

Value Vs growth stocks: evidence from Indian stock market

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Abstract

Benjamin Graham is known as the father of Value investment as the concept first coined by him in his book *The Intelligent Investor* (Graham & Zweig, 2006). He focused on value investing which can be done by beating the market in long run and therefore an intelligent investor can benefit from overpriced or underpriced valuations in the market. Graham preferred stocks with relatively low multipliers and various other characteristics - all of which define the value of a stock. Traditionally growth investment was the popular strategy adopted by investors where focus has been given to capital gains. On the other hand, value investment focuses on safety of fund as well as yield of return. Though both value and growth investments are very popular approaches of investment all over the world yet logically value investment seems to be more suitable approach for investment. Investors choosing between growth or value funds should carefully consider the differences between each approach to find the best match with their own personal investment goals and objectives. Growth stocks are generally stocks having high price to earnings ratio (P/E) and high price to book ratio (P/B). On the other hand securities with low P/E and P/B ratio are considered as value stocks. As the name suggests, value means the actual worth of an asset, value stocks are generally the stocks that are traded less than their intrinsic values and being the undervalued stocks they have a promising character to provide good return in future. An intrinsic value of a stock is actually its fundamental value and when compared with the corresponding market value it can be identified that whether the stock is over-valued and under-valued. Many research works by eminent researchers in Finance and Investment area are studied before attempting for this paper. Research works by Fama, Banz, Bouman, Graham and Penman are the most cited works for this current work. Recent research methods are carefully studied and the outline of the paper is decided. The underlying idea of the current study is to compare Value Stocks with that of Growth Stocks by comparing their return. In many major stock markets like US stock market, Singapore market and in some European market the performance of growth and value securities are compared. But, in India till now that has not been compared. So, accordingly the problem statement of the present work is coined to check whether in Indian market value stocks outperform growth stocks or not. Objectives of the study are set considering the above research gap of the study. It also tries to compare the performance of both the group of securities with that of whole market and interpret the result. For this purpose, secondary data is used in the present study. In order to use some key ratios to identify value and growth stocks, the help of some research work is taken and three key ratios are identified for using in the paper. Those are P/E ratio, P/B ratio and P/CF ratio. P/E Multiplier, P/B Multiplier and P/CF Multiplier Models have been used to estimate the intrinsic values of the sample stocks and accordingly two groups are established i.e. Value securities and Growth Securities. Every year the portfolios of value securities and growth securities are adjusted using the above method. Different research articles, books and working papers are studied for that purpose. Apart from this, Annual Reports, Balance Sheets, P/L Accounts, websites of the sample companies and official website of National Stock Exchange are used as inputs. The paper covers 7 years time period i.e. 1st January, 2010 to 1st January, 2018 and includes 50 listed companies of CNX S&P Nifty. The reason behind selecting the time period is to avoid the impact of Financial Crisis on stock behaviour. So, post crisis period is considered for the study. The method for identifying value stocks and growth stocks under these 3 approaches are also adopted from related research works regarding this subject. Then the returns of these two groups are calculated and compared. In order to know the significance level between the calculated returns under each multiplier approach, a paired sample t-test is conducted at 5% significance level. For comparing the three approaches, t-test is also conducted among them. Accordingly result is interpreted. The result of P/E approach shows, out of 7 years in 5 years value portfolio outperformed growth portfolio. Only in 2 years growth portfolio beats value portfolio. Apart from it comparing values of standard deviation, it can be interpreted that value portfolio returns are more volatile than growth portfolio returns. Similarly, in P/B approach, out of 7 years in 3 years growth portfolio provides better return than value portfolio. In remaining 4 years the performance of value portfolio is better. Like P/E approach, in P/B approach the volatility of value portfolio is more than growth portfolio. In P/CF approach, clearly the performance of value portfolio overpowers growth portfolio as out of 7 years only in 1 year, the value of growth portfolio is better. In remaining all 6 years performance of value portfolio is better. The conducted t-test (at 5% significance level) to check the significance level among the estimated returns of different approaches shows the paired sample t-test, in case of P/CF multiplier approach the results are significantly different. In case of P/E Multiplier and P/B Multiplier Approaches, the p values (0.178 and 0.196) show that the calculated returns are not significantly different from each other. However, in case of P/CF Multiplier Approach, the result is significant (p value= 0.028) and thus null hypothesis is rejected. At the end the approaches are compared and we can conclude that the results differ in these two different groups of securities. However, the result and statistical evaluation of the study outlined that only in case of P/CF multiplier method, value and growth portfolio show significant results. On the other hand, in case of P/B and P/E multipliers, the return differences between growth and value portfolios are

insignificant. Though many researchers have supported P/B multiplier approach to identify the performance of value portfolios yet this work is a disagreement with the previous findings. So, we can safely conclude that value stocks outperform growth stocks in Indian stock market only for the P/CF multiplier. Moreover, it is found that the P/CF and P/E ratios are better indicators than the P/B ratio, as they offer larger value premiums. This work can lead to a scope for future research where comparatively a longer time period can be considered and the result would be more robust. Apart from it more focus can be given to different factors that cause value premium of the stocks.

Keywords: Value Stocks; Growth Stocks; Intrinsic Value; Market Value; Multiplier Valuation Model; Value Investment

1. Introduction

Value investors are not concerned with getting rich tomorrow. People who want to get rich quickly will not get rich at all. There is nothing wrong with getting rich slowly.

Warren Buffett (Business Insider, 2012)

The concept of Value Investment was first coined by Benjamin Graham (1949) in his book *The Intelligent Investor*. But, the concept was implemented by practitioners only in near past when Efficient Market Hypothesis was proved contrarily and investors realised that it is possible to earn abnormal return from market as market price does not necessarily reflect all information in it (Bauman, Conover, & Miller, 1999; Cronqvist, Siegel, & Yu, 2015; Fama & French, 1995, 1998). In this context, the concept of Value stocks and Growth stocks came to existence. Still, the concept of value and growth stocks is not clear among the investors. The difference between these two types of stocks lies in the way they are perceived by the market and investors as they are compared with their corresponding intrinsic values. Growth stocks are generally stocks having high price to earnings ratio (P/E) and high price to book ratio (P/B). On the other hand securities with low P/E and P/B ratio are considered as value stocks. As they name suggests, value means the actual worth of an asset, value stocks are generally the stocks that are traded less than their intrinsic values and being the undervalued stocks they have a promising character to provide good return in future. The underlying principle of value stocks is to buy undervalued stocks and sell overvalued ones (Graham & Zweig, 2006). Many research works so far have established the fact that Value stocks outperform growth stocks. Given evidence in US and German Market, the current paper tries to investigate the same in Indian context. Being the most emerging market in global frontier, if the above fact holds true for Indian Stock Market, is examined here. Accordingly research question is set and structure of the paper is finalised. The paper is broadly classified into six parts. They are Introduction, Literature Review, Objectives, Methodology, Findings and Conclusion.

2. Literature Review

During 1970s, the impact of Efficient Market Hypothesis was significantly deep on researchers when Fama published his work "Efficient Capital Market". At that time the belief was common that the price of a security reflects its true value (Intrinsic value) by absorbing all information in it. But, when compared with value investment, EMH has a strong conflict. Certain works by Stickel (1998), Basu (1977), Fama & French (1995, 1998) and Baumann and Miller (1997) identified the existence of Value premium that clearly contradicts the logic of EMH. According to EMH investors cannot expect above average return because new information is immediately incorporated in stock price (Malkiel, 2003). It also indicates an uninformed investor as well as a professional investor should expect same return from their portfolios (Malkiel, 2003). In case of Index fund, this logic hold true. But, the common belief of EMH that market price always reflects its intrinsic values are not correct. Under priced and over priced securities is the answer to

this notion of EMH. It means that half of the investors are expected to achieve abnormal returns, while the other half will not get such returns (Malkiel, 2003). The German stock market is considered to be a high efficiency market. In 2010, Borges conducted a study comparing the market efficiency of six European countries (Germany, Spain, UK, France, Portugal, and Greece) and showed that Germany has the second most efficient market after Spain. He also showed that Germany meets most traits of random walk behaviour. Keeping this in mind, we can expect that investors will not beat the German stock market (Borges, 2010). Investors like Peter Lynch, Warren Buffet etc challenged the assumption of EMH and outperformed the market. So, it cannot be a coincidence that these investors beat the market by chance (Svedroe, 2012).

The concept of value investment was first introduced by Benjamin Graham in his book *The Intelligent Investor* (Graham & Zweig, 2006). He focused on value investing by beating the market in long run and therefore an intelligent investor can benefit from overpriced or underpriced valuations in the market. Graham preferred stocks with relatively low multipliers and various other characteristics - all of which define the value of a stock. Thomas Rowe Price, in contrast, is dubbed as the 'Father of Growth Investing'. His investment style can be characterized by a strong focus on well-managed firms operating in industries that are considered to show strong expansions. He was interested in firms showing increased earnings and dividends, as they are expected to grow at a faster rate than the economy (Investopedia, 2015). In the literature, value stocks are generally defined as firms which have recently shown low performance and are expected to show lower than average performance in the future, it is contrary to the growth stocks that have shown above-average performance in the past and are expected to continue this trend in the future (Bauman & Miller, 1997).

Growth stocks are generally sold at relatively high prices in comparison with earnings per share, cash flow per share, book-value per share, and dividends per share. Value stocks, however, show the exactly opposite characteristics (Bauman & Miller, 1997).

Value investors are commonly known as bargain hunters because they behave in a very similar way as most people do when paying for goods and services - they try to pay as little as possible. The term 'value' refers to what an investment - in this case a listed stock - is actually worth. This price is often very different from the intrinsic or true value of the security (Graham & Zweig, 2006). The reason for such over or undervaluation of stocks can be traced back to market inefficiencies, which are caused by wrong expectations of market participants. A company that has shown an outstanding performance with increasing earnings in recent times is likely to attract the attention of professional analysts and investors. Investors will have confidence in the future prospects of such firms and thus be prepared to pay higher prices for their stocks.

A factor that is often neglected is that prices could immediately move towards the opposite direction, which would cause share prices to crash. Value investors aim to benefit from such inefficiencies; their strategy is to buy stocks when they are undervalued and to sell stocks when they are overpriced (Graham & Zweig, 2006; Brooks & Nojin, 2010).

3. Research gap

Major research has been done (as discussed above) in growth portfolio investment. Value investment studies are limited to only US and some of the European markets. But, the study about growth and value portfolios in Indian Market is significantly limited. Being the most emerging Financial Market of the world, the importance for institutional as well as individual investors investing here cannot be avoided. So, the present paper is based on addressing following question.

“Does a Value stock investment outperform a Growth stock Investment in long run in Indian Stock Market”?

4. Objectives of the study

Having studied the above research works, the objectives of the current research can be defined as follows.

- To classify the stocks into Value and Growth categories
- To compare the return of each of the categories with that of market.
- To test the significance level of the returns and interpret the same.

5. Research Methodology

A wide range of literature exists on identifying Value as well as Growth Stocks. Key Financial ratios like P/E, P/B and P/CF are used for that purpose. Fama and French (1998) identified that low P/B stocks as value and high P/B stocks as Growth stocks based on the returns yielded by them. But, Penman (1996) compared P/E and P/B ratios and finds that P/E is more logically correct method of identifying Value stocks. Penman (1996) supports Fama and French and suggests high P/E stocks underperform in comparison to low P/E stocks. Shaungnessy (1998) conducted his study in US stock market by using major ratios and finds P/E and P/B are the best performing ratios of identifying value stocks. Although major research has been done using different ratios, P/E ratio is the widely used and accepted ratio by the practitioners all over world. Keep that into consideration, the present study uses P/E multiple method along with 2 other ratios for identifying value and growth stocks.

○ Data & Time Period of the Study

Secondary data has been used for the study to identify value stocks and growth stocks. Sample size is 50 i.e. CNX S & P Nifty stocks. Because, an index represents the whole market and the securities are traded every day. Bloomsbury database and websites of sample companies are used for accessing data like Annual Reports, Balance Sheet and P/L Account of the sample companies. For the return calculation of the stocks official website of National Stock Exchange (www.nseindia.com) is used.

In order to avoid external impact on stock behaviour, post Financial Crisis (2007-2009) period has been considered for the study for i.e. 7 years time period from 1st January, 2010 to 1st January, 2018.

○ Statistical Tool used

In the present empirical research, conclusion has been drawn by comparing the long term return of value stocks with growth stocks. For hypothesis testing, different statistical methods are used to accept or reject it. Referring the literatures on this area, it is found that t-test is widely used by the researchers to test the significance level between the two mean values of value stocks and growth stocks. A common approach is to use a significance level of 0.05, which is also used in this study. If p-value is equal or lower than

the significance level then null hypothesis is rejected or else it would be accepted. A paired t-test at 5% significance level is performed for this purpose taking return as dependent and P/E multiplier as independent variable. Accordingly Null Hypothesis is set.

○ Null Hypothesis & Alternate Hypothesis

Based on the objectives and findings of the present study, the stated hypotheses are as follows.

H01: Value portfolios generate the same return as Growth portfolios.

HA1: Value portfolios generate higher returns as Growth Portfolios.

• Research Design

In the present study, 3 Multiplier models are used to compare the performance of Value and growth stocks. They are P/E Multiplier, P/B Multiplier and P/CF Multiplier Models. In each of the models, the stocks are classified into 2 segments i.e. Value and Growth for each year. Then their performance in terms of returns yielded is compared. Having constructed these 2 portfolios using each Multiplier, their arithmetic and geometric returns are computed for the study period. Standard Deviation is also estimated to show the dispersion of the calculated returns. The portfolio is re-balanced each year considering the criteria set for Value as well as Growth portfolios. At the end a t-test is conducted at 5% significance level to check the spread between the above said stocks. Following methods are used to classify these 2 groups in each of the Multiplier method.

P/E Portfolio

This multiplier represents the market value of a stock in relation to its earnings per share. The market price of a stock is defined as the price for what has been traded in the market. This value is determined by calculating the average daily closing price over the year, which provides a solid value in such a way that this number is not biased by temporarily outliers. $P/E = \text{Market value} / \text{EPS}$

Portfolios ranked in accordance with their P/E ratios were, on average, divided into the following groups: Value (0–15), and growth (>15). This is consistent with the ranges reported in the literature, where growth stocks are considered to have a P/E value of ≥ 15 (Graham & Zweig, 2006).

P/B Portfolio

The P/B ratio is used to compare the market price of a stock with its book equity value. Broadly speaking, it states the amount of equity that someone needs to pay for each Euro in net assets.

$P/B = \text{Market Value} / \text{Book Value of the equity}$

$\text{Book Value of the Equity} = \text{Stock holder's Equity} / \text{Average Shares outstanding}$

For identifying Value and Growth portfolio, the help of previous research has been taken. For portfolios ranked in accordance with the P/B ratio, we find average ranges of 0 to 2 for the value portfolio and values larger than 2 are considered to be growth stocks. Graham and Zweig (2006) argue that value stocks are considered to have a P/B value smaller than 2 and growth stocks a P/B value of 2 or larger. This shows that our findings are consistent with P/B ranges reported in the literature.

P/CF Portfolio

The P/CF ratio sets a stock's market price in relation to the cash flow it generates on an annual basis per share. The P/CF ratio is often associated with the P/E ratio because both figures give insights into a firm's current and future performance (Fama & French, 1998). Although both ratios seem to be similar, it is reported that the P/CF ratio is often considered to be a more reliable

and accurate figure than the P/E ratio. This is because that the P/CF figure is much less vulnerable to accounting manipulations. This can have a major impact on the P/E ratio. P/CF is calculated in the following way.

$$P/CF = P / \text{Cash flow per share}$$

Cash Flow per share = Operating Cash flow/ Shares outstanding
The price-to-cash flow ratio is another multiplier that has shown to be a good classification figure to separate growth from value firms. The P/CF portfolios had average ranges of 0–10 for the value portfolio and values larger than 10 were assigned to the growth portfolio. Also, for this multiplier, our findings are consistent with previous research (Graham and Zweig, 2006)

After construction of Value and Growth Portfolios, We determined the annual return for each portfolio in the following way:

$$R_i = (P_1 + D_1 / P_0) - 1$$

Where, R_i is the annual return of stock i , P_0 the price of the stock at portfolio formation, P_1 the stock price at the subsequent year, D_1 the dividend paid in the subsequent year. Then AAR is estimated using the following formula

$$AAR = R_1 + R_2 + R_x / n$$

Where AAR is the annual return of the portfolio, R_x is the return of stock x , n is the total number stocks.

It is needed to determine the returns for all three multipliers, for each of its groups, for each fiscal year. Furthermore, the average return over the whole study period is calculated (2010–2018). Two different calculations are used in the literature to determine the average return over the total sample period, namely the arithmetic return and the geometric return.

The arithmetic return is determined by taking the sum of all values and dividing it by the total number of samples.

$$\text{Arithmetic return} = (AAR_1 + AAR_2 + AAR_x) / n$$

Where, AAR_x is the return of portfolio x and n is the total amount of portfolios.

Financial figures derived from the databases include stock quotes, dividends paid, P/E ratio, P/B ratio, and the P/CF ratio. As we rebalance portfolios on the last day of the year (31 December), we also need to use the stock closing price on that day. The individual ratios are directly derived from the database and not calculated by the researcher. For some years particular data has not been available. This is because some firms may not be listed at that point in time, have gone bankrupt, or have incomplete data. We assume, however, that this will not affect our study. It means that for some years more data is available than for others. Consequently, this will have an effect on the portfolio size because if we have a larger amount of data available for a specific multiplier, it will also increase the size of the portfolios.

6. Research Methodology

Having constructed value portfolio and growth portfolio for the whole study period i.e. 7 years, in each of the year, their returns are compared and the volatility is tested. In statistics, it is a common practice to make assumption about the volatility of a given dataset by its standard deviation. Hence, it is assumed that a higher standard deviation is associated with a higher volatility.

The following tables show the performance of the portfolios in terms of return and risk.

Table 1: Average Annual Returns of Growth & Value stocks based on P/E Multiplier

Year	Value Stock (%)	Growth Stock (%)	Outperformance
1	39.64	27.91	V
2	6.10	5.19	V
3	-43.99	-33.15	G
4	40.49	21.22	V
5	45.91	44.04	V
6	-13.34	-4.42	G
7	29.62	18.90	V
Arithmetic Standard Deviation	14.98 33.635	11.38 25.047	

It can be seen here that in study period of 7 years in 5 years Value portfolio outperformed Growth portfolio. In the year 3 and 6, growth period outperformed value portfolio. Furthermore, it can be observed that value portfolio returns are more volatile than growth portfolio. Because, Standard deviation of Value portfolio is 33.63 whereas in case of growth portfolio it is 25.047.

Table 2: Average Annual Returns of Growth & Value stocks based on P/B Multiplier

Year	Value Stock (%)	Growth Stock (%)	Outperformance
1	-13.82	-5.72	G
2	25.62	28.72	G
3	26.98	25.24	V
4	11.94	26.83	G
5	49.28	47.58	V
6	23.62	15.11	V
7	17.65	14.21	V
Arithmetic Standard Deviation	20.181 18.994	21.71 16.377	

The above table shows the performance of these two portfolios in P/B Multiplier Approach. The result shows out of 7 years, in 3 years the performance of growth portfolio is better and in rest 5 years the performance of value portfolio is better than growth portfolio. When volatility is compared, the result like P/E Multiplier Approach shows Value portfolio is more volatile than growth portfolio.

Table 3: Average Annual Returns of Growth & Value stocks based on P/CF Multiplier

Year	Value Stock (%)	Growth Stock (%)	Outperformance
1	-7.28	-10.32	V
2	24.42	28.05	G
3	42.94	21.47	V
4	12.93	5.13	V
5	53.58	25.64	V
6	37.32	36.29	V
7	12.60	12.35	V
Arithmetic Standard Deviation	25.215 20.943	16.944 15.779	

Table 3 shows the result regarding the performance of both value and growth portfolios and out of 7 years, only in one year the performance of growth portfolio is better whereas in remaining 6 years the performance of value portfolio dominates growth portfolio. Compared volatility in terms of standard deviation also ensures value portfolio is more volatile than growth portfolio.

The above three tables show different results regarding value portfolio and growth portfolio using different approaches. But, whether they are significant or not, need to be tested. For that purpose, a t-test is conducted at 5% significance level. The result is shown in the following table.

Table 4: Average Annual return spread Between Value and Growth Stocks

(Result of t-test)

Ratio		Value	Growth	Return Spread
P/E	Return p-value	16.9%	12.6%	4.3 0.178
P/B	Return p-value	16.8%	18.3%	-1.5 0.196
P/CF	Return p-value	20%	12.3%	7.72* 0.028

*significance at 5% level

The above table shows the result of the paired t-test. In each multiplier approach, the mean values of returns of value and growth portfolios are compared. The test is conducted at 5% significance level. In this paired sample t-test, in case of P/CF multiplier approach the results are significantly different. In case of P/E Multiplier and P/B Multiplier Approaches, the p values (0.178 and 0.196) show that the calculated returns are not significantly different from each other. However, in case of P/CF Multiplier Approach, the result is significant (p value= 0.028) and thus null hypothesis is rejected.

Having analysed the performances of each of these 3 multiplier approaches, next step is to compare them in terms of value premium. Value premium can be calculated by subtracting the return of growth portfolio from value portfolio.

The column 'spread' represents the difference between the value premiums from the individual multipliers.

Table 5: Multiplier in Comparison

	P/CF	P/B	Spread
Value Premium	7.76%	1.5%	9.26%*
P- value			0.014
	P/CF	P/E	
Value Premium	7.76%	4.28%	3.48%
P-value			0.171
	P/E	P/B	
Value Premium	4.28%	1.5%	5.78%*
P-value			0.049

• Significant at 5% level

A look at the above table (Table 5) clears that the P/CF multiplier has the largest value premium (7.8%). In case of P/CF portfolio, the value premium outperformed growth portfolio significantly (p value= 0.014). Comparing all three portfolios it can be assumed that P/CF multiplier is a better indicator than P/E and P/B multiplier. A comparison between P/E and P/B confirms that P/E ratio is a better performer than P/B ratio. Among the three, P/B is considered as a weak indicator for measuring the performance of value and growth portfolios.

Conclusion

The existence of Value Premium is already proved in certain works that are already discussed in previous section of the present paper. The study aims at checking the existence of value premium of sample stocks by comparing the performance of Value and Growth portfolios. The current work covered total time period of 7 years and a sample size is 50 i.e. NSE stocks. Three Multiplier Approach is used for testing the performance of both the portfolios. They are P/E ratio, P/B ratio and P/CF ratio. However, the result and statistical evaluation of the study outlined that only in case of P/CF multiplier method, value and growth portfolio show significant results. On the other hand, in case of P/B and P/E multipliers, the return differences between growth and value portfolios are insignificant. Though many researchers have supported P/B multiplier approach to identify the performance of value portfolios yet this work is a disagreement with the previous findings. So, we can safely conclude that value stocks outperform growth stocks in Indian stock market only for the P/CF multiplier. Moreover, it is found that the P/CF and P/E ratios are better indicators than the P/B ratio, as they offer larger value premiums.

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