

Studying the Behavior of Growth and Value Stocks in Pakistan Through Portfolios

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Abstract

This research is basically focused on finding evidence for the dynamic behavior of value and growth stocks over a timeline. The study also focuses on the convergence of these two categories because of the mean reversion pattern in their profitability and expected returns. The purpose of this research is to find evidence from the Pakistani stock market that Price to Book ratios of growth and stock prices follow a mean reversion pattern. Over pricing of growth stocks and under-pricing of value stocks take place which is followed by a correction and thus resulting in higher returns for value stocks and their PB ratio increases. While the price to book ratios of growth stocks decrease because of lower than expected returns. So this study tries to find an empirical evidence for this phenomenon. The population for this study consists of all listed companies in Karachi Stock Exchange (KSE) which remain listed from 2004 to 2008. The sample size was 94 companies. This research uses arithmetic means for trend analysis and extreme values disturb the arithmetic means and consequently the analysis. Secondary data have been used for this research. As mentioned above, the data of 96 companies useful in finding price to book ratios like book value of equity, number of fully paid ordinary shares outstanding and weekly market share prices have been used from 2004 to 2008. Other data has been extracted from the financial statements of companies while weekly share prices have been collected from Karachi Stock Exchange data websites. The data have been used for the period 2004-08. The results of the model (1) showed that there is a positive and significant relationship between “our growth portfolio” and “market growth portfolio”, while the results of model (2) showed that there is positive significant impact of “market value portfolio” on “our value portfolio”.

Key Words: Stocks, Value and Growth

1. INTRODUCTION

The behavior of growth and value stocks is an interesting phenomenon in finance as researchers have worked over the years on different aspects of it. Investors predict growth prospects for firms and invest accordingly. Companies which have high growth

prospects are more in demand and there is an upward pressure on the prices of these stocks while firms expecting low or no growth are only demanded by risk takers as they have produced high returns over times and are believed by many researchers to have more risk than growth stocks. However, firms usually change categories and the reason is over-pricing of growth and under-pricing of value stocks. When corrections take place, the price to book values change (Fama & French,1992).

Lakonishok, Shleifer and Vishny (1994) suggest that value stocks yield higher returns because they take advantage of the sub-rational behavior of the typical investors and not because that they are fundamentally riskier. High price to book firms tend to have strong fundamentals and low price to book firms tend to have weak fundamentals, but investors often over-react to these fundamentals and thus the firms with high price to book ratio are over-priced while the low price to book firms are under-priced, then the correction takes place and because of this correction lower price to book firms generate higher returns. This process goes on and on in the stock markets.

As Barberis, Shleifer and Vishny (1998), call it a conservatism bias that leads to overweighing of prior beliefs by investors and so they under react to any new information. In Daniel, Hirshleifer and Subrahmanyam (1998) investors are overconfident about their ability to evaluate securities and because of this belief they tend to overweight information that is consistent with their prior valuation while the information that is not in conformity with their past valuations is under-valued. With the passage of time, growth stocks often cease to exist in that category and value stocks often become neutral or growth stocks.

1.1 Background of the study

This research is basically focused on finding evidence for the dynamic behavior of value and growth stocks over a timeline. The study also focuses on the convergence of these two categories because of the mean reversion pattern in their profitability and expected returns. By “mean reversion” it is meant that price to book values become less extreme over time, and it does not mean a complete union of the two categories. For the high price to book firms, book value of equity does not increase by more Rupees as compared to the market value of equity, but the difference between the two shrinks with the passage of time, as investors switch securities according to (Fama & French, 1992). It is important to mention that not all growth stocks become value stocks with the passage of time, especially in a shorter time period and not all value stocks go up the list to become growth stocks, a good number certainly shows this behavior which is called “switching style stocks” and when studied in the form of a portfolio, it is easy to understand the trend and dynamic behavior of the portfolio.

Graham and Dodd (1934) claimed that any excess returns from value portfolios arise because there is a tendency in asset prices that with the passage of time they converge towards their fundamental values. Value stocks are defined by different researchers as stocks whose market price is low as compared to cash flow per share (Lakonishok, Shleifer, & Vishny 1994) or book value per share (Fama & French 1992). Fama and French (1992) suggested the efficient market hypothesis, which states that the value premium on value stocks may be because of the riskiness of value stocks and thus value stocks need such a premium. It is important to mention that the idea of the existence of such riskiness only emerged when the high returns of value stocks were discovered. So, the behaviourists associated the over-pricing and under-pricing with over confidence of the investors, investors irrationally price the securities, and such irrational investors dominate the pricing in stock markets. They often under-estimate the decline in growth and consequently profitability of stocks after they get located in the growth portfolios, likewise they under-estimate the increase in growth and profitability when the stocks are placed in value portfolios (Lakonishok, Shleifer, & Vishny 1994). Some other studies on the topic also suggested that the value premium does not exist, and the under-pricing is the result of data snooping (Lo & MacKynlay, 1990, Black, 1993). Lakonishok et al. (1994) also finds that value stocks over-perform growth stocks in both good and bad economic times, but this “value premium” is not due to any extra fundamental risks that are associated with these stocks. Such evidence has also been provided by Lettau and Wachter (2007), who examined data from 1952-2002, and found returns on growth and value portfolios by defining value stocks in different ways. In all cases, they found that returns on value portfolios were higher than growth portfolios. However, the beta for value portfolios was either equal or even less than that of growth portfolios, which shows that value stocks were under-priced, and the higher returns were not because of the fundamental riskiness, similarly growth portfolios were over-priced.

Barberis, Shleifer, and Vishny (1998) maintain that the new information that becomes available to the market is not processed properly by typical investor which results in the under-reaction of the market to the new information initially. On the contrary to it, Daniel, Hirshleifer and Subrahmanyam (1998) say that investors over-react to information because of their over-confidence and this bias of the investors help continue the trend of stock prices for a certain time period, they predict that this momentum should decline along with Book to Market ratio (increase with P/B of the firms) so there should be a strong momentum for high Book to Market firms and weak for the low Book to Market firms. It is based on the argument that low Book to Market firms has a high market value, and market values depend on the uncertain future (Daniel & Titman, 1999).

Daniel and Titman (1999), found in their study that the over confidence of investors leads to both overreaction and under reaction to information, confirm that very high and very low prices may not be the function of the fundamentals of the securities. They have described that valuing a growth company is a very uncertain task as it is based on the growth prospects of the companies in the future and the information is very much subjective. So, it is easy to value a stable company than to value a growth company. They concluded that companies with low book to market ratio have more growth prospects and thus the chances of over-confidence by investors in valuing them are high.

De Long et al. (1990) as well as Shleifer and Vishny (1997), have provided the evidence that arbitrageurs role is limited as the sentiments of the investor are to some extent unpredictable, so when they try to take advantage of the mispricing, the risk exists for them that the sentiments of the investors get even more extreme, as a result the prices of stocks deviate even more from their fundamental values. So, the arbitrageurs have a risk of losses especially in the short run, hence those arbitrageurs who cannot afford huge losses due to some reason, do not take a position of huge size in the short run. So that's why the "smart money" fails to correct prices in the short run and the sentiments of investors continue to make an impact on share prices.

Psychologists such as Edwards (1968) have explained a phenomenon called "conservatism". Edwards found in his experiments that individuals do update their prior beliefs, but the magnitude of this change is very little, and the process is very slow. If the new evidence is more useful and objective in nature, this phenomenon of conservatism becomes more evident from the reaction of the individual getting the new information. This conservatism of investors results in the under reaction to solid statistical numbers such as earnings. They give less importance to the new solid information in comparison to their prior beliefs which may not be based on such solid information. So, such investors can be characterized as over confident about their prior calculations of stock prices.

Studies in psychology such as that of Kahneman and Riepe (1998) suggest that one possible reason for the bias of investors in decision making regarding investments can be the use of simple heuristic by those investors in decision making. Another interesting phenomenon explained by psychologists is the representativeness heuristic (Tversky and Kahneman, 1974). One aspect of this phenomenon is that people believe that they see the patterns in its true random sequences. Thus, when a company has a history of many years of high earnings, it makes the investors believe that these earnings will continue in the coming years as well. They fail to take into account that this will result in over pricing of the stocks of that particular firm. So, this representative heuristic phenomenon is supporting the over-reaction of investors mentioned above.

Griffith and Tversky (1992) have tried to combine the two phenomena of conservatism and representativeness. There are two characteristics of the new evidence that individuals look for, according to this framework. One is strength while the other is weight. Individuals often overreact to the strength of new evidence and under react to the weight of new evidence. So, when some new quarterly earnings are announced, investors under react, resulting in over or under pricing because one quarter earnings figure looks less important to investors as compared to the historic trend of earnings spread over many years although the weight of the recent quarterly earnings would be more in forecasting future earnings.

De Bondt (1993) found evidence in this regard. He used a mix of classroom experiments with some investor surveys. He found that investors take past trends too much into the future. In his studies when he asked respondents to forecast future prices, so they forecasted high prices when they were presented with a high price pattern of the past and forecasted low prices when they were given low prices pattern of the past so means investors start following trends in stock prices once they think they have captured such trends.

Levis and Liodakis (1999) have suggested in their study that to remain consistent with one style is not a wise strategy for investors. They have built a model which is based on important economic and fundamental variables to obtain a timely signal for investors to change the style

The same has been done in this study; the behavior of growth and value stocks has been studied with the help of portfolios and the movement of average price to book value of these portfolios with time. Individual stocks have been studied in terms of their changing categories from the growth in value and vice versa.

2. OBJECTIVES OF THE STUDY

The main objectives of this research

- i. To provide evidence from the Pakistani stock market for a global stock market phenomenon, it is important because every market and its investors can be different.
- ii. To help investors recognize the threat of sub-optimal pricing.

3. RESEARCH HYPOTHESIS

- i. There is no significant relationship between the change in Our Growth Portfolio (OGP) and change in Market Growth Portfolio (MGP).
- ii. There is no significant relationship between the change in Our Value Portfolio (OVP) and change in Market Value Portfolio (MGP).

4. SAMPLE SIZE AND SAMPLING PROCEDURE

Initially, the sample consisted of a total of 100 companies, selected in the base year 2004, selected on the basis of convenience sampling of companies which existed from 2004 to 2008, so only those companies were selected whose complete data was available for this period. The final sample was reduced to 94 companies, 6 companies whose price to book ratio were extreme (more than 20 or less than 0.2) were not used for further analysis as this research uses arithmetic means for trend analysis and extreme values disturb the arithmetic means and consequently the analysis.

4.1 Data and Data Collection

Secondary data has been used for this research. As mentioned above, the data of 96 companies useful in finding price to book ratios like book value of equity, number of fully paid ordinary shares outstanding and weekly market share prices have been used from 2004 to 2008. Other data has been extracted from financial statements of companies while weekly share prices have been collected from Karachi Stock Exchange data websites. The data have been used for the period 2004-08. Data was available from the companies' official websites, www.kse.com website, www.ksestocks.com website as well as www.brecorder.com website.

4.2 Research Design

The model in this study used is a linear regression model. The regression model shows the relationship between dependent and independent variables of the study. There are two models for this study one is for growth portfolio and the other one is for the value portfolio.

Model 1: OLS, using observations 2004-2008 (T = 5)

Dependent variable: OGP

Table: 1 HAC standard errors, bandwidth 1 (Bartlett kernel)

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	1.88961	0.202873	9.3142	0.00262	***
MGP	0.343921	0.0630095	5.4582	0.01208	**

Mean dependent var	3.141605		S.D. dependent var	0.272230
Sum squared resid	0.050298		S.E. of regression	0.129483
R-squared	0.830327		Adjusted R-squared	0.773769

Model 2: OLS, using observations 2004-2008 (T = 5)

Dependent variable: OVP

Table: 2 HAC standard errors, bandwidth 1 (Bartlett kernel)

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	-7.1372	1.23834	-5.7635	0.01038	**
MVP	8.22986	1.27422	6.4587	0.00753	***

Mean dependent var	1.444282		S.D. dependent var	0.407614
Sum squared resid	0.251463		S.E. of regression	0.289518
R-squared	0.621631		Adjusted R-squared	0.495508

The result from the comparison of “our growth portfolio” with “market growth portfolio” is weakly supported our prediction regarding “our growth portfolio” that was made in hypothesis No.1. As can be observed in figure 1 that P/B of “our growth portfolio” has decreased slightly from 2004 to 2005 unlike “market growth portfolio” which has shown a significant increase. There is significantly less proportionate increase from 2005 to 2006 in “our growth portfolio” as compared to the huge increase in “market growth portfolio”. From 2006 to 2007 there is a significant decrease in the average P/B of “our growth portfolio” while the P/B of “market growth portfolio” has remained unchanged. From 2007 to 2008 there is a slight increase in “our growth portfolio” while the increase in “market growth portfolio” is very significant. So, the result is considerably weak but shows a behaviour which was predicted in hypothesis No.1.

The regression analysis for hypothesis No.1 has shown as expected that the independent variable “Market Growth Portfolio” is significant and the value of R^2 is 0.83 or 83% which means that 17% of the change in P/B of “Our Growth Portfolio” is not because of the market trend for growth stocks and accountable for mean reversion behaviour, a weak support.

The result from the comparison of “our value portfolio” with “market value portfolio” is strongly in accordance with the prediction that was made regarding “our value portfolio” in hypothesis no.2. As can be observed in figure 2 that P/B of “our value portfolio” has increased considerably from 2004 to 2005 unlike “market value portfolio” which has almost remained unchanged. There is proportionately a big increase from 2005 to 2006 in “our value portfolio” as compared to the slight increase in “market value portfolio”. From 2006 to 2007 there is a significant increase in the

average P/B of “our value portfolio” while the P/B of “market value portfolio” has remained unchanged. From 2007 to 2008 there is again a significant increase in “our value portfolio” while the “market value portfolio” has in fact shown a decline. The result here is strong enough to support our hypothesis No. 2.

The regression analysis for hypothesis No.2 has shown as expected that “Market Value Portfolio” is significant and the value of R^2 is 0.62 or 62%, which means that 38% of the change in “Our Value Portfolio” is not because of the market trend for value stocks and accountable for the mean reversion behavior, which is a strong support.

5. CONCLUSION

From the results, it can be concluded that for growth stocks, there is a weak support for the hypothesis and it has been proved that static growth stocks portfolio, which in this study is “our growth portfolio” do not consistently and perfectly follow the market trend for growth stocks and its P/B ratios become less extreme over time and come down towards value stocks range because of the mean reversion pattern in stock returns. The weak evidence may be due to general over-pricing of the Karachi stock market in the period of the research or it can be due to the different behavior of developing countries investors like Pakistan. Thus, hypothesis No.1 is confirmed by the data, though the evidence is weak and is rejected. Stronger evidence can emerge with a larger sample and lengthy timeline in future researches.

For value stocks there is a strong support that static value stocks portfolio, which in this study is “our value portfolio” do not consistently and perfectly follow the market trend for value stocks and their P/B ratios become less extreme and goes up towards growth stocks range because of the mean reversion pattern in the stock returns. Thus, hypothesis No.2 is confirmed by the data, though the evidence is weak and is rejected. So, the Null hypothesis of Hypothesis No.2.

6. RECOMMENDATIONS

Following are the recommendations of the study:

- i. As most of the research on this topic has been done in the U.S. In Pakistan, more work is needed as for as the behavior patterns of Value and Growth stocks are concerned.
- ii. Future researches on this topic should take into account the possible effect of general over-pricing of Karachi stock exchange.
- iii. Future researchers can also try to find any different behavior of investors in developing world than that of the developed world because of which the “convergence” phenomenon may be weak for KSE.

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