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Literature Review
Chapter 2

Literature review

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Behavioral Finance

- History, Book Revie of "Value Investing and Behavioral Finance"

Corporate behavioral finance

- irrational investors approach
- irrational managers approach

Increasing fundamental values

Catering

Market timing

- Mispricing driven Market timing
- Adverse selection of time driven mispricing

- Impact on capital structure
- Impact on cost of capital
- Impact on corporate investment decision
- Impact on stock prices

Persistent/ Temporary
Literature review

Vast amount of papers are available related to the theme of Behavioral finance, corporate behavioral finance and related issues. All papers are equally important and only differ for small research.

2.1.1 Behavioural finance

Behavioral finance has changed the traditional vision of facial market and theories. Zyszka (2003) under the normal financial theory investors are not able to judge correctly the alternative decision, cannot measure and restructure events and their probabilities. This turns out into undiversified portfolio. Further irrationality among investor also affects prices of security. Addition to this, risky and costly arbitrage does not provide any assurance about self-correcting markets. Therefore, the correction of mispricing is not always quick and efficient.

The basic underlying theory Efficient Market Hypothesis (EMH) does not hold true in every consequences. EMH has impact for various stake holders of the whole finance field in terms of its various forms of efficiency and announcement effects. Zyszka also concludes that behavioral finance will work as addition to the normal theory with unquestionable importance. Behavioral finance helps in understanding of complex process of markets and provides way to avoid psychological traps for decision making.

Ritter (2003) also wrote brief about behavioral finance and research done in the field. The two assumption of behavioral finance are cognitive psychology (how people think) and the limits to arbitrage (when markets will be inefficient) are up most important and weighted heavily to contradict traditional finance. The growth of behavioral finance research has been fueled by the inability of the traditional framework to explain many empirical patterns, including stock market bubbles in Japan, Taiwan, and the U.S.
Ritter also sites about difficulty in developing trading strategies that reliably make money. This does not imply that financial markets are information ally efficient; however, low frequency misevaluations may be large, without presenting any opportunity to reliably make money. Most of these short sellers, who were right in the long run, were wiped out before the misevaluations started to disappear. Thus, the forces of arbitrage, which work well for high frequency events, work very poorly for low frequency events. Behavioral finance is, relatively speaking, in its infancy. It is not a separate discipline, but instead will increasingly be part of mainstream finance.

In survey done by subramanyam (2004) studied literature over 20 years in the field of behavioral finance. He reviewed literature in three parts: empirical and theoretical analyses, studies for trading activity and research for corporate finance. He also suggested that Behavioral finance explains field because it presents a number of standardized actions for investors as well as top and middle level management. He concluded that there are more rooms for future research and more insights are needed to apply it widely for its various applications. He also poses that corporate actions and corporate finance segment of behavioral finance need more attention. He asked that there should be link established between corporate events, CEO profiles, characteristics and other attributes. He also presents that there should be space for doing researching study cross-country and cross-firm variation in biases (based on investing clientele) and their implications for return predictability. These studies would make the field of behavioral finance live and exciting for next many years.

Blommfield (2010) presents that behavioral finance is no longer controversial field as it was before few years. As financial economists become accustomed to thinking about the role of human behavior in driving stock prices, people will look back at the articles published in the past 15 years and wonder what the fuss was about. In the enlightenment of various financial theories, economists will routinely incorporate as much “behavior” into their models as they observe in the real world. After all, to do otherwise would be irrational. Even absent these benefits, research trends simply do not allow for much more rapid change from the status quo. These researchers will be providing the fundamental ground work needed to identify the settings in which behavioral finance is most useful, and equally important, will be stating arguments
that are difficult for traditionalists to refute: Behavioral approaches are more useful in some finance settings than others.

Shiller (2006) in his paper wrote that behavioral finance is very important for public policy like social security reform. The field is spreading to all social sciences for offering real and tangible benefits. Ross (2005, p. 66), in his book Neoclassical Finance, Ross complains of those in behavioral finance who “at their most strident, proclaim the death of neoclassical finance and the rise of a new finance based on the Psychological vagaries of Everyman.” But that is not what most of those of us who work in behavioral finance intends either. Neoclassical finance has an obvious relevance. What behavioral finance offers can be thought of as in fact the salvation of neoclassical finance. By putting the neoclassical model into its correct perspective, it becomes possible to apply that model much more constructively. That is the most significant event of our era promises to utterly transform our financial institutions in the future. We must make use of our entire arsenal of scholarly endeavor to make sure that this transformation leads to better lives for us all, and this means that we must apply both neoclassical finance and behavioral finance.

Thaler (1988) Economics is distinguished from other social sciences by the belief that most behavior can be explained by assuming that agents have stable, well-defined preferences and make rational choices consistent with those preferences in markets that(eventually) clear. An empirical result qualifies as an anomaly if it is difficult to “rationalize," or if implausible assumptions are necessary to explain it within the paradigm. This column will present a series of such anomalies. Of course, "difficult “and "implausible" are judgments, and others might disagree with my assessment. Hahnemann & Tversky (1986) found alternative descriptions of a decision problem often give rise to different preferences, contrary to the principle of invariance that underlies the rational theory of choice. Violations of this theory are traced to the rules that govern the framing of decision and to the psychophysical principles of evaluation embodied in prospect theory. Invariance and dominance are obeyed when their applications transparent and often violated in other situations. Because these rules are normatively essential but descriptively invalid, no theory of choice can be both normatively adequate and descriptively accurate.
Behavioral finance has many applications which affect the capital markets. While the behavior of the aggregate stock market is not easy to understand from the rational point of view, promising rational models have nonetheless been developed and can be tested against behavioral alternatives. Empirical studies of the behavior of individual stocks have unearthed a set of facts which is altogether more frustrating for the rational paradigm. Many of these facts are about the cross-section of average returns: they document that one group of stocks earns higher average returns than another. The book on the same application of behavioral finance describes provides ways to invested with behaviorally driven attributes of individual.

2.2 Book Review of “Value Investing and Behavior Finance”

Parikh P. (2009) wrote his book for “Value investing and Behavioral Finance”, that investment is a science which deals with the study and analysis of capital markets and plan according to observation. He contends that study of It is not adequate to criticize only Efficient Market Hypothesis instead an individual can study the field of behavioral finance and correct them selves for their own investment strategies. He presented the concept of behavioral finance along with its theories to explain the behavioral aspect of investors. Author also contends that there are ‘psychology’ factor that should be taken care by financial markets and investors in order to get more returns.

The author argued that modern finance theories have almost completely ignored the role of the complex motivational and cognitive factors that influence investor's (the best asset of a company) decision making.

The author mentioned about the book ”The Crowd: A study of the popular Mind” published in 1896 by Gustavo le Ban. The book was one of the greatest and most influential books of social psychology ever written. Under neo-classical assumption of economics,

1) People have rational preferences among outcomes that can be identified and associated with a value
2) Individuals maximize utility and times maximize profits and 
3) People act independently on the basis of full and relevant information.

Wenner F.M. De Bondt and Richard Thaler (1985) published, "Does the Stock Market Over-react?" This is another milestone in linking psychology with Financial-Market and form the start of Behavioral Finance. The paper explored that people systematically over-react to unexpected and dramatic news events, results in substantial weak form inefficiencies in the stock market. Another important concept developed known as, ‘framing’ developed by Tversky and Kahneman. Both author showed that psychological principles that govern the perception of decision problems and the evaluation of probabilities and outcomes produce predictable shifts of preference when the same problem is framed in different ways.

The evolution of prospect theory and framing concept discovers Behavioral Finance, a study influence of Psychology on the behavior of practitioner and the subsequent effect on markets. Behavioral Finance also provides reason and how markets might be inefficient. In other way behavioral finance is a field of study that has evolved which attempts to better realize and provide reasons as how emotions and cognitive errors influence investors and the decision-making process.

The key explanation from the lessons of Behavioral Finance evolved is 
1) People make decision based on estimation of general rules but they are not thinking rationally.

2) People are not uniform in treating economically similar and equivalent choices which are shown I different context but having same end result, this effect is known as framing.

3) Market efficiency are totally contradicted by market outcomes like mispricing, which include non-rational thinking from any one stake holder of market either manager or investors.
From the above observations it is clear that decisions can be systematically wrong in various ways. Biases, generally known as systematic errors of judgment are presented behind any financial decisions taken by managers. Decision maker also depend upon this his/her intuition before making any financial decision that are very complex and uncertain.

Dr. Parikh in this book provided four theories of behavioral finance.

### 2.2.2.1 Prospect Theory
- This theory suggests that people respond differently to equivalent situations depending on its presentation in relation to the losses or gains. Investors, most of the times are prone to have risk adverse behavior while deciding gains but also behaving risk lovers to minimize losses.

**Example** The author gave an example of Mr. Gupta who had started at 12.00 pm from his hotel room to go to airport but he got blocked in heavy traffic in his way. The plane was scheduled to take off at 3.00 pm. He had decided to cancel his tickets to avoid loss of money as he couldn’t able to reach at airport within time. Finally he reached at airport at 5.45 pm and felt very happy for his decision by cancelling his tickets. However, when he reached the airport at 5.45pm, the ground staff told him that the plane has been delayed by three hours and will take off at 6.00pm. But, it is impossible for him to board it as he cannot get a ticket anymore. Mr. Gupta is now criticizing himself for the decision he made, for which he was proud, an hour earlier.

### 2.2.2.2 Regret Theory
- Regret theory is about people's emotional attachment and having made an error of judgment. Investors generally avoid selling stocks that have lowered in price to avoid the regret of having made a bad investment and the embarrassment of reporting the loss. People want to follow the crowd and buy a popular stock: if it subsequently goes down, it can be rationalized as everyone else owned it.

**Example** Sales professional’s tries to attempt to capitalize on this behavior by offering an inferior option to make the primary option appear more attract.

### 2.2.2.3 Anchoring
- Anchoring is a notion in which investors assume current prices are about right in the absence of better information. People tend to give too
much weight to recent experience, showing that recent trends that are provided odd situation with long run average and probabilities.

**Example of Anchoring** According to a survey by Wall Street journal, at the peak of the Japanese market, 14% of Japanese investors expected a crash, but after it did crash, 32% expected a crash. Many believe, defying logic, that when high percentage of participants becomes overly optimistic or pessimistic about the future it is a signal that the opposite will occur.

**2.2.2.4 Over and Under Reaction** - Bill Miller proposed that the market does not show the available information as the academician or books tell us. As funny mirrors do not provide weight markets do not always reflect actual information. Markets and its participants are too pessimistic when it's bad and too optimistic when it is good. Investors tend to put too much weight on recent news at the expense of other data due to market over or under-reaction. People show overconfidence and with this trait they become more optimistic when the market goes up marginally and also becomes more pessimistic when the market goes down. So, prices declines too much on bad news and increase too much on good news.

**Example** - Contemporary financial situation is the best example of this theory. In the month of May, 2008 when Sensex was touching 22000 still investors were predicting that it will touch 25000 or 30000 without realizing it was the extreme situation. Investors were putting too much weight on current situation and became optimistic.

**2.2.3 Criticism to Behavioral Finance**: Not a single successful field is escaped from criticism. Behavioral Approach to financial market has many drawbacks. Critics of behavioral finance shows that systematic errors of judgment i.e. bias do exist. As decisions can be systematically wrong in various ways, there is a limit to actual impact of this systematic judgment as people actively search out opportunities to exploit such behavior.

(1) Eugene F. Fama is the most cited critic of behavioral finance, favors the efficient market theory. In his writing "Market efficiency, long term returns and behavioral finance" he shows that behavioral finance is a collection of
anomalies that are actually enhancing results and support for the anomalies tend to disappear with changes in the way they are measured.

(2) According to Goedhart, Koller and Wesels, in behavioral finance show discrepancies between intrinsic value of investments and market value of investment. They indicated that mispricing is temporary and rare phenomenon that are visible under special circumstances and when those circumstances shift "rational investors will step in to drive share prices back to intrinsic value."

(3) Lo in 2005 stated "while all of us are subject to behavioral biases from time to time, traditional economic theorist argue that market forces will always act to bring prices back to rational levels, implying the impact of irrational behavior on financial market is generally negligible and therefore irrelevant.

Lastly, author shows that Modern and traditional finance presumes that all participants of markets took every decision under the extreme rationality, but it is not. The two common mistakes investors make i.e. the behavior to allocate funds on losing investments but selling good stocks and excessive trading. Because of over confidence people do mistakes and is general tendency of human being to react promptly on mistakes. So, psychology research provides good frame work for our preferences which allow us to make more realistic decision in financial markets. With the same reason behavioral finance is rapidly growing field which deals with influence of psychology on the behavior of investors.

Lastly, author also mentioned that application of finance with psychological proof will surely improve mainstream finance. Apart from these things this particular area also collectively predict some outcomes where the traditional models failed along with reaches, the same current predictions as the traditional models.

This papers and book only provides outline about the behavioral finance and its application of aggregate of stock markets. For Corporate segment of behavioral finance large amount of papers has been shown with its sub subject.
2.3 Behavioral Corporate Finance

Corporate behavioral finance is highly influenced by the four surveys. I have tried to distinguish each survey with respect to its underlying assumption. I.e. whether it is following irrationality among investors or managers. Survey report of Baker and Wurgler (2002) and considered to be bible for the entire research. Their survey revolves around the two basic approaches but entirely different approaches. The first approach focuses on the investor behavior that is not fully rational and so irrational, while managers are assumed to be fully rational. The second portion discuss about the managers who are not fully rational so irrational but investors are fully rational. For each approach there are sub researches are available and lots of research has been conducted in order to make the field rich.

2.3.1 Irrational Manager Approach

In the second approach developed by baker and wurgler known as ‘irrational manager’s approach’ focuses on optimism and overconfidence. A model shows how these biases affect corporate managers which encourage over investment from internal resources. This optimism and overconfidence model are much similar to those of agency model and asymmetric information.

In this approach, the main obstacles for empirical tests include measuring of managerial biases like overconfidence and optimism. The impact of optimism and overconfidence has been studied in the context of merger activity, corporate investment-cash flow relationships, entrepreneurial financing and investment decisions, and the structure of financial contracts.

Survey done by survey of Hirshleifer (2008), presents a thorough treatment of the underlying psychology upon which proponents of behavioral finance draw. He also discusses how many of these psychological concepts have been applied to asset pricing and also to corporate finance.
One such survey has been conducted by Shefrin (2004) which revolves around the same theme. This survey is based on three different concepts, i.e. rational behavioral, CAPM model and efficient markets. Shefrin describe that psychological forces interfere with all three components of traditional paradigm. There are two obstacles for the value medication process one is internal and other is external. The first internal obstacles are behavioral cost as it weakens value creation, which are actually loss in value made by managers for their cognitive imperfections and other influences. The second obstacle is from behavioral errors done by analysts and investors. Shefrin also present the case of sonny where behavior obstacles are internal to the firm. Sony was founded in 1946 by Ibuka and Akio Morita. Sony has first invented pocket size radio in 1957 and in 1961 they were working to develop color television set. In one trade show they both show television screen with sharpest and brightest image. The color tube was chromatron and was developed for military and owned by paramount pictures. Morita bargain for technical license from paramount to produce such color television. The team at Sony started production of such color tube in September 1964. Before starting commercial production of TV set Ibuka in his overconfidence displayed prototype product in their showroom and kept retail price of TV set is $550. He put 150 staff on assembly production and hardly two to three pieces of picture tubes was acceptable standards out of thousand productions. Morita wanted to wind up such project but Ibuka refused and sold 13,000 sets with losses and finally in November 1966, the plant was closed. The behavioral traits like overconfidence and loss aversion was the main reason for such heavy losses at Sony. Manager Ibuka was also a founder and major shareholder. Being manager did not stop him from escaping trap of overconfidence and loss aversion. Shefrin clearly indicates that corporate managers and board members must able to recognize both behavioral obstacles for value maximization process.

Baker and wurgler (2002a) noticed that in the case of investor irrationality, the real economic losses associated with managerial irrationality have yet to be clearly quantified, but some evidence suggests that they are very significant. This losses are due to some of the managerial traits which makes than overconfident or optimisms.

2.3.3 Factors affect managers to become overconfident
In a paper written by Stein (1996) about rational capital budgeting in irrational world, he noticed that there are four factors affecting corporate managers to become overconfident. The first reason is that managers have to take decision regarding capital budgeting and it require projection of cash flows with uncertain outcomes. In such situation individual is more prone to become overconfident otherwise he cannot take decision. In the second reason he wrote that decision to issue or use equity or debt requires learning and knowledge of the practical field. Hahnemann and Loyallo (1993) mentioned that learning only occurs when individual actually facing frequently encountered problems. Managers used to become overconfident if the outcome of such problems are known and known feedback from upper management.

The other important behavioral trait Stein noticed that managers are reluctant to recount their experience and consequences of past decisions. Managers do not want to learn from their past experience which makes them overly confident and optimized. In the third notion he found that successful managers due to their self-attribution bias become more confident. The same truth has also been founded by Miller and Ross, 1975; Langer and Roth, 1975; Nesbit and Ross, 1980. They also concluded that most people overestimate them selves for their own success. (Daniel, Hirshleifer, and Subrahmanyam, 1998; Gervais and Odean, 2001). Lastly, Goel and Takor (2008) show, firms may internally select and promote on the basis of overconfidence, as overconfident individuals are having good track of performance in the past.

Gervais, Heaton, and Odean (2009) also mentioned that managers who are overconfident are good motivator, so it is also beneficial to the firm to hire overconfident managers.

These overconfident managers can also have bias towards investment and might overinvest. Smith (1776, p. 149) mentioned that corporate finance remained largely unaffected by psychology until much later. Simon (1955, 1959), Margolis (1958), and Cyert and March (1963) are some of the early proponents who study the impact of psychology into corporate finance. Simon also throws light on the importance of deciding a systematic role which influence people’s thinking, gathering and
interpreting style. March and Simon (1958) contend that CEO and top executive impact a firm’s decisions those having rational bounds. Katona (1946), showed that managers have their own preferences and traits which directly affect their investment decisions. Behavioral traits also affect the decisions on investors and managers or other top authority. As such, the biases can have large and persistent effects. Baker, Ruback, and Wurgler (2007) provide an overview of the effects of investor irrationality on capital budgeting.

In a paper written by Alsubie (2005), examine the effects of managerial overconfidence on the trading of some of the derivative instruments. It focuses on how confidence of CEO affects firm’s decision to hedge interest rate and foreign currency exchange risk exposure. The study indicates that over-confident managers undervalue risk and use less derivative products than lower confident managers. The main result shows that statistically significant positive relationship for interest rate derivative usage and CEO overconfidence, while insignificant positive relationship with the usage of derivatives to hedge foreign exchanges risk. Addition to this dividend yield and firm size also affects on firm decision to use derivatives for hedging against interest rate risk. Alsubie also mentioned that ratio of foreign sales also has an impact on the CEO overconfidence to interest rate and currency derivatives usage. The main limitation of the study is the small sample size.

Gervais (2009) in his paper wrote that managers tend to be overconfident and overly optimistic due to self-selection bias. These managers are more affected these biases than the general population and literature finds that biased managers overinvest firm’s free cash flows, involved too many mergers and start more firms and more projects also stick to unprofitable investment policies longer. The author indicates that managerial traits are related to investment policies of the firms. Gervais also found on the relationship between contractual incentives, overconfidence and investment policies. This establishes an overaggressive in investment policies together with overconfidence. Goldstein (2007) and Bolton, Brunnermeier, and Veldkamp (2008) showed that overconfidence is also useful to the firms and its internal workings as it motivate other subordinates too. Bernardo and Welch (2001), Englmaier (2006), Chu
(2007), and Gervais et al. (2009) also developed models which show that efficiency and economic growth is positively affected by overconfidence.

Malmendier et al (2007) show that financial policies like pecking order and are not only affected by firm level characteristics but also influenced by managerial traits. Most of the time overconfident manager realizes that their firm is undervalued and sought for external financing through equity routes. They test for overconfidence by continues fail to reduce their personal exposure to company-specific risk. They also observe CEO’s characteristics during press meetings. They found that overconfident managers are frequently accessing public markets. These managers raise 30% more debt to cover their external deficit than their peers. Addition to this overconfident managers access more frequently public markets than their peers. They establish that overconfidence leads to first preference for internal financing first than external financing. Authors use two measures for measuring overconfidence, first by analyzing his personal portfolio decisions and second by analyzing his/her traits during business press. They found that over confident CEO s less likely to issue equity than other. Their results are help full for designing incentive for managers and CEOs.

This approach is also known as the ‘managerial biases’ approach, which assumes that managers do have behavioral biases but retains the rationality of investors. This review centers on the biases of optimism and overconfidence. Here the underlying assumption is that managers are irrational while investors are rational enough which require managers to respond to the market price signals. In other approach which baker described as ‘Irrational investors approach’ is more popular and is more researched.

2.3.4 The Irrational Investors approach

This approach presumes that capital markets are not efficient and imperfect and so prices of security do not reveals its fundamental price. As managers are rational they can perceive such deviation in security price and can act to exploit it. This exploitation of security involves taking decisions that may either maximize short term value or lower long term value. Baker suggested three main functions under such
scenario. First is increasing fundamental value, second is catering – i.e. maximizing fundamental value and third is market timing. Market timing is an extremely important theory which opens the doors of future interesting research. **Market timing is defined as action by buying security when is under priced and selling when it is overpriced. Undervalued securities is purchased back by buy back mechanism while selling is done by issuing first or more time security when it is overvalued.**

Overconfidence and optimism is mainly studied under second approach.  

Baker clearly mentioned that two approaches are entire different and roles of managers are also different in both approaches. In the first, irrational investor approach, manager’s prime task is to increase long term value maximization. While for the second, irrational manager’s approach manager’s role is to reduce discretion and quickly respond to market signals.

Baker begins research for the first segment with two assumptions. The first is that irrational investors must influence securities price and managers are wise and smart as they can identify temporary deviation of their security’s market price from fundamental values.

The first assumption is based upon impact of investor’s irrationality among security markets. This assumption is clearly understood as markets are efficient; no one can ignore significance of investors. Than question arises that if investor has good influence on market than can’t they identify mispricing (deviation)? Baker answers that due to limits to arbitrage (Barbers and Thaler (2003) and Heifer (2000). Even though if they indentify such deviation, to exploit them, is risky and costly for investors. Now for the second assumption corporate managers have superior information than investor and so use wisely. Research done by Muelbroek (1992), Seyhun (1992), or Jenter (2005) clearly indicates that managers make good profits for their own trade. Further managers can create information and take advantage of such information’s. Bradshaw, Richardson, and Sloan (2003). DeLong, Heifer, summers, and Waldmann (1990) is built on short horizons and Miller (1977) indicates that corporate managers have less restrictions and constraints than money managers. Lastly managers also use ground rule of markets that helps him to identify such
deviations. Baker and Stein (2004) provide one such rule is to issue equity when the market is particularly liquid.

This approach is further divided into number of important theories like security issuance, market timing and its impact on capital structure, market timing and investing and financing decisions.

### 2.3.5 Issuance of capital and irrational manager’s approach

There are three main theories in literature regarding issuance of capital. Under normal finance theory, capital market efficient and integrated so, the costs of different forms of capital do not vary independently. So, there is no gain from opportunistically switching between equity and debt or repurchasing equity.

#### 2.3.5.1 Trade-off Theory for issuing capital

This theory is known as trade off theory (Modigliani and Miller (1958)) explaining how taxes, bankruptcy costs, security issuance costs and other investment opportunity costs affect the financing decision. The second theory developed by Myers (1999) known as pecking order theory indicates that there are different ways of raising capital associate with different level of financing costs. As a result there is a financial hierarchy which follows as internal financing (retained earnings), external debt, third is equity financing. Under this concept equity financing is preferred when the firm is financially constrained to get above two sources of finance.

#### 2.3.5.2 Pecking order theory for issuing capital

Moreover effect of pecking order is conditional on equity valuation. According to this theory financially unconstrained firm is expected to use debt finance first instead of equity finance. This theory indicates why debt ratios and profitability ratios are negatively related and why markets react negatively to all new equity issuers.

### 2.2.5.3 Mispricing Driven Equity Market Timing
The third is equity —market timing‖ refers to the practice of issuing shares at high prices and repurchasing at low prices in corporate finance. The objective is to utilize fluctuations in the cost of equity relative to the cost of other forms of capital. This assumption is relaxed in behavioral view of corporate finance where capital markets that are inefficient or segmented, market timing provides benefits to the shareholders and to firm. So, Agents or managers are tempted to time the equity market (in order to get better incentives) and to utilize it properly for increasing long term value of the firm.

Equity market timing proved to be an important aspect of corporate financial policy in reality and is evidenced in four different studies. There are two kinds of market timing theory. The first is based upon speculation and equity issuance other is adverse selection of market timing. The pecking order theory assumes that firm will only issue equity once it has no choices. The pecking order predicts that a firm will not issue equity when its stock price is high if this high price is due to overvaluation by investors who know less about the firm than the manager. The market timing theory asserts that firm will only issue equity when their prices are overvalued. There is clear difference in the underline assumption that in pecking order investors are rational (or managers believe investors are rational) and investors are irrational in the market timing.

IPOs and firm valuations have been studied by Loughran, Ritter, and Rydqvist (1994) and pagano, panetta and Zingales (1998). They analyze actual financing decisions and show that firms tend to issue equity instead of debt when market value is high, relative to book value and past market values, and tend to repurchase equity when market value is low. Second analyses of long-run stock returns followed by corporate finance decagons suggest that equity market timing is successful on average. Firms issue equity when the cost of equity is relatively low and repurchases when cost is high. This has been studied by Stigler (1964), ritter(1991), Loughran and Ritter(1995). A high share of equity issues in aggregate equity and debt issues also forecasts low market returns in Baker and Wurgler (2000). Third analyses of earning forecasts and realizations around equality issues suggest that firm tend to issue equity
at times when investors are too enthusiastic about earning prospects. Loghram and Ritter (1997), Rajang and Serves (1997). The forth and most important evidence is shown by Graham and Harvey (2001) in their survey.

2.3.6 Graham Survey for how CFO takes decisions

Graham and Harvey survey 4400 companies and received 392 completed surveys about how CFO make decision about capital budgeting. The survey consists of about 100 questions and reviewed capital structure and capital budgeting decisions in depth. The survey also mentioned that most of the large companies of their survey had very strict target debt ratios while only 33% of smaller firms have such targets. There is diversity of firms with respect to the sales, with respect to their function for their survey. Total 26% of the firms were very small (having sales less than $100 million), while 42% of firms are very large (sales at least of $1 billion). 40% firms were manufacturing, 15% firms financial firms, 13% of firms were belongs to transportation and energy, 11% firms were in retail and wholesale sales while only 9% firms are technical firms.

2.3.6.1 Graham Survey and Capital budgeting techniques

For capital budgeting, most of the companies use Discounted Cash Flow (DCF) and NPV (Net Present Value) techniques to judge new projects or investments. For capital structure decision companies depend more upon practical information rather on proved financial theories. Their main focus is on the factors affecting CFO for financing and investing decision. CFO while setting debt policy was to maintain financial flexibility rather focusing on how to reduce cost of capital. With the same objective it proved that most CFOs do not want to issue equity except their stock prices were highly overvalued. They also sight reason behind this that if they issue equity it will dilute their EPS and so it impact on the market capitalisation of their firms. The next important answer survey revealed that firm size do affect significantly practice of corporate finance. The technique used by large companies for capital structure decision is purely based upon their size. If the company is large enough, they are using NPV and smaller one relying upon pay back period.
The author got interesting response for their questions about capital budgeting techniques used by most CFOs. The survey shows that most of very small firms uses pay back period while large firms do rely on NPV (74.9%) and IRR (75.7%) techniques.

2.3.6.2 Graham survey and Capital Structure Decisions

In corporate finance two theories has spread its roots widely, first is trade-off theory which relies on trading off between the benefits of debt to the cost of debts. While other theory was ‘pecking order theory which states that firm uses first internal funds and than external funds i.e. equity or debt.

Graham and Harvey found that large firms more rely upon trade off theory to take advantage of tax shield. 45% of companies showed that tax advantage was very important for large highly leveraged, and for manufacturing firms. While small firm’s uses their own funds to undertake positive NPV projects. Their survey shows that equity financing is the last option for the companies to raise funds.

The most important finding of the graham and Harvey survey which acted as a base for so many researchers is questioning regarding factors that affecting decision to issue common stock equity.

Their survey presented direct proof that equity issuance is highly depend upon first the fear of CFO for the dilution of EPS and secondly equity undervaluation. The same thing is been revealed in following figure. Nearly 67% of CFO agreed that it was very important takes to check whether their firm’s stock is undervalued or overvalued before issuing common stock in the market. If the stock is undervalued they would not issue common stocks. Further a separate survey was also carried out just after a month regarding equity issuance when Dow Jones 30 touched to the level of 10000.

This survey also found that 66% of executive realised that their firms are undervalued even though index has risen while only 3% of executive felt their valuation has increased.
These two surveys strongly indicate, the common reason behind issuing equity is undervaluation or overvaluation of the firm.

These theories predict that increase in stock pries lower leverage rations in market value and lead firms to borrow more capital to bring down their capital structure back as was before leverage. Other researcher (e.g., Asquith and Mullins (1986), Jung, Kim and Stulz (1996), and Marsh (1982)) says that firms issue equity rather than debt when their equity valuation is high. All of these theories predict that an increase in stock prices -- which lowers leverage ratios in market value terms -- should lead firms to borrow more to bring their capital structures back in line with their respective optima. But the facts say otherwise. Firms issue equity rather than debt when equity valuations are high (e.g., Asquith and Mullins (1986), Jung, Kim and Stulz (1996), and Marsh (1982)).

Graham survey strongly indicates that valuations do matter at the time of issuing equity for the managers. For the fresh issuance of equity valuations and investor’s sentiment also affects the financing decision of firm.
2.3.7 Investor’s sentiment and market timing financing decisions

Stein (1996) also provides a useful framework for market timing, and its impact on the other issues. He also indicated that when a firm’s stock price is too high, the rational manager is increasing more shares. There is also some evidence that sentiments of irrational investor affect financing decisions. As provided in Stein’s (1996) model, in which the manager is both rational and interested in maximizing the firm’s true value. Now imagine that a firm’s stock price is too high, manager would issue more equity at this point and he would not add fresh capital into any new investments but he would keep money as it is or keep it in other stocks which is fairly priced. Here firm has some good and positive NPV projects which according to investors, managers should implement but in reality it is not a positive NPV project. Managers being rational also know that these projects should be avoided for better prospect of firm. Opposite to this, if the firm’s stock price is low than he would buy back shares but not draw back his investments. Simply irrational investors can influence the issuance of equity but not affect the firm’s investment prospects.

Stain also contended that there are several ways with which sentiments /moods of investors affect investment plans for the firms who have huge internal financial resources and so do not depend upon equities. In short investor’s feelings do not affect the investment plans of non leveraged firms or the firms have huge liquid bank balances or in simple terms for the firms who is more relied upon equity. For these firms investor’s sentiments can easily be exploited by managers to take advantage.

2.3.8 Investor’s sentiments for equity Dependence firms

For the companies who heavily rely upon equity for their financial and investment plans, investor sentiments do affect their investment plans. There seems to be good volatility in the prices of stocks for equity dependant firms, and these make investors more pessimistic about firm’s investment prospects. As firms want to undertake such investment opportunities, investors are too pessimistic and would make their share price down so such firms may have to forget attractive investment opportunity or have to ready to born stock market losses. This leads to the point that the price of equity dependant firms revolve around some rage of stock prices.
There are other routes through which investor sentiments distort investment plans. Stein (1996) also showed that if the investors are highly optimistic about firm’s prospects, but manager’s fears that investors would refuse even good and positive NPV projects, and so price will depress and so there might be threats for the takeover. This eventually leads to lose his job. This line of thinking proposes that, though manager is rational and wants to increase true value of the firm, it does not guarantee he would implement. As described in agency theory, manager may pursue his own objective first. To summaries investor sentiments affect investment if manager value investor’s opinions and suggestions and in such optimism he mistakenly accepting bed or negative NPV projects.

Now it is necessary to understand effect of sentiment and through which channel it affects. Blanchard, Rhee and summers (1993) indicates that volatilities in price are not related to fluctuations in fundamentals and shows only weak forecasting power for future investment. One good example of this research leads to look at rise in stock price during 1920s. Heifer and Vishny (2004) presented that in such situation managers actually wanted to make better investments, but he could only do investment in form of acquisition of less overvalued firm. This research leads to a theory of takeover battle, an increase in stock-financed acquisitions at times of high dispersion in valuations. A commensurate rise in investment, nor did the crash of 1987 slow investment down appreciably.

Merck, Heifer and Vishny (1990) and Baker and Wurgler (2002a) shows that firms with high market-to-book ratios in past keep more money in equity in the capital structure presently. This raised equity funds only increases their liquid balance at bank and not reinvested for any new investments.

More recently though, Polk and Sapienza (2001) report stronger evidence of investment distortion. They identify overvalued firms as firms with high accruals, defined as earnings minus actual cash flow, and as firms with high net issuance of equity. Firms with high accruals may become overvalued if investors fail to understand that earnings are overstating actual cash flows, and Chan et al. (2001) confirm that such firms indeed earn low returns. Overvalued firms may also be
identified through their opportunistic issuance of equity, and such firms earn low long-run returns. Controlling for actual investment opportunities as accurately as possible, Polk and Sapienza find that the firms they identify as overvalued appear to invest more than other firms, suggesting that sentiment does influence investment.

Moreover Baker, Stein and Wurgler’s (2003) tested that equity-dependent firms will be more sensitive to stock price movements than will non-equity dependent firms. They recognize equity dependent firms on the basis of their low cash balances, together with some other measures, and find that these firms have investment sensitivity to stock prices about three times as high as that of non-equity dependent firms. This study provides proof that sentiments may alter investments for equity dependant firms. This study provides relation of equity issuance and sentiments of investors. There are more research available with the same thrust but with little bit separated vision. By knowing the reason for issuing equity might disclose firm’s purpose and plans. The papers on this topic also a show that available options for raising money, cost associated with it and how different his/her thinking is with investor’s thinking.

2.3.9 The reason for issuing equity

Ditmaramy and thakor anjan (2004) provides research on reasons and timing of issuance of equity. They provide explanation that managers are attempting to time the market that they trust that investors are irrational. They propose theory that assumes that managers use equity to finance projects when their belief and about project pay off is in line with investors’ belief. If their views are not similar than manager use debt. The market timing hypothesis requires investors to be irrational and managers have ability to match timing of equity issues and peaks in their stock prices. The strongest evidence found by (e.g. Asquith and Mullins (1986), Jung, Kim, and Stulz (1996), Marsh (1982) and Mikkelson and Partch (1986)) against the tradeoff theory looks to be that firms issue equity rather than debt when valuations are high. Baker and Wurgler (2002) proposes that the level of a firm’s stock price is a major predictor of particular security to issue and this effect has long-lasting impact on firm’s capital structure. Welch (2004) finds firms typically do not issue securities to when their stock returns to their original capital structure. In fact he shows that firms allow their
ratios to down rather than issuing equity in order to keep them at the level as it was. He also shows that firm issues debt when prices rise, in order to get back their leverage ratios.

Dittmar and Thakor (2007) in their paper focused on two unanswered questions about reasons for issuing equity when stock price high and reason for not issuing securities when stock price returns to its original level. Their theory builds on the important characteristic of manager ‘autonomy’ as it allows management to make decisions for their firms. The degree of autonomy that manager has at any point in the time depends upon how the firm is financed. As debt provides maximum autonomy provided debt is also backed by high value assets and minimum autonomy when the assets backed has very low value. While equity also provide autonomy but it depend upon strategic choices managers used the managerial autonomy provided with equity depends on strategic choices management have and whether it has been agreed by shareholders or not. Equity provides highest autonomy when shareholders are totally agreed with the decision made by management. Author also indicates that autonomy is not valued equally at all times, its value is highly depend upon the decision management has taken; its value depends on the decisions management intends to make in the future and how much disagreement these decisions are likely to evolve. When the value of Autonomy in practice is sufficiently high, debt will be given maximum autonomy and when Autonomy in practice is low, equity will be preferred.

Rimand Kyung (2008) analyze the market timing and debt equity choice by using sample of US firms form 1993-2006 and insider trade as a measure of misevaluations. The authors identified overvalued firms as those whose insiders are net sellers and undervalued as those whose insiders are net buyers. The results show that overvalued firms issue more equity to fund the deficit as compared to undervalued firms even after controlling other parameters.

Furthermore, the results show that moving toward the target debt ratio plays a much important role when firms repurchase rather than raise capital. The author also tested tradeoff, agency and pecking order models. This study suggests that the conflicting results arise partially because the importance and role of some theories vary across
different types of corporate financing transactions. The paper addresses this issue by testing the role of stock misevaluation in security issuance and repurchase decisions separately for debt issues, equity issues, debt reductions and equity repurchases.

In a paper written by Dandu J .(2010) analyze that annual share issuance is a better measure for good returns and for analyzing market timing mechanism. The author use residual income model (RIM) valuation method to identify firm level mispricing in terms of undervaluation and overvaluation. The author shows that annual share issuance is a stronger predictability for overvalued firms as compared to undervalued firms.

2.3.10 Security issuance and its impact on investment choice

The theory mentioned about the manager’s security issuance decisions and its dependency. This concept shows that how this decision will affect the firm’s investment choice and how this choice in turn will affect the firm’s post-investment stock price. The managers has to closely observe and also take care for immediate stock price once he invest money in the project for which the finance is raised and also care for long term valuation of the firms. Managers can estimate the difference the good projects perceived by investors and by him. He can also visualize the expectation of investors about the stock price while taking any investment decision. So this degree of agreement is very important for manager to consider before taking any decision.

As all previous papers describes that security issuance do affect the valuation of firm and available investment as well other financing decisions. These papers took shows every other alternative available for security issuance. There is one more purpose which is described as market timing as Baker and wurgler in their paper contends to issue equity when the valuations are high and buying back when the valuation is low. This mechanism is world wide noticed and characterized by many geographic boundaries.
2.3.11 Market timing in UK

Hssain and Guney (2002) confirmed market timing theory for the firms of UK and also estimated intrinsic value of equities for measuring market timing. Using data of UK and estimating intrinsic value of equities and proved that market timing has significant impact on capital structure of the firm. They prove that if managers are successful in timing market correctly than the cost of capital can bring down to lower level and so firm value can increase.

Hovakimian (2006) mentioned that market timing has very short and small effect on capital structure of firm. Hovakimian (2006) also tested for UK market and asserts that debt can be increased when the firm is undervalued to fund deficit and similar debt is decreased during the time of overvaluation. Author cites the work done by Korajczyk and Levy (2003) and found that firms that are financially flexible are able to time their issues correctly as compared to firms without financial flexibility.

Both the author provided good insight to the field. First they are totally agreed with Baker and Wurgler’s proposition of market timing. They additionally prove that equity issuance during the time of overvaluation is needed to finance deficit. Secondly, they found that financial constraints are also important for judging their behavior during the time of valuations. Constrained firms issue more debt during periods of undervaluation and free more debt at the time of overvaluations. Constrained firm get more benefits from timing strategies as compared to unconstrained firms. Authors also found that issuing equity and repurchasing equity back are purely impacted by equity and its degree of mispricing. If the firms are free of financial constraints, their behavior is restricted by financial flexibility. Repurchasing behavior is also limited to financial capacity of firms.

2.3.11 Market timing in Indian perspective

Market timing in Indian perspective is little analyzed. Market timing can be studied in Indian perspective when companies are buying back their shares during the times of undervaluation. Mishra (2005) mentioned that in India share buyback is considered as an important when considering shares are at their intrinsic value. Many
companies believe that share buyback will help them to achieve better performance on capital markets and also provides good return to the shareholders which proved to be most common objective for share buyback. He mentioned that share buyback looks lucrative for many reasons. First is the cost of the buy-backs which is at the cost of hard assets. Generally companies are forced to sell off their hard assets to liquidate funds for share buy-back. Management should also determine whether buy back is actually utilized for better use of shareholder’s fund than reinvesting in the business. They should also decide this is the only good alternative available with them. Firms and its management should also give a thought to the dividend option. Mishra also observed that the company offered buyback prices far above premium had over-subscription and the prices fell after the buyback.

Mishra in his paper analyze that many of the Indian companies that have raised money through buyback have not enough good projects on hand to fruitfully utilize such money. Theoretically it means that if they buy back their shares shareholder value will be enhanced. From their study they conclude that in India share buy back is not successful and not provide good returns to the shareholders. They also conclude that Indian companies are looking at their valuations before buying their own assets back. If they feel it is cheaper due to any reason, they buy back their shares and wait till the price is increased.

Heaton J.B. (2002) described two dominant features that emerge from a simple model of corporate finance with excessively optimistic managers and efficient capital markets. Optimistic managers assume that capital markets undervalue their firm’s risky securities, and may decline positive net present value projects that must be financed externally. Second, optimistic managers overvalue their own corporate projects and may wish to invest in negative net present value projects even though they are faithful to shareholders. These results establish an under investment without invoking asymmetric information or rational agency costs.

The empirical research on capital structure in India has been extensive (see Bhole, 1980, 2000; Bhole and Mahakud, 2004; Dasgupta and Ying, 2001; Mahakud, 2006; Mahakud and Bhole, 2003; Mahakud and Mishra, 2010; Rajbhandary, 1997) the
research on the nature of historical market-to-book ratio, that is, whether it can be used as a market timing proxy or growth opportunity proxy and its role on determination of the capital structure in India is almost ignored.

By market timing, the intention is to exploit temporary fluctuations in the cost of equity relative to the cost of other forms of capital. Under the normal theories, the cost of different forms of capital does not vary if the markets are efficient. But under the inefficient forms of capital markets the switching between equity and debt especially through market timing mechanism varies. In practice market timing appears to be important aspect of real corporate financial policy. As already discussed market timing do involves issuances of equity and so affects capital structure of the firm. Now this how temporary or persistent this impact needs to be measured. Following section shows market timing with respect to its effect on the capital structure of the firm.

2.3.13 Market timing and capital structure

Market timing theory and its impact on capital structure is widely studied and discussed by many researchers around the world. This section shows different type of researches done in this field. The first notable research has been carried out by Baker and Wurgler (2002) which shows that market timing has persistent and long lasting impact on capital structure. This research became pioneer in the field and there are lots of other research carried out based on the same theme but for different markets around the world. There are research also carried out which criticize this conclusion and shows that market timing do not have long lasting impact on capital structure but it is short lived and disappear in 3-5 years. (Atli (2002))

Being able to raise money during period of overvaluation it asks for recognizing and responding to market signals. For responding such situations managers have to make adjustments to financing the deficit accordingly. However during the different periods, debt and equity issues trace the financing deficit differently.
Hovakimian (2006) found that firms time equity issues to periods of high market-to-book ratios but the effects are economically small and short-lived. The author shows that not only equity but debt issuance during the time of overvaluation also have long lasting impact on the capital structure. Though market conditions may be attractive, managers may be reluctant to make adjustments to their issuance activities due to targeting behavior. In this regard, market timing would be attractive when the adjustment to issuance activities is parallel to the debt issuance. Hovakimian (2004) finds that firms that have target debt ratios can engage in market timing activities. Altı (2006) documents that market condition tempt managers to deviate from their target leverage ratios, but their effect tends to be reversed and firms rebalancing their capital structure sooner. Thus, the dynamics of a firm would indicate that firms may in fact have target leverage levels and still attempt to time the market when managers find equity markets to be favorable.

2.3.14 Financing the deficit and mispricing

Financing patterns are first explored in Shyam-Sunder and Myers (1999) who test the relationship between net changes in leverage and financing deficit. In theory, if the pecking order holds, a one-to-one relationship would be observed. They find strong evidence for this notion. In their study, the deficit coefficient is able to better explain net debt issues and also change in leverage ratios than the target adjustment coefficient. The results hold even after considering actual and anticipated deficits via the use of instruments. However, Frank and Goyal (2003) find that net equity issued tracks the financing deficit more closely. Their results show that debt financing is not the main source of financing opted for by managers as the magnitude of equity financing is greater than debt financing. Huang and Ritter (2009) test the change in leverage and financing deficit and show that the pecking order coefficient is either highly significant or not significant at all. They argue that the pecking order is not able to explain their results because in some years the pecking order slope is insignificant. Butler et al. (2011) find that although the level of net financing is an important factor in explaining future stock returns the composition constituted by debt or equity is irrelevant. Bayless and Chaplinsky (1996) examine the windows of opportunity for seasoned equity offerings (SEO). They directly link the decision to issue equity to the cost of issuing. Hovakimian, Opler and Titman (2001) found that
US SEOs were also highly correlated with stock prices. In the UK, Marsh (1982) documented a similar pattern where firms tend to issue equity when prices are high. Baker and Wurgler (2002) propose that managers would reduce reliance on debt and opt for equity when they perceive the equity market to be more favourable. They test this notion by interacting the market-to-book ratio with the amount of capital raised (i.e., financing deficit) and show that there is a strong link between external finance weighted average market-to-book ratio and net change in leverage. Further evidence on managers’ attempts to time the market is provided by the survey evidence of Graham and Harvey (2001).

There are contradicting findings for the equity market timing and its impact on the capital structure. Alti (2006) found that market timing has short and temporary impact on capital structure of the firm. Alti (2006) mentioned that firms tend to rebalance their capital structure just in two year after timing of market. Flannery and Rangan (2006) also test the market timing theory and found that the changes in leverage levels are due to targeting behavior of the firms. They found that less than 10% of changes are explained by market timing and pecking order theories. Hovakimian shows that the market timing measurement, i.e. market to book ratio is not affected by market timing mechanism but growth opportunities firm are having.

Hovakimian A and Hovakimian G (2005) in their paper Cash flow sensitivity of Investment and firm level analysis shows that cash flow sensitive firms are financially constrained and do not invest in low cash flow years, but when they are not constrained they used to overinvest during high cash flow years. The access to the external capital is positively correlated with cash flows, intensifying investment cash flow sensitivity.

Financial constraints have significant impact on investment timing; cash flow sensitive firms alleviate their effects and over invest on aggregate level. They assess the relation between investment expenditures and internally generated cash flows using firm-level estimates of investment-cash flow sensitivity and examines whether high sensitivity is associated with the economically significant changes in the
corporate investment and financing behavior. Their measure of investment-cash flow sensitivity is Tobin’s Q ratio.

Dong et al. studies the interaction between market timing and pecking order for the financing decision of the firm. The authors use a sample of debt and equity issues and share buyback of Canadian firms and find that forms are issuing equity when their shares are overvalued only when they are not financially constrained. Further, they also show that post-announcement of issuing or repurchasing equity or debt the returns are lower especially for overvalued firms. This conclusion draws parallel with market timing driven mispricing. Authors also find that pecking order theory also applies for the undervalued firms, which states that firm prefer debt to rather equity financing unless in the situation of financial constraints. They clearly mentioned that during the time of overvaluation together with free from financial constraints firms utilize market timing or else pecking order during undervaluation and financial constraints.

The authors measure market timing and financial constraints using Market-to-Book ratio (MB) and use KZ index (Kaplan and Zingles (1997)) for financial constraints. They found that equity issuers have high MB ratio or equity issuance and MB ratio is positively related.

Previous research shows that equity offers coincide with high market valuations of equity. Baker and Wurgler (2002) presented past market valuation have a strong and persistent impact on capital structure. They also mentioned that firms raise equity when cost of equity is low or MB ratio is extremely high.

Gomes and Phillis (2007) also find positive relationship for market timing and valuations. Author also point out that market timing is a typical characteristics of public equity markets which more or less every company follows. Elliott, Koeter-kant and warr (2008) used earning based valuation model to test market timing theory and find that equity market mispricing plays crucial role for security choice decisions.

In a paper written by Mukherjee and Mahakud (2002) identify that whether MB ratio is used for market timing or for proxy for growth opportunities and find its impact on
capital structure. Both authors find that MB ratio is better predictor of growth opportunities rather than market timing mechanism. The author examined for 891 Indian manufacturing companies. The authors completely follows Hovakimian (2006) who shows that market timing has no impact on capital structure and MB ratio is only growth parameters for the firm, it is not true indicator for measuring valuation of the firm.

In a paper written by Chichti and Bougatf (2010) evaluates impact of market timing on the capital structure of Tunisia and France firms. The authors try to evaluate the impact of market conditions on the equity issuance and the persistence of the equity market timing on capital structures of Tunisian and French firms. Their study is unique in the literature with the two reasons, first that they connect net

Net equity issues and variable that reflects debt market conditions. Most of the earlier studies on the market timing neglected debt cost. Their second contribution to the literature is to test the market timing theory using data of Tunisian and French firms. Most of the market timing studies been conducted in U.S.context. Consistent with market timing assumptions authors find that Tunisian and French firms take advantages from “windows of opportunity” to raise capital. They issue equity when their market valuations are higher than their book values. More remarkably, they also found that equity issues are positively and significantly related to debt cost. Their last finding is the positive relationship between the profitability and the equity issuance.

Authors also point out that that Tunisian and French market timers become underleveraged only in the short-term. These authors also do find persistent impact of market timing on the capital structure of the firm.

Pagano, Panetta, and Zingales (1998), Loughran, Ritter, and Rydqvist (1994), Opler and Titman (2001), Graham and Harvey (2001) have already shows the timing mechanism using historical stock rises, interest rates, market-to-book ratios, and time-varying adverse selection costs. All of these studies prove that firms are timing equity market to raise capital at lower cost and higher valuations. Pagano, Panetta, and Zingales (1998) evaluate the parameter for raising IPO for Italian firms for the period
of 1982-92. They also confirm that Market – to – Book is most important factor that influences the IPO.

Lerner (1994) finds that the IPOs volume in the biotechnology industry is strongly related to the stock exchange index. Loughran, Ritter, and Rydqvist (1994) find that market capitalizations have statistically significant influences on the probability of going public. Other studies consider subsequent underperformance of equity issuers as evidence that managers are selling overpriced stocks1. Loughran and Ritter (1995) examine the performance of equity issuers in a sample of 4753 IPOs and 3702 SEOs for the period 1970-90. They find that ex post returns deteriorate but the underperformance is more important for IPO firms.

In a paper written by Alti (2007) shows that equity market timing is very important event for corporate financing decision. Most studies show that market valuations and equity issues are supplemented together with the long-run underperformance of issues. Alti pointed out the research question regarding impact of market timing on the capital structure is long or short lived and its importance with respect to the long term value of the firm. He mentioned that market timers are identified as those firms that have a highest history of raising capital at very high market-to-book ratios. In his paper, author focus on IPO event and tries to capture impact of market timing on capital structure.

The reason for taking IPO event is that it is most important financing event for any firm their life. secondly payoff from correct market timing is high to the issuer. With this reason he states that IPO only provides case for misevaluation of firm’s price.

Author’s measure of market timing is simple and direct that the place in which IPO took place. He characterized IPO by hot market IPO when there are more numbers of issuers.

If issuers raise money in hot markets than it would act as windows of opportunities with temporarily low cost of capital. On the other hand, cold-market IPOs are likely
to keep their equity issues to a necessary minimum issuers as market conditions are less favorable than average.

The author quantifies market timers by the issuing amounts and not by the firm level characteristics which Baker and Wurgler (2002) had tried. If the issue is carried out in hot market condition that it depress the leverage ratios in short run. Author finds a considerable hot market effect on the money issued by IPO. The average cold-market firm’s IPO proceeds amount to 54% of its pre-IPO asset value. Most importantly the hot-market effect is orthogonal to other factors that are known to have effect to the equity issuance. Author’s hot- and cold-market firms do not differ in their pre-IPO leverage levels, which avoid financial distress.

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market timing driven mispricing. Authors also find that pecking order theory also applies for the undervalued firms, which states that firm prefers debt to rather equity financing unless in the situation of financial constraints. They clearly mentioned that during the time of overvaluation together with free from financial constraints firms utilize market timing or else pecking order during undervaluation and financial constraints.

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market timing neglected debt cost. Their second contribution to the literature is to test the market timing theory using data of Tunisian and French firms. Most of the market timing studies been conducted in U.S. context. Consistent with market timing assumptions authors find that Tunisian and French firms take advantages from “windows of opportunity” to raise capital. They issue equity when their market valuations are higher than their book values. More remarkably, they also found that equity issues are positively and significantly related to debt cost. Their last finding is the positive relationship between the profitability and the equity issuance.

Authors also point out that that Tunisian and French market timers become underleveraged only in the short-term. These authors also do find persistent impact of market timing on the capital structure of the firm.

Pagano, Panetta, and Zingales (1998), Loughran, Ritter, and Rydqvist (1994), Opler and Titman (2001), Graham and Harvey (2001) have already shows the timing mechanism using historical stock rises, interest rates, market-to-book ratios, and time-varying adverse selection costs. All of these studies prove that firms are timing equity market to raise capital at lower cost and higher valuations. Pagano, Panetta, and Zingales (1998) evaluate the parameter for raising IPO for Italian firms for the period of 1982-92. They also confirm that Market – to – Book is most important factor that influences the IPO.

Lerner (1994) finds that the IPOs volume in the biotechnology industry is strongly related to the stock exchange index. Loughran, Ritter, and Rydqvist (1994) find that market capitalizations have statistically significant influences on the probability of going public. Other studies consider subsequent underperformance of equity issuers as evidence that managers are selling overpriced stocks1. Loughran and Ritter (1995) examine the performance of equity issuers in a sample of 4753 IPOs and 3702 SEOs for the period 1970-90. They find that ex post returns deteriorate but the underperformance is more important for IPO firms.

In a paper written by Alti (2007) shows that equity market timing is very important event for corporate financing decision. Most studies show that market valuations and
equity issues are supplemented together with the long-run underperformance of issues. Alti pointed out the research question regarding impact of market timing on the capital structure is long or short lived and its importance with respect to the long term value of the firm. He mentioned that market timers are identified as those firms that have a highest history of raising capital at very high market-to-book ratios. In his paper, author focus on IPO event and tries to capture impact of market timing on capital structure.

The reason for taking IPO event is that it is most important financing event for any firm their life. secondly payoff from correct market timing is high to the issuer. With this reason he states that IPO only provides case for misevaluation of firm’s price.

Author’s measure of market timing is simple and direct that the place in which IPO took place. He characterized IPO by hot market IPO when there are more numbers of issuers. If issuers raise money in hot markets than it would act as windows of opportunities with temporarily low cost of capital. On the other hand, cold-market IPOs are likely to keep their equity issues to a necessary minimum issuers as market conditions are less favorable than average.

The author quantifies market timers by the issuing amounts and not by the firm level characteristics which Baker and Wurgler (2002) had tried. If the issue is carried out in hot market condition that it depresses the leverage ratios in short run. Author finds a considerable hot market effect on the money issued by IPO. The average cold-market firm’s IPO proceeds amount to 54% of its pre-IPO asset value. Most importantly the hot-market effect is orthogonal to other factors that are known to have effect to the equity issuance. Author’s hot- and cold-market firms do not differ in their pre-IPO leverage levels, which avoid financial distress.

2.3.15 Two Type of Market Timing Mechanism

There are two theories of Market timing prevails in the literature. The first theory consist of market timing took place under time-varying mispricing in the equity segment. This theory of market timing provides opportunity to sell overvalued stock through equity routes. Under this approach high valuation can be measured through
Market to book ratio or else hot market periods characterized by high issuance of IPOs. In this analysis investors or managers, are rational and other counterparty assumed to be irrational.

The market timing hypothesis of capital structure contends that firm’s leverage is determined by market timing of equity issues. The central result of Baker and Wurgler (2002) who propose this theory is that firms issue equity when their market-to-book ratio is high and refrain from undoing the leverage changes caused by this in the long term.

Consequently, equity issues have a highly persistent impact on firms' book and market leverage ratios. The hypothesis formulated in Baker and Wurgler (2002) fits two market timing mechanisms. One is a mispricing one with irrational investors or managers, the other is due to fluctuations in adverse selection costs.

The mispricing hypothesis implies that equity is overvalued at the time of issuance and mispricing and not by financing needs under this view; firms will not fund investment but keep the raised financing in cash or equivalent assets, pay special dividends to existing shareholders or buy back equity later on.

Further, since equity prices are too high relative to fundamental value, firms consequently underperform similarly risky firms. Finally, since market timing considerations determine issuing decisions, firms consequently do not rebalance their capital structure subsequently.

The other theory of market timing implies that the adverse selection of timings affecting the equities and its price. This hypothesis relied upon the fact that equity is not deviated from its fundamental values, but issuing firms take advantage of temporarily lower adverse selections of equity. Korajczyk, Lucas, and McDonald (1992), the adverse selection hypothesis is version of the pecking order by Myers and Majluf (1984) and Myers (1984).
The main difference is that the degree of asymmetric information is time-varying. By choosing the timing of an equity issue, firms are issuing when there is relatively little information. For FPOs and IPOs, informational asymmetries are very important. Under this view, firms take advantage of a positive market to issue equity and use the issued equities to invest in positive net present value projects. In adverse selection theory firms invest efficiently, they provide good returns and do not have threat of underperformance of likely risky firms. Under the adverse selection hypothesis firms invest efficiently, they consequently do not underperform similarly risky firms. Also, since firms do not have a target capital structure under this view, they consequently do not rebalance their capital structure subsequently.

### Table 2.2 Tabular Summary of Literature Review

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<td>IPOs underperform compared to the market</td>
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<td>Ikenberry et al. (2000)</td>
<td>SEOs underperform compared to the market</td>
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<td>Burch et al. (2004) Baker &amp; Wurgler (2000)</td>
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<td>Henderson et al. (2006)</td>
<td>When there are many new issues, the market underperforms (International-evidence)</td>
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<tr>
<td>Loughran et al. (1994)</td>
<td>When there are many new issues, the market is typically overvalued according to ratios</td>
<td>Managers issue overvalued stocks</td>
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<tr>
<td>Pagano et al. (1998), Jung et al. (1996)</td>
<td>There are many new issues when the industry-PB is above average There are many new issues when the average Price Book Ratio of firms is at a historical high</td>
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<tr>
<td>Jenter (2005)</td>
<td>Managers privately sell stocks when firms issue them</td>
<td>Managers issue overvalued stocks</td>
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<tr>
<td>Graham &amp; Harvey (2001) Huh &amp; Subrahmanyan (2005)</td>
<td>Overvaluation affects the decision to issue stocks (survey) Particularly individual investors buy newly issued shares</td>
<td>Managers have an information advantage Private investors are more naive than institutional investors</td>
</tr>
<tr>
<td>Pagano et al. (1998), Jung et al. (1996)</td>
<td>There are many new issues when the industry-PB is above average There are many new issues when the average Price Book Ratio of firms is at a historical high</td>
<td>Managers issue overvalued stocks</td>
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<td>Ikenberry et al. (1995)</td>
<td>Repurchased stocks subsequently outperform the market</td>
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<td>Brav et al. (2005)</td>
<td>Undervaluation affects the choice to buyback stocks (survey)</td>
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<td>Hong et al. (2008)</td>
<td>Institutional investors appreciate buybacks more than individual investors</td>
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<td>Managers time bond issues</td>
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<td>Marsh (1982)</td>
<td>Time bond issues</td>
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<td>Guedes &amp; Opler (1996)</td>
<td>Interest rates influence the decision whether to issue bonds or not</td>
<td>Managers time bond issues</td>
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<tr>
<td>Graham &amp; Harvey (2001)</td>
<td>For newly issued bonds, there is a negative correlation between duration and the interest differential between long- and short-term interest rates. The interest rate level affects the decision whether to issue bonds or not (survey).</td>
<td>Managers time bond issues</td>
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<td>Spiess et al. (1999)</td>
<td>The yield curve affects the decision whether to issue short- or long-term bonds</td>
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<tr>
<td>Baker &amp; Wurgler (2002)</td>
<td>Firms that issue (convertible) bonds have lower subsequent stock returns than the market</td>
<td>Firms pay with overvalued stocks</td>
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<tr>
<td>Hovakamian (2005)</td>
<td>There is a negative relation between past Price Book Ratio and the relation of debt to equity</td>
<td>Price Book Ratio includes information about growth prospects</td>
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<tr>
<td>Rau &amp; Vermaelen (1998)</td>
<td>There is a negative relation between past Price Book Ratio and the relation of debt to equity</td>
<td>Firms pay with overvalued stocks</td>
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<tr>
<td>Ang &amp; Cheng (2005)</td>
<td>Firms that pay takeovers with stocks underperform in comparison to those that pay with cash</td>
<td>Firms pay with overvalued stocks</td>
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<tr>
<td>Baker et al. (2009)</td>
<td>There is a positive link between the number of takeovers and valuation ratios</td>
<td>Firms pay with overvalued stocks</td>
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<tr>
<td>Ravenscraft &amp; Scherer (1987)</td>
<td>Takeovers increase if the average Price Earnings Ratio in the home country of buying firms rises</td>
<td>Investors are naïve</td>
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<tr>
<td>Matsuaka (1993)</td>
<td>The preference for conglomerates varies from time to time</td>
<td>Investors had an irrational preference for conglomerates in the mid-1960s</td>
</tr>
<tr>
<td>Morck et al. (1990)</td>
<td>Until 1968, stocks reacted initially positive to takeover announcements, After 1968, there was no such effect any more</td>
<td>After 1968, the irrational preference for conglomerates disappeared</td>
</tr>
<tr>
<td>Klein (2001)</td>
<td>Until 1968, conglomerates traded at a premium, after 1968 they, traded at a discount</td>
<td>Investors have an irrational preference for conglomerates</td>
</tr>
<tr>
<td>Baker &amp; Wurgler (2002)</td>
<td>Firms with high Price Book Ratios issue an above-average number of stocks but do not invest the funds</td>
<td>Investment is independent of investor sentiment</td>
</tr>
<tr>
<td>Blanchard et al. (1993)</td>
<td>Tobin’s Q does not have a significant effect on investment</td>
<td>Investment is independent of investor sentiment</td>
</tr>
<tr>
<td>Gilchrist et al. (2005)</td>
<td>Misvaluation affects corporate financing and investment decisions</td>
<td>Irrational investors influence corporate investment and financing decisions</td>
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<tr>
<td>Polk &amp; Sapienza (2009)</td>
<td>Misvaluation affects corporate financing and investment decisions if investors have a short term horizon</td>
<td>Irrational investors influence corporate investment decisions</td>
</tr>
<tr>
<td>Baker et al. (2003)</td>
<td>Investment is influenced by the dependence on equity</td>
<td>Irrational investors influence corporate investment decisions</td>
</tr>
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2.4 Literature review on model
Financial research is mainly based upon the models. Through my extensive literature review I found seven different models which are useful to my research. In this section I indicate in details about he models proposed by earlier researcher in line with the two researches, first related to equity market timing and second related to the performance of IPO and its uses. Total seven models have been studied in detail with their samples, variables, study focus and limitations.

2.4.1 Model I – Baker and Wurgler (2002)

According to Baker and Wurgler (2002), earlier evidence for market timing not much useful where the net effect of market-to-book on changes in leverage is not clear. Authors show that firms with high market-to-book ratios are often growing quickly and may be issuing as much debt as equity.

2.4.2 Samples of model I

The authors took samples as all firms who raised their IPO between 1968 and 1999. They further restrict the sample to exclude financial firm’s minimum book value of assets below $10 million, and firms without complete data on total assets between the IPO year and the latest year. They further restrict the sample to exclude individual firm-year outliers for capital structure and the market-to-book ratio as discussed below. The whole sample includes 2,839 observations on firms at the first fiscal year end after IPO, 2,652 observations on firms in the next fiscal year (Which they refer to as subsample IPO+1), et cetera, down to 715 observations on firms at 10 years after the IPO (subsample IPO+10).

2.4.2 Variables used – MODEL I

- Leverage - It is defined as assets minus book equity plus market equity all divided by assets. The authors drop firm-year observations where market-to-book is greater than 10.0.
- Book debt as total assets minus book equity.
- Book equity as total assets less total liabilities and preferred stock plus deferred taxes and convertible debt. When preferred stock is missing, it is replaced with the redemption value of preferred stock.
Book leverage is then defined as book debt to total assets. They drop firm-year observations where the resulting book leverage is above one.4

Market leverage as book debt divided by the result of total assets minus book equity plus market equity.

Market equity is defined as common shares outstanding times’ price. These definitions follow Fama and French (2000).

Pre-IPO values - The book leverage in the year prior to the IPO, which they call the pre-IPO value.

Net equity issues (e/A) is the change in book equity minus the change in balance sheet retained earnings divided by assets.

 Newly retained earnings (RE/A) is the change in retained earnings divided by assets.

Net debt issues (d/A) is the residual change in assets divided by assets

In the bottom three panels in Table II, They regress each of these three components of changes in leverage on the market-to-book ratio and the other independent variables. This allows us to determine whether market-to-book affects leverage through net equity issues, as market timing implies.

### 2.4.3 Determinants of equity issuance and valuations

In their paper, authors indicate that the net effect of market to-book on the annual change in leverage. Then they decompose the change in leverage to examine whether the effect comes through net equity issues, as market timing implies.

The author’s main focus is on market-to-book, but also on other three control variables that Rajan and Zingales (1995) find to be correlated to leverage in several developed countries. The three controlling variables are asset tangibility, profitability, and firm size.

Market-to-book is also related to find out investment opportunities and market mispricing.

Tangible assets may be used as collateral and so may be associated with higher leverage. Asset tangibility is defined as net plant, property, and equipment (Item 8) divided by total assets and expressed in percentage terms.
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- Profitability is defined as earnings before interest, taxes, and depreciation (Item 13) divided by total assets and expressed in percentage terms.
- Size may increase leverage if large firms are less likely to enter financial distress. It is measured as the log of net sales.

The author form following equation for determine annual changes in to the four variables, i.e. Market to book ratios, Asset tangibility, Profitability and Size of the firms.

**Equation A-1 Changes in leverage – Baker and Wurgler (2002a)**

\[
\left( \frac{D}{A} \right)_{t} - \left( \frac{D}{A} \right)_{t-1} = a + b \left( \frac{M}{B} \right)_{t-1} + c \left( \frac{PPE}{A} \right)_{t-1} + d \left( \frac{EBITDA}{A} \right)_{t-1} + e \log(S)_{t-1} + f \left( \frac{D}{A} \right)_{t-1} + u_t
\]

**Equation A-2 Changes in leverage decomposed into other control variable – Baker and Wurgler (2002a)**

\[
\left( \frac{D}{A} \right)_{t} - \left( \frac{D}{A} \right)_{t-1} = \left[ \frac{E}{A} - \frac{E}{A} \right] = \left( \frac{e}{A} \right)_{t} - \left( \frac{\Delta RE}{A} \right)_{t} - \left[ E_{t-1} \left( \frac{1}{A} \right) - \frac{1}{A_{t-1}} \right]
\]

Above equation splits the change in leverage into equity issues, retained earnings, and the residual change in leverage, which depends on the total growth in assets from the combination of equity issues, debt issues, and newly retained earnings.

The author regress each of these three components of changes in leverage on the market-to-book ratio and the other independent variables. This allows us to determine whether market-to-book affects leverage through net equity issues, as market timing implies.

The final Model for measuring market timing and its impact comes from following equation.

**Equation A-3 – Regression equation for Market timing and other variables – Baker and Wurgler (2002a)**

\[
\left( \frac{D}{A} \right)_{t} - \left( \frac{D}{A} \right)_{t-1} = a + b \left( \frac{M}{B} \right)_{t-1} + c \left( \frac{PPE}{A} \right)_{t-1} + d \left( \frac{EBITDA}{A} \right)_{t-1} + e \log(S)_{t-1}
\]

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2.4.4 Limitations of model:

Alti shows that market to book ration not only shows the growth prospects of the firms, but influenced by other factors like economy or the capital intensiveness of the firm’s technology. If the two firms with similar market-to-book ratios may differ considerably in their growth potential. If one of these firms has a repeat history of raising capital at high market-to-book ratios, it is more likely to be a growth firm, as the past financing activity is consistent with a growth trend. Even if the firm’s current investment prospects are dim, such a firm may keep its leverage ratio low in order to maintain financial flexibility for the future.

2.4.2 MODEL B – Alti (2007)

Alti (2007) shows that market timing can be identified from a variety of different sources. Starting with Taggart (1977), several studies demonstrate the tendency of firms to issue equity when their market valuations are high relative to book values or past market values.3 timing measures. In other approached for identifying overvalued equity sales is to analyze the subsequent stock return performance of issuers. Ritter (1991) and Loughran and Ritter (1995) document that IPOs and seasoned equity issues underperform their benchmarks in the long run. Underperformance is more pronounced for hot-market IPOs (Ritter (1991)) and the IPOs of firms for which analysts initially forecast high growth (Rajan and Servaes (1997)).

These findings provide further explanation for focusing on hot–cold market differences to capture timing effects. Finally, survey evidence in Graham and Harvey (2001) also shows that market timing is a primary concern of corporate financing events.

Alti identified hot-market IPO firms as market timers; his paper avoids the worries for the use of the market-to-book ratio. The hot–cold market classification clearly does not capture the full extent of market timing. Both methodical and characteristic valuation factors affect firms’ timing decisions. Moreover cold-market IPOs are also important concern for timing attempts.

2.4.2.1 Definition of Hot and Cold Markets
Hot and cold markets are defined on the basis of the monthly IPO volume. Precisely, author used the number of IPOs for each month between January 1971 and December 1999. To smooth out seasonal variation, he took a 3-month centered moving average of the number of IPOs for each month.

- Hot (cold) months are then defined as those that are above (below) the median in the distribution of the descended monthly moving average IPO volume across all the months in the sample.
- For each IPO, a dummy variable $HOT$ takes the value of one if the firm goes public in a hot month, and zero otherwise. The variable $HOT$ is the main focus of this study in measuring firms’ market timing attempts.

2.4.2.2 Samples – Model B
Alti took sample consists of all IPOs between January 1, 1971, and December 31, 1999, restricted to exclude spinoffs, unit offers, financial firms with book values of assets below $10$ million at the end of the IPO year.

2.4.2.3 Variables – Model B
- Most of variables are same as Baker and wurgler paper. These are Book Debt, Book equity, Book leverage, New Debt issues, new equity issues, newly retained Earnings, Profitability, Assets tangibility and size.

The more variables Alti used are following.
- R&D/A is research and development expense (, replaced by zero when missing).
- INV/A denotes capital expenditures.
- DIV/E is common dividends (Item 21) divided by yearend book equity.
- CASH/A is defined as cash and short-term investments.

Size increases with age, whereas the investment rate and market to-book ratio decrease. As documented by Jain and Kini (1994) and Mikkelson, Partch, and Shah (1997), there is a significant reduction in profitability around the IPO year. Cash balances double with the infusion of new capital in the IPO year, and steadily decline in subsequent years.

Author two variables for measure the amount of equity issued at the IPO using two different variables.
ProceedsP/At, referred as the IPO proceeds from the sale of primary shares divided by IPO year-end total assets. This variable captures the amount of new equity capital the firm raises by going public.

ProceedsP/At−1, defined as the proceeds from the sale of primary shares divided by total assets at the beginning of the IPO year. As expected, the market timing effect when measured relative to pre-IPO assets is even larger. Proceeds from primary shares of the average cold-market firm are 53.76% of its pre-IPO assets. In contrast, the proceeds of the average hot-market firm are 75.61% of its assets, a 40% increase relative to cold-market issuers. The timing effect is statistically highly significant.

ProceedsT/At, described as the total IPO proceeds divided by IPO yearend total assets. Since some of the shares sold at the IPO are secondary shares held by insiders, total proceeds typically exceed the proceeds from the sale of primary shares. By including insiders’ sales, ProceedsT/At captures an aspect of market timing that ProceedsP/At cannot reflect. Where t is the IPO year, and the regression is run in the cross-section of IPOs. Above, the dependent variable Yt is ProceedsT/At, ProceedsP/At, Or ProceedsP/At−1. The dummy variable HOT captures the market timing effect.

The control variables include the market-to-book ratio, profitability, size, tangibility of assets, research and development expense, and lagged book leverage.

The positive hot-market effect on the amount of equity issued may reflect higher prices (relative to the book value of assets) obtained in hot markets, larger ownership stakes offered for sale, or both. The price effect is consistent with market timing, but it could also obtain if intangible assets play a relatively more important role in the valuation of hot-market firms. The quantity effect captures market timing attempts.
more directly. To examine these two effects separately, he decompose the primary proceeds measure, ProceedsP/At, into its quantity and price components:

Right-hand side of above equation measures the fraction of firm ownership sold via the issuance of primary shares. The second term is the offer price as a multiple of book value of assets.

Another probable clarification for the equity issue activity of hot-market firms is that they grow faster. If hot-market firms invest at higher rates, or expect to do so in the near future, then they are likely to finance part of this growth by raising equity capital. The investment regressions also point to an important drawback of using the market-to-book ratio as a measure of market timing. Firms that have higher market-to-book ratios invest significantly more. Thus, the relationship between the market-to-book ratio and equity issues is likely to obtain because of the tendency of growth firms to use more equity financing. Focusing instead on market conditions around equity issues better isolates the market timing effects, as hot and cold-market firms do not differ in their future investment activity.

2.4.2.4 Limitation of Model : This model requires data which are not readily available. For example, insider trading data is not easily available for any country. Moreover author uses moving average of data of IPO firms which are not true measure according to some other experts.

2.4.3 Model – C - Chichti J. and Bougatet K. (2010)

In a paper written by Chichti J. and Bougatet K. (2010) explored the impact of market conditions on the equity issuance and the persistence of the equity market timing on capital structures of Tunisian and French firms.

2.4.3.1 Samples – Model C

Their main sample is Tunisian firms listed in Tunis Stock Exchange between 2001 and 2007. They limit sample to firms which can be observed regularly since 2001. They further restrict the sample to exclude financial firms. The final sample consists
of 19 publicly traded Tunisian firms and 31 non-financial French firms of the Paris stock market index for which during the period 2001-2007.

2.4.3.2 Variables
All the variables are same as Baker and Wugler (2002a) and also defined the same way as Baker and Wugler defined. The variables include Book debt, Book equity, Book leverage (blev), Market value, Market leverage (mlev), Net equity issues (e), Market-to-book ratio (MTB), Profitability PROF, Asset tangibility (TANG), Size (SIZE).

2.4.3.3 Additional variables
- MARKET reflects the performance of stock market and is defined as annual growth rate of the index TUNINDEX for Tunisia and CAC40 for France.
- PRICE is defined as annual growth rate of stock price.
- INTEREST represents the money market annual average rate for Tunisia and the annual average of EUR3M (EURIBOR for 3 months).
- This model is estimated using many panel data techniques. Using panel data can enhance the quality and quantity of data. It allows us to identify some effects that cannot be detected using time-series analysis. Panel Data regression provides three estimators.

Limitation of Model – the model incorporates other econometric data like interest which are useful for measuring debt market timing concepts. To study equity market timing purely this model does not provide true results.

2.4.4 Model D – Dong, Loncarski, Horst and Veld (2010)
In a paper written by Dong M., Loncarski I., Horst J., and Veld C study the interaction between market timing and pecking order in the financing decision of firms. Using a sample of debt and equity issues and share repurchases of Canadian firms during 1998-2007, authors find that only when firms are not financially constrained, they are more likely to issue (repurchase) equity when their shares are overvalued.
(undervalued), and post-announcement long-run returns are lower for overvalued firms.

2.4.4.1 Sample Construction

Authors analyze three types of public security issues or repurchases in the Canadian market between 1998 and 2007: debt (bond) issues, seasoned equity issues, and share repurchase (equity withdrawal). Finally authors are having 227 corporate debt issues (made by 64 different companies), 1,271 corporate equity issues (made by 664 different companies), and 1,071 intended share repurchases (made by 447 different companies).

2.4.4.2 Variables

- **Stock returns before the announcement of the security issue** are estimated using the standard market model with the total return on TSX 300 market index being a proxy for the market return.

- **Stock returns at the announcement of the security issue** is estimated using the standard market model with the total return on the TSX 300 market index being a proxy for the market return.

- **Stock returns after the announcement of the security issue** is estimated using the standard market model with the total return on the TSX 300 market index being a proxy for the market return.

- For all the market-model cumulative abnormal returns, the estimation window for the model parameters is (-200, -60) relative to the announcement date. In addition to the market-model abnormal returns, we also use size and MB adjusted returns over the three event windows to examine market timing (see Section 4.2).

- We expect equity issuers to have significantly higher MB-ratios than debt issuers or share repurchases. Moreover, stock returns after the announcement of the issue are expected to be decreasing in market-to-book ratios, if managers time the market.

- Cumulative Abnormal Returns (Panel A) and Buy-and-hold Abnormal Returns (Panel B) for equity issuers by Canadian non-financial companies from 1998 to 2007. Pre-announcement market-adjusted stock returns, announcement-
period market-adjusted stock returns and post-announcement market-adjusted stock returns for equity issuers are sorted according to market-to-book quartiles.

2.4.4.3 Limitations - availability of buy and hold abnormal returns are very difficult for every company. Author clusters the companies according to the return provided by firm after IPO and than analysis done based upon simple descriptive. This shows the limitation of model.

2.4.5 MODEL E – Hussain and Guney (2007)

In a paper written by Hussain and Guney (2007) about measuring equity mispricing, financial constraints, market timing and targeting behaviour of companies, investigated market timing theory for UK based firms. He proposed that Managers increase debt (equity) issues during periods of undervaluation (overvaluation).

Managers, thus, seem to time issues strategically out of necessity rather than being able to do so. Both timing of issues and repurchasing are influenced by reaching target leverage. The evidence suggests that managers are clearly aware of the cost of being off-target and weigh this against benefit gained from timing the market.

2.4.5.1 Samples – Model E

Their initial sample comprises all U.K. firms available during the period of 1984-2008. He also excludes financial firms. The final sample comprises of 11,201 firm-year observations.

2.4.5.2 Variables – Model E

All variables are same as Baker and Wurgler’s model and also defined the same way as they defined. Book leverage, (BL), the net debt issues, (Δdbl), the net equity issues, (Δe), SIZE, Tangibility of assets, TANG, R&D and CAPEX are proxies for growth options defined as research and development expenses scaled by total assets, and capital expenditure divided by total assets, respectively. Profitability (PROF) is the earnings before interest, taxes and depreciation over total assets.

Model for measuring the financing deficit

Author expands the model used by Shyam-Sunder and Myers (1999) and includes a measure of valuation to proxy for timing. The model used regresses the net debt
issued on the financing deficit and is defined as DEF for firm \( i \) in year \( t \) as follows: DIV\(_{it}\) is cash dividends, \( I_{it}\) is net investments, \( \Delta W_{it}\) is net working capital, and \( C_{it}\) is cash flow after interest and taxes. The sum is identical to net debt issued (\( \Delta d_{it}\)) and net equity issued (\( \Delta e_{it}\)).

### 2.4.5.3 Variables for Equity Mispricing

Author measure mispricing with the ratio of intrinsic value (IV) to current market price (MP). Intrinsic value is measured as follows.

\[
V_{equity} = \sum_{t=1}^{\infty} \frac{FCFE_t}{(1+r_e)^t} = \sum_{t=1}^{N} \frac{FCFE_t}{1+r_e^t} + \frac{Terminal\ Value}{(1+r_e)^N}
\]

Where \( g \) is the long-term FCFE growth. Given that FCFE occurs throughout the year we make adjustments as follows:

\[
V_{equity} = \left[\sum_{t=1}^{N} \frac{FCFE_t}{(1+r_e)^t}\right] (1 + r_e)^{0.5}
\]

\[
= \left[\frac{FCFE(1+g)}{1+r_e^t}\right] (1 + r_e)^{0.5}
\]

FCFE\(_t\) is free cash flow to equity at time \( t \) and \( r_e \) is the cost of equity. FCFE is the sum of net income plus depreciation minus change in non cash working capital minus capital expenditure minus principal repayments of debt capital plus new debt issued.

\[
\text{Misvaluation} = \frac{IV_{it}}{MP_{it}}
\]

Their final model is

\[
\Delta d_{bl_{it}} = \alpha + \beta_1 DEF_{it} + \beta_2 UNDVD_{it} + \beta_3 (UNDVD \times DEF)_{it} + \varepsilon_{it}
\]
2.4.6 MODEL F

In a paper written by Khurshed A., Mudambi R and Geergen M. for measuring long run performances of IPO indicates the impact of post IPO returns as a function of pre-IPO factors like managerial decision and a firm’s performance before IPO. This leads to useful model for my other hypothesis for measuring equity issuance and its impact on investment decision taken by the firm manager. Authors find that the percentage of equity issued and the degree of multinationality are key predictors of IPO performance.

2.4.6.1 Samples

The sample used in the study comprises 240 IPOs of non-investment companies in UK from January 1991 through June 1995. Their sample also includes those IPOs that were delisted before completion of three year.

2.4.6.2 Methodology:

The author computed the market adjusted abnormal returns (MAAR0) for each firm. The total return for stock ‘i’ at the end of the first trading day is calculated as: where $P_{i,1}$ is the price of stock ‘i’ at the close of the first trading day, $P_{i,0}$ is the offer Price and $R_{ab,1}$ is the total first-day return on the stock.

$$MAAR_{i,0} = 100 \times \left\{ \frac{ (1 + R_{i,1}) }{ (1 + R_{m,1}) } \right\} - 1$$

The return on the market index during the same time period is: where $I_{m,1}$ is the market index value at the close of first trading and $I_{m,0}$ is the market index value on the offer day of the appropriate stock, while $R_{m,1}$ is the first day’s comparable market return. Using these two returns, the market adjusted abnormal return for each IPO on the first day of trading is computed as
Where MABHRi denotes the market adjusted buy and hold return for a firm over a
Month period ( for the purpose of the study this constitutes only 36 monthly readings
Pi , t and Im , t denotes the end of the t month share price for the firm i and the

\[ MABHR_i = \sum_{t=2}^{t=37} \left[ \ln \left( \frac{P_i,t}{P_i,t-1} \right) - \ln \left( \frac{I_m,t}{I_m,t-1} \right) \right] \]

corresponding end of the month index respectively. These returns exclude initial
under pricing. Buy and hold returns were preferred to Cumulative Average Abnormal
Returns (CAARs).

2.4.6.3 Limitations – the model is lack of some important variables and more
useful to show the long term performances of the firm after IPO.

2.4.7 MODEL F

Wagner, in his paper explains and how market timing affects public equity offerings
and consequently firm leverage.

2.4.7.2 Sample
The sample includes all IPO and SEO firms between 1 January 1970 and 31
December 2002. Author eliminates all secondary offerings, unit offers, closed-end
funds, financial institutions, limited partnerships and offerings with an offer price
below USD 5.
For SEOs, he selected only true secondary offerings and eliminating again unit
offers, closed-end funds, financial institutions, limited partnerships and offerings
with an offer price below USD 5. Author also skips the firms whose total assets are
smaller than 10 million USD.

2.4.7.2 Variables

- Most of the variables are same as Baker and Wurgler (2002a) and also defined
  as the same way they defined. The variables which are same as of previous
  study include Book equity E, Book debt D, Book leverage D, Market equity
  ME, Market leverage M/A, The market-to-book ratio MB, Net debt issued
d=A , Book equity equals, Net equity issued, Newly retained earnings, Profitability EBITDA=A , Firm size is measured by SIZE, , Tangibility of assets PPE/A I, Research and development expense R&D/A, Dividend payments Div=E are measured by common dividends divided by year-end book equity, CASH/A is defined as cash and short-term investments (item 1) divided by assets, Hot as same Alti’s paper.

- PVGO - present value of future growth opportunities (PV GO) to measure how susceptible firm value is to asymmetric information. The current stock price of a firm P0 is the capitalized value of its average earnings per share.

\[
P_0 = \frac{EPS}{R} + PVGO.
\]

- P0 - The current stock price of a firm P0 is the capitalized value of its average earnings per share assuming zero growth plus the present value of future growth opportunities. The current stock price of a firm P0 is the capitalized value of its average earnings per share assuming zero growth plus the present value of future growth opportunities

\[
RPVGO = \]

**Equity issues**

Equity issues differ in their composition. The author’s sample contains primary offerings, in which new shares are sold as well as mixed offerings, in which both new shares are sold (the primary component) and existing shareholders sell some of their shares (the secondary component). Their approach is conservative as of Myers and Mali (1984) indicated that insiders sell their shares when they perceive them to be overvalued. Under this view, market timing should be more pronounced for a sample of primary as well as mixed offerings than for a sample containing only primary offerings. Total proceeds from the offering, Proceeds, are decomposed into primary proceeds ProceedsP and secondary proceeds.
Under the market timing view, the amount of equity issued should be driven by the market. The author run the following regression which controls for various determinants of equity issuance: where the dependent variable Yt is one of several measures of the relative size and price of the offering proceeds. Offering proceeds are scaled by year-end total assets of the IPO year. The offering year t is the fiscal year during which the offering takes place.

\[
Y_t = c_0 + c_1RPGVGO_{t-1} + c_2IPO + c_3IPO \times RGPGVGO_{t-1} + c_4YT + c_5RSQVY_T + c_6KZ\text{ Index}_{t-1} + c_7HOT + c_8M/B_t + c_9EBITDA/A_{t-1} + c_{10}\text{SIZE}_{t-1} \\
+ c_{11}PPE/A_{t-1} + c_{12}R&D/A_{t-1} + c_{13}R&D\ d_t-1 + \epsilon_t,
\]

2.4.8 MODEL G - Issuing equity for investment purposes

Firms are able to take advantage of temporarily low adverse selection costs when issuing equity, but that equity is not mispriced when issued. Next, I answer the question of whether firms use the raised equity to finance investment. Under the mispricing view of market timing firms do not subsequently invest. Under the adverse selection view of market timing they do.

The author determines both financing sources and uses by analyzing cash flow statements and following the definitions of sources and uses of funds. His aim was to identify the use of money raised in the offerings that are attributable to investment activity rather than purely financial uses.

The author determined nine different variables, which are the change in assets as a benchmark and eight possible uses of funds|capital expenditure, increase in investments, acquisitions, changes in cash holdings, dividends, debt reductions, equity repurchases or other uses.

Change in assets as a benchmark and nine possible uses of funds
1. Capital expenditure,
2. Increase in investments,
3. Acquisitions,
4. Changes in cash holdings,
5. Dividends,
6. Debt reductions,
7. Equity repurchases or
8. Other uses.
9. Equity repurchases

The specification is as follows: where the dependent variable $Y_t$ is the cumulative change in assets from pre-offering to post-offering year $t$ scaled by pre-offering assets, i.e. summarized from year 0 to post-offering year $t$ and scaled by assets, Residual sources are summarized from year 0 to post-offering year $t$, i.e.

$$Y_t = c_0 + c_1 \left( \frac{\text{Proceeds}^p}{A_{t-1}} \right) + c_2 \left( \frac{\text{Residual sources}}{A_{t-1}} \right) + c_3 \text{SIZE}_{t-1} + \epsilon_t,$$

where

$$\text{Residual sources} = \sum_{t=0}^{T} \text{Total sources of funds} - \text{Proceeds}^p.$$

This model is extremely helpful for the second research of this study.

This model particularly focuses on how issued amount is utilized for investment decision. This entire model indicates security issuance and uses of issued investment. All model some how different with little changes in variables and the methods used. Although all variables use regression analysis for deriving results. Looking at the above models, I would finalize appropriate model for my research that have been discussed in the methodology section.

2.4 Limitations:

The field of behavioral finance is very fascinating and becomes interesting day by day with more and more involving of researchers and scholars around the world. In the field of corporate behavioral finance, Baker and Wugler’s survey and paper is most referred and highly cited at every related filed. The research in the behavior corporate finance could not begin without citing Baker and Wugler’s survey and papers. In foreign context the filed is deeply researched by various experts. Although there is a lack of research in Indian context. Only one paper, Mukharjee Sulagna, Mahakud Jitendra(2012) is purely shows market timing machismo in Indian perspective and its impact on capital structure of firm. Other most of the paper concentrate on the IPO and its performances on short and long run. There is one book know as “Value
Investing and Behavioral Finance” book written by parag parikh in Indian context, none other book or paper indicates Indian capital markets and its relation with behavioral driven aspects. So, there is a need to have more research in this field so new research have good database of research papers.

2.6 Conclusion:

Though behavioral finance word seems new to the normal or layman, there are vast amount of literature available. Earlier research only available to the extent of psychological concepts and its application to the finance. Taking this concept as the base for the field behavioral finance now becomes separate distinct field provides different application. There are lots of application of behavioral finance costing of aggregate of stock market, close ended funds, investor behavior and corporate behavioral finance. Concentrating of the corporate aspects of behavioral finance, there are lots of research done in the field but to identify as part of behavior corporate finance is very difficult.

Most of the behavioral corporate finance is studied in terms of irrational investor’s view. There is little literature available for irrational manager’s view, as it is very difficult to measure irrationality of managers and to relate their action which is purely behaviorally driven. Such insight might be produced from research of psychology. There is need for more research in the field of irrational manager’s approach. As previously discussed irrational investor’s view has been discussed in detail by many researchers.