Institutional Investment and Stock Returns Volatility at Pakistan Stock Exchange (PSX)

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This study explores the relationship between institutional shareholding with stock returns volatility in 195 non-financial firms listed on Pakistan Stock Exchange (PSX). The panel data of sample firms is collected from annual reports, Pakistan Stock Exchange (PSX) and State Bank of Pakistan (SBP). We apply multivariate OLS and GMM regression method to the panel data for analysis of correlation between institutional shareholding with stock returns volatility. The results are consistent with our hypothesis that institutions are risk averse and prefer to invest in low volatile stock. Further analysis show that the impact investment institutions is negative on the stock returns volatility. The shareholding by investment institutions is slightly higher in dividend paying firms than non-dividend paying firms. Our results show the significant role of investment institutions in the stability of Pakistan Stock Exchange (PSX).

Keywords- finance, institutional investors, stock returns volatility, dividend yield, stocks liquidity,

Financial markets provide platform for trading of financial assets. These markets also help in the price determination of financial assets, risk sharing, portfolio diversification, stock liquidity and information aggregation. Financial institutions make profit through the creation and transactions of the financial assets. Institutional investors play the role of specialized investors and facilitate the investments of small investors. Investment institutions are expert in making investment decisions and portfolio diversification with the ultimate objective of enhancing returns[1]. Institutional investors now play significant role in the creation of stocks liquidity and improvement in firm performance. Khorana, Servaes, & Tufano, (2005) argue that both in develped as well as emerging markets the role of institutional investors is repidly grwoting. Investment institutions such as pension and mutual funds are now managing 51% shares in the firms previously held by individual investors (Chen, Harford, & Li, 2007). The influence of investment institutions is improving due to increased share trading.

The growth in institutional investment increased the research on relationship of institutional investment with different firm and market level factors. Institutional investors are attracted by large market capitalization, liquid stocks and higher book to market ratio (Gompers & Metrick, 2001). The investment institutions are attracted by firm specific factors like market capitalization, better

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Contribution of Authors:
First author, conception and design of the research work, acquisition of the data, data analysis and interpretation, drafting the article
Second author, critical review of the literature, methodology and results, and suggestions for improvement in the manuscript.

[1] OECD, "The Role of Institutional Investors in Promoting Good Corporate Governance" (2011), *OECD Publishing* at p9.

financial performance, high leverage and low price to book value ratio (Al-Amarneh, Al-Kilani, & Kaddumi, 2014). Zhu, (2010) finds that both foreign and local mutual funds favor large firms, higher stock returns and enhanced sales growth.

The need for analysis of different factors affecting the stock return volatility has increased after the 2008 global financial crisis (Vo, 2016).The recognition of different features of stock return volatility is critical (Mittnik, Robinzonov, & Spindler, 2015). Institutional investors make investments on behalf of other small investors. Institutional investors follow "Prudent Man" rule and invest in low volatile, stable dividends and large stocks (Del Guercio, 1996). Prudent Man rule suggests that the correlation of institutional investment with stock return volatility is negative. However, Azzam, (2010) finds that the impact of private institutions is significantly positive on the stock return volatility. Whereas, (Vo, 2016) finds institutional ownership helps in stability of stock price volatility. Rubin and Smith, (2009) concludes that relationship of institutional investment and volatility of stock returns is mainly effected by the dividend policy. However (Xu & Malkiel, 2003; Sias, 1996) finds a positive correlation between institutional investment and stock returns volatility. Institutions are directly responsible for volatility (Dennis & Strickland, 2002).

Pakistan is characterized as emerging economy. The stock market in Pakistan is gradually developing and providing an important channel of raising funds for investments. The three main stock exchanges of Pakistan, namely Karachi stock exchange, Lahore stock exchange and Islamabad stock exchange were merged on 11th January 2016 to form Pakistan stock exchange (PSX). The Pakistan stock exchange (PSX) has important role in the privatization adopted by the government as economic reforms strategy. The institutional investors perform the significant role of active market players in the emerging markets. Therefore we expect that investment institutions effectively participate at Pakistan Stock exchange and enhance the performance of the firms, corporate governance, liquidity and stock returns. Institutional investors have the information advantage and their share trading affect the stock return volatility (Lin, Lee, & Liu, 2007).Hence, it is important to study the impact of institutional investment on the stock returns volatility at Pakistan Stock Exchange (PSX).

This study has various motivations. First, from the context of Pakistan Stock Exchange. Pakistan is small emerging economy where the equity market is mainly dominated by family ownership concentration (Shah, Iqbal, & Gohar, 2011;Shabbir, 2014). In terms of investment outlay, individual and private investors are relatively small investors at Pakistan Stock Exchange. The second motivation is from the relationship of institutional investors with the stock return volatility. Current literature shows that institutional investment is considered as stabilizing factor (Bohl, 2009; Vo, 2016). Similar to most emerging markets, we expect that investment institutions play significant role in the stabilizing of stock prices and reduced stock returns volatility.

This paper provides better policy implications. Firstly, it explores the determinants of institutional investment at Pakistan Stock Exchange. The analysis of preferences of institutional investment provides guidelines for individual and other private investors. Individual and private investors seek guidance from this information in identifying profitable stocks and making investment decisions. Secondly, this study offers a detailed analysis of the potential influence of institutional investment on the stock returns volatility at PSX. The analysis of this correlation is important for an emerging market like Pakistan where, family ownership concentration is higher. This paper provides detailed analysis for government of Pakistan to encourage the active participation of securities companies and investment institutions in the stock market.

The structure of rest of the paper is as follow. Section 2, provides the existing literature on the determinants of institutional investment and the impact of institutional share trading on the stock returns volatility and hypothesis development. Section 3, presents the data and variables of the study and methodology for analysis. The results and discussion of the study is given in section 4. Finally, the conclusion is given in Sections 5.

Literature Review and Hypothesis Development

The minor investors are exposed to expropriation and concerned about their rights as well as consistent returns on their investments. Institutional investors pool funds from small investors and invest in diversified portfolios. Investment institutions being specialized investors, follow "Prudent Man" rule and invest in low volatile stocks (Del Guercio, 1996). The current studies on the association between institutional investment and stock returns volatility show mixed conclusions. Some authors find negative correlation between institutional shareholdings and stock returns volatility. The institutions have superior information than individuals (Lin et al., 2007). This information efficiency leads to speedy adjustment of stock prices and efficient stock markets. The higher level of institutional shareholdings lead to informed prices and lower volatile returns (West, 1988). This is called institutional sophistication hypothesis (Rubin & Smith, 2009). Bohl, Brzeszczy, and Wilfling (2009) investigate how institutional investment influence the stock returns. The study finds that pension funds reduce the stock market volatility. Grinstein and Michaely, (2005) find that institutions are attracted by dividend paying stock. In dividend paying firms, the institutions invest more than in low paying dividend stocks. Pástor, Stambaugh, and Pastor (2003) find that the volatility of stock return is higher in non-dividend firms than dividend paying firms. The negative relationship is attributed as institutional preference hypothesis (Rubin & Smith, 2009). The institutional preference hypothesis refers to "Prudent Man" rule (Del Guercio, 1996). Institutional investors are considered as fiduciaries and expected to prefer investment in large firms, dividend paying and low volatile stocks. Cai and Zheng, (2004) find that higher stock and market return cause increase in institutional trading. Institutions purchase good performing stocks when market rises. The relationship of stock returns is negative with lagged institutional share trading.

However, some studies find that the correlation of institutional investment is positive with stock return volatility (Sias, 1996; Xu & Malkiel, 2003). Sias (1996) argues that increase in stock returns volatility is associated with increased insititutional owenership. One possible explanation for this positive relationship is the information effeiciency of investment instituitons than other indivisual investors. Institutions use informaiton efficiency and willing to deal at higher prices which result in increased volatility.

Rubin and Smith (2009) introduce dividend policy in the analysis of impact of institutional shareholdings on stock returns volatility. The analysis show that dividend payout of the firm significantly affect the correlation between institutional investment stock return volatility. Furthermore, the increase in institutional shareholding result in increased stock returns volatility for dividend paying firms. The Increase in stock returns volatility due to increased share trading by investment institutions is called institutional turnover hypothesis (Karpoff, 1987). In dividend paying stocks, the correlation of institutional shareholding with stock returns volatility is positive, while negative in non-dividend stocks. However, increase in volatility causes decrease in institutional shareholding in both sample firms. Azzam (2010) explores the relationship amongst institutional investment, stock returns volatility and dividend payout. The study finds that institutional shareholding result in increased stock returns volatility. Hotchkiss and Lawrence (2007) report that increase in dividend yield lead to higher shareholding by institutions. Bennett, Sias, Starks, and

Bennett (2003) find that investment institutions prefer to invest in large firms, however, they have increased preference for small firms with riskier stocks. Gompers et al. (2001) find that investment institutions prefer large firms and liquid stocks. However, the relationship of stock returns volatility with institutional investment is not significant. Previous studies on the correlation between institutional investment and stock return volatility mainly focus on developed markets and present various conclusions. The literature on small emerging economies such as Pakistan is limited. There is difference between the capital structure in the developed markets and Pakistan. In advanced countries the investment institutions hold large shares in the firms up to 51% (Chen, Harford, & Li, 2007). Whereas family ownership concentration is higher in the firms listed on Pakistan Stock Exchange (Shah, Iqbal, & Gohar, 2011; Shabbir, 2014). This is also evident from our sample firms, where mean of institutional shareholding is lower than insider and related parties for sample firms. This paper explores the relationship of institutional shareholders with the stocks return volatility in 95 dividend paying and 100 non dividend paying firms listed on the Pakistan Stock Exchange. Pakistan Stock Exchange is at developing stage and we assume that investment institutions have information efficiency over individual investors in share trading. Therefore, increase in the share trading by investment institutions will lead to informed stock prices and reduced stock return volatility. Institutional investors prefer stability and predictability in the stock returns, therefore institutions make investments with buy and hold strategy. We expect negative relationship between stock returns volatility and institutional shareholding in Pakistan Stock Exchange and test the following hypothesis.

H1: Institutional ownership and stock returns volatility has negative relationship in the firms listed on Pakistan Stock Exchange

Data and variables

Initially data of all the non-financial firms listed on PSX is collected, however institutional investment is available in 195 firms from 27 different industries. In whole sample, 95 firms pay dividends while 100 firms don't pay dividends for the period from 2008 to 2013. Financial firms are excluded due to different capital structure. Financial firms are usually highly leveraged and have subsidiaries acting as investment institutions. In order to check for any possible difference, we divide the sample firms in to two sub samples on the basis of dividend payout. The time period for the study is due to the reason that PSX experienced decline and recovery during 2008 to 2013. The data of shareholding pattern is extracted from annual reports of the sample firms. The accounting data is collected from State Bank of Pakistan while the stock data from PSX. We undertake winsorisation of the variables at 90% to reduce the impact of outliers. In ninety percent winsorisation, all the data below five percent is set to the five percentile and the data above ninety five percent is set to ninety five percentile (Abarbanell et al., 2014).

Volatility (VOL)

The dependent variable used in the analysis is volatility. We calculate Volatility (VOL) on yearly basis. Volatility (VOL) is the standard deviation of daily stock return for sample years.

Independent Variables

The main independent variable of the study is institutional shareholdings (ISH). The Institutional shareholdings (ISH) is calculated as the combined percentage shareholdings by the investment institutions including mutual funds, banks, and insurance companies at the end of each year. We include INSIDER to analyze the impact of inside shareholders. INSIDER is measured as the combined percentage shareholdings by Directors, Executives, and family members. Stocks liquidity is positive correlated to institutional shareholdings (Rubin, 2007). Vo, (2016) finds that volatility of liquid stock is higher. Therefore, Stocks liquidity (LIQ) is the annual stock turnover divided by year end

number of outstanding shares. Grinstein & Michaely (2005) find that investment institutions prefer dividend paying firms. While Rubin and Smith (2009) find that the impact of institutional shareholdings on the stock returns volatility is subject to the dividend payout of the firm. We take Dividend yield (DY) as the total annual dividend divided by closing stock price for each sample year.

Control Variables

The existing literature identified number of other factors affecting stock returns volatility. Large firms are highly diversified, less likely to bankrupt and pay higher dividends (Titman & Wessels, 1988). We calculate SIZE as the log total assets for each sample year (Rubin & Smith, 2009). The earnings (ROE) affect the stock return volatility (Wei, 2006). Leverage (LEV) has impact on firms' profitability and volatility of stock returns (Rubin & Smith, 2009). We take the ratio of total debt to total equity as LEV**.** We use book to market (BM) ratio to count for the impact of growth. Young and high growth firms are more uncertain (Pástor et al., 2003). Therefore, we compute AGE as the total number of years since the listing of the firm on PSX.

Method

In order to analyze the institutional ownership in the sample firms. First, we categorize the institutional shareholding in to four quartiles for sample years. The corresponding values of stock returns volatility, dividend yield, size, leverage and age are given in Table-1. Second, we divide the sample in to dividend paying and non-dividend firms for any possible difference. The Wilcoxon test for difference in the median is presented in Table-2. Third, we employ pooled regression to the panel data for analysis of factors affecting stock returns volatility in PSX. Following, Rubin & Smith (2009) and Vo (2016), below basic regression model is estimated for panel data.

$$VOL_{i,t} = \alpha_t + \beta_1 ISH_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 INSIDER_{i,t} + \beta_5 LIQ_{i,t} + \beta_6 DY_{i,t} + \beta_7 BM_{i,t} + \beta_8 AGE_{i,t} + \beta_9 ROE_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where i = 1, 2, 3, 4……195, and *t* = 2008, 2009, ……., 2013

Fourth, we conduct separate regression analysis for both sample firms to analyze any possible difference.

We test fixed and random effect to deal with possible heterogeneity. For potential endogeneity and robustness of results, we use GMM estimation model. GMM estimation is appropriate for our analysis which has large cross sectional and short time period data.

Results and Discussions

Descriptive Statistics

The summary statistics of institutional shareholding quartiles with respective median of volatility of stock returns (VOL), dividend yield (DY), firm size (SIZE), leverage (LEV) and (AGE) is given in Table-1. It is evident from Table-1 that for higher institutional shareholding quartile the median of volatility is slightly low while in low institutional shareholding quartile the median of volatility remains high. The correlation of institutional shareholding with volatility of stock returns remains negative. The relationship of insider with institutional shareholding is also negative. In low institutional ownership quartiles the median of insider is higher whereas in higher quartiles the median of insider remains lower. The relationship between insider and volatility of stock returns is positive, the median of insider is higher (lower) for higher (lower) volatility. The correlation between liquidity and institutional shareholding is positive, suggesting that investment institutions in PSX tend to invest in liquid stocks. Overall table shows, that institutional shareholding has a negative relationship with volatility and insider, while a positive correlation with liquidity. Table-1 also shows a positive relationship between insider and volatility.

Table 1

Institutional Shareholding Quartiles

Year	2008				2009				2010			
Quartile	Lowest	1	2	Highest	Lowest	1	2	Highest	Lowest	1	2	Highest
Number of Observations	48	48	48	48	49	49	49	48	49	48	49	49
Institutions Shareholdings (%)	7.41	14.23	22.4	37.12	6.69	13.09	21.17	35.38	6.35	12.44	20.14	32.88
Dividend Yield	0.086	0.016	0.046	0.094	0.039	0.075	0.069	0.098	0.117	0.089	0.185	0.185
Volatility	0.044	0.077	0.052	0.04	0.075	0.103	0.073	0.059	0.065	0.077	0.067	0.067
Liquidity	0.237	0.257	0.41	0.48	0.206	0.387	0.31	0.474	0.244	0.401	0.239	0.33
ROA	2.97	0.64	6.09	7.59	4.14	-1.99	3.14	8.78	4.92	4.86	8.07	7.83
Insider %	26.49	26.68	20.32	22.09	26.76	22.8	21.51	22.04	28.05	22.77	19.24	22.5
Number of Institutions	44	32	34	51	38	29	26	53	36	27	30	47

Year	2011				2012				2013			
Quartile	Lowest	1	2	Highest	Lowest	1	2	Highest	Lowest	1	2	Highest
Number of Observations	49	49	48	49	49	48	49	49	49	49	48	49
Institutions Shareholdings (%)	5.49	11.95	19.15	32.57	4.47	10.89	17.81	31.03	4.51	9.91	16.59	30.32
Dividend Yield	0.103	0.07	0.148	0.272	0.091	0.07	0.129	0.13	0.056	0.045	0.087	0.094
Volatility	0.058	0.051	0.059	0.049	0.049	0.052	0.056	0.042	0.037	0.044	0.041	0.036
Liquidity	0.137	0.183	0.144	0.271	0.43	0.355	0.337	0.52	0.417	0.674	0.482	0.719
ROA	8.59	3.63	6.631	8.819	3.306	3.641	5.428	6.066	7.78	7.792	8.48	9.51
Insider %	27.53	21.4	22	22.9	26.36	20.11	25.42	23.19	28.62	19.88	24.24	20.67
Number of Institutions	33	25	30	45	31	22	25	49	30	22	21	59

Further we divide the sample of 195 firms in to two sub samples to check for any possible difference. In the sub samples, 95 firms pay dividend while 100 firms don't pay dividend. Table -2 shows the summary statistics for both sample firms. The dividend paying firms are 48.71% of total sample. For difference in means of both sample firms we compute t-stats while for difference in medians Wilcoxon test, given in Table-2. The mean (median) of stock returns volatility for non-dividend paying is 0.007 (0.05) while mean (median) for dividend paying firms is 0.03 (0.03). This show that in non-dividend paying firms the stock return is high while lower in dividend paying firms. These results are consistent with (Rubin & Smith, 2009). The mean for ISH is 16.97 in dividend paying firms while 15.35 in non-dividend paying firms, suggesting that investment institutions prefer the dividend payout (Grinstein & Michaely, 2005). However, (Rubin & Smith, 2009) show that institutional investment is lower in dividend paying firms than non-dividend paying firms. INSIDER is higher in non-dividend paying firms. The mean (median) of INSIDER 26% (22%) in non-dividend paying firms as compared to 19% (10%) in dividend paying firms. The mean (median) for LEV is 22.8% (17.4%) for non-dividend paying firms against 12.2% (8.9%) for dividend paying firms. The difference in mean and median of LIQ for both sample firms is negligible. The mean (median) of ROE is significantly different for both sample firms.

Table 2

Descriptive Statistics: Dividend paying vs non-dividend paying firms

	Non Dividend Paying Firms				Dividend Paying Firms				T test for Difference in Means	Wilcoxon test for Difference in Medians
	Mean	Median	No of Observations	Std. Dev.	Mean	Median	No of Observations	Std. Dev.		
ISH	15.36	14.12	365	11.37	16.97	14.25	279	12.73	-0.35	0.24
SIZE	21.55	21.55	365	1.57	22.24	22.10	279	1.5	-12.378*	2.804*
LEV	22.80	17.40	365	0.22	12.20	8.90	279	0.11	7.485*	2.803*
AGE	25.40	22.00	365	2.7	28.79	25.00	279	0.5	-1.46	1.20
INSIDER	26.67	22.33	365	9.08	19.02	10.33	279	10.87	31.19*	2.802*
VOL	0.07	0.05	365	0.09	0.03	0.03	279	0.02	5.141*	2.802*
LIQ	0.33	0.10	365	0.63	0.38	0.10	279	0.65	-0.25	1.04
ROE	10.17	8.84	365	11.01	0.69	0.43	279	11.55	-3.622*	2.812*

, **, and * indicates 1%, 5% and 10% significance level respectively*

Multivariate Regression analysis

We use five specifications to provide a comprehensive analysis of the impact of institutional shareholdings on the stock return volatility. Table-3 exhibits the regression results. In the first specification we control for firm size. In the second specification we include ownership measure INSIDER along with SIZE. The relationship between institutional shareholdings and insider is negative. The third specification comprises of other firm's specific variables, LEV, AGE, and BM. In fourth specification, we include the (ROE) and LIQ. In order to analyze the role of dividend payout, we include DY in the last specification. In the full model regression we find negative coefficient of ISH in explaining the stock return volatility. The coefficient of ISH -0.0017 (t = -1.09). These results are consistent with Table 1, where stock returns volatility is negatively correlated with ISH. This shows the negative impact of institutional investment on the stock returns volatility at PSX. INSIDER has a positive impact on the stock return volatility. The correlation between LEV and stock return volatility is negative. The coefficient of BM and AGE is positive. LIQ, ROE has negative impact on the stock return volatility. This shows that profitability and stocks liquidity decreases the risk. The coefficient of DY is negative. This indicates that dividend policy of the firm has negative impact on the risk as denoted by stock return volatility.

Table 3

Regression analysis of all Sample firms

Regressions	1	2	3	4	5
C	0.3925	0.3785	0.1766	0.1828	0.0756
ISH	-0.0038	-0.0037	-0.0048	-0.0042	-0.0017
	(-1.3017)	(-1.1755)	(-2.1294)**	(-1.4768)	(-1.0937)
SIZE	-0.0152	-0.0148	-0.0075	-0.0079	-0.0027
	(-12.5528)*	(-11.169)*	(-7.598)*	(-6.8386)*	(-4.0897)*
INSIDER		0.0002	0.0001	0.0002	0.0001
		2.1943**	1.9168**	2.42847**	1.9503
LEV			0.0270	0.0287	-0.0036
			(3.2864)*	(2.9842)*	-0.4641
BM			0.0209	0.0207	0.0371
			(0.7069)*	(0.7554)*	0.0401
AGE			0.0005	0.0006	0.0003
			(3.7719)	(4.3031)	(4.4146)
LIQ				-0.0007	-0.0064
				(-0.0682)	(-1.0668)
ROE				-0.0002	-0.0003
				(-1.4788)	(-2.461)
DYN					-0.0014
					(-0.5296)
R-squared	0.14	0.13	0.59	0.62	0.70

, **, and * indicates 1%, 5% and 10% significance level respectively*

We employ fixed and random effects to deal with possible heterogeneity. Table-4 shows result of Hausman test. The p value (0.0062) is lower than 5%, this shows that null hypothesis cannot be accepted. These results suggest that fixed effects are better than random effects. Fixed effect model have better p value than random effect model. The random effect model has also misleading r-squared value.

Table 4

Hausman Specification Test

Summary of Test	Chi-Sq. Statistics	Chi-Sq. degree of freedom	Prob.
Cross-Section Random	$\chi^2 = 21.389$	8	p = 0.0062

In order to control for potential endogeneity problem and robustness of the regression results, we employ GMM estimation model. GMM estimation analysis is appropriate for our panel data series. Table-5 presents the GMM estimation results. The coefficient of **ISH** is negative and consistent with our previous results. Moreover, the validity of instruments used in GMM estimation is an important condition. We use Sargan test to check the validity of instruments and over identifying restriction. The J statistics and p-value also show that the GMM estimation is valid and don't have the over identifying problems.

Table 5

GMM Regression analysis for Sample Firms

Variable	Coefficient	t-Statistic	Prob.
C	0.0756	4.9068	0.0000
ISH	-0.00166	-1.0937	0.2749
SIZE	-0.0027	-4.0898	0.0001
INSIDER	0.0001	1.9503	0.0520
LEV	-0.0036	-0.4641	0.6429
BM	0.0371	22.0401	0.0000
AGE	0.0003	4.4146	0.0000
LIQ	-0.0064	-1.0669	0.2869
ROE	-0.0003	-2.4610	0.0144
DYN	-0.0014	-0.5296	0.5967
Number of Observations		324	
Number of Firms		95	
J- Statistics		23.64	

Further Analysis

We extend our study by using separate regression analysis to check for any difference between dividend paying and non-dividend paying firms. The regression results for both sample firms are given in Table-6. In both sample firms the correlation of ISH is negative with stock return volatility. However, the significance level is higher in dividend paying firms. Azzam, (2010) also finds that in dividend paying firms the institutions stabilize the stock prices by reducing the volatility Our results are inconsistent with the (Rubin & Smith, 2009) where institutional ownership is negatively (positively) correlated to stock return volatility in non-dividend paying (dividend paying) firms. The impact of SIZE and LIQ on the stock return volatility is negative in both sample firms. The stock return volatility is positively affected by INSIDER. However, the significance level of INSIDER is lower in dividend paying firms than non-dividend paying firms. The coefficient of LEV is different for both samples. In dividend paying firms the coefficient of LEV is negative while positive in non-dividend paying firms. Furthermore, in dividend paying firms the leverage is lower than non-dividend paying firms. These results are consistent our earlier results of Table-2. The impact of the profitability (ROE) on the stock return volatility is negative. This shows that profitability decreases the risk. However, the significance level of ROE is lower in non-dividend paying firms. AGE and BM has positive impact on the stock return volatility in both type of firms. The impact of DY on the stock return volatility remains negative. This confirms our earlier results, that dividend yield decreases the risk. It is evident that overall results are consistent with our previous results presented in Table-2. However we find

difference in the significance level of different factors affecting the stock return in dividend paying and non-dividend paying firms. Rubin and Smith, (2009), argue that the behaviour of institutional shareholders is different in dividend paying and non dividend paying firms.

Table 6

Regression analysis for sub-sample: Non-dividend versus Dividend Paying Firms

	Dividend Paying Firms		Non Dividend Paying	
Variable	**Coefficient**	**t-Statistic**	**Coefficient**	**t-Statistic**
C	0.08359	7.40467	0.2260	4.6660
ISH	-0.00015	-2.25271	0.0001	0.3116
SIZE	-0.00285	-5.67587	-0.0103	-5.0280
INSIDER	0.00005	1.48096	0.0001	0.8382
LEV	0.00247	0.37149	0.0453	3.3204
LIQ	-0.00069	-0.74616	-0.0121	-2.2540
ROE	-0.00006	-1.85939	0.0000	-0.4108
AGE	0.00017	2.91592	0.0008	2.7637
BM	0.02658	15.61548	0.0197	16.2322
DY	0.02463	1.81206		
Number of Observations	330		461	
Number of Firms	81		90	
R- Squared	0.64		0.55	

, **, and * indicates 1%, 5% and 10% significance level respectively*

Conclusion

The fiduciary function of investment institutions has not only increased in developed markets as well in emerging economies. The essential purpose of investment institutions is to protect the capital of small investors. This paper provide an investigation of the determinants of institutional investment in PSX and its impact on the risk as denoted by stock return volatility.

The analysis finds a negative relationship between institutional ownership and stock returns volatility at PSX. This negative correlation indicates that institutional investors at PSX are risk averse and don't prefer risky stocks (Rubin & Smith, 2009). Second, we study the level of volatility in both types of firms and find that the volatility of non-dividend stocks is higher than dividend paying stocks. Third, institutional shareholdings is slightly higher in the dividend paying firms than non-dividend paying firms. Fourth, the correlation matrix shows that institutional shareholding is negatively correlated in non-dividend as well as in dividend paying firms. Fifth, the impact of institutional investment on the stock returns volatility is negative. This shows that institutional investors have the ability to stabilize the stock prices and reduce the stock returns volatility.

The overall results of the study confirm the significant role of investment institutions in emerging markets and consistent with the "Prudent Man" hypothesis. The study reveals that institutional investors in PSX are risk averse and invest in low volatile liquid stocks. Furthermore, this study shows that institutional investors have stabilizing impact on stock return volatility. This paper has important policy implications. It explores the important relationship of institutional investment and stock returns volatility at PSX. The negative impact of institutional investors on the stock return volatility is important for encouraging institutional investment.

This research can be extended for a longer time period to check the behavior of investment institutions in PSX during different phases of Pakistani economy i.e. boom, decline, recovery and stability. Furthermore, the impact of investment institutions on different factors such as dividend policy of the firm, stocks liquidity and firm performance may also be investigated.

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