ANALYZING THE PERFORMANCE OF HIGH AND LOW BOOK-TO-MARKET RATIO FIRMS WITH SPECIFIC REFERENCE TO INDIAN IT, PHARMACY AND BANKING STOCKS

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ABSTRACT

This paper tries to explore the Financial Performance of High and Low Book-to-Market ratio firms with specific reference to Indian IT, Pharmacy and Banking Stocks. Previous Literature has documented that all High Book-to-Market ratio firms are financially distressed. It is also been proved that high Book-to-Market stocks are those with poor historical performance and have not received enough attention from the investors. Investors tend to be over pessimistic about the future performance of these stocks. Envisaging all these, the current research tries to prove all documented facts in the Indian Stock Market with specific reference to mentioned stocks. In this research work a simple financial score is designed to capture short term changes in firm's Profitability, Solvency, Liquidity, Earnings Stability and Accounting Conservatism. For this purpose Historical Financial Information is derived from various financial statements. Using Historical Financial Information is a method adopted in fundamental analysis which is helpful in predicting future stock returns and for explaining the momentum phenomenon in stock prices. The goal of this paper is to show that investors can create a stronger value portfolio by using simple historical financial performance and identify winning and losing stocks.

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INTRODUCTION

Financial Statements

A Financial Statement is a collection of data organized according to logical and consistent accounting procedures. Its purpose is to convey an understanding of some financial aspects of a business firm. It may show a position at a moment in time, convey profit status at another point in time or may show inflow and outflow of cash/funds. Financial statements are the outcome of summarizing process of accounting.

Thus, Financial Statements generally refers to the two statements: (i) the position statement or the balance sheet and (ii) the income statement or the profit and loss account. These statements are used to convey to management and other interested outsiders the Profitability, Solvency and Financial Position of a firm.

Fundamental Analysis

Fundamental analysis is a method of finding out the future price of a stock which an investor wishes to buy. It relates to the examination of the intrinsic worth of a company to find out whether the current market price is fair or not, whether it is overpriced or under priced. It believes that analyzing the economy, strategy, management, product, financial status and other related information will help to choose shares that will out perform the market and provide consistent gains to the investor. It is the examination of the underlying forces that affect the interest of the economy, industrial sectors and companies. It tries to forecast the future movement of the capital market using signals from the Economy, Industry and Company. It requires an examination of the market from a broader perspective. The presumption behind fundamental analysis is that a thriving economy fosters industrial growth which leads to development of companies. Estimate of real worth of a stock is made by considering the earning potential of the company which depends on investment environment and factors relating to specific industry, competitiveness, quality of management, operational efficiency, profitability, capital structure and dividend policy.

Review of Literature

The origin of Fundamental analysis for the share price valuation can be dated back to Graham and Dodd (1934) in which the authors have argued the importance of the fundamental factors in share price valuation.
Theoretically, the value of a company, hence its share price, is the sum of the present value of future cash flows discounted by the risk adjusted discount rate. This conceptual valuation framework work is the spirit of the renowned dividend discount model developed by Gordon (1962). However, the dividend discount model valuation involves the forecast of future dividend payment which is difficult due to the changes in firm’s dividend policy. Thus, the subsequent studies along this line of literature searched for the cash flow that is unaffected by the dividend policy and can be obtained from the financial statements.

Ou and Penman (1989) use financial statement analysis of income statement and balance sheet ratios to forecast future earnings. The primary motivation for this research is to identify mispriced securities. However, these authors demonstrate that the information in the earnings prediction signals is helpful in generating abnormal stock returns.

Fama and French (1992) show that value stocks (high book/market) significantly outperform growth stocks (low book/market). The average return of the highest book/market decile is reported go be one percent per month higher than the average return for the lowest book/market decile.

Jagadeesh and Titman (1993) document that over a horizon of three to twelve months, past winners on an month higher than the average return for the lowest book/market decile.

The objectives of the study can be concluded by

- Usage of various fundamental signals to measure Five Areas of Firm’s Financial Status: Profitability, Solvency, Operating Efficiency, Earnings Stability and Accounting Conservatism
- Examining returns variation among each group of high and low book-to-market ratio stocks by using financial statement analysis (this objective is set as a part of Fundamental Analysis)
- Classification of companies as “Good” or “Bad” depending on the signal’s implications for future prices and profitability.
- Constructing aggregate signal to measure the overall strength of the firm’s financial position.

The current research work is contemplated after thoroughly reviewing the above mentioned literature. For the purpose of this work firms are broadly categorized as Information Technology, Pharmacy and Banking. At the first instance Book-to-Market ratio is calculated to identify firm’s having High/Low Book-to-Market ratio. After this a comprehensive F_SCORE/G_SCORE was constructed for those firms having High/Low book-to-market ratio. Firms having highest F_SCORE/G_SCORE were given the first rank followed by those having lower F_SCORE/ GCORE. For these firms Stock Returns, Earnings per Share and Price Earning were ascertained for ten years. Later top 10 and bottom 10 firms were chosen for analysis. The period of study is 01st April 2001 to 31st March 2010.

An insight into FSCORE

FSCORE is a composite indicator which incorporates various fundamental aspects of the firm and it is constructed to examine the future performance of the firm. The concept of FSCORE was developed JOSEPH.D.PIOTROSKI, Professor, The University of Chicago, Graduate School of Business, in the year 2000. The goal of this research work is to show that investors can create stronger value portfolios by using simple historical financial performance.

Professor Piotroski identifies three broad heads to measure the financial performance of a company which are
Identified as Financial Performance Signals. They are, Profitability, Solvency and Operating Efficiency variables. The final score is represented as follows; 
$$FSCORE = ROA + AROA + CFO + ACCRUAL + DMARGIN + DTURN + DLEVER + DLQUID + EQOFF$$

**An insight into G_Score**

The investment strategy based on the FSCORE does not suit for the low book-to-market ratio stocks as documented by Mohanram (2005). Mohanram further extended the FSCORE measurement to examine the fundamentals for the low book-to-market stocks. He argued that the financial statement analysis using FSCORE is not appropriate for the low book-to-market stocks because it failed to consider the growth fundamentals of these firms. Growth firms are usually those with stable earnings and sales growth, larger Research and Development spending and capital expenditure, and more analysts following.

Mohanram (2005) constructed GSCORE measurement which accounts for the financial variables that concern the future performance of the firms. The results of this research showed that for the low book-to-market stocks, high GSCORE firms are more likely to beat the earnings forecasts and thus earn higher excess return than the low GSCORE firms.

**Analysis and Interpretation**

**Table 1: Showing Descriptive Statistics of firms involved in high and low F and G_Score**

<table>
<thead>
<tr>
<th></th>
<th>Average ratio</th>
<th>BM</th>
<th>Average Returns</th>
<th>Average Assets</th>
<th>Average EPS</th>
<th>Average PE ratio</th>
<th>Average No. of trades</th>
<th>Average PAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top F</td>
<td>1.59</td>
<td>366.65</td>
<td>19871.59</td>
<td>51.22</td>
<td>13.44</td>
<td>132762.71</td>
<td>217.77</td>
<td></td>
</tr>
<tr>
<td>Bottom F</td>
<td>4.97</td>
<td>6.67</td>
<td>6693.38</td>
<td>-4.37</td>
<td>32.32</td>
<td>9582.08</td>
<td>-38.84</td>
<td></td>
</tr>
<tr>
<td>Top G</td>
<td>4.99107</td>
<td>630.24</td>
<td>382593.4</td>
<td>27.71</td>
<td>19.74</td>
<td>4369417</td>
<td>512.22</td>
<td></td>
</tr>
<tr>
<td>Bottom G</td>
<td>0.580191</td>
<td>20.43</td>
<td>5310.68</td>
<td>-1.82</td>
<td>52.47</td>
<td>31222.73</td>
<td>12.38</td>
<td></td>
</tr>
</tbody>
</table>

Above table shows the results of descriptive statistics pertaining to the analysis of Top and Bottom F and G_Score firms. For this purpose, analysis common variables not relating to the construction of score is considered. As it is evident from the table, Top and Bottom F_Score firms are having higher BM ratio compared to the firms under G_Score. As proved by Piotroski (2000) F_Score is more suitable for firms having high BM ratio and Mohanram (2005) endorses the applicability of G_Score for firms with low BM ratio.

Average returns given by top G_Score firms is almost double than the top F_Score firms, one interesting observation to note is that EPS given by high F_Score firms is almost double than the top G_Score firms. In the long run high F_Score firms have created wealth for their investors. The Mean of the BM ratio are 1.59 (4.97) and 0.49107 (0.580191) for the value and growth stocks having high and low scores respectively. The growth stocks have larger asset base than the value stocks. The average assets of high/low score value stocks 19871.59 (6693.38) and 382593.4 (5310.68) with that of high/low score growths stocks. It is evident that growth stocks have larger asset base. Even low score growth stocks are having a healthy asset base than the low score value stocks. The sales and sales growth for the growth stocks are higher than those of the value stocks for the entire sample. This confirms the fact that growth firms grow at a faster rate than the other firms. The main contribution to the sales growth of these firms is the Research and Development intensity and the nature of investments these firms make into Research and Development activities. Because of this reason there would be a larger future potential growth opportunities for these firms.

Consistent with the previous findings in Piotroski (2000) and Mohanram (2005), future performance of the stock returns are positively correlated to the firm’s financial health. It is been noted in the current research that fundamental scores and future returns are positively correlated with F and G_Score firms, for a study period of ten years. The correlation results of F_Score firms are 0.06273 and G_Score 0.98457.

Lakonishok, Shleifer and Vishny (1994) argued from the behavioral aspects that high book-to-market stocks are those with poor historical performance and have not enough attention from the investors. Investors tend to be over pessimistic about the future performance of these stocks and higher future returns are expected when the mispricing is corrected. To validate this statement in the current research Average Number of Trades of all the companies were compared with one another. It is very evident from the analysis that firms with high G_Score are associated with high number of trades. This indicates that there is huge investor following for these company shares, To conclude this analysis between F and G_Score firms, PE of these firms were considered and from the analysis it is concluded that high F_Score are having lower PE compared to the high G_Score firms which naturally indicates the ability of high F_Score firms in earning higher returns to its share holders in terms of maximizing the Earnings per share. The PE of high F_Score firms is recorded at 13.44 as
compared to 19.74 for high G_Score firms. The accounted EPS is Rs.51.22 for high F_Score firms and 27.71 for the firms with high G_Score. As specified in the beginning of this section value stocks have out performed the growth stocks in terms of maximizing Earnings per share to the individual share holders. All these results are in consistent with the previous literature, which includes Fama and French (1992), Piotroski (2000) and Mohanram (2005), Dr.Cheng Few Lee and Wei-Kang Shih (2009).

Examing Returns Variation among each group of high and low book-to-market stocks by using Financial Statement Analysis

<table>
<thead>
<tr>
<th>Year</th>
<th>MKT. RET.</th>
<th>Returns of High F_Score</th>
<th>z-value of Returns of High F_Score</th>
<th>Returns of High G_Score</th>
<th>z-value of Returns of High G_Score</th>
<th>Returns of low F_Score</th>
<th>z-value of Returns of low F_Score</th>
<th>Returns of Low G_Score</th>
<th>z-value of Returns of low G_Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>C2</td>
<td>C3</td>
<td>C4</td>
<td>C5</td>
<td>C6</td>
<td>C7</td>
<td>C8</td>
<td>C9</td>
<td>C10</td>
</tr>
<tr>
<td>2001</td>
<td>-17.87</td>
<td>13.22</td>
<td>-0.57</td>
<td>38.09</td>
<td>0.03</td>
<td>-11.41</td>
<td>-0.04</td>
<td>-32.11</td>
<td>-1.76</td>
</tr>
<tr>
<td>2002</td>
<td>3.52</td>
<td>9.48</td>
<td>-0.06</td>
<td>14.56</td>
<td>-0.48</td>
<td>-28.22</td>
<td>-1.36</td>
<td>-10.77</td>
<td>-0.69</td>
</tr>
<tr>
<td>2003</td>
<td>72.89</td>
<td>110.67</td>
<td>1.61</td>
<td>66.16</td>
<td>0.65</td>
<td>-10.54</td>
<td>0.03</td>
<td>2.75</td>
<td>-0.01</td>
</tr>
<tr>
<td>2004</td>
<td>13.08</td>
<td>21.39</td>
<td>-0.39</td>
<td>46.98</td>
<td>0.23</td>
<td>-7.39</td>
<td>0.28</td>
<td>-3.701</td>
<td>-0.33</td>
</tr>
<tr>
<td>2005</td>
<td>42.33</td>
<td>44.34</td>
<td>0.12</td>
<td>24.12</td>
<td>-0.28</td>
<td>-22.89</td>
<td>-0.94</td>
<td>-6.34</td>
<td>-0.46</td>
</tr>
<tr>
<td>2006</td>
<td>46.70</td>
<td>38.20</td>
<td>-0.01</td>
<td>30.63</td>
<td>-0.13</td>
<td>-16.02</td>
<td>-0.40</td>
<td>16.64</td>
<td>0.69</td>
</tr>
<tr>
<td>2007</td>
<td>47.15</td>
<td>76.59</td>
<td>0.84</td>
<td>47.26</td>
<td>0.23</td>
<td>4.67</td>
<td>1.23</td>
<td>38.98</td>
<td>1.82</td>
</tr>
<tr>
<td>2008</td>
<td>-52.45</td>
<td>-49.60</td>
<td>-1.98</td>
<td>-53.08</td>
<td>-1.97</td>
<td>-25.03</td>
<td>-1.11</td>
<td>-9.33</td>
<td>-0.61</td>
</tr>
<tr>
<td>2009</td>
<td>81.03</td>
<td>80.63</td>
<td>0.93</td>
<td>129.84</td>
<td>2.04</td>
<td>11.01</td>
<td>1.73</td>
<td>18.97</td>
<td>0.81</td>
</tr>
<tr>
<td>2010</td>
<td>17.43</td>
<td>43.25</td>
<td>0.10</td>
<td>22.12</td>
<td>-0.32</td>
<td>-3.82</td>
<td>0.56</td>
<td>13.73</td>
<td>0.55</td>
</tr>
<tr>
<td>Mean</td>
<td>25.81</td>
<td>38.81</td>
<td>0</td>
<td>36.68</td>
<td>0</td>
<td>19.96</td>
<td>0</td>
<td>28.98</td>
<td>0</td>
</tr>
<tr>
<td>SD</td>
<td>41.08</td>
<td>44.75</td>
<td>1</td>
<td>45.60</td>
<td>1</td>
<td>12.71</td>
<td>1</td>
<td>19.88</td>
<td>1</td>
</tr>
</tbody>
</table>

As observed from the above table, the Z-value of Returns of High F_Score for the year 2001 is -0.57, standard deviation is below the mean, while the Z-value of high G_Score is 0.03 Standard Deviation is above the mean. This indicates that deviation is more than the mean with reference to high G_Score firms as compared to high F_Score firms. The negative z-value indicates that F_Score return of that particular period is lesser the mean F_Score and positive z-value indicates the F_Score return is higher than the mean. Likewise, z-values of returns of high F_Score and high G_Score across years (from 2002 to 2010) show a similar pattern of negative and positive z-values with not much of a variation. However, in few years such as 2003, 2007 and 2010 F_Score is showing better result than G_Score. One Striking observation made from the above analysis is that, whenever, the market returns are falling, the returns of F and G_Score firms are also falling in tune with the market. For all those years Market Returns as well as Firm Returns are achieving negative Z value.

On the other hand, with respect to low F_Score and G_Score return, it is seen that negative z-values of low G_Score are higher than that of low F_Score. Interestingly, in most of the years, both G_Score and F_Score are having negative z-values indicating lesser than overall mean. This clearly indicates the inability of low score firms in earning returns to the share holders. As like the high F_Score and G_Score, not much variation is observed between low F and G_Score.

CONCLUSION

At the bottom line it is concluded that high G_Score firms are leading the race in augmenting the returns. Over a period of 10 years high G_Score firms have given almost double the returns of their counterpart the high F_Score firms. One more important observation to note is that, all high G_Score firms are getting the maximum attention from the investors and investing community is behind these stocks to speculate. From this it is evident that the firms with low Book-to-Market ratio are getting the investor's attention towards them. All the above results are in consistent with the evidence as shown by Piotroski (2000) and Mohanram (2005).

REFERENCES


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