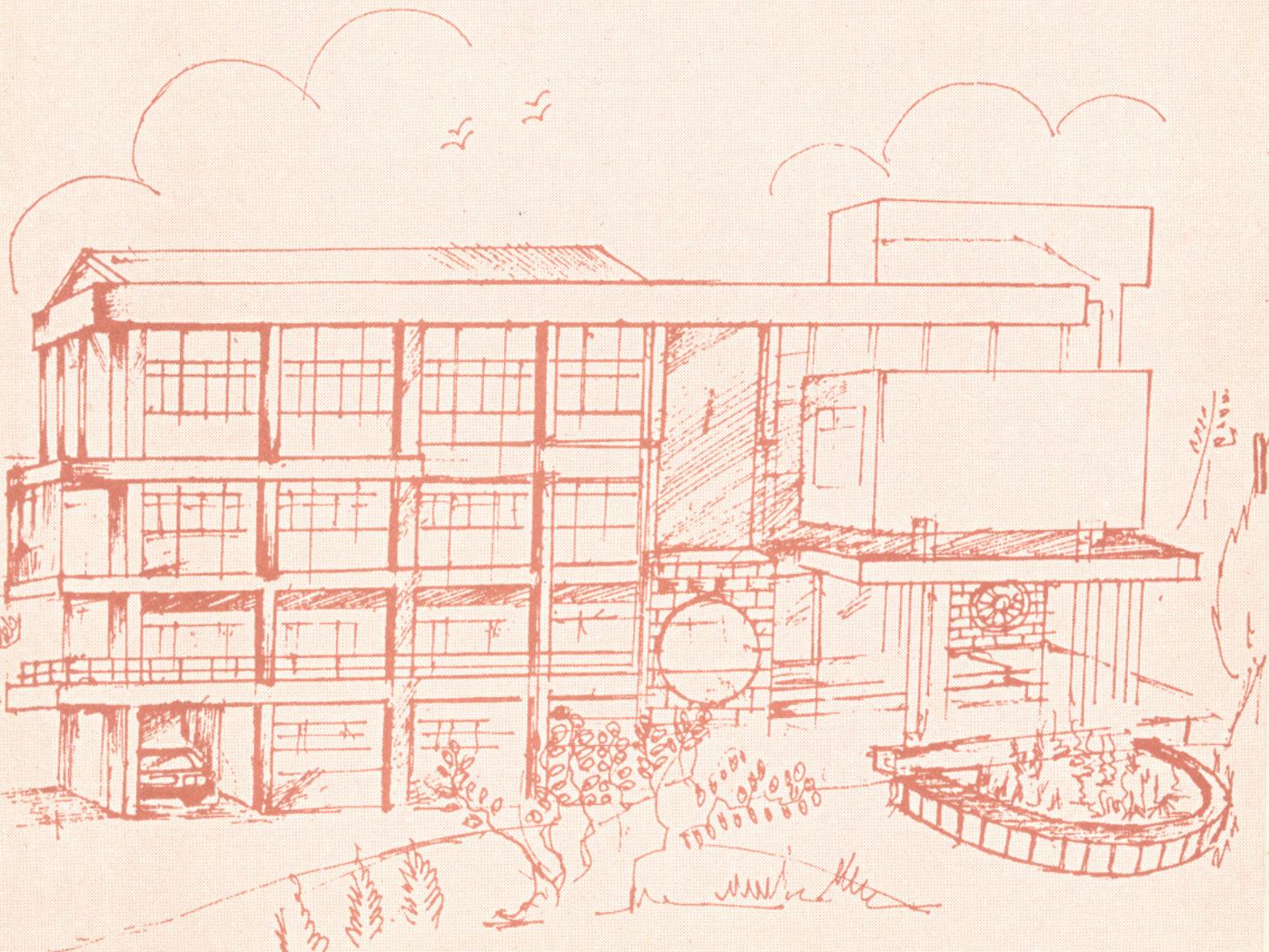




No. 47

Working Paper Series

**Ownership Structure and Stock
Liquidity –
Evidence from Indian Market**



Ownership Structure and Stock Liquidity – Evidence from Indian Market

Prof. Lakshmi Sharma
Assistant Professor
T.A.Pai Management Institute
Manipal-576104
Karnataka, India.
Email: lsharma@mail.tapmi.org.

TAPMI WORKING PAPER SERIES NO. 2005 / 10

The objective of TAPMI working paper series is to help Faculty members of TAPMI to test out their research ideas/findings at the pre-publication stage.



T. A. Pai Management Institute
Manipal –576 104, Udupi Dist., Karnataka

Ownership Structure and Stock Liquidity – Evidence from Indian Market

Prof. Lakshmi Sharma, Assistant Professor, T A Pai Management Institute, Manipal

Liquidity is an important feature of any financial market. Liquidity is the lubricating agent that facilitates a frictionless smooth functioning of the financial markets. Liquidity is an essential part of a stock market as much as the efficiency is. While efficiency refers to the speed with which the prices in the market move to reflect the information flows, liquidity refers to the ease with which the buyers and sellers promptly transact with minimal impact on the price of a stock. Liquidity of an asset is very precisely defined by Keynes way back in 1930. Keynes (1930) writes that an asset is more liquid than another, 'if it is more certainly realizable at short notice without loss.' (p.67) Liquidity of an individual stock, therefore, is of two dimensions – the availability of a market for the stock and the cost of trading in it.

The study of liquidity is important because of its implications for the firm's financing and investment decisions. Amihud and Mendelson (1986) show that the market participants are willing to pay for liquidity and suggest that firms can reduce their cost of capital by increasing the liquidity of their stocks. Their research points out the need for moving from the two dimensional risk-return framework to three dimensional risk-return-liquidity for analyzing a number of financial management policies and institutional mechanisms. Jacoby, Fowler and Gottesman (2000) bring out a direct link between liquidity and corporate costs of capital. That liquidity has an impact on asset pricing is also brought out by empirical evidence. Pastor and Stambaugh (2001) investigate if market-wide liquidity is a state variable important for asset pricing. They find that expected stock returns are related cross-sectionally to the sensitivities of returns to fluctuations in aggregate liquidity. Chordia, Roll and Subrahmanyam (2001), Jones (2001) find a negative relation between return and unexpected illiquidity for size portfolios. Empirical evidence produced by Acharya and Pedersen (2003) based on cross-sectional tests is consistent with the findings of the other studies that liquidity risk is priced.

This paper focuses on the relation between ownership structure and liquidity. It is obviously important to analyze the relation between ownership structure and liquidity, since illiquidity has an impact on a firm's cost of capital as proved by previous empirical studies. It is also helpful to traders in the market place to strategize cost efficient ways to trade.

Ownership Structure and Liquidity

The attributes of individual security has always been the central theme of the market microstructure literature. The transactions costs, pricing and liquidity are few of the issues that market microstructure studies focus on. Many studies are also carried out on how liquidity differs in the cross section of firms. (See for example, Benston and Hagerman 1974, Branch and Freed 1977, Easley 1996) Time series analysis of variations in market wide liquidity is also studied. (See for example Chordia, et al. 2001) Cross sectional heterogeneity in the time series variation of liquidity is also analyzed. (See for example, Chordia et al. 2004)

The market microstructure literature suggests that inventory risk and asymmetric information or both can impact the liquidity of a security and can explain its difference across securities. Asymmetries in information and its implications for market equilibrium are explained by the agency theory. According to this theory, since the owners of the firm (principal) delegate the control to the managers (agent), a monitoring problem occurs. The costs and benefits of monitoring is a function of the ability to monitor the firm management and its costs as against the benefits derived from informational advantage. These costs and benefits estimation is a function of ownership structure of the firm.

Market microstructure theories predict a negative relation between stock market liquidity and insider ownership. This prediction emerges from the assumption that the benefit of insider ownership is greater in firms where the profit potential is less observable because of the presence of information asymmetry. Market microstructure models derive how the fear of trading with people with privileged access to information is reflected in the

liquidity of stocks through higher impact costs of trading. The larger the insider ownership with privileged accesses to information in a firm, the higher the cost of transactions and wider the bid-ask spread for the firm's stock. Hence, increased insider ownership is assumed to contribute to information asymmetry and reduced liquidity. Glosten and Milgrom (1985) argue that one of the causes of illiquidity is the presence of privately informed traders. According to them, one such group of privately informed traders is the insiders of the firm. The study by Seyhun (1986) shows that insider trades precede abnormal changes in the price of their company's stock. Seyhun suggests that the level of insider ownership in a firm may influence the liquidity of the stock. Sarin, Shastri and Shastri (2000) show that the stock liquidity decreases with concentrated ownership. However, they find that for higher insider ownership this loss of liquidity is a consequence of higher adverse selection costs, while for higher institutional ownership it is the result of higher inventory carrying costs. In fact, some of the studies have even used the ownership structure as an indicator of what fraction of equity owners are informed. Specifically, they assume that insider and institutional owners are informed, while the individuals are uninformed. (See for example, Grullon and Wang, 2001)

Even in the absence of informational asymmetry, increased insider ownership could mean reduced liquidity because there will be less available shares for the other category of shareholders to trade in the market. Without assuming that large owners have an informational advantage, Holmström and Tirole (1993) derive a theoretical model where market liquidity and owner concentration are negatively related. The model shows that when a large owner reduces his or her ownership, liquidity increases because it opens up for an increasing number of liquidity traders in the stock. Amihud, Mendelson and Uno (1999) find that increases in a firm's base of individual investors' increases its stock liquidity. Such increases are also associated with increases in the stock price. This is in line with the finding of Demsetz (1968) that one of the important determinants of secondary market liquidity is the number of shareholders. Hence, concentrated insider ownership would mean less number of shares available in the market and as a consequence, results in reduced liquidity.

There is no clear indication of what should be hypothesized about the relation between institutional ownership in a firm and its stock liquidity. Institutional investors, as they generally hold shares larger than typical shareholders, are said to monitor a firm's operations (Morck, Shleifer and Vishny, 1988). This reduces the agency costs and increases the firm's value. (See for example, Barclay and Holderness 1991) However, this may prove to be potentially costly as the prior research indicates that market makers charge wider spreads and reduce the number of shares that they offer to informed traders in order to mitigate their loss. Lee, Mucklow and Ready (1993) also argue that this reduced liquidity may bring down the potential benefits from monitoring. In short, the increased institutional ownership may bring down the liquidity of the stock. Heflin and Shaw (2000) show that both internal and external blockholders, defined as owners of at least 5% of outstanding shares, contribute to reduced liquidity. This finding is in line with the results of the studies carried out by Tinic (1972) and Hamilton (1978), who report a negative relation between institutional ownership and liquidity measured by the bid-ask spreads.

Since institutional ownership is indirect and as typically institutional investors hold a diversified portfolio, it is also argued that liquidity may actually cause institutional ownership rather than vice versa. The studies by Kahn and Winton (1985) and Maug (1998) argue that liquidity requires decreased monitoring by shareholders as they can exit from the stock more easily. Maug further adds that liquidity has a positive impact on monitoring by making corporate governance more effective as it is easier for shareholders to buy additional shares because of the cost of holding large stakes being low in liquid stocks. There are also research findings which show no significant relation between institutional ownership and liquidity. (See for example, Fabozzi 1978) The theoretical and empirical a priori relation between institutional ownership and liquidity, therefore, is not well defined.

The Study

This study empirically tests the relation between the stock liquidity and the percentage of shares held by promoters and institutional investors for a sample of 100 stocks – the 50 stocks included in the S&P CNX Nifty index (Nifty from now onwards) and the 50 stocks of the S&P CNX Nifty Junior index (referred to as Nifty junior in this study) of National Stock Exchange (NSE). The reason for choosing these 100 stocks for the study is because these are the most liquid stocks in NSE and information for all variables are available only for these stocks. The total market capitalization of the Nifty and Nifty junior stocks stand at Rs.9028310 million and Rs.1654443 million respectively as of December 31, 2004. The analysis is cross-sectional and is as of December 2004. The per cent of shares held by the promoters and institutional investors as of December 2004 is ascertained from the NSE website, www.nseindia.com

Research studies on liquidity define it variedly. Lippman and McCall (1986) define liquidity in terms of time it takes to transact. Hasbrouck and Schwartz (1988) measure the liquidity of a market by its depth, breadth and resiliency. Bid-ask spread and its variants like total quoted spread, total effective spread, etc are the most common measure of liquidity in many prior studies. (See for example Chordia, Roll and Subrahmanyam, 2000, Heflin and Shaw 2000) This study uses impact cost as reported by NSE for each of the Nifty and Nifty junior stock for the month of December 2004 as the measure of liquidity. According to this study liquidity is the measure of how comfortably an investor is able to trade frequently in the market without having to suffer a great impact on price. Liquidity is the ability of the market to absorb large quantities of trade without heavy transactional cost. Such a measure of liquidity is provided by the impact cost figure for the stocks. Impact cost measures the market impact of a trade. It is the cost of executing a transaction in a given stock for a specific predetermined order size at any given point in time. Impact cost is the percentage price movement caused by an order size of Rs. 50 lakhs from the average of the best bid and offer price in each order book snapshot for the Nifty stocks. For the purposes of computation of impact cost, four snap shots at different times are taken everyday from the order book in the capital market segment for all

securities. Impact cost is the mean of the buy side impact cost and sell side impact cost. Where sufficient number of shares is not available for either buy side or the sell side in a snapshot, the impact cost for such observations is given a penal value of 5%. The impact cost calculation for the Nifty junior stock is for an order size of Rs.25 lakhs. (www.nseindia.com) A stock which is perfectly liquid trades without any price impact, while a stock which is perfectly illiquid cannot be traded at any price. Therefore, this measure of liquidity encompasses important aspects of liquidity which are not captured by other measures of liquidity like bid-ask spread and quoted depth.

It has been empirically shown that changes in share price, trading volume, return variance and firm size have significant explanatory power with respect to variation in liquidity. (See for example, Benston and Hagerman 1974, Tinic and West 1988) Hence, these variables are used in the model as control variables to isolate the effect of ownership structure on the stock liquidity.

The link between liquidity and trading volume has been described by Yamey (1985) in the context of birth and development of futures markets. He states that the impact on price made by a surge of selling or buying by hedgers depends upon the volume and continuity of trading in the markets. He says that the speculators who help to make a market active and continuous are attracted by an active market. This suggests that trading volume and absorptive capacity of the market tend to feed positively on each other. In other words, higher the trading volume in a stock, higher would be the absorptive capacity of the market and lower would be the impact cost. Huang and Stoll (1996) also report empirical evidence of the inverse association between trading volumes and execution costs of Nasdaq stocks. Some of the empirical studies carried out show that while smaller equity trades are often executed inside the quoted prices, larger trades often face prices far inferior to those quoted. (Petersen and Fialkowski 1994, Knez and Ready 1996) This suggests that there is a direct relation between trading volume and impact costs, i.e. the higher the trading volume the higher the impact cost.

The empirical influence of the share price on the liquidity is not very obvious. Clearly an Rs.10 stock will not have the same impact cost as an Rs.1000 stock, provided that they

have otherwise similar attributes. Impact cost should increase with price, *ceteris paribus*. Branch and Freed (1977) also find that the low priced securities tend to have significantly higher percentage spreads than higher priced securities. The relative spreads increase rapidly as prices decline. Hence, share prices may also be positively related to liquidity as shown by previous empirical results. Research studies on asset pricing find that asset prices are affected by expected trading costs. (See for example Brennan and Subrahmanyam 1996) However, Demsetz (1968) hypothesized that the percentage of spread should increase as the price of the stock decreased because of the proportionately higher costs for the typically smaller dollar volume of trades in low priced stocks. His results also confirm this relation. This suggests that the share price and liquidity may be negatively related.

Stock volatility which relates to the historical returns is taken as an indicator for the future. Lower the return volatility the higher would be the interest in the stock for investment and higher would be the impact cost. But, as shown earlier, since the empirical studies also document a positive relation between trading volume and impact cost, the relation can be that higher the stock liquidity, higher will be the impact cost and vice versa.

Firm size expressed in terms of market value of the firm is expected to be negatively related to impact cost. Higher the market value of the firm, the lower will be the impact cost. But, since the higher market value firms are also generally traded more the relation could also be positive.

The variables are defined in the study as follows.

Liquidity: Impact cost expressed as a per cent for an order size of Rs.50 lakhs for Nifty stocks and for an order size of Rs.25 lakhs for Nifty junior.

Promoter ownership: Shares held by promoters including foreign promoters and persons acting in concert as a per cent of the total outstanding shares of the firm.

Institutional ownership: Shares held by all types of institutional investors including those held by foreign institutional investors expressed as a per cent of the total outstanding shares of the firm.

Share Price: The average of the daily closing share price for the month of December 2004. Since for the Nifty stocks the share price dispersion was greater than the Nifty junior stocks and since a scaling problem is encountered in regression estimation, it is defined in natural logarithmic form for Nifty stocks alone.

Traded quantity: Average trade quantity of the stock for the month of December 2004 in natural logarithmic form to avoid skewness.

Return volatility: The standard deviation of the daily returns for the stock for the month of December 2004 expressed in per cent terms.

Firm size: Market value of the firm's equity expressed in natural logarithmic form to avoid skewness.

Information on all these variables is ascertained from NSE website, www.nseindia.com

The study estimates a multivariate regression model. This regression model tests for the liquidity changes for any changes in ownership structure expressed as promoters shareholding and institutional investors shareholding controlling for any differences in share price, trading volume, return volatility and firm size.

The Model

Impact cost = f (ownership variables, control variables)

Descriptive Statistics

Table 1 gives the descriptive statistics of the sample. The mean impact cost of the sample is at 0.1284 per cent. The minimum and maximum impact cost for the sample varies widely from 0.06% to 0.29%. The promoters' shareholding for an average firm in the sample is 49%. The maximum shareholding by promoters stands at 87% as against the minimum of zero. The mean institutional shareholding for the 100 firms studied is

27%. The institutional shareholding ranges from 0.73% and 69%. The firm size measured by the market value varies widely from Rs.8768 million to Rs.1169195 million. The return also shows a wide disparity. The minimum return is -13% and the maximum is 87.43%. This observation is true of traded quantity as well. The minimum traded quantity for a stock in the sample is 12814, whereas the maximum is at 25000000. The mean share price for the sample firms is Rs.439.97, with the minimum and maximum at Rs.12.96 and Rs.2069.15 respectively.

Table 1
Descriptive Statistics

	Minimum	Maximum	Mean	Standard Deviation
Impact cost	.06	.29	.1284	.0487
Promoters shareholding	.00	87.15	49.46	22.4117
Institutional investors shareholding	.73	69.81	27.90	14.694
Share price	12.96	2069.15	439.97	366.64
Traded quantity	12814	25000000	1689772	3934416
Return volatility	1.09	5.81	2.0236	.8553
Firm size	8768	1169195	106827	16229

Since the dependent variable, impact cost, shows a wide disparity among the sample firms which is true of most of the other variables as well, a t test is carried out to check if the two sets of stocks chosen for study – stocks in the Nifty and stocks in the Nifty junior – have impact costs which are statistically significantly different from each other that they cannot be clubbed together for study. The results of the t test are presented in table 2 below.

Table 2
t test results

	N	Mean	Standard deviation	t value
Nifty	50	.0926	.0227	-10.835*
Nifty junior	50	.1642	.0408	

* $p < 0.05$

It can be seen from the above table that the impact cost differs between the Nifty and Nifty junior companies which is statistically significantly different. This means that the study of determinants of impact cost for the two categories of stocks cannot be done for the sample stocks combining them together. As a result, the regressions are run separately for the Nifty stocks and Nifty junior stocks. A table on descriptive statistics for these two set of stocks is presented below.

Table 3
Descriptive Statistics for Nifty and Nifty Junior Stocks

	Mean for Nifty	Standard Deviation for Nifty	Mean for Nifty Junior	Standard Deviation for Nifty Junior
Impact cost	.09	.02	.16	.04
Promoters shareholding	45.83	24.19	53.09	20.07
Institutional investors shareholding	32.24	15.99	23.57	11.92
Share price	538.67	396.72	341.27	307.12
Traded quantity	1699758	3759052	1679785	4140591
Return volatility	1.71	.48	2.34	1.02
Firm size	180566	204388	33088	17400

It can be seen from Table 3 which gives the descriptive statistics for the two sets of stocks namely Nifty and Nifty junior that the mean impact cost for Nifty stocks is .09% whereas it is .16% for the Nifty junior stocks. It can also be seen that for the other variables as well the figures for the Nifty stocks is significantly different from those for the Nifty junior stocks. This justifies the estimation of the determinants of liquidity for the two sets of stocks separately.

The Results

The results of the regression run are presented below.

Table 4a
Regression Results for Nifty Stocks

Independent Variables	Coefficient	t-Value	Significance Level
Constant	.394	13.368	99%
Promoters shareholding	-.000096	-.717	Not significant
Institutional investors shareholding	-.000037	-.179	Not significant
Log Share price	-.063	-7.297	99%
Log Traded quantity	-.052	-10.570	99%
Return volatility	.015	4.510	99%
Log Firm size	.029	4.310	99%

No. of observations = 50 $R^2 = .809$ Adjusted $R^2 = .782$ Dependent variable = Impact cost

F statistic = 30.318*

*significant at 99%

The regression results of Nifty stocks are presented in Table 4a, where both the ownership structure variables, i.e., promoters' shareholding and institutional investors' shareholding have come out to be statistically insignificant in explaining differences in the liquidity as measured by impact cost for the 50 stocks. All the control variables included in the model have emerged to be significant statistically in explaining the liquidity differences among the Nifty stocks. The share price and the traded quantity bear a negative relation with liquidity, i.e. the higher the share price and the higher the traded quantity, the lower is the impact cost. Return volatility and firm size are positively related to liquidity, i.e. higher the return volatility and larger the firm size measured in terms of its market capitalization, the higher is the impact cost.

Table 4b
Regression Results for Nifty Junior Stocks

Independent Variables	Coefficient	t-Value	Significance Level
Constant	.407	3.498	99%

Promoters shareholding	-.00006681	-.152	Not significant
Institutional investors shareholding	-.00003564	-.051	Not significant
Share price	-.000002076	.072	Not significant
Log Traded quantity	-.018	-1.380	Not significant
Return volatility	.017	-1.410	95%
Log Firm size	-.041	1.459	Not significant

No. of observations = 50 $R^2 = .213$ Adjusted $R^2 = .103$ Dependent variable = Impact cost
F statistic = .096*

*significant at 90%

Just as in the case of Nifty stocks, the shareholding of promoters and institutional investors have emerged to be statistically insignificant in explaining the impact cost differences in Nifty junior stocks also. In fact, the only variable which is statistically significant happens to be return volatility and all other variables have become insignificant.

Findings

1. Both the ownership structure variables, promoters shareholding and institutional investors shareholding, are statistically insignificant variable in explaining the liquidity differences both for Nifty and Nifty junior stocks.
2. Share price, traded quantity, return volatility and firm size are found to be statistically significant variables in explaining the liquidity differences among the Nifty stocks.
3. Share price and traded quantity are in inverse relation to impact cost for the Nifty stocks.
4. Return volatility and firm size are positively related to the liquidity measure for Nifty stocks.
5. The only variable that explains the liquidity differences between Nifty junior stocks is return volatility.

Discussion of findings

As mentioned above that the promoters' shareholding is not a statistically significant variable in explaining the determinants of liquidity in both Nifty stocks and Nifty junior stocks though is contrary to the a priori relation proposed by the market microstructure literature, it is not unusual in empirical literature. However, empirical studies do not converge absolutely on this proposition. There are some studies that bear evidence to

believe that there may not exist any significant relationship between insider ownership and liquidity. For example, Glosten and Harris (1988) report an insignificant relation between liquidity defined as spreads and insider holdings for a sample of 250 New York stock exchange stocks over the period, 1981-83. That the promoters shareholding does not emerge as a statistically significant variable in determining the impact cost of both the Nifty and Nifty junior stocks may be because since the promoters shareholding in most of the Indian companies is higher than the global standards it may not be an important parameter in determining the liquidity of a stock. Biswal (2003) brings out the fact that the free float in most American companies is above 90% whereas in India promoters have more than 50% stakes in majority of large companies.

That liquidity may actually cause institutional investors to hold a stock in their portfolio rather than it being the effect of institutional investment has already been indicated before. Sharma (2005) studies the Nifty stocks and suggests that impact cost and quantum of shares available for trading in the market are two important considerations for FIIs for their investment purposes. As a result, the fraction of shares held by institutional investors not bearing any significant relation with liquidity is not a surprise.

Reference:

1. Acharya V.V., and L.H. Pedersen, 2003, Asset Pricing with Liquidity Risk, Department of Finance Working Paper Series, Leonard N. Stern School of Business, New York University.
2. Amihud Y., and H. Mendelson, 1986, Asset Pricing and the Bid-ask Spread, *Journal of Financial Economics*, 17, 223-249.
3. Amihud Y., H. Mendelson and J. Uno, 1999, Number of Shareholders and Stock Prices: Evidence from Japan, *Journal of Finance*, 53, 1169-1184.
4. Amihud Y., (2002). Illiquidity and Stock Returns: Cross-Section and Time-Series Effects. *Journal of Financial Markets* 5, 31 - 56.
5. Barclay M. and C. Holderness, 1991, Negotiated Block Trades and Corporate Control, *Journal of finance*, 46, 861-878.
6. Benston G. and R. Hagerman, 1974, Determinants of Bid-asked Spreads in the Over-the-counter Market, *Journal of Financial Economics*, 1, 353-364.
7. Biswal P.C., 2003, Free-float Sensex is Better Index, Working Paper, August 2003, Institute for Studies in Industrial Development.
8. Branch B. and W.Freed, 1977, Bid-asked Spreads on the Amex and the Big Board, *Journal of Finance*, 32, 159-163.
9. Brennan M.J. and A. Subrahmanyam, 1996, Market Microstructure and Asset Pricing: On the Compensation for Illiquidity in Stock Returns, *Journal of Financial Economics*, 41, 441-464.
10. Chiang R., and P.C. Venkatesh, 1988, Insider Holdings and Perceptions of Information Asymmetry: A Note, *Journal of Finance*, 43, 1041-1048.
11. Chordia T., R.W. Roll and A.Subrahmanyam, 2000, Commonality in Liquidity, *Journal of Financial Economics*, 56, 3-28.
12. Chordia T., R. Roll and A. Subrahmanyam, 2001, Market Liquidity and Trading Activity, *Journal of Finance*, 56, 501-530.

13. Chordia T., L. Shivakumar and A. Subrahmanyam, 2004, Liquidity Dynamics Across Small and Large Firms, Economic Notes by Banca Monte dei Paschi di Siena SpA, Blackwell Publishing Ltd., Oxford, UK.
14. Demsetz H., 1968, The Cost of Transacting, Quarterly Journal of Economics, 82, 33-53.
15. Demsetz H., 1986, Corporate Control, Insider Trading and Rates of Return, American Economic Review, 76, 313-316.
16. Easley D., N. Kiefer, M.O'Hara and J. Paperman, 1996, Liquidity, Information and Infrequently Traded Stocks, Journal of Finance, 51, 1405-1436.
17. Fabozzi F., 1979, Bid-ask Spreads for Over-the-counter Stocks, Journal of Economics and Business, 32, 56-65.
18. Glosten L., and P. Milgrom, 1985, Bid-ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders, Journal of Financial Economics, 14, 70-100.
19. Glosten L. and L.E. Harris, 1988, Estimating the Components of the Bid-ask Spread, Journal of Financial Economics, 21, 123-142.
20. Grullon, Gustavo, and F. Albert Wang, 2001, Closed-End Fund Discounts with Informed Ownership Differential, Journal of Financial Intermediation, 10, 171-189
21. Hamilton J.L., 1978, Marketplace Organization and Marketability: Nasdaq, the Stock Exchange and the National Market System, Journal of Finance, 33, 487-503.
22. Hasbrouck J., and R.A. Schwartz, 1988, Liquidity and Execution Costs in Equity Markets, Journal of Portfolio Management, 14, 10-17.
23. Heflin F., and K.W. Shaw, 2000, Blockholder Ownership and Market Liquidity, Journal of Financial and Quantitative Analysis, 35, 621-633.
24. Holmstrom B. and J. Tirole, 1993, Market Liquidity and Performance Monitoring, Journal of Political Economy, 101, 678-709.
25. Huang R.D. and H.R.Stoll, 1996, Competitive Trading of NYSE Listed Stocks: Measurement and Interpretation of Trading Costs, Financial Markets, Institutions and Instruments, 5, 1-55.
26. Jacoby G., D.J. Fowler and A.A. Gottesman, 2000, The Capital Asset Pricing Model and the Liquidity Effect: A Theoretical Approach, Journal of Financial Markets, 3, 69-81.

27. Jones C. M., 2001, A Century of Stock Market Liquidity and Trading Costs, Working Paper, Graduate School of Business, Columbia University.
28. Kahn C., and A. Winton, 1998, Ownership Structure, Speculation and Shareholder Intervention, *Journal of Finance*, 53, 99-130.
29. Keynes J.M., 1930, *Treatise on Money*, London, Macmillan.
30. Knez P.J. and M.J. Ready, 1996, Estimating the Profit from Trading Strategies, *Review of Financial Studies*, 9, 1121-1163.
31. Lee C., B. Mucklow and M. Ready, 1993, Spreads, Depths and the Impact of Earnings Information: an Intraday Analysis, *Review of Financial Studies*, 6, 345-374.
32. Lippman S., and J. McCall, 1986, An Operational Measure of Liquidity, *American Economic Review*, 76, 43-55.
33. Maug E., 1998, Large Shareholders as Monitors: Is there a Trade-off between Liquidity and Control? , *Journal of Finance*, 53, 65-98.
34. Morck R., A. Shleifer and R.W. Vishny, 1988, Management Ownership and Market Valuation, *Journal of Financial Economics*, 20, 293-315.
35. Pastor L., and R.F. Stambaugh, 2001, Liquidity Risk and Expected Stock Returns, NBER Working Paper No. w8462.
36. Petersen M.A. and D. Fialkowski, 1994, Posted versus Effective Spreads: Good Prices or Bad Quotes?, *Journal of Financial Economics*, 35, 269-292.
37. Sarin A., K.A. Shastri and K. Shastri, 1999, Ownership Structure and Stock Market Liquidity, Working paper, Santa Clara University and University of Pittsburgh.
38. Seyhun N., 1986. Insider-profits, Costs of Trading and Market Efficiency, *Journal of Financial Economics*, 16, 189-212.
39. Sharma L., 2005, Determinants of FIIs Investment, nse news, January 2005, 3-8

40. Tinic S.M., 1972, The Economics of Liquidity Services, The Quarterly Journal of Economics, 86, 79-93.
41. Tinic S. and R. West, 1988, Competition and the Pricing of Dealer Service in the Over-the-Counter Stock Market, Journal of Financial and Quantitative Analysis, 7, 1707-1727.
42. Yamey B.S., 1985, Scope for Futures Trading and Conditions for Success, in How Commodity Futures Markets Work, Thames Essay no.42, B.S. Yamey, R.L. Sandor and B. Hindley, eds., Trade Policy Research Centre, London.