Corporate Ownership and Stock Price Volatility: An Empirical Study

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Abstract

This paper investigates the relationship between the firm ownership structure and price volatility. Ownership structure consists of promoter holdings, public shareholdings, institutional and non institutional holdings. Selected 26 Information Technology firms sample was taken for the study and it is found that largest shareholder in this sector is promoter and promoter group, who hold more than 45% stake in the firm. Public shareholding is the second largest. Institutional and non institutional investors have less than 25% shareholdings. Volatility is measured using standard Deviation and GARCH (1,1) is used to check the volatility persistence. It is found that price volatility is not significantly influenced by the firm ownership structure. This agrees with the notion that the price volatility is largely influenced by external macro economic variables and speculative forces of the market and internal factors like leverage and ownership structure has no significant influence on stock price volatility.

Keywords: Ownership structure, volatility, GARCH, Promoter holdings

JEL category: G23, G21

1. Introduction

Category of corporate ownership is an imperative information, as it determines the number of stocks available for trading in the market at any given point of time. When a firm has less percentage of shares issued to the public and largest shareholder is the proprietors, it leads to less liquidity due to less number of shares available for trading in the market. SEBI in India has mandated 25% minimum public shareholding to bring in more retail participation and infuse liquidity in to the market. Proprietors with better access to information will have information advantage and abnormal return as compared to public shareholders. Compared to investors, managers have superior information about their firm's investment opportunities and issue stock when it is overvalued; security prices therefore fall upon issuance since investors are wary of an information asymmetry problem (Myers (1984)). This information asymmetric causes for price volatility. This is a matter of corporate governance and needs attention of the regulatory system and curtails market volatility. In this study it is observed that the largest shareholders in the Information Technology sector in listed companies are promoters. Public shareholding is less and more volatile stocks have more promoter shareholdings. This leads to conflict of interest between agent and principal. As per the agency cost theory internal cost that arises must be paid to an agent acting on behalf of a principal. Agency costs arise because of core problems such as conflicts of interest between shareholders and management. Shareholders wish for management to run the company in a way that increases shareholder value. But management may wish to grow the company in ways that maximize their personal power and wealth that may not be in the best interests of shareholders. As per pecking order theory the cost of corporate financing increases with asymmetric information. Financing comes from three sources, internal funds, debt and new equity. This leads to liquidity and stock return volatility.

2.Literature review

(Martin T. Bohl, Janusz Brzeszczyn ski b, and Bernd Wilflinga (2009)), provides an empirical evidence on the impact of institutional investors on stock market returns dynamics by performing Markov-switching-GARCH analysis evidences prove that the increase of institutional ownership has temporarily changed the volatility structure of aggregate stock returns. (Yabei Hu and Shigemi Izumida (2008)), laid the empirical evidence on the relationship between ownership structure and corporate performance from two perspectives namely, ownership concentration and managerial ownership. It focused on reasons for discrepancies among previous empirical research on ownership structure comprising of corporate governance environments, data issues, variable measurements, and estimation methods. (Nendi Juhandi, Made Sudarma, Siti Aisjah, Rofiaty (2013)), studied the effects of internal factors and stock ownership structure on dividend policy and their impacts on company's value. It also examined the influence of dividend policy on company's value. The results found proved that managerial ownership has no effect on dividend policy but on company's value, while institutional ownership positively and significantly affects dividend payment and company's value. This shows that corporate management is a representation of company's ownership as a company's control. (Baskin, 1989) has found significant negative relationship between dividend yield and volatility of stock's price. Findings of (Hussainey et

al., 2011) also failed to support the study of (Baskin, 1989).

3. Methodology

The objective of the study is to determine the ownership structure of Information Technology sector and its composition relationship with the stock price volatility. The study attempts to verify the notion of largest public participation in the market leads to abnormal volatility in the sector. Data for this study is taken from the listed Information Technology companies in National stock exchange of India. The sample is derived from CNX500 index which includes 26 companies of Information Technology sector. CNX 500 is India's first broad based benchmark of the Indian capital market. The CNX 500 Index represents about 95.77% of the free float market capitalization of the stocks listed on NSE. The daily stock closing price data is taken from NSE website. Ownership structure data is taken from CMIE prowess data base. Stock volatility is the uncertainty or risk about the size of changes in a security's value. A higher volatility means that a security's value can potentially be spread out over a larger range of values. This means that the price of the stock can change considerably over a short time period in either ways. A lower volatility means that a stock value does not fluctuate dramatically, but changes in value at a steady pace over a period of time. Volatility is measured using standard deviation of the log stock returns.

$$S_x = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$$

Granger causality test is used to check the causal effect between the variables. It is a statistical concept of causality that is based on prediction. According to Granger causality, if a signal X_1 "Granger-causes" (or "G-causes") a signal X_2, then past values of X_1 should contain information that helps predict X_2 above and beyond the information contained in past values of X_2 alone. It is computed with the help of following equation.

$$Y_t = \sum_{i=1}^{m} \alpha_i Y_{t-i} + \sum_{i=1}^{m} \beta_i X_{t-i} + u_t$$

$$X_t = \sum_{i=1}^{m} \gamma_i Y_{t-i} + \sum_{i=1}^{m} \delta_i X_{t-i} + e_t$$

Jarque–Bera test is performed for sample companies to check the goodness-of-fit and verify whether sample data have the skewness and kurtosis matching a normal distribution. If the data come from a normal distribution, the JB statistic asymptotically has a chi-squared distribution with two degrees of freedom, so the statistic can be used to test the hypothesis that the data are from a normal distribution. It is computed with the help of following equation.

$$JB = n\left[\frac{skewness^2}{6} + \frac{(kurtosis - 3)^2}{24}\right]$$

where

$$skewness = \frac{\frac{1}{n}\sum_{i=1}^{n}(x_i - \bar{x})^3}{\left(\frac{1}{n}\sum_{i=1}^{n}(x_i - \bar{x})^2\right)^{3/2}}$$

$$kurtosis = \frac{\frac{1}{n}\sum_{i=1}^{n}(x_i - \bar{x})^4}{\left(\frac{1}{n}\sum_{i=1}^{n}(x_i - \bar{x})^2\right)^2}$$

If $JB > \chi^2_{(\alpha,2)}$, then the decision rejects the null hypothesis meant that data do not follow normal distribution.

4. Results and Discussions

Table 01
Descriptive statistics

	Mean	Median	Standard Deviation	Sample Variance	Kurtosis	Min	Max	Count
Promoter Holdings	45.359	61.105	15.029	225.874	-0.929	29.510	78.100	26
Public Holdings	41.599	38.895	14.960	223.787	-0.937	21.900	70.490	26
Institutional shareholders	23.665	21.965	14.919	222.563	-0.019	3.060	53.020	26
Non Institutional shareholders	17.934	17.670	12.631	159.550	-1.094	3.500	39.280	26
ADR/GDR	0.042	0.000	0.177	0.031	18.000	0.000	0.750	26

Among the sample firms that are listed in Indian National stock exchange, promoter's shareholdings represent largest stake in the sector. Promoters are the largest block holders with mean holding of 45.35% in the industry. Public shareholdings are the second largest with the mean of 41.595. Institutional shareholders and non institutional investors have 23.66% and 17.935 respectively. Largest shareholders influence the market liquidity and volatility of the stock price. Their ability to trade in large quantity influences the market volumes and returns. This also leads to information asymmetric effect as the promoters have better access to vital information. Table 02 indicates the volatility of stock returns. It is found that the sectoral mean volatility is 7.8% with largest shareholding by promoters and public.

Table 02
Sectoral stock price volatility indicators

	Range	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Information Technology	.664	.003	.078	.006	-.944	.156	5.540	.312

Table 04
Correlation matrix

	Institutional Shareholders	Non Institutional Shareholders	Promoter	Public	Volatility
Institutional Shareholders	1.000000	-0.465701	-0.559780	0.559780	-0.155441
Non Institutional Shareholders	-0.465701	1.000000	-0.472610	0.472610	-0.028890
Promoter	-0.559780	-0.472610	1.000000	-1.000000	0.181896
Public	0.559780	0.472610	-1.000000	1.000000	-0.181896
Volatility	-0.155441	-0.028890	0.181896	-0.181896	1.000000

Volatility of stock returns represents the changes in the prices of shares and it is believed to be more, when firm has more public shareholding than promoters. Correlation matrix table shows that stock price volatility and percentage of shares held by promoters is positively correlated, whereas the public shareholding, institutional and non institutional shareholdings has negative correlations. Public, Institutional and non institutional shareholding is positively correlated. As per pecking order theory, firms first prefer internal financing, and then debt, lastly raising through equity. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required.

5. OLS REGRESSION RESULTS

Table 03

Impact of ownership structure on stock price volatility of IT sector companies

Dependent Variable: VOLATILITY

Method: Least Squares

Sample: 1 3040

Included observations: 3020

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Public holdings	0.077622	0.005469	14.73430	0.0000
Promoters holdings	0.054966	0.001897	35.15507	0.0000
Non institutional holdings	0.093271	0.002876	28.99247	0.0000
Institutional holdings	0.079201	0.002149	31.76566	0.0000
C	-0.270991	0.008342	-32.28559	0.0000
R-squared	0.446871	Mean dependent var		0.184027
Adjusted R-squared	0.456402	S.D. dependent var		0.042679
S.E. of regression	0.025379	Akaike info criterion		4.508175
Sum squared resid	1.941866	Schwarz criterion		4.498219
Log likelihood	6912.344	F-statistic		1380.737
Durbin-Watson stat	1.993271	Prob(F-statistic)		0.000000

The OLS results show that the category of ownership and its percentage of holdings has an influence on the stock price volatility. The ownership structure can explain the variance in the price volatility to the extent of 44 percent. The individual variable coefficient is positive and confirms that the larger the shareholdings with public and institutional entities can influence the volatility dynamics.

6. Conclusion

Ownership structure of Information Technology sector firms in India consists of promoter, Public, Institutional and non institutional investors. Largest shareholder in this sector is promoters, who hold more than 58% stake in the firm. Public shareholding is the second largest. Institutional and non institutional investors have less than 25% shareholdings. The study was intended to verify whether the structure of firm ownership shareholding influence the stock price volatility. It is found that price volatility is not significantly influenced by the firm ownership structure. This agrees with the notion that the price volatility is largely influenced by external macro economic variables and speculative forces of the market and internal factors like leverage and ownership structure has no significant influence on stock price volatility.

References

Azzam, I. (2010). The Impact of Institutional Ownership and Dividend Policy on Stock Returns and Volatility : Evidence from Egypt Islam Azzam. *International Journal of Business*, *15*(4), 443–458.

Bohl, M. T., Brzeszczyński, J., & Wilfling, B. (2009). Institutional investors and stock returns volatility: Empirical evidence from a natural experiment. *Journal of Financial Stability*, *5*(2), 170–182. http://doi.org/10.1016/j.jfs.2008.02.003

Di, T., Di, O., In, R., & La, C. E. (n.d.). Does Ownership Structure Matter For Returns and Returns Volatility ? Submitted by Dr Cristina Cella.

Ezazi, M. E., Faculty, A., Sadeghi, S. J., Alipour, M., Branch, Z., & Amjadi, H. (2011). The Effect of Ownership Structure on Share Price Volatility of Listed Companies in Tehran Stock Exchange : An Empirical Evidence of Iran, *2*(5), 163–169.

Hagen, Ø., & Ehling, P. (2009). Ownership Structure and Investor Behavior.

Hashemijoo, M., Mahdavi Ardekani, A., & Younesi, N. (2012). The Impact of Dividend Policy on Share Price Volatility in the Malaysian Stock Market. *Journal of Business Studies Quarterly*, *4*(1), 111–129. Retrieved from http://ezproxy.lib.monash.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=91711854&site=ehost-live&scope=site

Hauser, S., Hauser, S., Lauterbach, B., Lauterbach, B., Analysis, Q., & Analysis, Q. (2003). The impact of minimum trading units on stock value and price volatility, (MARCH 2002). http://doi.org/10.2139/ssrn.314389

Hotchkiss, E. S., & Strickland, D. (2000). Does Shareholder Composition affect Stock Returns?

Hu, Y., & Izumida, S. (2009). The Relationship between Ownership and Performance: A Review of Theory and

Evidence. *International Business Research*, *1*(4), 72–81. http://doi.org/10.5539/ibr.v1n4p72

Jensen, M. C., & Meckling, W. H. (1976a). Theory of the Firm : Managerial Behavior , Agency Costs and Ownership Structure Theory of the Firm : Managerial Behavior , Agency Costs and Ownership Structure. *Journal of Financial Economics*, *3*(4), 305–360. http://doi.org/http://dx.doi.org/10.1016/0304-405X(76)90026-X

Jensen, M. C., & Meckling, W. H. (1976b). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. http://doi.org/10.1016/0304-405X(76)90026-X

Juhandi, N., Sudarma, M., & Aisjah, S. (2011). The Effects of Internal factors and Stock Ownership Structure on Dividend Policy o n Company ' s Value [A Study on Manufacturing Companies Listed on the Indonesia Stock Exchange (IDX)], *2*(11), 6–18.

Kadlec, G. B., & McConnell, J. J. (1994). The Effect of Market Segmentation and Illiquidity on Asset Prices: Evidence from Exchange Listings. *Journal of Finance*, *49*(2), 611–636. http://doi.org/10.2307/2329165

Nishat, M., & Irfan, C. (2001). Dividend policy and stock price volatility in Pakistan. *Th Annual General Meeting of PSDE, Pakistan ...*, *5*(2), 1–7. Retrieved from http://72.9.146.122/pdf/psde 19agm/dividend policy and stock price volatility.doc

Saffi, P., Sturgess, J., & Pearson, a. (2009). Equity Lending Markets and Ownership Structure. *IESE Research Papers*, *3*(February). Retrieved from http://www.iese.edu/research/pdfs/DI-0836-E.pdf

Sterne, P. (2012). An Alternative Stock Market Structure that Provides Automatic Liquidity and Reduced Volatility, 1–9.

Suresha, B., & Murugan, N. (2014). Causal Nexus between Firm Ownership Structure and Market Liquidity, *4*(12), 14–24.

Zhou, X. (2001). *Understanding the determinants of managerial ownership and the link between ownership and performance: Comment*. *Journal of Financial Economics* (Vol. 62). http://doi.org/10.1016/S0304-405X(01)00085-X