximum value of ROA 67.58851 and minimum value of ROA is -17.64238 while the standard deviation of ROA is 11.73194. The average value of return on assets ROA is 7.131465. CS shows the capital structure. The average value of capital structure CS is 1.9537. The Standard deviation of CS is 4.8251 while the minimum and maximum values of capital structure CS are 0.0072 and 32.0055. GO shows the growth. The standard deviation of GO is 0.87112 while the minimum and maximum values Of GO are -4.076374 and 7.471473. The average value of the GO is 0.156434. The mean value of ATS is 0.08032. Standard deviation of ATS is 0.47658. The maximum value of ATS is 7.9446 and minimum value of ATS is 0.0000.

## 4.2 Correlation Matrix

The table 4.2 shows Tobin q is positively correlated with earning volatility 0.124. Tobin q is negatively correlated with systematic risk and firm specific risk -0.132, -0.083. Cash flow and total assets are negatively correlated with Tobin q -0.029, -0.168. Tobin q is positively correlated with return on assets and advertisement to sale 0.305, 0.104. CS and growth opportunities are negative correlated -0.096, -0.036 with Tobin q. EV is negatively correlated with cash flow -0.048. Systematic risk and total assets are negatively correlated with earning volatility -0.159, -0.069. EV is positively correlated with firm specific risk and return on assets 0.167, 0.198. Advertisement to sale is positively correlated 0.021 with earning volatility. Earning volatility is negatively correlated with capital structure and growth opportunities -0.008, -0.038. Systematic risk and firm specific risk are negatively correlated with cash flow -0.064, -0.047. Cash flow is positively correlated with total assets 0.156. Return on asset is negatively correlated with cash flow -0.085. Growth opportunities and advertisement to sale are positively correlated with cash flow 0.043, 0.017. Cash flow is positively correlated with capital structure 0.001. Systematic risk is positively correlated with firm specific risk 0.102. Total assets and return on assets are negatively correlated with systematic risk -0.040, -0.085. Systematic risk is positively correlated with capital structure and growth opportunities 0.045, 0.037. Advertisement to sale is negatively correlated with systematic risk -0.086. Firm specific risk is positively correlated with total assets and return on assets 0.045, 0.061. Capital structure and advertisement to sales are negatively correlated with firm specific risk -0.049, -0.038. Firm specific risk also negatively correlated with growth opportunities -0.002. Total assets are negatively correlated with return on assets and advertisement to sale -0.040, -0.027. Growth opportunities and capital structure are positively correlated with total assets 0.035, 0.339. Return on assets is negatively correlated with capital structure and growth opportunities -0.160, -0.029. Advertisement to sale is positively correlated with return on assets 0.021. The capital structure is negatively correlated with growth opportunities and advertisement for sale -0.018, -0.043. Advertisement to sale is negatively correlated with growth opportunities -0.100.

TABLE 4.2: Panel-correlation of Earning, Cash flow volatility and other variables for the period of 2003 to 2017

	T-Q	EV	CF	SR	FSR	T-A	ROA	CS	GO	ATS
T-Q	1									
EV	0.124	1.000								
CFV01	-0.029	-0.048	1.000							
SR	-0.132	-0.159	-0.064	1.000						
FSR	-0.083	0.167	-0.047	0.102	1.000					
T-A	-0.168	-0.069	0.156	-0.040	0.045	1.000				
ROA	0.305	0.198	-0.085	-0.085	0.061	-0.040	1.000			
CS	-0.096	-0.008	0.001	0.045	-0.049	0.035	-0.160	1.000		
GO	-0.036	-0.038	0.043	0.037	-0.002	0.339	-0.029	-0.018	1.000	
ATS	0.104	0.021	0.017	-0.086	-0.038	-0.027	0.021	-0.043	-0.100	1.000

Note: : This table shows correlation for various independent and dependent variables. The dependent variable is Tobin q which the proxy of firm value. The independent variables are Ev is the earning volatility of the firms CFV is cash flow volatility. SR is the systematic risk which calculated using Beta. FRM is the firm specific risk which solely related to firms: S is the size of the firms which is equal to log of total assets. ROA is the return on asset which is net profit over total assets. GO is the growth opportunity which is Capx over sales CS the capital structure of the firms. ATS IS the advertising expense over sales.

### 4.3 Multicollinearity Check of the Independent Variables for the Period of 2003 to 2017

If the correlation between independent or predictor variables is very high, then the issue of multicollinearity arises. It may affect the regression results because instead of affecting the dependent variables independent variables start affecting each other. So, overall results get affected. To check the multicollinearity issue VIF variance inflation factor is used.

TABLE 4.3: Variance Inflation Factors of the Earning volatility, Cash flow volatility and firm value.

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.067	3.332	NA
EV	0.000	1.544	1.107
CFV	0.000	1.125	1.039
FSR	0.761	1.213	1.059
SR	0.890	1.907	1.067
T-A	0.000	1.230	1.172
ROA	0.000	1.479	1.080
CS	0.001	1.264	1.036
GO	0.034	1.187	1.146
ATS	0.090	1.041	1.020

*Note: This table shows (VIF) Variance Inflation Factors for various independent variables. The dependent variable is Tobin q which the proxy of firm value. The independent variables are Ev is the earning volatility of the firms CFV is cash flow volatility. SR is the systematic risk which calculated using Beta. FRM is the firm specific risk which solely related to firms: S is the size of the firms which is equal to log of total assets. ROA is the rerun on asset which is net profit over total assets. GO is the growth opportunity which is Capx over sales CS the capital structure of the firms. ATS IS the advertising expense over sales When the centered value of VIF is less than 5 there is no concern of multicollinearity. If the centered value is more than 5 there is a problem of multicollinearity that must be resolved before running the regression equation. The centered value of EV CFV SR FSR T-A ROA GO ATS is less than 5 are which means there are no concerns of multicollinearity in the data. These variables can be regressed simultaneously.*

## 4.4 Diagnostics Test

As it is a panel data analysis, so it becomes important which of the models in the panel analysis is being used in this study. There are two different models, Common Coefficient model, fixed effect model. Each of these has different assumption in relation to the nature of the data with respect to time and cross section. For opting one of these models the Redundant Fixed effect test is used to identify either the constant coefficient model or the fixed model is to be used for the study. If the results are significant then fixed effect model is used, but if the results are insignificant, then the common coefficient model is used. As the test results are significant so the fixed effect model is opted between these two.

TABLE 4.4: Redundant Fixed Effects Tests.

Redundant Fixed Effects Tests	Statistic	d.f.	Prob.
Cross-section F	6.34	-59559	0
Cross-section Chi-square	321.13	59	0

TABLE 4.5: Random Effect Model.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	25.543521	8	0.0013



## 4.5 The Results of Fixed Effects Model for Earning Volatility

The value of determination coefficient ( $R^2 = 0.5279$ ) indicates that the model has strong explanatory power. The value of adjusted coefficient of determination ( $\text{Adj. } R^2 = 0.4726$ ) that the independent variables explain 47.26% variation in Dependent variable. Moreover intercept is significant (0.0000) that indicates the probability of omitted variables. It means there are various variables which are included in this study but there are also some variables which may impact Tobin q which is the proxy of firm value but are not included in this study. In model 1 only without risk variables included. Model 2, firm specific risk in model 3 systematic risk included. In model 4 all the 3 variables of risk added. As model 1 show; most of our control variables are significant and have the same signs as in the literature. The ATS and growth are insignificant, This first variable which significantly impacts the Tobin q is Ev, with p-value 0.0428, The coefficient of Ev had value of -0.052335, this negative value along with p-value indicates a significant and negative relationship between Ev and Tobin Q Above result is the according to the expectations that volatility in financial statements negative impact on firm value (Trueman and Titman 1988; Brennan and Hughes 1991; Lang, Lins, and Miller 2002; and Badrinath, Gay, and Kale 1989; Allayannis Weston 2003). The SR also has significant relationship with the Tobin q with a p-value of 0.0791, but the coefficient of SR has a value of 0.215087, which indicates a Positive relation between SR and proxy of firm value. These results are consistent with the literature included in this study such as research by Shin and Stulz (2000). The size also has significant relationship with the Tobin q with a p-value of 0.0032, but the coefficient of Size has a negative value of -0.0660 which indicates a negative relation between Size and proxy of firm value. These results are consistent with the literature included in this study such as research by (Luqman 2017). The ROA also significant impacts with Tobin q, with a p-value of 0.000, the coefficient of this variable is 0.025425 which represents positive relationship between ROA and Proxy of the firm value, and CS significantly impacts Tobin q ratio by having

TABLE 4.6: Fixed Effect Model Show the impact of Earning Volatility on Tobin Q for the period of 2003- 2017

Fixed Effect model	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Intercept	4.2306	0.0000	4.2184	0.0000	4.1249	0.0000	4.2061	0.0000
EV							-0.0523	0.0428**
SR					0.2382	0.0515	0.2151	0.0791*
FSR			0.2988	0.8724	-0.5150	0.7866	-0.2490	0.8958
Size	-0.0699	0.0014	-0.0693	0.0019	-0.0640	0.0042	-0.0660	0.0032***
ROA	0.0243	0.0000	0.0244	0.0001	0.0252	0.0000	0.0254	0.0000***
GO	0.0129	0.4014	0.0129	0.4026	0.0127	0.4113	0.0109	0.4796
CS	-0.0080	0.0111	-0.0080	0.0111	-0.0077	0.0134	-0.0070	0.0259**
ATS	-0.0388	0.2220	-0.0387	0.2239	-0.0382	0.2282	-0.0370	0.2420
R 2		0.5213		0.5213		0.5245		0.5279
Adj R-squared		0.4680		0.4671		0.4697		0.4726
F stat		9.7836		9.6172		9.5755		9.5454
F sig		0.0000		0.0000		0.0000		0.0000

The dependent variable is Tobin q which the proxy of firm value. The independent variables are Ev is the earning volatility of the firms CFV is cash flow volatility. SR is the systematic risk which calculated using Beta. FRM is the firm specific risk which solely related to firms. S is the size of the firms which is equal to log of total assets. ROA is the rerun on asset which is net profit over total assets. GO is the growth opportunity which is Capt over sales CS the capital structure of the firms. ATS IS the advertising expenses over sales.

p-value of 0.0259 the coefficient value of CS indicated negative relation between TOBIN Q and CS as it has value of -0.007004 these result are consistent with the results of study by (Allayannis Weston 2001, 2003) Rountre et al. (2008). Growth, Firm specific Risk and Advertising to sales ratio are insignificant relation with Tobin Q ratio.

## 4.6 The Results of Fixed Effects Model for Cash Flow Volatility

The value of determination coefficient ( $R^2 = 0.527$ ) indicates that the model has strong explanatory power. The value of adjusted coefficient of determination ( $\text{Adj. } R^2 = 0.472$ ) that the independent variables explain 47.26% variation in Dependent variable. Moreover intercept is significant (0.0000) that indicates the probability of omitted variables. It means there are various variables which are included in this study but there are also some variables which may impact in model 5 only without risk variables included. Model 6, firm specific risk in model 7 systematic risk included. In model 8 all the 3 variables of risk added. As Model 1 shows; most of our control variables are significant and have the same signs as in the Literature. Same as earning volatility model the ATS and growth are insignificant, Tobin q which is the proxy of firm value but are not included in this study. This first variable which significantly impacts the Tobin q is CFV, with p-value 0.073, The coefficient of CFV had value of -0.039, this negative value along with p-value indicates a significant and negative relationship between CFV and Tobin Q Above result is the according to the expectations that volatility in Cash flow volatility negative impact on firm value (Trueman and Titman 1988; Brennan and Hughes 1991; Lang, Lins, and Miller 2002; and Badrinath, Gay, and Kale 1989; Allayannis Weston 2003)). The SR also has significant relationship with the Tobin Q with a p-value of 0.058, but the coefficient of SR has a value of 0.232, which indicates a Positive relation between SR and proxy of firm value. These results are consistent with the literature included in this study such as research by (Shin and Stulz 2000). The size also has significant relationship with the Tobin Q with a p-value of 0.006, but the coefficient of Size has a negative value of -0.061 which indicates a negative relation between Size and proxy of firm value. These results are consistent with the literature included in this study such as research by (Allayannis Weston 2001; Luqman 2017). The ROA also significant impacts with Tobin Q, with a p-value of 0.000, the coefficient of this variable is 0.026 which represents positive relationship between ROA and Proxy of the firm value, and CS

TABLE 4.7: Fixed Effect Model Show the impact of Cash Flow Volatility on Tobin Q for the period of 2003- 2017

Fixed Effect model	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Intercept	4.231	0.000	4.218	0.000	4.125	0.000	4.638	0.000		
CFV							-0.039	0.073*		
SR					0.238	0.052	0.232	0.058*		
FSR			0.299	0.872	-0.515	0.787	-0.543	0.775		
Size	-0.070	0.001	-0.069	0.002	-0.064	0.004	-0.061	0.006***		
ROA	0.024	0.000	0.024	0.000	0.025	0.000	0.026	0.000***		
GO	0.013	0.401	0.013	0.403	0.013	0.411	0.012	0.448		
CS	-0.008	0.011	-0.008	0.011	-0.008	0.013	-0.008	0.012**		
ATS	-0.039	0.222	-0.039	0.224	-0.038	0.228	-0.040	0.205		
R 2		0.521		0.521		0.524		0.527		
Adj R-squared		0.468		0.467		0.470		0.472		
F stat		9.784		9.617		9.576		9.517		
F sig		0.000		0.000		0.000		0.000		

The dependent variable is Tobin q which the proxy of firm value. The independent variables are Ev is the earning volatility of the firms CFV is cash flow volatility. SR is the systematic risk which calculated using Beta. FRM is the firm specific risk which solely related to firms. S is the size of the firms which is equal to log of total assets. ROA is the rerun on asset which is net profit over total assets. GO is the growth opportunity which is Capt over sales CS the capital structure of the firms. ATS IS the advertising expense over sale.

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significantly impacts Tobin q ratio by having p-value of 0.012 the coefficient value of CS indicated negative relation between TOBIN Q and CS as it has value of -0.008 these result are consistent with the results of study by (Allayannis Weston 2001, 2003). Rountree et al. (2008) Growth, Firm specific Risk and Advertising to sales ratio are insignificant relation with Tobin q ratio.

# Chapter 5

## Conclusion

The first purpose of study is to examine the impact of earning volatility, cash flow volatility on firm value using a sample of 60 non-financial firms listed at the Pakistan stock market for the period of 2003 to 2017. For this purpose fixed effects regression model is employed. The proxy of earnings volatility (Standard deviation of the residual of earning per share from operations and cash flow volatility measured by the standard deviation of residual of cash flow from operating activities. The results of the study indicate a significant negative relationship between earning volatility, cash flow volatility and firm value. Companies with higher earnings and cash flow volatility have elevated less firm value. The investors are uncertain about future behavior of the firms, so they tend to avoid these companies which firms earnings and cash flow volatility is high. . These companies which are facing large variations in earnings in which companies, Individual and institutional investors avoid to investing their fund. It is quite evident from previous studies that smoothness in earnings and cash flow reduces the informational benefit between insider management and outside investors. High earnings volatility increases negative earnings disclosures; because when trading volumes are high, then financial markets will be more informed. This informed trading will help to reduce the information asymmetries between the insiders and outsiders. This will eventually put a pressure on insiders to generate smoothness in financial statements. There is a positive relationship between Systematic risk and firm value. It is quite evident from the previous studies that market risk positively contributes to firm value.

The third purpose of examine the relationship between control variables firm size and value of the firm. Size is negatively associated with the firm value Profitability is positively linked to firm value companies normally return on assets their profits so if the company is making good profit it will give positive sign to its potential and existing shareholders. When company will be making less profit it will have less cash flow available and this cause has directly led towards a shortage of cash flow, which will enhance the variations in operating cash flows so it will generate the cash flow volatility. These results are aligned with previous researches [Serrasqueiro and Nunes \(2008\)](#); and [Becker-Blease et al. \(2010\)](#)) they also studied the association between profitability and firm value. Leverage negatively associated with firm value. The change in debt to equity ratio augmented the risk of equity holder then return on equity increase, which leads to decrees the firm value significantly [Rountree et al. \(2008\)](#).

## 5.1 Policy Recommendation

On the basis of the findings, it is recommended that firms should keep a check on the variations over time. In this process the consideration of various factors is very important. It allows identifying those factors which make the smoothness in financial statements. Special consideration should be given to the control factors which impact the firm value of the non-financial firms. The systematic risk which is usually gives great importance regarding the firm value. This study makes it clear that the volatility in financial statements influences regarding the Value of the firm. Being vigilant about only those variables which influence the value of the firm allows saving time and energy spent by firms in making these decisions and their implementation. In case of leverage firms should keep optimal debt to equity ratio. This factor should be kept in view of the non-financial firms when making capital structure decisions.



## **5.2 Directions of the Future Research**

The study may propose the following future directions.

- The Total Risk may also have an impact on firm value. It could be included in the future study.
- The Use of derivatives may also affect Firm value so it should be Included in the study.
- Dividend pattern may also affect the firm value it can also be Included in the study.
- This study is only limited to non-financial companies; pattern of financial firms shall also be studied

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