CHAPTER 1
INTRODUCTION

The developing as well as developed economies need resources for their economic development and growth. The rate of economic development depends primarily upon the long term investments and the capital formation in an economy. Capital is said to be “formed” when savings are utilized for investment purpose. Savings and investment are the vital factors which boost the growth and economic development of the country. Generally, the units which save and invest are different and the capital markets provide a bridge by which savings of surplus units are transmitted into long term investments by deficit units. The capital markets, thus, play a crucial role in accelerating the pace of economic growth of a country (Bhole, 1982). The process of economic development is invariably accompanied by a corresponding and parallel growth of financial organizations. The financial system is possibly the most important institutional and functional vehicle for economic transformation (Singh, 2008).

The capital market should be efficient and diversified. The efficiency of a financial market can be judged by how competently and successfully it meets the financial requirements of the different parties. It mobilizes the savings of the masses and provides well organized markets for the sale and purchase of financial securities. Security market, hence, plays a vital role in facilitating free flow of funds from the surplus to deficit units and provides liquidity, marketability, safety etc. to investors and accelerates the rate of capital formation (Balkrishan and Narta, 1997). In order to ensure the availability of funds for companies and an individual’s need to invest surplus money efficiently, the stock market of a country should be stable and growing up. Also, in the era of augmented global competition, rapid technological innovation and greater thrust on growth and productivity, the stability and development of the stock market of a country is a necessity for maintaining the competitiveness of an economy. Thus, an efficient, articulate and developed financial system is indispensible for the rapid economic growth of an economy.

However, if the financial system does not perform its role well, then the economy cannot operate efficiently and the economic growth will be hampered. Financial
instability occurs when shocks to the financial system interfere with the information flows and the financial system can no longer do its job of channeling funds to the productive investment opportunities (Mishkin, 1999). Also, Ferguson (2002) described financial instability as a situation characterized by three basic criteria: (1) some important set of financial asset prices seem to have diverged sharply from fundamentals; and/or (2) market functioning and credit availability, domestically and perhaps internationally, have been significantly distorted; with the result that (3) aggregate spending deviates (or is likely to deviate) significantly, either above or below, from the economy’s ability to produce. If the financial stability is quite acute, it is likely to completely destroy the functioning of the capital market and eventually the overall economy. Such a situation is called as financial crisis. Davis (2003) described financial crisis as a major collapse of the financial system, entailing inability to provide payments services or to allocate credit to productive investment opportunities. One such most striking financial crisis happened in the history of American financial markets which completely shacked the global economy was the stock market crash of 1929 (De Long and Shleifer, 1991).

1.1 STOCK MARKET CRASH OF 1929

Throughout the 1920s the stock market witnessed a long boom which took stock prices to towering peaks. Stock markets in United States and Europe were earning huge profits since 1920. The Dow Jones Industrial Average (DJIA) rose from 200 in January, 1928 to 381 in September, 1929 (Kohn, 1999). Many investors were convinced that they could get rich by investing in the stock market and thus borrowed heavily to invest in stock market. From 1920 to 1929, stock prices quadrupled. As stocks continued to climb throughout 1920s, many investors came to believe that stocks were a sure way to ensure a secure future for their families (Lange, 2007). However, on October 28, 1929, the Dow Jones Industrial Average (DJIA) dropped 12.82%, losing 38.33 points down to 260.94; then the very next day, on October 29, 1929, it again fell down to 11.73% losing another 30.57 points (Architect, 2012). As the news spread, more and more investors wanted a way out of the market at whatever price they could get. Even without looking at the price, the investors went crazy to sell off their shares. So began the stock market crash of 1929. The day of 29th October 1929 is remembered as Black Tuesday in the history of stock
market crashes. There began the rampant selling of stock on wall street causing values to plummet and paved way to great depression started in 1929 and lasted until the late 1930s and early 1940s (Lange, 2007).

The great depression of 1929 was the most severe trauma the world had experienced. The stock market crashed, banks failed, industrial production was severely curtailed and the unemployment rates escalated (Neal, 1998). It caused the devastating effects on the demand, consumption, savings and investments at macroeconomic level. People went bankrupt overnight and their belief of earning returns through investment in stock market was totally shaken.

Before the stock market crash of 1929, the investment in stock market was a disordered and muddled activity (Bierig, 2000). The investors used to base their investment decisions on insider activities and speculative activities were more in number. Looking at the devastating effects of crash of 1929 and the frequent irrationality of market pricing, Columbia Business School Professors; Benjamin Graham and David Dodd thought of creating sound intellectual framework for stock market investment\(^1\). There came the origin of the concept of value investing.

1.2 ORIGIN OF VALUE INVESTING

Graham and Dodd (1934) in their seminal work entitled ‘Security Analysis’ introduced the concept of value investing and security analysis. Security analysis involves examining a number of securities to identify those securities that currently appear to be mispriced. There are mainly two approaches to security analysis: fundamental analysis and technical analysis (Alexander et. al, 1995).

Fundamental analysis involves a detailed study of a company’s financial position using financial ratios which help in taking an investment decision for long term (Vanstone et.al, 2004). Benjamin Graham’s stock selection strategy is based on the fundamental analysis of a company. He introduced a new approach to investing, whereby the securities which are underpriced in relation to their estimated underlying values are bought (Capual et al., 1993) and sold when the true or actual value of the security is reflected in its market price. This approach of investing is called as value investing.

\(^1\) http://www.clearbridge.com/documents/commentary/D8901-CBA_Socks_Stocks.pdf
Benjamin Graham, thereafter, was called as father of financial analysis and value investing. He made investment in stock market a profitable venture by devising sound guidelines for analyzing a company’s fundamentals and its future prospects.

1.2.1 Meaning of Value Investing

Value investing utilizes a traditional fundamental analysis approach in selecting stocks for investment portfolios (Ahmed, 2008). It consists of buying securities whose shares appear underpriced by some form of fundamental analysis. Such securities trade at discount to book value, have high dividend yields, low price to earnings multiples or low price to book ratios. It can be defined as follows:

*The conventional definition:* A value investor is one who invests in low price to book value or low price to earnings ratio stocks. *The generic definition:* A value investor is one who pays a price which is less than the value of the assets in place of a firm (Damodaran, 2003).

Graham and Dodd (1934) questioned the ability of the firms to sustain same growth in earnings in future, so they hypothesized that firms who have and are currently experiencing high (low) earnings growth are unlikely to able to sustain it to the extent expected by the market e.g. a high price to earnings multiple is indicative of the market’s expectation of high future earnings growth. When this earnings growth reverts towards industry/economy mean, then this will result in the revision of earnings’ expectations, a fall in firm’s price to earnings multiple and so, a downward correction in its stock price (Bird and Gerlach, 2003). Therefore, it is prudent to concentrate on securities whose prices are depressed while representing excellent value. These stocks must represent excellent value today in order to create a buffer against future market volatility. Thus, regardless of market volatility, the value of this portfolio remains intact in short term. Most importantly, over the long term there is strong potential for this portfolio to increase (Ahmed, 2008). Thus, value strategies call for investing in companies that have low prices relative to earnings, dividends, book assets or other measures of value (Lakonishok et al., 1994). Therefore, value strategies include investing in companies with high ratios, such as, book to market (B/M), earnings to price (E/P), and cash flow to price (CF/P) and high dividend yields (Kwag and Lee, 2006).
In short, the basic premise of value investing is to invest in stocks trading below their true value. Therefore, the value companies are ones whose securities can be purchased for prices that are low in relation to their estimated underlying values (Capaul et.al, 1993) and a value investor is one who looks for a bargain by identifying an undervalued company. A company is undervalued when its share price is relatively cheap compared to its earnings and book value (Azzopardi, 2006).

1.2.2 Intrinsic Value and Margin of Safety

“The term intrinsic value means the discounted value of the cash that can be taken out of a business during its remaining life. In other words, a company’s intrinsic value is equal to the value today of all the money it will deliver in the future” (Boroson, 2001).

Value investors typically calculate intrinsic value by focusing on earnings, cash flow and other indicators of the company’s wealth creation potential. The core principle of value investing is to buy companies at a deep discount to their intrinsic value (Graham, 1949). Therefore, the key principle of value investing is to look for a meaningful gap between a company’s market valuation and its underlying intrinsic value or worth and is called as margin of safety i.e. value investing: stock intrinsic value - stock market value = margin of safety (Hoesly et al., 2008). Value managers believe in finding the long term true net worth or the intrinsic value of a stock because the stock that is trading well above its long term intrinsic value will eventually decrease to that value and if a stock is undervalued (trading below its intrinsic value), it will presumably migrate back to its long term intrinsic value over time. In both instances, stock is said to be reverting to its mean (Shannon, 2002).

The concept of margin of safety is the cornerstone of value investing popularized by Benjamin Graham. It is an important concept for making stock and bond choices. According to Graham, margin of safety is necessary to protect an investor from the price fluctuations. Also, the market price of the stock may not move in line with its intrinsic value. Therefore, the investor must invest in the stocks which have significant gap in its market price and the intrinsic value, so that, the margin of safety can protect him in the event of a huge downturn.
The concept of margin of safety and intrinsic value can be explained from figure 1.1. In it, a horizontal line represents a supposed company’s intrinsic value i.e. the core value of the business which does not change as often as its stock price, which changes every minute. Also, there is a gap between the intrinsic value and the price at which shares of the company should be purchased called as discount to intrinsic value or margin of safety. Further, a line is added which represents how the company’s stock price fluctuates over time. The stock’s market price rises above and falls below the company’s fundamental value. This rise and fall of market price creates value bargains for the investors. When the price of a security falls down its actual worth, it generates a buying or purchase opportunity. The shaded area between the company’s stock price and its discount to intrinsic value, illustrates, when value investors should consider buying the stock. Value investors expect that over a period of time, the true value of the company is recognized and the market price of a stock will migrate towards its true worth. When the share price exceeds the company’s intrinsic value, the margin of safety vanishes and the shares should be sold (Brandes, 2004).

Figure 1.1: Intrinsic Value and Margin of Safety

Source: Brandes, 2004
Thus, value strategies aim at purchasing a stock when significant discount to its actual worth is available and holding it till the time the value greater than its actual worth is not available. The factor of the bargain is the key to process. It is also referred to as buying a dollar for fifty cents. Value investing combines the conservative analysis of underlying value with the requisite discipline and patience to buy only when a sufficient discount from that value is available (Klarman, 1991).

After enlightening the investor community with the margin of safety as the core principle of investment in stock market, Graham (1949) in his another seminal work entitled ‘The Intelligent Investor’ suggested rules for stock selection for defensive as well as enterprising investor. These rules help in selecting value stocks for two categories of investors; defensive and enterprising.

**Rules of Stock Selection for Defensive Investor**

A defensive investor is one who is risk averse and interested basically in the safety of the principal amount. They are recommended to follow the following rules to take an investment decision.

1. **Adequate Size of the Company:** A smaller company is generally subject to wider fluctuations in earnings. Therefore, Graham (1949) recommended that the annual sales of an industrial company should exceed 100 million dollars and the total assets of a public utility company should exceed 50 million dollars.

2. **Strong Financial state:** This rule states that the ratio of current assets to current liabilities of a company should be greater than two. Also, the working capital of a company should exceed its long term debt so as to provide margin of safety to investors in case of bankruptcy or default.

3. **Earnings Stability:** There should have been a few earnings earned by the company in each of the past ten years i.e. the companies should not have suffered a loss over the past ten years.

4. **Dividend record:** The company should have paid dividend consistently for at least past 20 years.

5. **Earnings augmentation:** There should be growth of at least 33.33% in earnings per share in last ten years.
6. **Moderate price to earnings ratio (P/E):** The price to earnings ratio of a company should be lesser than 15. The mean earnings of past three years are considered to calculate this ratio.

7. **Moderate ratio of price to book value:** According to this criterion, current price should be lesser than two-third of the book value last reported. A price higher than this would denote the stock as overvalued and the investor will not get margin of safety through investing in that very stock (Graham, 1949).

   Graham advised the defensive investor to purchase and maintain a portfolio of 10 to 30 common stocks, each meeting specified criteria. These criteria reflect Graham’s belief that in order to assure safety of principal, a security must meet certain minimal business standards and also provide a certain value for purchase price (Oppenheimer and Schlarbaum, 1981).

**Rules of Stock Selection for Enterprising Investor**

   The enterprising investor is one who devotes an ample amount of his interest and labor toward getting a better than average investment result. Such investor has greater market understanding and more time for portfolio management.

   Graham (1949) recommended certain rules of stock selection for enterprising investor. These rules are:

   1. **Financial condition:** (a) The ratio of Current assets to current liabilities should be at least 1.5 and (b) the total debt of a company should be lesser than 110% of net current assets.

   2. **Earnings stability:** The earnings of the company should be stable in the last five years.

   3. **Dividend record:** Dividend should be paid by the company in the year preceding portfolio formation.

   4. **Earnings growth:** The previous year’s earnings of a company should be greater than its five year prior earnings.

   5. **Price:** Current price should be lesser than 120% of net tangible assets.

   Based on the fundamental information regarding the company, many investors started investing money in stock markets. The investment managers started developing fundamentals based mutual funds. From 1926 to 1956, Graham Newman Corporation
yielded an annual return of 17% during its 30 year period. However, by the early 1970s a consensus had emerged among financial economists suggesting that stock prices could be well approximated by a random walk model and that changes in stock returns were basically unpredictable (Pesaran, 2005).

Thus, Fama (1970) developed efficient market hypothesis which stated that achieving above average returns on a risk adjusted basis is impossible and a market in which prices always fully reflect available information is called efficient market (Roddenberry and Bacon, 2011). Eugene Fama’s efficient market hypothesis has become the basis of numerous financial models and forms the foundation of the investment strategies of many individuals and corporations (Palan, 2004).

1.3 **EFFICIENT MARKET HYPOTHESIS**

Efficient market hypothesis, popularly known as random walk theory, is the proposition that current stock price fully reflect available information about the value of the firm, and there is no way to earn excess profits, (more than the market overall) by using any information (Clarke et al., 2001). Eugene Fama discussed three forms of efficient market hypothesis:

1.3.1 **Weak Form of Efficiency**

This hypothesis states that the stock prices accurately reflect all the information contained in the record of past prices and trading volume. Hence, the investors who depend solely on the past series of stock prices in selecting their portfolio cannot consistently outperform the same investors who buy and hold random portfolio at same risk. Hence, technical analysis (selecting securities on the basis of past prices and trading volume) is of no use (Hadi, 2006). Thus, the sequence of prices relating to the historical data does not have any value for predicting the future stock prices. As a result, no investor can earn excess returns by developing trading rules based on historical prices.

1.3.2 **Semi Strong Form of Efficiency**

It states that in addition to past prices, all publically available information including fundamental data on the firm’s product line, earnings forecasts, dividends, stock split announcements, quality of management, balance sheet composition, patents
held, accounting practices etc. should be fully reflected in security prices. The publically available information includes accounting reports, the reports of competing firms or industry, announced information relating to the state of economy, announcement of earnings, dividends, bonus issues, stock analysts’ reports in a business magazines, the annual report of a firm, published forecasts etc. Thus, one cannot make a superior profit by using the fundamental analysis in the market which is efficient in the semi-strong form (Yalcin, 2010).

1.3.3 Strong Form of Market Efficiency

This form of market hypothesis states that security prices fully and instantaneously reflect all information whether public or private. If market is strongly efficient, even an individual having monopolistic access to non public information is unable to earn abnormal profits than what would be earned with buying and holding strategy. Therefore, it is not useful to any investor or any analyst to make any future forecast of prices because one can never make any returns, which are superior to others consistently (Maiyo, 2003).

1.4 GROWTH PHILOSOPHY

Motivated from the concept of strong form of efficient market hypothesis, also emerged simultaneously was growth investing philosophy. While the value investor invests in stocks which are disfavored by the market, hoping the market value of their equity will increase, the subscriber to the growth philosophy invests in stocks which are already popular in the market place, hoping their market value will increase further (Dirks and Magnusson, 2007). It is a strategy of investing in the shares which appear to have substantial growth prospects. Growth shares may appear expensive as their price is high relative to historic performance and a relatively large portion of their value is the expectation of improved return in the future (Graham and Uliana, 2001). Growth stocks have been defined as stocks having relatively high prices in relation to fundamental factors like earnings per share, cash flow per share, book value per share and dividends per share (Bauman et.al, 1998). Higher return of value stocks over growth stocks is defined as value premium (Karan and Gonenc, 2003). Growth investors are more apt to subscribe to the “efficient market hypothesis” which maintains that the current market
price of the stock reflects all the currently “knowable” information about a company and is therefore the most reasonable price for that stock at that given point in time.

Efficient market hypothesis has been applied extensively to theoretical models and empirical studies of financial securities prices, generating considerable controversy and financial insights into price discovery process (Lo, 2007). Several studies have documented strong evidence of anomalies in the stock market that seems to contradict efficient market hypothesis (Yalcin, 2010). Thus, a naive view of market efficiency in which price is assumed to be equal to the actual worth of a stock is an inadequate conceptual starting point for market-based research. This view fails to capture the affluence of market pricing dynamics and the complex process of price formation in the stock market (Froidevaux, 2004). Also, if prices deviate from their fundamental values, research could lead to the exploitation of these opportunities. By doing this, one not only makes money, but the price is also driven back to the true value, given there was mispricing (Doeswijk, 1997).

Thus, exploring the inefficient form of market, Benjamin Graham in his last years distilled his six decades of experience into ten criteria which investors could use to identify undervalued stocks (Rea, 1977; Oppenheimer, 1984; Klerck and Maritz, 1997). The ten criteria are called as value investing rules/principles of Benjamin Graham.

1.5 BENJAMIN GRAHAM’S VALUE INVESTING RULES

Benjamin Graham has given ten rules of stock selection based on value investment strategy, which the investors can use to gain edge over the market. These rules/principles are as under:

1. An earnings to price yield should be at least twice the triple-A bond yield. The earnings yield is the reciprocal of the price to earnings ratio.
2. The price to earnings ratio should be lesser than 40% of the highest price to earnings ratio, the stock had over the past five years.
3. A dividend yield should be at least two-third of the triple-A bond yield.
4. A stock price should be lesser than two-third of tangible book value per share.
5. A stock price should be lesser than two-third of net current asset value (current assets less total debt) per share.
6. Total debt should be lesser than the book value.
7. Current ratio (current assets divided by current liabilities) should be greater than two.
8. Total debt should be lesser than twice the net current asset value.
9. The earnings of the company should have a compounded annual growth rate of 7% in prior ten years.
10. There should be stability of growth in earnings i.e. no more than two declines of five percent or more in year-end earnings (relative to previous year) in the most recent ten years should be there.

The first five criteria measure reward and are sensitive to price and earnings changes and the second group of five criteria offer a measure of risk and does not change rapidly with changes in price and earnings (Klerck and Maritz, 1997). The intrinsic value of the stock has been determined through the fundamentals such as earnings yield, dividend yield, tangible book value, net current asset value, total debt, current ratio, earnings growth and earnings stability. Then these measures of intrinsic value have been linked with the market price of the stocks so as to make certain the presence of margin of safety. Thus, stock selection criteria of Graham ensures the sufficient gap between intrinsic value and the market price of the shares in order to guarantee sufficient margin of safety to investors.

After the death of Benjamin Graham in 1976, the investor community and the researchers brought the value investing theories into practice. Hence, the detonation of scholastic interest in value investment strategies could be traced back to 1970s when different ratios discussed by Graham were used as valuation measure to determine whether a particular stock is value or not. The topic of value and growth investing offers a shining example of the fruitful exchange of ideas between academic research and investment practice. The issues encountered by portfolio managers and consultant such as procedures for identifying value or growth styles have spurred ongoing analysis and extensions in the research literature (Chan and Lakonishok, 2004).

Given below are the ratios as well as variables used by different researchers to see whether they generate value premium or not.
1.6 DIFFERENT VALUATION METRICS/ RATIOS

The ratios have been used either in isolation or in combination with the other ratios. The comparison of different stocks’ on the basis of various price multiples can facilitate an investor to determine whether a particular stock is overvalued, undervalued, or accurately valued in terms of measures such as earnings, sales, cash flow, or book value per share.

1.6.1 Price to Earnings (P/E) Ratio

This ratio helps give investors an idea about what the market and shareholders are willing to pay for the earnings of the company. This valuation metric establishes the relationship between the actual recent earnings based performance of the company with its future market performance.

Price to earnings ratio = Current market price / Earnings per share for last financial year end (Crotzer, 2008). Hence if a company is having 10 as its P/E, then it implies that the market is ready to pay ₹10 for every ₹1 of its earnings.

There are two versions of the P/E ratio. A trailing P/E is the current market price divided by the company’s reported earnings per share of last 12 months. The stock market is much more concerned about what will happen in the future than what happened in the past, so some analysts prefer to compute the P/E based on expected earnings rather than on actual or realized earnings (Strong, 2004). A high P/E ratio represents stock being overvalued and a low P/E ratio signify the stock being undervalued.

1.6.2 Price to Book Value (P/B) Ratio

Book value per share is an accounting concept that measures what shareholders would receive if all the firm’s liabilities were paid off and all its assets could be sold at their balance sheet value. The term is synonymous with equity per share or net asset value (Strong, 2004). It is the historical cost value of the firm’s assets on a per share basis and is calculated by dividing the book value or the net worth by number of shares outstanding.

Price/ book value ratio = Current market price of a share/ Book value of a share for last financial year end.
A company’s share price represents investors’ assessment of future prospects, while its book value represents accountants’ representation of its past costs (Dunis and Reilly, 2004). This is one of the most important factors determining whether a company is a value or growth company (Crotzer, 2008). Book value is also considered a rough index of the liquidation value of the firm. The liquidation value is the residual proceeds from selling off the firm’s assets and paying the firm’s liabilities. Thus, the ratio also gives some clue of what an investor is paying for what would be left if the company went bankrupt immediately.

1.6.3 Dividend Yield

This ratio gives the current return to the investor as a percentage of his investment in a particular stock. It is of interest to potential shareholders who are considering purchasing the firm’s stock and who desire dividends as a source of income (Hampton, 1980). It is calculated by dividing all dividend paid per share in the last year by the current stock price. If XYZ Company paid ₹1 in dividends and traded at ₹20 in the market, then stock’s dividend yield would equal to 0.05, or 5 percent (Brandes, 2004).

1.6.4 Price to Cash Flow (P/CF) Ratio

This ratio is calculated by dividing current stock price by the financial year end’s operating cash flow. This ratio again assumes that a security’s price represents investors’ assessment of future prospects, while its cash flow represents the cash generated or lost by the firm over the reporting period, therefore giving an indication of the financial strength of the company (Dunis and Reilly, 2004).

1.6.5 Price to Sales (P/S) Ratio

This ratio is not much different from that of P/E ratio. The difference, however, is that instead of earnings as the denominator, sales per share is used. There are different ways of calculating the P/S ratio. One way is to divide market capitalization of the stock by the company revenues. Another way is to divide the stock price by the sales per share (Crotzer, 2008).
1.6.6 Size Effect

Size effect means that the stocks with smaller capitalization tend to outperform the stocks with larger market capitalization. This effect has been studied along with value investing ratios (as discussed above) to enhance the performance of value portfolio. Thus, the size effect exists in the stock market as an anomaly as well as value effect.

1.6.7 Past Growth in Sales

Some researchers have used growth in sales variable to determine whether the particular variable is value stock or growth stock e.g. Lakonishok et al. (1994) used annual geometric average growth rate of sales in determining the nature of stocks. Stocks with low past growth rate are classified as value stocks and the stocks with high past growth rate are called as growth stocks.

1.6.8 Financial Leverage

The use of fixed interest or fixed dividend bearing securities such as debt or preference capital along with the owners’ equity in the total capital structure of the company, is called as financial leverage (Maheshwari, 2002). Alternatively, this ratio indicates the relative proportion of debt and equity in financing the assets of a firm. With a large proportion of debt in the capital structure, the earnings available to owners would increase more than proportionately with an increase in the operating profits of the firm as debt carries a fixed rate of return and if the firm is able to earn a rate higher than the fixed charge on loans, the benefit goes to shareholders (Van Horne, 1994). However, the excessive debt increases the financial risk for the firm. In adverse circumstances, if the firm is not profitable, it will have to bear a huge amount of interest. The firm will also have to face serious difficulties in raising funds for future. Thus, the value stocks have lesser level of leverage compared to other stocks.

In short, the stocks having high earnings to price, book to market value, sales to price, dividend yield, cash flow to price and lesser leverage are considered as value stocks. The stocks having low earnings to price, book to market value, sales to price, dividend yield, cash flow to price and higher leverage are considered as growth stocks. Over the years, academicians have enhanced the value investing literature with work on different ratios as valuation measures, bringing to light the outperformance of value
stocks over growth stocks and the reasons for the existence of value premium. However, all the shares in a value portfolio, formed on the basis of these valuation ratios, do not show the increment in their market value. The majority of such shares yielded negative returns (Piotroski, 2000). Thus to extract the real value generating shares out of the value portfolio, the shares have been screened on the basis of another set of fundamentals called as F-Score.

1.7 ADDING VALUE TO VALUE STOCKS

Piotroski (2000) studied that less than 44 percent of all high book to market firms earned higher returns than the market in the two years following the portfolio formation. Thus, majority of the firms in high book to market portfolio were not showing increment in their value. Consequently, in order to generate value out of value, Piotroski (2000) developed an F-Score model. The model is based on nine fundamental signals which measure three areas of firm’s financial condition: profitability, financial leverage along with liquidity and operating effectiveness. The stocks meeting the said condition have been assigned score of one and stocks not meeting the particular condition have been assigned zero score. Based on the historical financial performance of the firm, the model helps to extract true value maximizing securities out of entire value portfolio. The brief discussion of the components of F-Score is as follows:

1. Return on assets (ROA): This ratio measures the profitability of total assets to investments of a firm and thus establishes the relationship between net profits and assets (Khan and Jain, 1994). It is calculated as:
   \[
   \text{ROA} = \frac{\text{Net income before extraordinary items at the end of financial year}}{\text{Total assets at the beginning of the year}}.
   \]
   Positive ROA determines the stock’s ability to generate funds internally and represents earnings productivity of total assets.

2. Change in ROA: The firms having current year’s ROA greater than the previous year’s ROA are given positive score. Piotroski (2000) through this metric made sure that firm has not incurred a loss in prior two years.
3. **Cash flow from operating activities (CFO):** Cash flow from operating activities denotes the excess of cash receipts over cash payments, both relating to the company’s principal business activities (Parrino et al., 2011). It is calculated as:

\[
\text{CFO} = \frac{\text{Net cash flow from operating activities at the end of financial year}}{\text{Total assets at the beginning of the year}}.
\]

Positive ratio denotes the operating cash flow generation ability of the total assets.

4. **Accrual:** Under the cash system of accounting, an organization records and reports financial transactions only when cash has been actually received or expended. However, the system wherein, revenue is recorded when earned and expenses are recorded when incurred, is called as the accrual method of accounting. In other words, revenues and expenses are accrued, when all events have occurred to evidence the obligation, without regard to the time of actual receipt or disbursement of the money (Blazek, 2008). Sloan (1996) found that earnings performance attributable to the accrual component of earnings exhibits lower persistence than earnings performance attributable to the cash flow component of earnings. Thus the accrual ratio receives the negative signal if firm’s profits (ROA) are higher than the firm’s cash flow from operations (CFO).

5. **Change in leverage:** Leverage means the share of average total assets financed by outside funds.

\[
\text{Leverage} = \frac{\text{Long term debt at fiscal year end}}{\text{Average total assets at fiscal year end}}.
\]

When a company raises debt, it takes on an obligation to considerable predetermined outflows for some time into the future. The company does not have a certain cash inflow over the same period. Indeed the inflow may be most uncertain. A fixed cash outflow combined with an uncertain cash inflow gives rise to financial risk. As a result, a larger debt is accompanied by larger risk (Walsh, 1993). Thus, the set of companies which have not increased their leverage as compared to previous year’s leverage get positive signal.

6. **Change in liquidity:** The liquidity position of an enterprise is assessed through its current ratio. The ratio of current assets to current liabilities is called as current ratio. This ratio provides information regarding the current cash position of a
company and its capability to stay solvent in the event of adversities. Essentially, it compares short term obligations with the short term resources available to meet these obligations (Van Horne, 1994). Higher the ratio, better the capacity of the company to pay its liabilities. Therefore, higher current ratio as compared to previous year’s ratio acknowledges company to get positive signal.

7. **Change in number of shares**: Ikenberry et al. (1995) observed that average abnormal return on announcement of share repurchases of value stocks due to undervaluation is 45.3% as compared to glamour stocks where no positive drift in abnormal returns could be observed. Moreover, Loughran and Ritter (1995) found that the companies issuing seasoned equity offering significantly underperform relative to non issuing firms for 5 years after the offering date. Hence, the companies showing an increase in the number of issued shares compared to previous year’s shares get negative signal.

8. **Gross margin**: This ratio of gross profit to sales is used as the indicator of the efficiency of the production operations (Hampton, 1980). The firm should have a reasonable margin to ensure adequate coverage for operating expenses of the firm and sufficient return to the owners of the business, which is reflected in the net profit margin (Khan and Jain, 1994). A stock gets positive signal if its current year’s gross margin is greater than previous year’s margin.

9. **Change in asset turnover**: It highlights the amount of assets the firm uses to produce its total sales. The ability to produce a large volume of sales on a small asset base is an important part of the firm’s profit picture. Idle or improperly used assets increase the firm’s need for costly financing and the expenses for maintenance and keep up. By achieving a high asset turnover, a firm reduces costs and increases the eventual profit to its owners (Hampton, 1980). Hence, the firm showing larger asset turnover ratio compared to previous year’s ratio, gets positive signal.

The sum of the above mentioned nine signals forms F-Score. Piotroski (2000) observed that if one applies F-Score on the value stocks, high scoring shares will outperform the low scoring firms. Hence, it helps in extraction of real value generating shares out of chaff of value shares.
Ahmed and Nanda (2001) further observed that the two strategies; value and growth, instead of being mutually exclusive to each other, can complement each other in enhancing the returns of the investors. The information regarding the growth of certain financial attributes can be clubbed with the value returns, to enhance the returns of the portfolio. There follows another approach to investing in which only good companies (companies that have shown a momentum in certain financial attributes) are bought at bargain prices. It is the concept of magic formula given by Greenblatt (2006) in his seminal work entitled “The Little Book that Beats the Market”.

1.8 MAGIC FORMULA INVESTING BY JOEL GREENBLATT

As motivated from the core principle of value investing i.e. buying a dollar for fifty cents, Joel Greenblatt introduced an another approach to value investing which aims at buying stocks of good companies at bargain prices, termed as magic formula investing. It is a two-step formula intended to buy stock in good companies at bargain prices. The magic formula comprises of two factors; return on capital and earnings yield. Return on capital is the performance part of the formula which shows that how much measure of the earnings a company generates from a given level of investment (the growth part of the formula) and the earnings yield is simply P/E ratio turned upside down. This is the value part of the magic formula, which shows that stocks are giving a large share of company’s earnings for a small price. The two ratios are:

- **Return on Capital**: It is one of the most important concept in financial management. Every firm has to match each dollar of assets it has by the funds drawn from financial markets. Also, the payment for the funds drawn has to be made at the market rate. This payment comes from the operating surplus resulting from the resourceful employment of assets. Thus, by relating this surplus to the value of underlying assets/ funds, a firm can estimate its return on capital (Walsh, 1993). More specifically, it is measured by calculating the ratio of profits before interest and taxes (PBIT) to tangible capital employed. Therefore, Return on capital= PBIT/ Tangible capital employed (Net Working Capital + Net Fixed Assets) (Greenblatt, 2006).
• **Earnings Yield**: It is the reverse of the most commonly followed valuation metric P/E ratio. It reflects the price currently paid by market for each rupee of currently reported earnings. It therefore measures the investors’ expectations and the market appraisal of the performance of the firm (Van Horne, 1994).

Earnings yield is measured by calculating the ratio of pre-tax operating profits (PBIT) to Enterprise value (Market value of equity + Net interest-bearing debt). This ratio helps to make out what a firm earns in relation to its purchase price (Greenblatt, 2006).

Greenblatt reported that a simple stock selection rule based on return on capital (ROC) and the PBIT to Enterprise Value ratio on US securities produced an annualized return of over 30% per year on a portfolio of approximately thirty stocks from 1987-2004 (Larkin, 2009).

Greenblatt has used PBIT due to the fact that all companies do not have the same level of debt. Also, the companies belonging to different industries can have different tax rates. Therefore, through PBIT, an investor can assess the operating profits of varied companies without the distortions arising from differences in borrowings and taxation rates. Thus, for every company, earnings generated through the operating activities are compared with the total cost of resources used to generate those earnings. Net working capital plus net fixed assets (or tangible capital employed) is used in place of total assets (used in an ROA calculation), which simply figures out how much capital is required to conduct the company’s business (Greenblatt 2006). Overall, the magic formula selects companies that have the best combination of a high return on capital and a high earnings yield.

1.9 **PURPOSE OF THE STUDY**

Indian stock market has witnessed metamorphic changes as regards size, structure, stability, regulatory framework and turnover due to various financial sector reforms which were initiated since early 1990s by the Government of India. The major reforms, amongst many, include the constitution of Securities and Exchange Board of India (SEBI) in 1988 to ensure investor protection and promotion of securities market, formation of credit rating agencies such as Credit Rating Information Services of India
Limited (CRISIL) in 1987, Investment Information and Credit Rating Agency (ICRA) in 1991 for dissemination of authentic investment information to investors, abolition of Controller of Capital Issues (CCI) in 1992 so as to accord freedom to companies to price their securities, establishment of National Stock Exchange (NSE) in 1992 in order to provide nationwide screen based facilities on securities to investors scattered all over the country, entry of Foreign Institutional Investors (FII) to invest in Indian stock market in 1992, replacement of floor based trading by screen based trading with the establishment of BSE on line trading (BOLT) in 1995, initialization of depository system i.e. National Securities Depository Limited (NSDL) in 1996 to reduce the paper work, formation of National Securities Clearing Corporation (NSCC) to assume counter party risk in all trading deals made on exchange, trading on rolling settlement basis, demutualization of exchanges, capital adequacy norms for brokers, derivatives trading in 2000, the prevention of insider trading as per SEBI (Securities and Exchange Board of India) Regulations, 1992, to bring about safety in financial market etc.

As a result of these reforms, various developments have taken place in Indian stock market, which has made it comparable to other mature markets in respect of various qualitative as well as quantitative parameters. The amount of capital raised has shot up, the number of issues has increased substantially and the trading volumes on the stock exchanges has increased manifold. Other than individual investors and institutions like Unit Trust of India (UTI), many new investment firms and mutual funds have also started participating in the market (Vaidyanathan and Chava, 1997). Moreover, positive fundamentals combined with fast growing markets have made India an attractive destination for foreign institutional investors. Significant amounts of capital are flowing from developed world to emerging economy like India (Prassana, 2008). As a result, there has been enlarged awareness about the need for investment analysis. Hence, a need is felt for a study which can help the investors to follow an investment strategy which would provide extraordinary returns in long run.

The present study therefore attempts to investigate the profitability of value investing strategies in Indian stock market.
1.10 RESEARCH OBJECTIVES

The major objective of the study is to examine the profitability of value investing strategies in Indian stock market. However, the specific objectives of the study are as follows:

1. To Test the applicability of Benjamin Graham’s stock selection criteria in Indian stock market.
2. To examine whether Piotroski’s F-Score applied to high book to market stocks could enhance the performance of value portfolio.
3. To investigate the profitability of Greenblatt’s magic formula in Indian stock market.
4. To recommend the value investing criteria the investors should adopt to enhance their return on investment.

1.11 STRUCTURE OF THE STUDY

The study has been divided into seven chapters. The first chapter that is ‘Introduction’ briefly introduces the concept of value investing. It also explains the need and the objectives of the study. The second chapter ‘Review of Literature’ reviews the available literature on value investing. It is designed in the chronological order. The third chapter ‘Research Methodology’ explains the research methodology employed in the present study. It describes the universe and the sample of the study, data collection, portfolio formation and calculation of returns, data analysis techniques and also the limitations of the study. The fourth chapter discusses the theoretical phenomenon behind each and every principle of Benjamin Graham’s stock selection criteria and empirically examines its relevance in Indian stock market. The fifth chapter examines the potential of Piotroski’s F-score in enhancing the returns of value stocks in Indian stock market. The sixth chapter details the results of empirical testing of Joel Greenblatt’s magic formula in Indian stock market and finally chapter seven explains the summary, conclusions and the recommendations of the study.