

GROWTH OPTIONS, DIVIDEND PAYOUT RATIOS AND PORTFOLIO STOCK RETURNS: EVIDENCE FROM PAKISTAN STOCK EXCHANGE

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ABSTRACT

The study analyzes the future stock returns affected by different sets of criteria in an emerging market of Pakistan and importance of momentum strategy to predict future stock returns. Trading strategies that buy past winners and sell past losers realize significant abnormal returns over the period of January, 2009 to December, 2016. We construct 15 portfolios based on mentioned criteria. Results show that high dividend paying companies in short & medium term follow the momentum strategies while in long run might be followed contrarian strategy. Similarly, high medium and low paying companies in long run do not follow momentum but in short and medium run they follow momentum. As pointed out by (George li, 2016) that on future stocks and price momentum, dividend payout ratio has a significant impact. Interestingly for the medium-run all securities of the different sets of criteria have a positive and significant effect, which means they follow momentum in future. The study is helpful for funds managers who are responsible for organizing practical plans on the behalf of the financiers. The findings of this study are helpful to them in measuring the performance of the stock market and it is also supportive in making buying and selling decisions.

Keywords: Dividend Pay-out ratio, Size, Trading Volume, Leverage, Price-earnings ratio

INTRODUCTION

The proportion of firm's earnings which is distributed to stockholders in the shape of the dividend is dividend payout ratio. High dividend payout ratio increases dividends; firms hold a less proportion of retained earnings for future investment. Firm's future assets, risk, and cash flows are influenced by investment in future growth options, portfolio based on different set of criteria effectively predict future stock returns (Nukala & Rao, 2021; George Li, 2016). Firm's earnings and dividend payments depend on Dividend payout ratio and also retained earnings of the firm for taking growth options in the future. Moreover, momentum is a pivotal part of empirical evidence that defines the market efficiency assumption in the modern asset pricing theory (Kraft et al., 2018; Yen & Lee, 2008). Therefore, firm's earnings and future dividend payments depend on dividend payout ratio and also

retain earnings of the firm for taking growth options in the future (Estrada, 2022; Yen & Lee, 2008).

Returns produced from the momentum strategy have confounded finance researchers, for more than twenty years. Momentum strategies are based on selling and buying of past losers and past winners (Gautam, 2017; Jegadeesh & Titman, 1993), while, in contrast contrarian strategies are constructed by taking short stocks which performed well in past and long position of stocks which performed bad in past, and also take benefit from asset returns negative autocorrelation (De Bondt & Thaler, 1985). Empirical evidences suggest that these strategies are mutually co-exist, subsequently the momentum strategies are profitable in short to medium time zone, while contrarian strategies are profitable for very short term and long-term holding period (Husna & Satria, 2019).

The test for the profitability of momentum strategies portfolio formation technique is adopted, where with the construction of formation period, holding period profitability for the different time periods examined. Portfolios are constructed on basis of size, Leverage, dividend payout ratio, trading volume, and Price Earnings ratio (Pan et al., 2022). On the other hand, momentum approach is a well-recognized style of investment does affect the value of a firm in equity markets (Chan et al., 1996). So momentum strategy is a tool to predict future returns in the cross-section of assets by using past returns (Barinov & Chabakauri, 2021; Daniel & Markowitz, 2013).

By using momentum strategy, George Li 2016 investigate the strong impact between the past dividend ratio and past stock returns on future stock returns in the UK, still, there is a room available to discuss the importance of momentum strategy in Pakistan to investigate the impact of dividend payout ratio on future stocks. In addition, prior studies, portfolios formed on the basis of firm size, stock price, and the dividend payout ratio, but in current study portfolio are constructed on basis of size, market to book value, dividend payout ratio, trading volume, and volatility (Kristani et al., 2022). Dividend payout considered by firm's managers while making the decision about dividend policy, where dividend policy means the decision of size and form of cash distribution to shareholder's overtime (Amarjit Gill et al., 2010). Furthermore, Miller & Modigliani 1961 discussed the given capital market, as the dividend decision does not affect the firm value (Sarwar, 2020).

Considering the association between leverage and growth options, the effect of leverage by growth options, is an important part of capital structure analysis. As per capital structure trade-off theory, most of the firms have a prime leverage target, with tax benefits and interest deductions (Kraus & Lichtenberger, 1973). Furthermore, various studies examine that stock returns growth with total leverage (Dhaliwal et al., 2006; Bhandari, 1988). Moreover, on the other hand some studies find that stock returns decline with total leverage (Kashif et al., 2023; George & Hwang, 2009; Arditti, 1967)

Several financial studies investigated the value, size, and their Momentum effects and some explored the value of Momentum effects existence for individual emerging markets, (Griffin, Ji, & Martin, 2003;

Fama & French, 1998; Fama & French, 2012). They reveal that stocks with high market-to-book ratios produce high average returns than growth stocks with low market-to-book ratio. Furthermore, numerous studies predict that buying stocks with low prices with their basics (i.e. value stocks) as well as stocks with higher past returns (i.e., past winners) makes high future returns, the understanding of these return arrangements has been very debated. (Forsberg & Sundqvist, 2022; Nusret Cakici et al., 2016)

In addition, prior studies only formed portfolios on the basis of firm size, stock price, and the dividend payout ratio, but in current study portfolio are constructed on basis of size, Leverage, dividend payout ratio, trading volume, and Price Earnings ratio (Sultana et al., 2022). The trend of investment in emerging markets is different to developed markets. Pakistan stock exchange is small size emerging market. Political instability, terrorism, and government interventions made it one of the most unpredictable and volatile market. Pakistan stock market declared best Asian market in (2016), As in developed markets, one of the core decision variables that influence firm future investment, cash flows, risk and stock returns is dividend payout ratio (George Li, 2016).

Miller & Modigliani (1961) investigated that the value of a firm is not affected by dividend decision in capital markets. On the other hand, the value of a firm is affected by momentum approach in equity markets discussed by (Chan et al., 1996). Moreover, the present study research Objective on the basis of above contrasting arguments.

Moreover, the present study research Objective on the basis of above contrasting arguments.

- First, how the future stock returns affected by different set of ratios in emerging market in Pakistan.
- Second, importance of momentum strategy to predict future stock returns.

The study of dividend payout ratio can shed light on how a firm's growth options affect future stock return and price momentum effect. As an implication, study will help portfolio managers to construct well organized portfolios and financial institutions to invest in profitable stocks and market efficiency has always been an area of vital interest for financial economists. Furthermore, present study

will help out Financial Institutions to develop amicable investment policy for their firm.

The research will help the government to adopt different strategy in the country and formulate policies that will help curb exploitation by various companies and protect the public. It will also help government in formulation of policies that would look after shareholders from manipulation by firm managers by knowing the information content of dividend payout and the importance of this information for companies.

LITERATURE REVIEW

A wide finance literature documents that on the base of past returns the cross-section of stock return is predictable, i.e. De Bondt 1985 & Thaler 1987 examine long term past winners overtake by long term past losers for the period three to five years. Short term return reversal examined by (Jegadeesh, 1990; Lehmann, 1990), moreover three to twelve months horizon added by (Jegadeesh & Titman, 1993) in literature that there is momentum in stock so past losers overtake past winners. Momentum investing approach has grown to the extent that in United States and other equity markets, it's standard style of investment. Microstructure biases are base of long-term reversals that are serious for stocks of low price (Ball, Kothari & Shanken, 1995; Kaul, 1993) time variation in expected returns (Ball and Kothari, 1989). Stock and price differences in past show differences in Book-to-market value of equity and relatedness. Book-to-market effects phenomenon of long-term reversals discussed by (Sarwar & Alim, 2023; Chan, Hamao & Lakonishok, 1991; Fama & French, 1992; Lakonishok, Shleifer, & Vishny, 1994).

Fama & French (1988) estimate that the decrease in the current price is compensated by the price increase in the future implemented by the high expected returns. Thus, the temporary components of prices are generated through expected returns that vary as a function of time. On the other hand, the fact suggests high risk related to high yields, high volatility of small stocks provide higher returns that the return on growth values is better than value stocks in these three emerging markets.

Several justifications of momentum strategies's in (Jegadeesh & Titman, 1993) documents are evaluate by (Titman, 2001), moreover these momentum

profits continued into 1990's and suggest that results are not from data bias. Momentum effect existence in stocks returns documented by recent researchers, stocks that have under-performed or over-performed the average stocks price over the previous few months. Jegadeesh & Titman (1993) have documented the zero-cost momentum of selling and buying. Rouwenhorst 1998 examined the parallel evidence for stocks traded on European markets. Conversely, several studies do not agree in their interpretation of the momentum price in the United States stock market. Jegadeesh & Titman (1993) and Chan et al. (1996) debate that a momentum price is result of company earnings result and information contained in past stock returns.

Naransimhan Jegadeesh 1993 examined that over the period of 3 to 12-month, momentum strategies that buy stocks in past have performed well and sell stocks in past have performed poorly. Furthermore, Past returns and past gains surprise each prediction of the high drift in future returns after controlling the other. Drifts are not explained by market size, market risk and book-to-market. Momentum strategy have the ability to forecast future return and features of momentum portfolios examined by (Jegadeesh, 1996), moreover, stocks returns subsequent reversal and momentum profit is also a slight evidence.

Positive aggregate news of cash flow results in momentum gain. Cooper et al. (2004) expand the study by addition that the timings are significant only where past market returns are non-negative. Antoniou et al. (2013) analyzed that the momentum will be weaker when the feelings are pessimistic. higher momentum gains during the aggregate period of positive cash flow news is driven primarily by losers who continue to perform poorly in subsequent periods. Hong & Stein (1999) model is consistent with their findings that the gradual diffusion of contradictory news are accentuated when the wealth change is positive and more permanent.

Winners have temporarily higher burdens than the recent losers on the growth rate of industrial production (Zhang, 2008). Growth rate of industrial production in standard asset price tests is a price risk factor. more than half of the impulse gains explain macroeconomic risk factor risk play an important role in driving momentum gains. "International equity markets show a continuation of medium-term performance" (Rouwenhorst, 1998). continuation of

the returns are present in the sample of twelve countries and lasts on average for one year. continuation of return negatively related to company's size ,International momentum returns is correlated with impulse strategy in the United States, that suggest profitability boost of impulse strategies. Furthermore, The highest proportion of Sharpe offered by momentum to the investors when compared with value, size or market examined by (Pedro Barroso, 2014).

Value and impulse effects in 18 emerging markets examined by (Nusret Cakici, 2013). size patterns in value and momentum are investigated , strong evidence of value effect in emerging markets and the thrust effect for all but Eastern Europe are observed. Portfolios formed in size and book-market relationship, three well-known factor model used to explain the yield of the portfolios based on locally constructed factors, stock markets (Zafar et al., 2020).

In emerging markets, size and impulse strategies generally cannot achieve greater benefits (Nusret Cakici et al., 2016). On the other hand, the value effect refutes due to different periods and market environment and except Brazil, exists in all markets. In addition, in different markets the value premiums are likely to move positive, and overtime rise during global financial crisis is due to such a cross-market exchange.

Dynamics of prices source in stock market use information of the options markets examined by (Zhuo Chen, 2017). Direct evidence to the gradual model's information diffusion of (Stein, 1999), population whose information diffused slowly in the stock market have greater momentum benefits. By selecting winning or losing stocks with high growth in implicit buy option in volatility,they able to enhance the impulse strategy. The finding is not driven by existing stock options that are well-known to boost momentum.

Dividend payment policies are examined for firms in six Latin American countries by (Julian Benavides, 2016). Profitability is directed related to dividend payments, where past investment opportunities and indebtness are negatively related to dividend payments, predicted by negotiation and hierarchical models . Proportion of target dividends are positively related to the governance indicator at the country level. Respectively, the companies speed for dividend

adjustments is lower for change in earnings in the region's high-governance countries. Stock liquidity's informative effect on dividend payments of Chinese companies examined by (Amedeo, 2015), Moreover, They investigate the positive relationship between dividend payments and stock liquidity ,where information environment is opaque and conflict between shareholders and smaller investors is serious.

Momentum is mostly driven by 12 to 7 months companies's performance before the portfolio formation, not by rise in trend and fall in stock continue to rise and fall examined by (Novy Marx, 2012). Positive returns are less generated by strategies which are based on past performance and less profitable for past mid-horizon performance, particularly between larger liquid stocks. Comparable results are kept for impulse strategy by trading international stock indices, commodities and currencies.

Corporate dividend policy is a well-researched topic in corporate finance area where, (Sajid Nazir, 2010) have investigate the corporate dividend policy role of stock prices volatility in Pakistan. The study examined that the dividend policy have strong significant relationship with the volatility of stock prices in KSE. Furthermore, Rehman 2008 have examined that these findings are consistent with earlier researchers in developing economies, where price volatility could be reduced by use of a corporate dividend policy effect.

Global financial crisis started from the United States and spread all-over the world, which negatively affect financial sector of developed and developing countries. The purpose of (Afzal, 2012) study is to examine the impact of this global financial crisis on the stock market of Pakistan and India, which shows that negative stocks have obvious impact on volatility to the positive stocks. This global financial crisis initiated the negative impact to the stock performance and also increases the volatility of the stock market of Pakistan and India; however the impact is strong in Indian stock market than Pakistan stock market.

RESEARCH METHODOLOGY

Current devastating universal financial crises started from the United States, extent all over the world and undesirably affect the financial and real sectors of

developed as well as several developing countries. The main purpose of this study is to explore the impact of recent global financial crises on stock markets of Pakistan. For this purpose, daily data of Pakistan stock exchange from 1st January 2009 to 31st December 2016 is used.

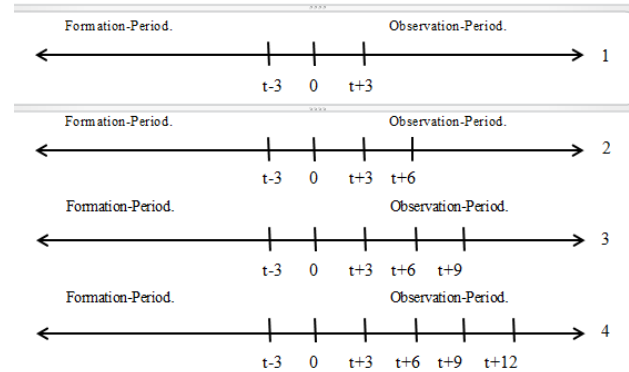
Secondary data utilized for the study. Share prices of stocks collected from Pakistan stock exchange. Financial statements with financial position and income statements of non-financial sector are used for ratios calculation. EPS and DPR obtained from financial statements. Non-financial sector from January 2001 to December 2016 studied.

Present study constructs 15 portfolios after measurement of dividend payout ratios and returns of all selected securities. The first set of three portfolios consists of dividend payout ratio (DP). DP1 represents lowest dividend payout ratio securities, medium and highest dividend payout ratio stocks represent as DP2 and DP3 respectively. The study adopts dynamic portfolio modeling of (Naryan et al., 2016) for the formation of size, All 285 securities ranked from smallest to largest size on the basis of market capitalization so MV1 denoted as smallest size portfolios, MV2 and MV3 represent medium and largest size portfolios respectively. The construction of next three portfolios is based on trading volume, with the lowest trading volume of securities is denoted as a TV1 portfolio and highest trading volume of securities represented as TV3 while TV2 represent with securities of medium trading volume.

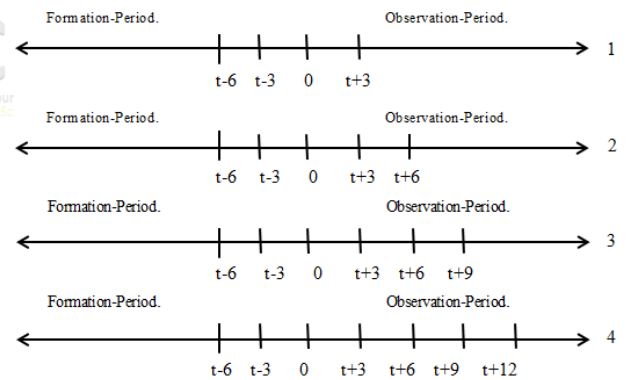
	Lowest	Medium	Highest
Dividend Payout Ratio	DP1	DP2	DP3
Size (Market Capitalization)	MV1	MV2	MV3
Trading Volume	TV1	TV2	TV3
Leverage	L1	L2	L3
Price Earnings Ratio	PE1	PE2	PE3

Further, on the basis of leverage ratio (L) the next three portfolios are formed. Lowest leverage ratio of securities is denoted as L1 portfolio and leverage

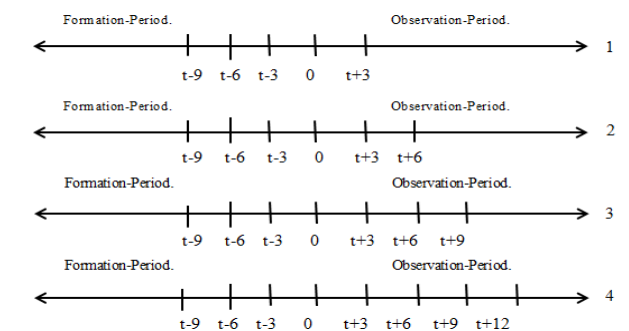
ratio of securities represented as L3 while L2 represent with securities of the medium leverage ratio. By Holding number of factors such as higher price earnings ratio and constant risk indicate high growth opportunities, the last three portfolios are constructed on the basis of price-earnings ratio (PE). Formation period 3 months and holding periods 3, 6, 9 and 12 months presented.



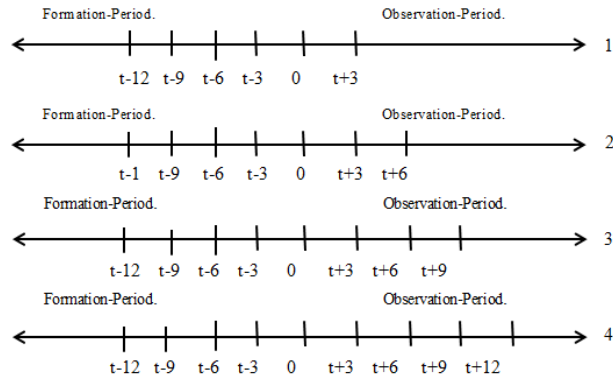
Formation period and holding period, 6 months and 3, 6, 9 and 12 months respectively.



Formation period and holding period, 9 months and 3, 6, 9 and 12 months respectively.



Formation period and holding period, 12 months and 3, 6, 9 and 12 months respectively.



Lowest PE securities are denoted as PE1, PE2 represents medium-PE securities and securities having highest PE are represented as PE3.

Formation period 3 months and holding periods 3, 6, 9 and 12 months presented.

To studied impact of momentum strategies, Definitely, at the start of each month, stocks are organized into quintile portfolios on the basis of their returns over formation period J, which has a value of three, six, nine or twelve months. K has a value of three, six, nine, or twelve and these quintile portfolios are held for K months. The monthly return of a K-month held period is based on an equal-weighted average of portfolio returns of strategies executed in the current month and the previous months K-1. Further one-factor model describing stock returns.

$$R_{it} = \mu_i + b_i f_t + e_{it} \quad (1)$$

Where the unconditional expected return μ_i on security i, f_t is the unconditional unexpected return on the portfolio, R_{it} is the return on security i; e_{it} is the firm-specific component of return at the time t, and; b_i is factor sensitivity of security i.

$$E(f_t) = 0$$

$$E(e_{it}) = 0$$

$$Cov(e_{it}, f_t) = 0, \quad \forall i$$

$$Cov(e_{it}, e_{it-1}) = 0, \quad \forall i \neq j$$

Dividend payout ratio and past sock returns measured previously to portfolio formation date t; this is the start of a given month in our sample period. The past stock returns are the geometric average return over portfolio formation period J” (J = 3, 6, 9 or 12 months) prior to month t”. Dividend payout ratios are measured in the most recent fiscal year that ended at least three months prior to month t”. This

three-month lag after the fiscal year end will pledge that investors have access to this kind of information (George Li, 2016). Relative strength strategies performance document in last section indicate that stocks which generate high returns than average returns in one period similarly generate high return than average returns in period that follows. These results imply that;

$$E\{(r_{it} - \bar{r}_t)(r_{it-1} - \bar{r}_{t-1})\} > 0 \quad (2)$$

Given the one-factor model defined in (1), the profit given in expression (2) can be decomposed into the following three terms:

$$E\{(r_{it} - \bar{r}_t)(r_{it-1} - \bar{r}_{t-1})\} = \sigma_\mu^2 + \sigma_b^2 Cov(f_t, f_{t-1}) + Cov_i(e_{it}, e_{it-1}) \quad (3)$$

The σ_μ^2 and σ_b^2 are cross-sectional variances of expected returns and factor sensitive respectively. The stocks with the high past returns are the ‘Winners, on the other hand, the stocks with the low past returns are ‘Losers’. Eligible stocks are managed into three different quintiles according to their cumulative returns among the months of t-12, t-24, t-36 and t-60. Then, the first portfolio ‘Losers’ and the third portfolio ‘Winners’ are figured out on equal-weighted returns. The WML Factor is the return of the ‘Winners’ portfolio minus the return of the ‘Losers’ portfolio. Securities are arranged in descending order and top 47 and bottom 47 securities for calculation of average monthly returns. Stocks having highest returns at start and last stocks with lowest returns are known as Winner’s and loser’s stock.

Monthly return data for the period between January, 2009 and December, 2016 from Pakistan stock exchange is used. The return on 285 listed securities has served as the market index with the help of an equally weighted arithmetic average rate.

For every stock ‘j’ on the portfolio with minimum 95 months of return data (month 1-95) with some missing value in between and starting in January 2009 (month 12), the next Feb 2009 to April 2010, Feb 2009 to April 2011 and Feb 2009 to April 2012 monthly residuals returns μ_{jt} -(months 12-95) are estimated. If some or all of the raw return data beyond month 95 are missing, the residuals returns are calculated up to that point. The procedure is repeated 12 times starting in January 2009. As time goes on and new securities appear on the portfolio more and more stocks qualify for this step.

For every stock j , start in January 2009 (95 months; the "portfolio formation date") ($t = 0$), cumulative excess returns calculated μ_{it} for the earlier 12 months (the "portfolio formation" period, months 12 through 95). The phase is repeated 12 times for all no overlapping. On each of the 12 related portfolio formation dates, the j 's are ranked from low to high and portfolios are formed. Firms in the top 47 stocks are allotted to the winner portfolio W; firms in the bottom 48 stocks to the loser portfolio L. Thus, the portfolios are designed conditional upon excess return behavior prior to $t = 0$, the portfolio formation date.

Portfolios in particular periods ($n=1, \dots, N; N=12$), start from February 2009 (month 95, the "starting month") and up to April 2010, the cumulative average calculated for the residual returns of all securities in the portfolio, for the next 24 months (the "test period," months 12 through 95), i.e., from $t=1$ through $t=24$. CARW n, t and CARL, n, t found. If the return of a security is missing in a month subsequent to portfolio formation, then from that moment on, the stock is permanently dropped from the portfolio and the CAR is an average of the available residual returns. Thus, whenever a stock drops out, the calculations include an implicit rebalancing.

Using the CAR's from all 12 test periods, average CAR's are calculated for portfolios and each month between $t=1$ and $t=24$. They are indicated ACARW, t and ACARL, t . The overreaction hypothesis calculates that, for $t > 0$, ACARW, $t < 0$ and ACARL, $t > 0$, so that by implication, $[ACARL, t - ACARW, t] > 0$.

With two samples of equal size N , the variance of the difference of sample means equals $2S^2/N$ and the t -statistic is therefore $T_t = [ACARL, t - ACARW, t] / \sqrt{2S^2/N}$. Relevant t -statistics can be initiated for each of the 24 post formation months but they do not characterize independent evidence. In order to evaluate whether, for any month t , the average residual return makes a contribution to either a CAR w, t or ACARL, t , it can be tested whether it is significantly different from zero.

RESULTS AND DISCUSSION

This section explains the key variables, which were used in this study. Moreover, this will show how the variables were calculated and determined.

Dividend Payout Ratio (DPR)

Dividend is a portion of the income that is gained after taxation. Revenues are distributed to shareholders as per their contribution and their investment. Distribution of earning is a matter to the risk for each share-holder of the company. Furthermore, the amount of revenue distribution depends on the actual dividend policy of the company. Hence, the dividend policy has a significant impact on the company (Gordon, 2009). Following procedure obtained for Dividend Payout Ratio calculation:

Dividend Payout Ratio (DPR) = Dividend per Share / Earning per Share

To study the dividend payout ratio impact on momentum strategies, the study of Jegadeesh and Titman, (1993) is used. Specially, at the start of each month, stocks are organized into quintile portfolios on the basis of their returns over formation period J , which has a value of three, six, nine or twelve months. K has a value of three, six, nine, or twelve and these quintile portfolios are held for K months. The monthly return of a K -month held period is based on an equal-weighted average of portfolio returns of strategies implemented in the current month and the previous months $K-1$. Further one-factor model describing stock returns.

Dividend Payout Ratio Portfolios formatted on the basis of Formation and holding period, after that Security return, Market Return are calculation on the formatted portfolios. Furthermore, Average returns are calculated for the all the securities. Stocks are sorted into quintile portfolios on the basis of their returns. The first portfolio 'Losers' and the third portfolio 'Winners' are figured out on equal-weighted returns. The WML Factor is the return of the 'Winners' portfolio minus the return of the 'Losers' portfolio. The Winner, Loser and T -statistics results are tabulated below.

Table 4.1

Dividends Payout Ratio						
High Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	0.283	0.766	-0.483	-11.753	0.000
	24	0.357	0.966	-0.609	-11.168	0.000
	36	0.816	1.538	-0.721	-10.072	0.000
	60	1.161	1.597	-0.436	-10.777	0.000
24	12	0.471	1.108	-0.637	-11.243	0.000
	24	1.160	1.813	-0.653	-11.353	0.000
	36	1.552	2.016	-0.464	-15.604	0.000
	60	1.302	1.426	-0.124	-13.841	0.000
36	12	2.140	2.256	-0.116	-0.578	0.566
	24	2.188	2.420	-0.233	-15.651	0.000
	36	1.856	1.873	-0.017	-9.996	0.000
	60	1.686	1.623	0.063	7.873	0.000

This study determined the trend of Dividend payout ratios under the study from 2009 to 2016. The performance of High ranked securities based on their returns has been studied comprehensively. Figure 1 for the highest ranked securities shows that for formation period 12, 24 & 36 with all holding periods except 12 holding period of 36 formation shows significant results with t-value and p-value also significant for all securities, that means securities continue to win in future and momentum exist for the securities in long run. 36 formations with 12 holding shows negative results which means these securities are contrarian for future. High dividend securities in long-run and medium-run follow momentum, while in short-run period they are reversed and may be close to contrarian.

Table 4.2

Dividends Payout Ratio						
Medium Ranked Securities						
Formation	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	0.128	0.554	-0.426	-10.718	0.000
	24	0.465	0.399	0.066	0.271	0.788
	36	1.141	1.268	-0.127	-20.664	0.000
	60	1.301	1.298	0.003	-9.561	0.000
24	12	0.802	0.244	0.559	5.987	0.000
	24	1.647	1.624	0.023	-9.058	0.000
	36	1.772	1.824	-0.051	-13.544	0.000
	60	1.460	1.292	0.167	1.509	0.138
36	12	2.492	3.005	-0.513	-18.178	0.000
	24	2.257	2.613	-0.356	-19.262	0.000
	36	1.858	1.897	-0.039	-12.255	0.000
	60	1.735	1.734	0.000	-9.244	0.000

Medium ranked securities Figure 2 results for the 12 formation months with 12, 36 & 60 holding months shows the positive and significant results for medium term securities, while 12 formation with 24 holding shows negative respectively. Similarly, 24 formation with 12, 24, 36 holding and 36 formation with all holding periods shows significant results for t-value respectably for P-value which means momentum exist for these securities in medium run, while 24 formation with 60 holding have reverse effect. Securities with medium return have significant effect in long and short run which means they follow momentum in long and short-run period, moreover for the medium they are insignificant which shows reversed effect.

Table 4.3

Dividend Payout Ratio						
Low Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	-0.531	-0.689	0.158	11.639	0.000
	24	0.364	-0.040	0.404	11.727	0.000
	36	0.989	0.964	0.026	8.200	0.000
	60	1.034	0.846	0.188	8.584	0.000
24	12	1.259	0.609	0.650	8.229	0.000
	24	1.750	1.790	-0.040	0.020	0.984
	36	2.027	1.679	0.348	9.037	0.000
	60	1.299	1.155	0.144	4.317	0.000
36	12	2.240	2.971	-0.731	-7.319	0.000
	24	2.411	2.215	0.196	7.664	0.000
	36	1.480	1.436	0.044	0.778	0.440
	60	1.689	1.714	-0.025	-0.240	0.812

Low ranked securities Figure 3 results for the 12-formation period with all holding periods and 24 formation with 12, 36 & 60 formation shows significant results in short run for the t-value as well as for P-value, where 24 formation with 24 holding shows insignificant results which means reverse effect for the securities in short run. 36 formation period with 12 & 24 holding have also significant results in short run, these securities follow momentum in future, while 36 formation with 36 & 60 holding period illustrate negative and significant effect from t-value and P-value which means in short term these securities performed reversely in future. Low ranked securities of dividend paying firms follow momentum in short and medium run while in short-run they may be close to contrarian same like high ranked securities.

Abnormal profits can be earned from contrarian strategy in long-run (Debondt & Thaler, 1985). The over-reaction effect is asymmetric being much larger for loser portfolios. Over-reaction performance ensues during the high and medium ranked securities, while low ranked securities followers to momentum strategy.

Price Earnings Ratio

Efforts and methods related with statistical analysis, share price in the market became the dependent variable, while on the other side, Earnings per Share in the market became the independent variable in the year. This was constructed on the assumption that earnings a company obtained in an year and other variables are proficient of affecting the price of the shares in the market in the next year, when the data is announced. The earnings per share were given by:

$$\text{Price Earnings Ratio} = \text{Market Price of Share} / \text{Earning per share}$$

The stock price at a particular time illustrates the balance among the sellers and buyers (Zakir & Khanna, 1982). Daily price is adjusted due to changes in the selling and buying pressure.

The T-statistics, Winner and Loser results of Price earnings Ratio is formulated below,

Table 4.4

Price Earnings Ratio						
High Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	-0.158	-0.498	0.340	4.783	0.000
	24	0.448	0.285	0.163	8.261	0.000
	36	0.878	0.939	-0.061	-9.813	0.000
	60	1.123	1.045	0.078	-1.608	0.115
24	12	1.055	1.068	-0.014	4.805	0.000
	24	1.397	1.658	-0.262	-16.469	0.000
	36	1.760	1.803	-0.043	-6.958	0.000
	60	1.280	1.247	0.033	-4.796	0.000
36	12	1.738	2.248	-0.510	-19.289	0.000
	24	2.113	2.170	-0.057	-8.370	0.000
	36	1.574	1.552	0.022	-6.359	0.000
	60	1.353	1.132	0.221	8.846	0.000

Price earning high ranked securities for the 12-formation period with 12, 24 & 36 holding period respectively shows significant and positive result in long run, while 12 formation period with 60 holding have negative effect in long run. Likewise, for the 24 & 36 formation period for all the holding periods in

long run have significant results with t-value and P-value which shows that momentum exist for these securities in long-run future. Price earning for all the period high, medium and low have significant results which means high ranked securities follow momentum.

Table 4.5

Price Earnings Ratio						
Medium Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	-0.054	0.109	-0.162	1.261	0.214
	24	0.431	0.241	0.191	8.421	0.000
	36	1.117	1.143	-0.026	-3.360	0.002
	60	1.172	1.219	-0.047	-10.355	0.000
24	12	0.916	0.373	0.543	5.995	0.000
	24	1.702	1.660	0.042	-3.217	0.002
	36	1.778	1.822	-0.044	-11.800	0.000
	60	1.426	1.312	0.114	1.971	0.055
36	12	2.488	2.947	-0.459	-20.061	0.000
	24	2.209	2.546	-0.337	-21.299	0.000
	36	1.666	1.871	-0.206	-20.474	0.000
	60	1.334	1.278	0.056	1.210	0.232

Price earning medium ranked securities for the 24 formation period with 24, 36 & 60 holding period shows significant and positive result, while for the 12 holding period its insignificant. 24 & 36 formation period with 12, 36, and 60 holding periods have significant effect for all the securities in future, while for 24 & 60 formation with 60 holding have insignificant which means these stocks not performed well in future. Positive and significant results indicate the out-performance of the stocks for the future. Price earning medium ranked securities in short-run and long-run have insignificant effect which means they are not followers of momentum, while securities in medium-run have significant and positive effect which means in this time period they follow momentum.

Table 4.6

Price Earnings Ratio						
Low Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	0.436	0.697	-0.261	-8.083	0.000
	24	0.559	0.484	0.076	2.671	0.010
	36	1.322	1.278	0.044	7.561	0.000
	60	1.405	1.240	0.165	7.393	0.000
24	12	0.682	0.270	0.412	6.273	0.000
	24	1.765	1.569	0.196	12.411	0.000
	36	1.964	1.694	0.270	9.431	0.000
	60	1.404	1.253	0.151	9.769	0.000
36	12	2.848	2.868	-0.020	5.318	0.000
	24	2.604	2.406	0.199	9.581	0.000
	36	1.969	1.744	0.225	10.060	0.000
	60	1.188	1.042	0.146	5.859	0.000

Price earnings ratio in short run have significant results with t-value and P-value of 12, 24 and 36 formation for all the holding periods which means momentum exist for these securities and these securities performed well in future. Low ranked securities in short-run have the same result of medium ranked securities which is reversed, while for the medium and long-run low ranked securities have positive and significant results which shows they follow momentum in these time periods.

LEVERAGE

Debt to Equity Ratio is a debt ratio used to measure the financial leverage of a company, which is calculated as dividing total liabilities of a company by its stockholders' equity.

$$\text{Debt-Equity Ratio} = \text{Debt} / \text{shareholders' equity}$$

Table 4.7

Leverage						
High Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	0.178	0.479	-0.302	-6.106	0.000
	24	0.557	0.312	0.246	10.667	0.000
	36	1.109	1.207	-0.099	-12.915	0.000
	60	1.273	1.284	-0.011	-10.323	0.000
24	12	0.936	0.144	0.793	9.242	0.000
	24	1.574	1.571	0.003	-7.984	0.000
	36	1.879	1.770	0.109	-5.015	0.000
	60	1.432	1.295	0.137	-1.165	0.250
36	12	2.211	2.998	-0.787	-12.962	0.000
	24	2.351	2.584	-0.233	-17.090	0.000
	36	1.750	1.932	-0.182	-16.728	0.000
	60	1.788	1.841	-0.053	-13.718	0.000

The purpose of the study is to practice the interaction between leverage and momentum as the base of a trading strategy. Leverage results for High ranked securities with 12, 24 and 36 formations for all holding months' shows significant results which illustrates momentum strategies for these time periods. These securities performed well in long run for leverage with the significant t and P-value. High ranked leverage securities have significant effect for all the periods short, medium and long run, which examine that they momentum strategies are followed in these time periods.

Table 4.8

Leverage						
Medium Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	0.351	0.385	-0.034	-7.991	0.000
	24	0.800	0.525	0.276	0.952	0.346
	36	1.353	1.276	0.077	-1.873	0.068
	60	1.371	1.262	0.109	-0.479	0.634
24	12	1.250	0.664	0.586	2.818	0.007
	24	1.855	1.722	0.133	-0.039	0.969
	36	1.896	1.856	0.039	-4.420	0.000
	60	1.415	1.294	0.121	1.324	0.192
36	12	2.460	2.779	-0.319	-4.663	0.000
	24	2.219	2.453	-0.234	-6.927	0.000
	36	1.752	1.754	-0.002	-1.788	0.081
	60	1.590	1.655	-0.065	-6.085	0.000

Leverage results for Medium ranked securities with 12 formation for 12 holding months' shows significant results which leads to momentum, while 12 formation with 24, 36 and 60 holding months it shows insignificant results which means contrarian strategies for these time periods and momentum not exist for these months. For the securities with 24 formation period for 12 & 36 holding months indicates the significant and Positive results for securities while 24 formation for 24 & 60 holding shows insignificant and negative results which shows these securities in medium run not follow the momentum. For 36 formation with 36 holding it's also insignificant, moreover for 36 formation with 12, 24 & 60 holding it indicates significant result in medium run for the securities. Medium ranked securities in short run and medium run have insignificant results which means may be they are close to contrarian, while these securities in long-run have significant result, which shows in long -run they implement momentum strategies.

Figure 4.3.3 shows that Leverage with Low ranked securities for 12, 24 & 36 formation for all holding months except 36 holding of 24 formation and 12 & 36 holding of 36 formation shows significant and positive results which means these securities performed well in short run for leverage and follow the momentum, respectively other are insignificant. Low ranked securities in short run and medium run

have significant results which means they implement momentum strategies while these securities in long-run have insignificant result, which shows in long – run may be they are close to contrarian.

Table 4.9

Leverage						
Low Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	-0.249	-0.621	0.372	12.362	0.000
	24	0.185	0.126	0.059	12.533	0.000
	36	0.909	0.875	0.033	5.883	0.000
	60	1.073	0.964	0.109	10.066	0.000
24	12	0.620	0.874	-0.254	-5.131	0.000
	24	1.488	1.624	-0.136	-5.334	0.000
	36	1.766	1.737	0.030	1.282	0.206
	60	1.286	1.216	0.070	9.345	0.000
36	12	2.355	2.374	-0.018	-1.753	0.086
	24	2.340	2.168	0.171	3.025	0.004
	36	1.665	1.523	0.142	-1.788	0.081
	60	1.705	1.581	0.124	7.069	0.000

The strategy which purchases winner stocks, with low leverage and short sells loser stocks, with high leverage, yield significant monthly returns. Results demonstrates that while on average high leverage stocks outperform for loser and winners, the outperformance is not perceived among winner stocks and that even though in general winner stocks outperform loser stocks, this outperformance is not observed among low and medium leveraged stocks.

Market Capitalization (Size)

Firm’s size plays a vital role in investment creation. Large firms usually suggest improved investment opportunities to investors, than smaller ones. Firms by quality of their higher production usually occupy a stronger and leading position in the stock market. Firm’s size can be measured in various ways, e.g. through capital employed, turnover, net sales, total assets and paid up capital etc.

The current study divides the securities in 3 equal parts on the basis of their respective market capitalization. Stocks with the higher market capitalization are assigned to high market capitalization portfolio, respectively medium and low market capitalization portfolio. The T-statistics, Winner and Loser results of Market Capitalization (Size) are expressed below

Table 4.10

Market Capitalization (Size)						
High Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	0.248	0.464	-0.217	-12.604	0.000
	24	0.498	0.481	0.018	-1.082	0.285
	36	0.993	1.062	-0.069	-12.890	0.000
	60	1.400	1.329	0.072	-6.707	0.000
24	12	0.749	0.497	0.252	12.999	0.000
	24	1.366	1.361	0.005	-5.543	0.000
	36	1.779	1.807	-0.028	-9.833	0.000
	60	1.528	1.357	0.172	3.307	0.002
36	12	1.982	2.224	-0.242	-16.235	0.000
	24	2.295	2.462	-0.168	-13.775	0.000
	36	2.001	1.894	0.108	-6.796	0.000
	60	1.841	1.700	0.140	1.915	0.062

Market Capitalization high ranked securities with 12 formation for 12, 24 and 36 holding and 36 formation with 60 holding have insignificant results, while all the other securities have positive and significant results , which examined that these securities performed well in future for the long-run and these securities followed the momentum strategies for long-run. Firms with high ranked securities in short-run and medium-run have significant results and follow momentum for both time period, moreover these high ranked securities in long-run have insignificant result which means they are close to contrarian and not momentum followers.

Table 4.11

Market Capitalization (Size)						
Medium Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	-0.116	0.389	-0.505	-7.178	0.000
	24	0.513	0.370	0.143	1.135	0.263
	36	1.139	1.071	0.069	-0.261	0.796
	60	1.120	1.075	0.045	-0.929	0.358
24	12	1.142	0.351	0.791	4.021	0.000
	24	1.767	1.412	0.356	3.155	0.003
	36	1.767	1.548	0.219	3.494	0.001
	60	1.299	1.158	0.141	1.849	0.071
36	12	2.392	2.472	-0.080	-3.462	0.001
	24	2.080	2.147	-0.067	0.717	0.477
	36	1.525	1.545	-0.021	-3.259	0.002
	60	1.171	1.102	0.069	1.782	0.082

Market Capitalization medium ranked securities with 12 formation for 12 holding have significant result while for the 12 formation and 24, 36 and 60 holding have insignificant result. For the 24 formation it's positive and significant for the 12, 24 and 36 holding months furthermore, for the 36 formation it's significant for 12 and 36 holding month, which mean in medium term these securities have followed momentum for some of the holding months. Medium ranked securities firms for the short-run and long-run have insignificant results which shows they are may be close to contrarian while for the medium-run these securities have significant results which means they follow momentum.

Table 4.12

Market Capitalization (Size)						
Low Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	0.136	-0.502	0.639	12.216	0.000
	24	0.570	0.102	0.468	12.917	0.000
	36	1.264	1.171	0.093	6.829	0.000
	60	1.212	1.080	0.133	7.802	0.000
24	12	1.003	0.706	0.298	7.608	0.000
	24	1.827	2.007	-0.180	-2.349	0.023
	36	1.974	1.949	0.025	0.181	0.857
	60	1.328	1.265	0.064	3.924	0.000
36	12	2.651	3.308	-0.657	-4.394	0.000
	24	2.459	2.571	-0.112	-4.204	0.000
	36	1.641	1.732	-0.091	-4.047	0.000
	60	1.125	1.109	0.015	-0.786	0.436

Market Capitalization low ranked securities with 12, 24 and 36 formation period for all holding months except 36 holding month of 24 formation. All have significant results which shows that market capital in short run have positive impact on securities and these securities performed well in short run for the future with momentum strategies. Low ranked securities have significant results for short-run, furthermore for medium and long run its insignificant which means respectively they follow momentum and have reversed effect.

TRADING VOLUME

Financial researchers and practitioners have predicted that past trading volume provide valuable information about a security. Additionally, there is little settlement on how volume information should be measured and interpreted. In current study stocks are organized and divide in 3 parts high, medium and low securities. The interaction between past returns and past trading volume documented in predicting future returns

Table 4.13

Trading Volume						
High Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	-0.380	-0.472	0.092	-5.778	0.000
	24	0.304	0.025	0.280	1.173	0.247
	36	0.880	0.785	0.095	-5.326	0.000
	60	1.119	1.032	0.087	-5.415	0.000
24	12	0.989	0.522	0.467	7.405	0.000
	24	1.509	1.413	0.096	-3.560	0.001
	36	1.748	1.680	0.068	-4.419	0.000
	60	1.443	1.277	0.166	-0.312	0.757
36	12	2.030	2.305	-0.275	-30.294	0.000
	24	2.127	2.258	-0.132	-22.196	0.000
	36	1.663	1.704	-0.041	-11.570	0.000
	60	1.801	1.671	0.130	0.500	0.619

Trading Volume high ranked securities with 12, 24 & 36 formation for all holding months' shows significant results while only for some securities with 24 formation for 60 holding and 36 formation for 60 holding have insignificant results which shows reverse effect for these securities in long-run while for all the other securities its positive and these securities have performed in long-run. High ranked trading volume securities have significant effect in short-run and follow momentum, moreover high ranked securities in medium and long-run have insignificant effect which means they have reversed effect and not follow momentum.

Table 4.14

Trading Volume						
Medium Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	-0.3801	-0.4724	0.0923	10.6348	7.30E-14
	24	0.30446	0.02475	0.27971	0.81257	0.42075
	36	0.87963	0.78487	0.09477	-0.1128	0.91067
	60	1.11947	1.03233	0.08714	9.82079	9.14E-13
24	12	0.989	0.52188	0.46712	-6.8832	1.52E-08
	24	1.5095	1.41349	0.096	-7.7886	7.01E-10
	36	1.74761	1.67958	0.06803	2.29205	0.02663
	60	1.44319	1.27693	0.16626	6.5326	5.04E-08
36	12	2.02999	2.30511	-0.2751	-0.4838	0.63084
	24	2.12692	2.25843	-0.1315	6.99859	1.02E-08
	36	1.66281	1.70405	-0.0412	9.47583	2.73E-12
	60	1.8009	1.6706	0.1303	9.94597	6.16E-13

Trading Volume medium ranked securities for 12 formation with 12 & 60 holding, 24 formation with all holding periods and 36 formation with 24, 36 and 60 holding months' shows significant results which represents momentum strategies for these time periods in medium term. Medium ranked securities in short-run have insignificant result which leads to reversed effect, while medium ranked securities have positive and significant results for medium-run and long-run and follow momentum.

Table 4.15

Trading Volume						
Low Ranked Securities						
Formation Period	Holding Period	CARW	CARL	W-L	t Stat	P(T<=t)
12	12	-0.380	-0.472	0.092	4.696	0.000
	24	0.304	0.025	0.280	11.828	0.000
	36	0.880	0.785	0.095	-0.400	0.691
	60	1.119	1.032	0.087	-23.436	0.000
24	12	0.989	0.522	0.467	9.215	0.000
	24	1.509	1.413	0.096	-4.767	0.000
	36	1.748	1.680	0.068	-4.584	0.000
	60	1.443	1.277	0.166	-19.849	0.000
36	12	2.030	2.305	-0.275	-18.752	0.000
	24	2.127	2.258	-0.132	-13.770	0.000
	36	1.663	1.704	-0.041	-31.674	0.000
	60	1.801	1.671	0.130	-17.954	0.000

Trading Volume low ranked securities with 12, 24 and 36 formation period for all holding months except 36 holding of 12 formation indicates the significant and positive results for securities, which shows that losers will outperform winners in future. Same like medium ranked securities the low ranked securities have same results. low ranked securities in short-run have insignificant result which leads to reversed effect, while low ranked securities have positive and significant results for medium-run and long-run and follow momentum.

CONCLUSION

Research in investigational psychology has suggested that, in destruction of Bayes' rule maximum people "overreact" to unexpected and histrionic news events. The question than augmented whether such performance matters at the market level. Dependable with the predictions of the overreaction hypothesis, portfolios of previous "losers", initiate to outperform previous "winners." 12, 24, 36 months after portfolio formation, the losing stocks have earned, more than the winners, however the latter are significantly more risky. Various features of the results remain without reasonable justification; most importantly, the large positive excess returns earned by the loser portfolio. The objective of this study is to analyze the future stock returns affected by different set of ratios in emerging market in Pakistan and importance of momentum strategy to predict future stock returns.

The study constructed 12 momentum strategies (12-12, 12-24, 12-36, 12-60, 24-12, 24-24, 24-36, 24-60, 36-12, 36-24, 36-36, 36-60) by following equal weighted, full rebalancing and Decile techniques.

The data of 285 companies listed on Karachi Stock Exchange from 2009 to 2016 has been used for analysis. 12 strategies were formulated on the basis of equal weighted and full rebalancing. The Stocks were ranked on the basis of average monthly stock returns and top forty-seven stocks were selected as winner's stock and bottom forty-seven were selected as loser's stock.

In the current study, momentum strategies investigated in Pakistan stock market, which include all the listed stocks. The study analyzes the future stock returns affected by different set of ratios in emerging market in Pakistan and importance of momentum strategy to predict future stock returns. Trading strategies which buy past winners and sell past losers realize significant abnormal returns over the period Jan 2009 to Dec 2016.

High Dividend paying companies in short & medium term follow the momentum strategies while in long run might be follow contrarian strategy. Same like high medium and low paying companies in long run not follow momentum but in short and medium run follow momentum. As pointed out by (George li, 2016) that dividend payout ratio has a significant impact on future stocks and price momentum. Interestingly for the medium-run all securities of the different sets of criteria have positive and significant effect, which means they follow momentum in future.

Price earnings ratio, leverage and market capital have some like same results for short and long run, in short run all these securities for high and low companies have significant effect while for medium securities have insignificant effect. In long run high price earning firms, low leverage firms and high-volume firms have insignificant effect which might be close to contrarian. Moreover (Lin Q, 2015) have examined a negative and high convex relationship between firm's optimal leverage and growth options. Trading volume for all the securities in short, medium and long run have mix results, high trading volume firms have insignificant result in medium and long run, while in short run they follow momentum.

Limitation of the study is Dividend adjusted returns

are not available for the Pakistan stock market. On daily frequency Dividend data not available. Results might be changed for high dividend stocks if dividend adjusted data available on daily or weekly basis. Future implication on the base of current study is in current trend for future research can be focus on High frequency data availability e.g. per hour data, per day data, and portfolios can be constructed in Short- run on daily or weekly basis.

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