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Nexus between Ownership Structure and Stock Liquidity Evidence from Indian Service Sector

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Abstract
This study attempts to find relationship between the firm ownership structure and stock liquidity. Data for this study is taken from the listed stocks of National stocks exchange which are the constituents of CNX500 index, and it includes 74 financial sector, 26 Information technologies and 7 telecommunication sector companies. The sample data for the study is taken from 2009 to 2015 and stock liquidity is measured by using Amihud illiquidity ratio (2002) and turnover ratio. Concentration of ownership in few hands means less liquidity. It is found that public is the largest shareholder in case of Information technology firms with equal representation from institutions and non institutional holdings and has enhanced liquidity as measured by amihud illiquidity ratio compared to financial service and telecommunication sector. Independent variables like percentage of shares held by mutual fund institutions, financial Institutions, Insurance companies, FII, Individuals holding less than 1 lakh, and Individuals holdings more than 1 lakh have significant positive influence on stock liquidity. The study found that public concentration of firm ownership lead to better liquidity as it enhances the frequency of trade. Higher promoter shareholdings affect the liquidity adversely. Public shareholdings and turnover ratio are highly correlated; indicating better liquidity for shareholders and financial service stocks have superior liquidity compared to Information technology and telecommunication stocks.
Keywords: Ownership structure, stock liquidity, Amihud Illiquidity ratio Promoter holdings
JEL category: G23, G21

Introduction

Stock liquidity and price volatility are the quest unanswered in the financial research since the development of free float trading as there are difficult to identify the factors that cause for the stock liquidity and volatility. Thou empirical research have found few evidences and affirm that these are influenced by both internal and external factors, corporate governance related issues always drives the price volatility in a significant manner. The percentage of ownership held by each category of shareholders is imperative information, as it determines the number of stocks available for trading in the market at a 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 may have the benefit of 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.

Literature review

Sharif F, Bino A and Tayeh M (2015) this paper investigates the relationship between firm's ownership structure and its stock liquidity for firms listed on Amman Stock Exchange. It finds that stock liquidity of firms whose "largest shareholder" is a family which is very low compared to those of widely held firms. **Golonji, Kangarlouei, and Motavassel (2013)** investigates the relationship between institutional ownership and investment strategies in firms listed in Tehran Stock Exchange (TSE) and finds that only firms size as investment strategy proxy matters in institutional ownership and other investment strategies including cost of capital, liquidity, investment in capital assets and financial leverage do not matters. (Martin T. Bohl, Janusz Brzeszczyn ski b, and Bernd Wilflinga (2009)), provide empirical evidence on the impact of institutional investors on stock market returns dynamics. 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).
Alzeaideen and AL-Rawash (2014) this paper investigates the effect of different ownership structure (The largest, Five Greatest, Institutional and Individual Shareholder Structure) on a share price volatility of listed companies in Amman Stock Exchange and the results provide evidence of positive statistically significant relationship between the largest shareholder and share price volatility. Also; the results reveal a positive and significant relationship between the five greatest shareholder and share price volatility. The study, however, could not provide a significant relationship between the individual and institutional shareholder in one hand and share price volatility on the other. These results are consistent with prior empirical studies.

Methodology
The objective of the study is to determine the ownership structure of financial service, Information technology and telecommunication sector firms and its relationship with the stock liquidity. Also the study attempts to verify that whether there is an impact of ownership structure on stock liquidity. Data for this study is taken from the listed stocks of National stocks exchange which are the constituents of CNX500 index, and it includes 74 financial sector, 26 Information technology and 7 telecommunication sector companies. CNX500 index is chosen because it is India's first broad based benchmark of the Indian capital market. It 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 and NSE corporate shareholding data as disclosed by companies in the website. The sample period of the study is 2009 to 2015. Amihud illiquidity ratio (2002) and turnover ratio is taken as a measure of stock liquidity which is computed as follows.

Amihud ratio
Amihud's (2002) illiquidity ratio, which is the ratio of the daily absolute return to trading value.

$$\left|R_{|}\right|\frac{P_t}{P_{t-1}}$$

The firm's average illiquidity ratio over the year is defined as follows:

$$\frac{1}{Y}\sum_{t=1}^{y}\left|R_t\right| \Big/ P_t * V_t$$

Where R_t is the absolute return, P_t is the price at day t, and V_t is the trading value at day t. According to this measure, firm would have low liquidity when the measure has a high value. Goyenko et al. (2009) find that Amihud's measure is the most representative measure that captures the price impact, and it is the only one among other price impact proxies that has statistically significant correlations with high- frequency liquidity benchmarks. In this study, using daily data, Amihud ratio is calculated and quarterly average Y is taken by dividing the total of quarterly Amihud illiquidity ratio data by number of trading days in the quarter.

Turnover Ratio
Turnover ratio indicates the relationship between total numbers of share traded to total number of paid up shares of a company. It is calculated by dividing daily number of shares traded by the number of shares outstanding. In India, listed companies release their number of shares outstanding on quarterly basis and the same is available on NSE corporate information portals. In this study, the daily turnover ratio is computed using the following formula:

$$\frac{1}{Y}\sum_{t=1}^{y} V_t \;/\; N$$

Where Y is the number of trading days in the

quarter, V is the traded quantity of shares at day t, and N is the number of shares outstanding. The higher turnover ratio indicates that the stock is more liquid.

Results and Discussions

Table 01

Descriptive statistics of Stock liquidity indicators and ownership structure of sample sector firms

	Financial sector		Information Technology Sector		Telecommunication sector	
Descriptive Statistics	Mean	SD	Mean	SD	Mean	SD
Amihud illiquidity ratio (%)	0.763	0.900	0.005	0.007	0.074	0.148
Turnover ratio (%)	0.300	0.300	0.006	0.012	0.002	0.002
Ownership Structure						
Promoter and Promoter Group holdings	46.584	24.572	45.290	17.223	57.360	15.721
Institutional Holdings	30.093	19.607	27.581	16.469	20.400	5.555
Non Institutional Holdings	23.270	17.531	27.128	15.885	22.238	16.962
Total Public Share holdings	53.364	24.540	54.709	17.222	42.638	15.713

For the purpose of robustness of the study the ownership structure is categorized as shares held by promoter/s and public. Promoter and promoter group holdings comprise of shares held by Indian or foreign promoters, which further classified as shares held by individuals, government, corporate and financial institutions and banks. Total Public share holding comprises of Institutional holdings and Non – Institutional holdings. Institutional holdings comprises of the shares held by Mutual Fund houses, Financial Institutions and Banks, Government holdings, Insurance Companies, Foreign Institutional Investors, and others. Non – Institutional holdings includes the shares held by corporate, Individuals holding less than one lakh shares and more than one lakh shares, and others. Table 01 shows the descriptive statistics of the percentage ownership structure of sample service sector companies. The ownership structure as per the data released by National Stock Exchange in their official website is broadly classified as the shares held by promoter and promoters group and public shareholdings. Among Indian promoter's holdings highest holding is of Government, which has mean percent of 55.59 with maximum of 88 percent. Financial Institutions/Banks have mean percent of 37.95 and maximum of 78.91. It represents the second highest percentage of share holdings. It can be inferred that government has significantly high percentage of control in Financial Institutional/Banks shareholdings in Indian financial sector. Foreign promoters have mean percent of 26.25 with maximum 71.83 percent. The mean percent total of promoter and promoter group holdings is 46.584. Taken as a whole, it can be concluded that predominantly Indian promoters have highest share in the ownership structure of financial service companies in India. Public share holdings are largely composed of Institutional and Non Institutional holdings. Among institutional holdings foreign institutional investors have highest mean percent of 19.13. Insurance companies have second largest holdings with mean percent of 5.82 and Mutual Funds have mean percent of 4.43. The total mean of institutional holdings is 30.09 percent. It can be concluded that among public shareholdings institutional category foreign institutional investors have significant ownership control in the financial service sector. Among Non Institutional holdings category Individuals holdings less the one lakh shares have highest mean percent of 8 and corporate bodies have mean percent of 5.69. Individual's holdings more the one lakh shares have mean percent of 5.38. It can be concluded that Individuals holdings less the one lakh shares have significant control under this category. They largely represent the individual retail investors, who expect growth and liquidity in the market. Overall, under public shareholding category FII's, Insurance companies, Mutual funds, Individuals holdings less the one lakh shares, Corporate bodies and Individual's holdings more the one lakh shares have concentration of ownership interest in the financial service sector in India.

From the descriptive statistics it is observed that promoter and promoter group holdings are dominant in Information Technology companies with total mean percentage of 45.29. Under this category corporate holdings have mean percentage holding of 34.83. Individuals are the second largest with mean percentage of 17.93. Foreign promoters have mean percentage of 28.079. Total public shareholdings represent mean percentage of 54.70. Under this category, public shareholding, institutions and non institutional holdings have mean percentage of 27.58 and 27.12 respectively, and under the institutional category highest holdings are with FIIs. It can be concluded that, under Information technology sector promoters are largely corporate bodies and ownership is concentrated in the hands of public.

In case of telecommunication sector promoter and promoter group holdings are dominant shareholders with total mean percentage of 57.36. Under this category corporate holdings have mean percentage holding of 50.56. Government holdings the second largest with mean percentage of 26.12. Foreign promoters have mean percentage of 21.66. Total public shareholdings represent mean percentage of 42.63. Under this category, public shareholding, institutions and non institutional holdings have mean percentage of 20.40 and 22.23 respectively,

and under the institutional category highest holdings are with FIIs. It can be concluded that, under telecommunication sector promoters are largely corporate bodies and ownership is concentrated in the hands of Indian corporate.

Table 02

Impact of ownership structure on stock liquidity as measured by Amihud illiquidity ratio

Regression Results	Financial Sector			Information Technology			Telecommunication		
	R Square	F statistic	Sig	R Square	F statistic	Sig	R Square	F statistic	Sig
	.433	90.230	.000	.669	61.289	.000	.532	13.261	.000
	β	t	Sig	β	t	Sig	β	t	Sig
(Constant)	.002	4.091	.000	.004	4.707	.000	-.326	-.270	.788
Total promoter holdings	-	-	-	-	-	-	.007	.424	.672
Mutual fund holdings	-.002	-9.552	.000	-	-	-	.001	.039	.969
Financial Institutional holdings	7.640	.595	.552	-.015	-6.159	.000	-	-	-
Insurance companies holdings	.000	-2.574	.010	-.001	-5.788	.000	.012	.446	.657
FII	-.001	-5.310	.000	-.001	-8.916	.000	-.001	-.069	.945
Total Institutional holdings	.001	5.036	.000	.001	8.433	.000	.005	.292	.771
Individuals holding less than 1 lakh	.000	1.900	.058	-.001	-5.739	.000	.023	.793	.429
Individuals holdings more than 1 lakh	-.001	-9.575	.000	.000	-5.258	.000	.025	.576	.566
Non institutional total	.000	7.023	.000	.001	8.017	.000	-	-	-

Financial Sector

ANOVA table shows the model fitness between amihud illiquidity ratio and ownership structure variables. Amihud illiquidity ratio is taken as dependent variable and holdings by Mutual fund companies, Financial Institutional, Insurance companies, FII's, total Institutional holdings, Individuals holding less than 1 lakh, Individuals holdings more than 1 lakh, and total non institutional is considered as predictive variables. Anova test results table last column shows the goodness of fit of the model. It has F statistic of 90.230 and it is significant. Typically, if "Sig" is less than 0.05, we conclude that our model could fit the data. The R-Square indicates the percentage of the variation in the dependant variable (amihud) that the model explains. It shows the proportion of the variation in the dependent variable i.e amihud ratio, which is a liquidity indicator that was explained by variations in the independent variables. Model summary table shows R-Square of .433. It means the variation in the stock liquidity is explained 43.3% by the independent variables. It further supports the view that the stock liquidity can be predicted by using the information about the percentage of stake held by entities like Mutual fund houses, Financial Institutions, Insurance companies, FII, Individuals holding less than 1 lakh, and Individuals holdings more than 1 lakh. The table coefficients provide information on the confidence with which we can support the estimate for each variable. Percentage of ownership held by different entities has its influence on stock liquidity. Mutual fund, Insurance companies, FII's, and Individuals holdings with more than 1 lakh have negative impact and aggregate non institutional holdings have positive impact on stock liquidity as measured by amihud ratio. The coefficients are statistically significant at 1%.

Information Technology

OLS regression model summary shows the R Square value of .669, which means that 66.9% of the variations in the stock liquidity as measured by amihud illiquidity ratio can be explained by the independent variables i.e percentage of ownership held by total non institutional holdings, Insurance holdings, Financial Institutions and Banks, Total Institutional holdings, Individuals with more than 1 lakh shares, Individuals with less than 1 lakh shares, FIIs. Also the ANOVA table shows the F statistics of 61.289 with significance and therefore the model fitness is confirmed. It means that the predictors of the model i.e Total Non institutional holdings, Insurance holdings, Financial Institutions and Banks, Total Institutional holdings, Individuals with more than 1 lakh shares, Individuals with less than 1 lakh shares, FIIs does contribute for explaining the variations in the dependent

variable i.e stock liquidity as measured by amihud illiquidity ratio. Also, the coefficient values of the predictors are significant for all the variables and thus confirm that the predictors of the model can explain the changes in the stock liquidity. Thereby it can be inferred that the stock liquidity of the Information technology sector firms is influenced by the percentage of shareholdings held by Total Non institutional holdings, Insurance holdings, Financial Institutions and Banks, Total Institutional holdings, Individuals with more than 1 lakh shares, Individuals with less than 1 lakh shares, FIIs.

Table 03

Impact of ownership structure on stock liquidity as measured by Turnover ratio

Regression Results	Financial Sector			Information Technology			Telecommunication		
	R Square	F statistic	Sig	R Square	F statistic	Sig	R Square	F statistic	Sig
	.162	22.861	.000[b]	.707	73.024	.000[b]	.184	2.625	.009[b]
	β	t	Sig	β	t	Sig	β	t	Sig
(Constant)	.002	5.716	.000	.000	.610	.542	.017	1.139	.257
Total promoter holdings	-	-	-	-	-	-	.000	-1.270	.207
Mutual fund holdings	5.745007	.007	.995	-	-	-	.000	-.591	.556
Financial Institutional holdings	1.254005	.182	.855	.002	.955	.341			
Insurance companies holdings	.000	2.677	.008	.000	1.367	.173	.000	-1.206	.230
FII	.000	1.892	.059	.000	3.732	.000	-9.377	-.467	.642
Total Institutional holdings	.000	-1.753	.080	.000	-4.750	.000	.000	-.564	.574
Individuals holding less than 1 lakh	.000	7.572	.000	.001	7.318	.000	.000	-1.335	.185
Individuals holdings more than 1 lakh	6.753005	-1.672	.095	.000	-1.897	.059	-.001	-.992	.323
Non institutional total	-5.297005	-1.909	.057	-2.075	-.304	.761	.000	-1.251	.214

Financial Sector

The OLS results of turnover ratio as dependent variable and Mutual fund holdings, financial institutional holdings, insurance companies holdings, FII, total institutional holdings, individuals holding less than 1 lakh, individuals holdings more than 1 lakh, non institutional total as independent variables shows a model fitness with F statistics of 22.861 at 1% significance. R Square of 16.12% shows the explanation of variance in the dependent variable by independent variables. Thou R Square are not strong enough to explain; it is found in the earlier researches (Sharif F, Bino A and Tayeh M 2015) the R Square is around .20, it is significant to note that these independent variables have influence on stock liquidity. Coeffient tables indicates that holdings by insurance companies and holding by Individuals with less than one lakh shares have statistically positive significant influence on the stock liquidity as measured by liquidity ratio. It means an increased percentage of shareholdings in this category improvise the stock liquidity. However, individuals holding with less than one lakh shares, individuals holdings more than one lakh shares, and aggregate non institutional holdings have statistically insignificant negative influence on the stock liquidity. It means that accretion of stocks in these categories of shareholders wanes the stock liquidity.

Information Technology

OLS regression model summary shows the R Square value of .707, which means that 70.7% of the variations in the stock liquidity as measured by turnover ratio can be explained by the independent variables i.e percentage of ownership held by total non institutional holdings, Insurance holdings, Financial Institutions and Banks, Total Institutional holdings, Individuals with more than 1 lakh shares, Individuals with less than 1 lakh shares, FIIs. Also the ANOVA table shows the F statistics of 73.024 with significance and therefore the model fitness is confirmed. It means that the predictors of the model i.e Total Non institutional holdings, Insurance holdings,

Financial Institutions and Banks, Total Institutional holdings, Individuals with more than 1 lakh shares, Individuals with less than 1 lakh shares, FIIs does contribute for explaining the variations in the dependent variable i.e stock liquidity as measured by turnover ratio. Also, the coefficient values of the predictors are significant for all the variables and thus confirm that the predictors of the model can explain the changes in the stock liquidity. Thereby it can be inferred that the stock liquidity of the Information technology sector firms is influenced by the percentage of shareholdings held by Total Non institutional holdings, Insurance holdings, Financial Institutions and Banks, Total Institutional holdings, Individuals with more than 1 lakh shares, Individuals with less than 1 lakh shares, FIIs.

Telecommunication

OLS regression model summary shows the R Square value of .184 which means that 18.4% of the variations in the stock liquidity as measured by turnover ratio can be explained by the independent variables i.e percentage of ownership held by Mutual Fund bodies, Non institutional – others, promoters - corporate, Total institutional holdings, Individuals holding more than 1 lakh, Individual holding less than 1 lakh, Insurance companies, FIIs, total promoter holdings. Also the ANOVA table shows the F statistics of 2.625 with significance and therefore the model fitness is confirmed. It means that the predictors of the model i.e Mutual Fund holdings, Non institutional – others, promoters - corporate, total institutional holdings, Individuals holding more than 1 lakh, Individual holding less than 1 lakh, Insurance companies, FIIs, total promoter holdings does contribute in emaciated form for explaining the variations in the dependent variable i.e. stock liquidity as measured by turnover ratio. However, the coefficient values of the predictors are insignificant for all the independent variables and thus confirm that the predictors of the model fail to explain independently the changes in the stock liquidity significantly. Thereby, it can be inferred that the stock liquidity of the telecommunication firms are not influenced by the percentage of shareholdings held Mutual Fund holdings, Non institutional – others, promoters - corporate, total institutional holdings, Individuals holding more than 1 lakh, Individual holding less than 1 lakh, Insurance companies, FIIs, total promoter holdings.

Conclusions

This study attempts to find relationship between the firm ownership structure and stock liquidity. Concentration of ownership in few hands means less liquidity. Public is the largest shareholder in case of Information technology firms with equal representation from institutions and non institutional holdings and has better liquidity as measured by amihud illiquidity ratio compared to financial service and telecommunication sector. Liquidity can be predicted by using information about percentage of shares held by mutual fund institutions, financial Institutions, Insurance companies, FII, Individuals holding less than 1 lakh, and Individuals holdings more than 1 lakh. Public concentration of ownership leads to better liquidity as it enhances the frequency of trade. Higher promoter shareholdings affect the liquidity adversely. Public shareholdings and turnover ratio are correlated; indicating better liquidity position and financial service has superior liquidity compared to Information technology and telecommunication sectors.

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