# Institutional Ownership and Firm Performance: Additional Evidence from Indian Companies

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## Abstract

*This study aims to investigate the relationship between institutional ownership and firm performance in the Indian context. Using data of 273 Bombay Stock Exchange (BSE) listed firms from 2007 to 2021, the study performs regression analysis to test the association of institutional ownership, taken as a whole and separately for domestic and foreign institutional investors, with firm performance. The results of Ordinary Least Square regression indicate a positive impact of institutional ownership on performance. However, when endogeneity is factored and Two- stage regression with simultaneous equation system is applied, the study finds evidence of negative effect of institutional ownership on performance. Results of Two- stage regression also suggest a reverse causality of accounting performance having significant positive impact on the institutional ownership. The findings indicate institutional investors to be passive in monitoring firm performance and exit firms when performance is declining.*

**Keywords:** Institutional Ownership, Endogeneity, Firm Performance, Foreign Institutional Ownership, Institutional Investors

## Introduction

The rise of global corporations and their contribution in economic growth has indeed been reaffirmation of significance of corporate form of business. As these corporations involve resources contributed by various stakeholders, their accountability towards the stakeholders is imperative. Instances of corporate scandals and financial crisis bring back the attention to corporate governance and its role in mitigating agency problem. Berle and Means (1932) were among the earliest to caution that managements of widely held corporations could potentially undermine the rights of dispersed shareholders. When ownership is diffused, agency problem surfaces from the conflict of interests between outside shareholders and the managers of the firm (Jensen and Meckling, 1976).

Atypical to agency conflict emanating from dispersed ownership prevalent in developed markets like USA and UK, emerging markets have principal-vs.-principal type of conflict where large dominant shareholder expropriates the dispersed minority shareholders. Shleifer and Vishny (1986) and Sarkar and Sarkar (2000) emphasize the role of large shareholders like institutional investors in resolving such conflicts by monitoring corporate performance thorough activism. Claesseans and Fan (2002) also underline that the presence of institutional investors can enhance the credibility of management towards the minority shareholders.

Studies in the area of ownership structure have mainly analyzed ownership by identity of owner, ownership concentration and its relationship with performance. Some studies evaluate the effects of managerial ownership (Morck et al., 1988; Welch, 2003; Davies et al. 2005) while others examine effects of insider/promoter ownership (Selarka, 2005; Pant and Pattanayak, 2007; Bhatia and Srivastava, 2017) on performance. Studies investigating the influence of institutional investors (McConnell and Servaes, 1990; Coffee, 1991, Cornett et al., 2007) have been conducted mainly in the backdrop of developed markets like USA, where activism and proxy contests are frequent. With number of institutional investors increasing worldwide, Claessens and Yurtoglu (2012) rightly draw attention to the need for more research in emerging markets. Emerging markets like India are characterized by promoter

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dominated firms with less developed external mechanism of corporate governance. In the midst of growing mutual fund penetration and Indian economy attracting foreign institutional investors, it would be interesting to study their role and the response as large shareholders in monitoring corporate performance. The present study intends to add to this pursuit.

The ensuing sections present an overview of existing literature followed by description of data, methodology and variables used. The succeeding section briefly describes the trends in institutional ownership in the sample firms followed by the results of regression analyses and ends with discussion, conclusion and suggestions.

## Review of Literature

The literature of corporate governance has umpteen studies examining the relationship between ownership and performance but some specifically focus on institutional ownership and its association with performance.

Shleifer and Vishny (1986) highlight the monitoring role of large shareholders, who are unaffiliated with management of the firm, in resolving the agency problems. Pound,(1988) recognizing the role of institutional investors in corporate voting process, posits three hypotheses on effects of institutional ownership on performance improving measures: (a) efficient monitoring hypothesis (b) conflict of interest hypothesis and (c) strategic alignment hypothesis. Efficient monitoring hypothesis states that institutional investors have the expertise in managing investment and taking informed voting decisions and hence are more competent in monitoring and improving firm performance than dispersed shareholders. This postulates a positive relationship of institutional shareholding with performance. Conflict of interest hypothesis on the other hand suggests that institutional investors like banks and insurance companies are involved with the firm as lenders, insurers and allied financial service providers causing a conflict of interest position that interferes with their fiduciary role as monitors. Ultimately, they are likely to take the side of the management, leading to a negative influence on performance. Strategic alignment hypothesis expects institutional investors and the management to co-operate for mutual benefits suggesting similar negative effects on performance.

Further empirical studies that test these postulations find mixed results. Table 1 provides an overview of the results of analyses made by some of the previous empirical studies.

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**Table 1. Summary of previous studies and their results**

| Research Study | Sample and Period of study | Performance Variable | Ownership Variable of interest | Description of Analysis | Results |
|---|---|---|---|---|---|
| McConnell and Servaes (1990) | Two samples of 1173 US firms for year 1976 and 1093 US firms for year 1986 | Tobin's Q | Fraction of shares owned by institutional investors | Regression analysis of effect of insider ownership, block holders and institutional ownership on Tobin's Q | Significant positive influence of Institutional Ownership on Performance |
| Li et al. (2006) | 433 listed companies of Hong Kong during 1996 -1998 | (Short-term profitability) ROA | Percentage of shares owned by institutional investors | Partial Least Square (PLS) analysis of effects of institutional ownership on corporate governance variables including short-term profitability | No significant direct effect of institutional ownership on short -term profitability |
| Douma et al. (2006) | 1005 Indian listed firms for the financial year 1999 -2000 | ROA, Tobin's Q | Percentage of shares owned by domestic and foreign institutional investors | OLS Regression analysis of ROA and Tobin's Q on Foreign and Domestic Institutional Ownership along with Director Ownership | Significant positive influence of foreign and domestic institutional ownership on performance |
| Cornett et al. (2007) | S&P 100 indexed US Firms from 1993 to 2000 | Industry Adjusted ROA | Fraction of shares owned by institutional investors | OLS Regression analysis of Industry Adjusted ROA on Lagged values of Fraction of Institutional Investors Owners hip, their type and number | Institutional Ownership has a significant positive influence on Performance |
| Bhattacharya and Graham (2007) | 116 Finland public traded companies for the year 2004 | Tobin's Q | Herfindahl index (being sum) of equity ownership by institutional shareholders | 3SLS analysis of relationship between Tobin's Q and equity ownership by institutional investors . | Performance and Institutional ownership are endogenously determined with two-way feedback. Institutional ownership and firm performance have negative influence on each other |

| | | | | | |
|---|---|---|---|---|---|
| Tsai and Gu (2007) | 49 publicly traded restaurant firms of USA over the years 1999 to 2003 | (proxy) Tobin's Q | Percentage of shares owned by institutional investors | OLS and 2SLS Regression analysis of relationship between Tobin's Q and institutional ownership | Significant positive endogenous relationship between Institutional Ownership and Performance. |
| Charfeddine and Elmarzougui (2010) | 35 listed firms of France during 2002 -2005 | (proxy) Tobin's Q | Percentage of shares owned by institutional investors | 2SLS analysis of relationship between Tobin's Q and institutional ownership | Endogenous relationship exists between Performance and Institutional ownership with negative influence on each other. |
| -Najjar (2015) | 82 listed firms from Jordan during 2005 -2013 | ROA, ROE | Percentage of shares owned by institutional investors | OLS Regression analysis of ROA and ROE on Institutional Ownership | No significant relationship exists between institutional ownership and firm performance |
| Kansil and Singh (2018) | Panel data of 496 listed Indian firms over the year 2008 to 2014 | Market to Book value (M B Ratio) | Percentage of shares owned by institutional investors | OLS and generalized 2SLS Regression analyses for Fixed and Random effects of relationship between M B Ratio and institutional ownership | Significant positive endogenous relationship between Institutional Ownership and Performance considering firm fixed effects. However overall results show firm performance to impact institutional ownership and not vice versa |
| Sakawa and Watanabel (2020) | 436 Japanese listed firms over the period 2010 to 2016 | ROA, Tobin's Q | Percentage of shares owned by institutional investors, domestic and foreign institutional investors | Linear regression and 2SLS analysis of effect of institutional ownership, domestic and foreign institutional investor ownership on Performance | Significant positive influence of Institutional Ownership, institutional ownership, domestic and foreign institutional investor ownership on Performance |
| Putra et al. (2022) | 141 Indonesian firms over the period 2015 -2017 | Tobin's Q | Proportion of shares owned by institutional investors | Linear regression analysis of effect of institutional ownership along with concentrated and family ownership on Tobin's Q | Statistically Significant positive influence of Institutional Ownership on Performance |
| Abedin et al. (2022) | 180 public listed companies of Bangladesh over the year 2008 to 2018 | ROA, Tobin's Q | Percentage of shares owned by domestic and foreign institutional investors | Linear regression analysis of effect of domestic and foreign institutional investor ownership on Performance. | Significant positive effect of Domestic and Foreign Institutional Ownership on Performance |



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### Need for Study, Objectives and Hypothesis

Previous studies analyzing the relationship between institutional ownership and performance are mainly concentrated in developed economies and recent studies have started giving attention to emerging economies. More studies are needed in emerging markets that analyze endogenous nature of institutional ownership in relation with performance. The present study intends to fill this gap by seeking additional evidence from Indian firms. The study aims to test endogeneity of ownership variable to see if institutional ownership and performance influence each other. The study also distinguishes domestic institutional investors from foreign institutional investors while investigating their association with performance. Based on existing literature the study expects the relationship can be positive or negative and hence following null hypotheses are being tested:

H0_1: Institutional ownership has no significant relationship with firm performance

H0_2: Domestic Institutional ownership has no significant relationship with firm performance

H0_3: Foreign Institutional ownership has no significant relationship with firm performance

## Methodology

The present study employs panel data of 273 Indian companies listed on Bombay Stock Exchange (BSE). The sample is derived from companies included in BSE 500 Index over 15 years from 2007 to 2021. This period has seen several governance reforms and improved disclosure norms that have ensured better availability of governance related data. Initially from the set of 500 companies, the state owned public sector undertaking and banking, insurance and finance sector companies were excluded understandably for their distinctive regulatory environment and reporting features. Further non availability of data reduced the sample size to 273 companies, which still forms 54.6 percent of the index. Data for all the 273 companies across 15 years add up to 4095 observations. The data is mainly sourced from Center of Monitoring Indian Economy (CMIE) ProwessIQ database, supplemented by annual reports of companies and data form BSE website. The study employs Ordinary Least Square (OLS) and Two-Stage Least Square (2SLS) regression for analysis and Durbin, Wu-Hausman tests for testing endogeneity.

### Variables

#### Performance Variables

For measuring performance, the study uses Return of Assets (ROA) and natural log transformed Tobin's Q ratio. ROA is an accounting measure commonly used in several studies to evaluate corporate performance (Barber and Lyon, 1996). Alternatively, Tobin's Q is applied as a forward looking market based measure. In its original form Tobin's Q is the ratio of market value of the firm to the replacement cost of its total assets. Since assessing replacement cost poses practical difficulties, a proxy way of computing Tobin's Q, commonly used in literature (Demsetz and Villalonga, 2001) has been used i.e. sum of market value of equity and book value of outside liabilities divided by book value of total assets as at the financial year end. The distribution of Tobin's Q values for our sample appears to be positively skewed requiring further transformation for regression analysis. In order to address its non-normality and to reduce heteroscedasticity effect of its skewed distribution, natural log transformed values of Tobin's Q are used throughout this study, which is denoted as LNTQ.

### Ownership Variables

Percentage of shares held by institutional investors as at the end of financial year is used as ownership variable indicator. This measure is calculated for overall institutional holdings (INST_OWN) as well as separately for shares held by domestic (DOM_IO) and foreign institutional investors (FORGN_IO). Domestic institutional investors include mutual funds, banks, financial institutions, insurance companies, domestic venture capital funds and other institutional non-promoters. Foreign institutional investors include non-promoter Foreign Institutional Investors (FIIs), Foreign Venture Capital Funds (VCFs) and institutional Qualified Foreign Investors as per SEBI (ICDR).

### Control Variables

In order to control for other factors determining firm performance, variables like firm age, firm size, Leverage (debt levels), Research and Development effects, Advertisement effects, stock beta and corporate governance factors like board size, its composition and independence are introduced in the model. Control variables used for determining ownership variables are firm age, firm size, Leverage, stock beta, growth potential and holding period stock returns. Previous studies like McConnell and Servaes (1990), Cornett et al. (2007), Charfeddine and Elmarzougui (2010), Al-Najjar (2015), Kansil and Singh (2018) etc. have applied similar control variables in their analysis

Table 2 provides description of variables used along with expected relationship with performance and ownership variables.

SEBI (ICDR): Securities Exchange Board of India (Issue of Capital and Disclosure Requirements) Regulations

**Table 2. Definition of Variables**

| Symbol | Variable Name | Description | Hypothesized Relationship with | |
|---|---|---|---|---|
| | | | **Performance** (ROA and LNTQ) | **Ownership** (INST_OWN, DOM_IO and FOREGN_IO) |
| ROA | Return on Assets | Earnings before Interest and Tax divided by Total Assets as at the year -end multiplied by 100 | | (+/-) |
| LNTQ | Log natural transformed Tobin's Q Ratio | Tobin's Q ratio is calculated as sum total of market value of equity and book value of outside liabilities divided by book value of total assets as at financial year end. Natural log of this Tobin's Q ratio is used as LNTQ. | | (+/-) |
| INST_OWN | Institutional Ownership | Percentage of shareholding by Institutional investors as at financial year end | (+/-) | |
| DOM_IO | Domestic Institutional Ownership | Percentage of shareholding by Domestic Institutional investors as at financial year end | (+/-) | |
| FORGN_IO | Foreign Institutional Ownership | Percentage of shareholding by Foreign Institutional investors as at financial year end | (+/-) | |
| AGE | Age | Number of years from the date of incorporation of the firm, till the date of observation. | (+) | (+) |
| SIZE | Size | Natural Log transformed valued of sum of 3 years averages of Total Income and Total Assets of the firm | (+) | (+) |
| LEV | Leverage | Long Term liabilities divided by Total liabilities as at financial year end | (+) | |
| R&D | Research and Development Expenses to Sales Ratio | Research and Development Expenses divided by Sales multiplied by 100 | (+) | |
| ADVT | Advertisement Expenses to Sales Ratio | Advertisement Expenses divided by Sales multiplied by 100 | (+) | |

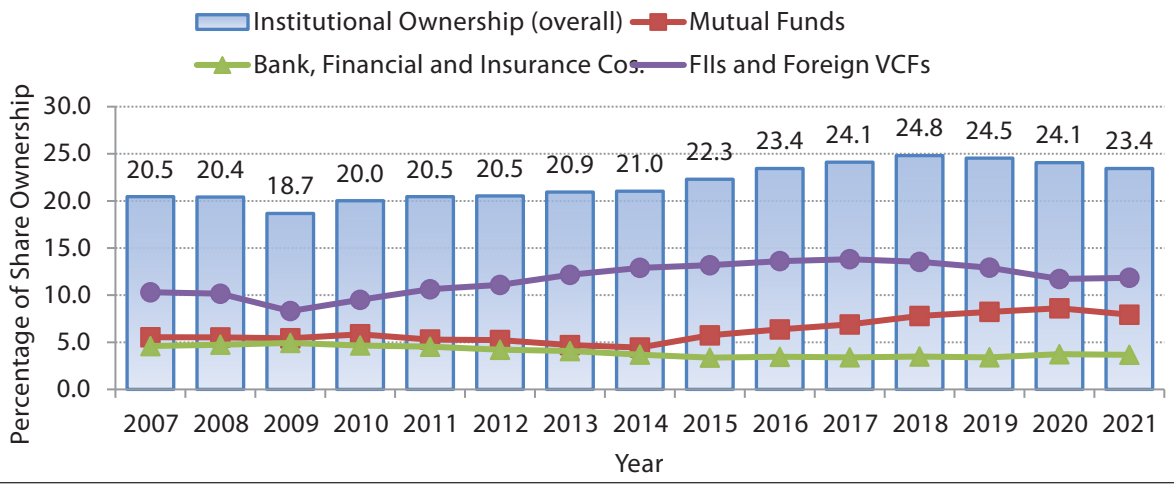
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|---|---|---|---|---|
| BETA | Beta | Sensitivity of stock return to market return | (-) | (-) |
| B_SIZE | Board Size | Number of Directors in the Board | (-) | |
| B_NED | Board Composition | Percentage of Non-Executive Directors in Board | (+) | |
| B_INDEP | Board Independence | Percentage of Independent Directors in Board | (+) | |
| GROWTH | Growth | Percentage change in Sales of the firm from its previous year Sales | | (+) |
| HPR | Holding Period Return | Current Closing Market price minus Previous Closing Market price per share added by Dividends declared, expressed as a percentage of Current Closing Market price as at financial year end | | (+) |
| Industry Dummies | Industry Dummies | Dummy variable with value 1 if firm belongs to particular industry; else 0. Industry Classification indicator across; 11 industrial sectors as per CMIE classification, viz. Diversified, Industrials, Basic Materials, Energy, Healthcare, CDGS (Consumer Discretionary Goods and Services), FMCG (Fast Moving Consumer Goods), Utilities, Telecom, Finance, Information Technology | (+/-) | (+/-) |

## Data Analysis and Interpretations

Trends in Institutional ownership

Institutional ownership in India prior to 1991 was largely limited to participation of government sponsored banks, insurance companies and Unit Trust of India (UTI). Post liberalization period saw the entry of foreign portfolio investors and venture capital funds. By the end of the millennium, domestic institutions like private banks, insurance companies and mutual funds also started investing in Indian stock market. Institutional investors have increasingly become a major driver of India's capital markets representing around 30 percent of market capitalization (OECD, 2020). A brief perusal of recent trends in institutional ownership gives a better understanding of their growing significance.

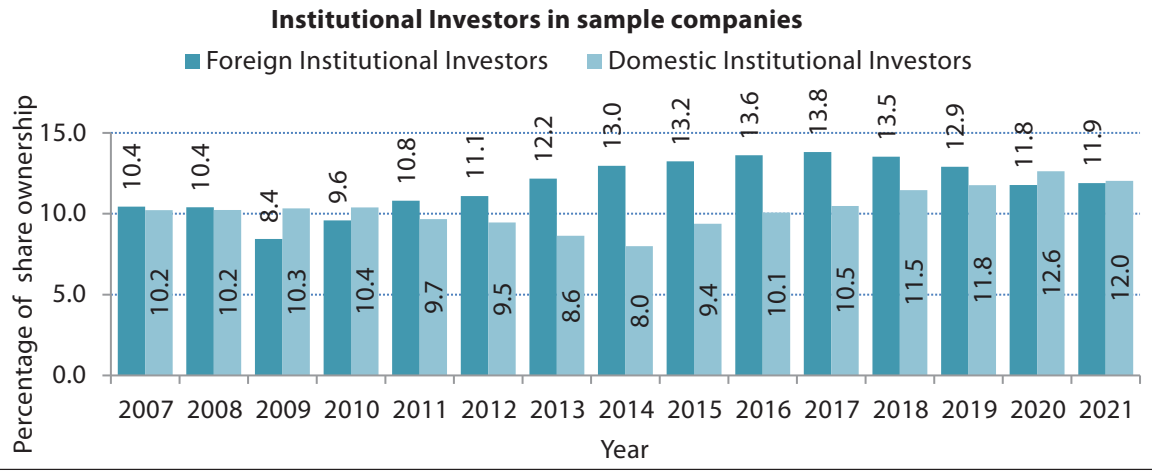
**Figure 1 : Trends in Institutional Ownership in sample companies**




Source: Compiled by authors

Chart 1 indicates the trends in financial year end ownership levels of institutional investors in our sample from 2007 to 2021. Overall institutional ownership level has seen a steady increasing trend especially from 2010 till 2018. The initial increase is mainly contributed by rise in holdings of FIIs and Foreign VCFs supplemented by increased mutual fund participation from 2015. From 2007 to 2021, FIIs and Foreign VCFs holdings have increased from 10.4 percent to 11.9 percent. Mutual Funds have also seen a rise from 5.5 percent to 7.9 percent. Equity holdings by banks, financial and insurance companies have slightly decreased for 4.6 to 3.7 percent but remained close to average 4 percent. Overall institutional ownership rose from 20.5 percent to 23.4 while reaching highest of 24.8 percent in 2018.

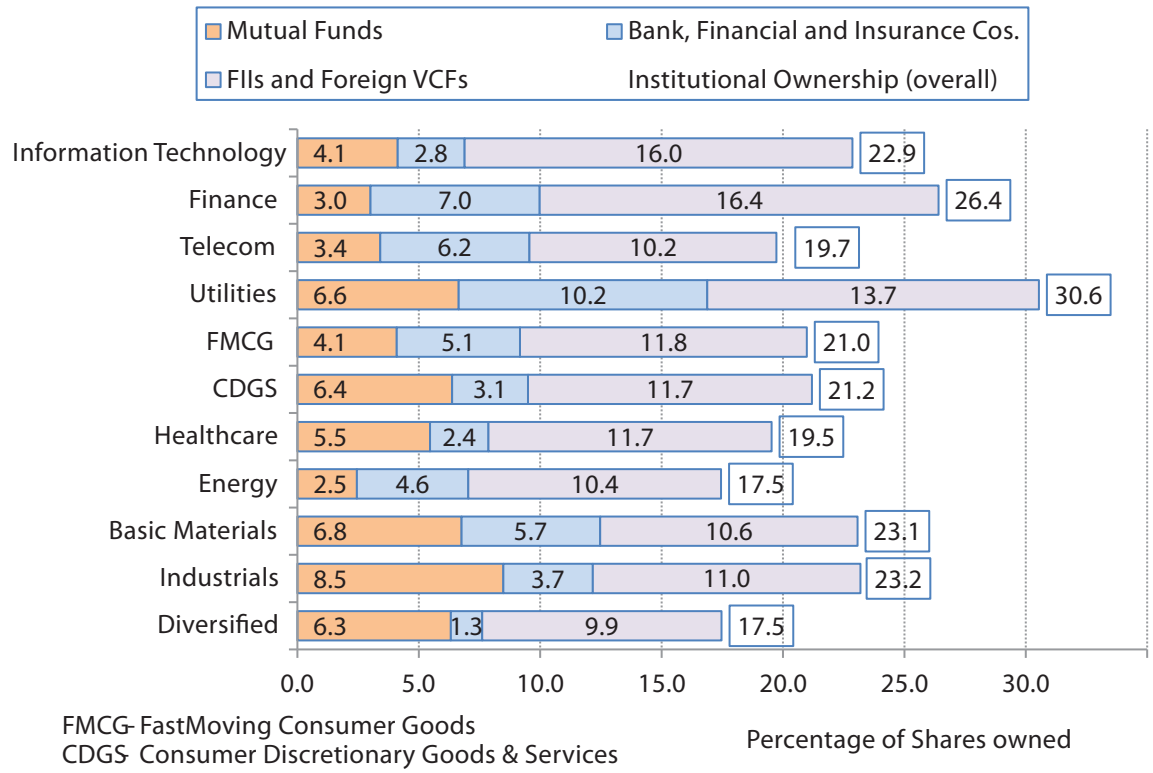
**Figure 2 : Trends in ownership levels of Foreign and Domestic**




Source: Compiled by authors

Chart 2 depicts the trends by grouping ownership levels into Foreign and Domestic institutional investors. The rise in foreign institutional holdings over the years 2010 to 2017 seems to correlate with India's phenomenal GDP growth rates for that period. The slight fall in their holding in later years amidst global recession fears and ramifications of pandemic scenario, is balanced by increased participation of domestic institutions reaffirming their trust in India's growth story.

**Figure 3 : Industry wise Average Institutional Ownership in sample companies (2007-2021)**




Source: Compiled by authors

Chart 3 gives an overview of industry-wise preference of institutional ownership. The top three sectors for equity holdings by Mutual Funds are in Industrials, Basic Materials and Utilities. For Banks, Financial Institutions and Insurance Companies Utilities, Finance and Telecom industries are the top three sectors. Finance, Information Technology and Utilities sector are the top three preferred sectors by FIIs and Foreign VCFs.

**Table 3. Descriptive Statistics**

| Variable | No. of obs. | Minimum | Maximum | Median | Mean | Standard Deviation |
|---|---|---|---|---|---|---|
| **ROA** | 4095 | -398.26 | 128.01 | 11.18 | 12.56 | 12.52 |
| **LNTQ** | 4095 | -1.11 | 3.24 | 0.67 | 0.75 | 0.70 |
| **INST_OWN** | 4095 | 0.00 | 79.32 | 20.09 | 21.95 | 13.56 |
| **DOM_IO** | 4095 | 1.29 | 48.28 | 9.10 | 10.32 | 8.02 |
| **FORGN_IO** | 4095 | 0.00 | 68.27 | 9.53 | 11.78 | 10.24 |
| **AGE** | 4095 | 1.00 | 158.00 | 34.00 | 42.91 | 25.98 |
| **SIZE** | 4095 | 3.23 | 15.63 | 10.08 | 10.12 | 1.38 |
| **LEV** | 4095 | 0.00 | 1.33 | 0.09 | 0.15 | 0.16 |
| **R&D** | 4095 | 0.00 | 297.79 | 0.07 | 1.07 | 7.02 |
| **ADVT** | 4095 | 0.00 | 28.72 | 0.12 | 1.48 | 3.07 |
| **BETA** | 4095 | - 0.12 | 2.64 | 0.96 | 1.00 | 0.41 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **B_SIZE** | 4095 | 3.00 | 23.00 | 10.00 | 9.89 | 2.72 |
| **B_NED** | 4095 | 25.00 | 100.00 | 75.00 | 74.19 | 12.47 |
| **B_INDEP** | 4095 | 10.00 | 100.00 | 50.00 | 52.43 | 11.11 |
| **GROWTH** | 4095 | -95.61 | 3046 .03 | 10.92 | 89.23 | 476.08 |
| **HPR** | 4095 | -97.57 | 2455.90 | 7.07 | 28.27 | 101.41 |

Source: Compiled by authors

Table3 summarizes the descriptive statistics of the variables used in the analysis. A perusal of mean and median values of all the variables reveals close proximity indicating normal like distribution. Notably the average shareholding of overall institutional investors is about 22 percent with Domestic and Foreign institutional ownership averaging to 10 and 12 percent respectively.

**Table 4. Correlation Analysis**

| | ROA | LNTQ | INST_OWN | DOM_IO | FORGN_IO | AGE | SIZE | LEV | R&D | ADVT | BETA | B_SIZE | B_NED | B_INDEP | GROWTH | HPR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ROA** | 1 | | | | | | | | | | | | | | | |
| **LNTQ** | 0.422** | 1 | | | | | | | | | | | | | | |
| **INST_OWN** | **0.048**** | **0.073**** | 1 | | | | | | | | | | | | | |
| **DOM_IO** | -0.012 | **-.051**** | 0.653** | 1 | | | | | | | | | | | | |
| **FORGN_IO** | **0.055**** | **0.136**** | 0.798** | 0.106** | 1 | | | | | | | | | | | |
| **AGE** | 0.016 | 0.022 | 0.156** | **0.314**** | -.035* | 1 | | | | | | | | | | |
| **SIZE** | -.067** | -0.018 | **0.515**** | **0.344**** | **0.397**** | 0.233** | 1 | | | | | | | | | |
| **LEV** | **-.353**** | **-.414**** | -.073** | -.044** | -.052** | -.062** | -.041** | 1 | | | | | | | | |
| **R&D** | -.048** | -0.009 | -.032* | -.039* | -0.006 | -.037* | -.032* | -.043** | 1 | | | | | | | |
| **ADVT** | 0.171** | 0.298** | -0.025 | -.078** | 0.033* | 0.016 | -.141** | -.162** | -0.028 | 1 | | | | | | |
| **BETA** | **-.330**** | **-.404**** | -0.024 | 0.018 | -.047** | 0.046** | 0.162** | 0.239** | 0.004 | -.250** | 1 | | | | | |
| **B_SIZE** | 0.038* | 0.001 | **0.324**** | 0.228** | 0.256** | 0.132** | 0.397** | 0.028 | -.043** | -.048** | 0.004 | 1 | | | | |
| **B_NED** | -.037* | 0.031* | 0.057** | 0.094** | -0.010 | 0.069** | 0.068** | -0.026 | -0.018 | -.043** | 0.040** | -.072** | 1 | | | |
| **B_INDEP** | -.050** | -.126** | 0.079** | 0.022 | 0.095** | 0.030 | 0.078** | 0.069** | 0.056** | -0.021 | 0.079** | -.059** | 0.161** | 1 | | |
| **GROWTH** | -0.007 | 0.003 | -0.003 | -0.009 | 0.002 | -0.025 | 0.016 | 0.017 | -0.003 | 0.004 | -.033* | -.034* | 0.032* | 0.031* | 1 | |
| **HPR** | 0.067** | 0.133** | -.085** | -.064** | -.062** | -0.024 | -.077** | -0.010 | 0.007 | 0.002 | 0.035* | -.036* | 0.003 | 0.011 | 0.001 | 1 |

****. Significant at the 0.01 level (2-tailed). *. Significant at the 0.05 level (2-tailed).**

Source: Compiled by authors

The results of correlation analysis among the variables are presented in Table 4. Ownership variables (INST_OWN, DOM_IO and FORGN_IO) and performance variables (ROA and LNTQ) exhibit very low but statistically significant correlations. Control variables like LEV and BETA display negative correlation with performance variables. SIZE, B_SIZE and AGE show significant positive correlations with the ownership variables.

## OLS Regression

For assessing the effect of institutional ownership on firm performance, ordinary least square (OLS) linear regression analysis is done keeping the following base model:

Firm Performance it = b0 + b1 (Ownership variable it) + b2-10 (Control variables it) + b11-20 (Industry dummies it) + e it ……..equation (1)

where,

Firm Performance = represented by ROA and LNTQ; each taken separately

Ownership variable = INST_OWN, DOM_IO and FORGN_IO which are individually substituted against the each of the dependent variables (ROA and LNTQ)

Control variables = (AGE, SIZE, LEV, R&D, ADVT, BETA, B_SIZE, B_NED, B_INDEP) which are retained across all the equations

Industry dummies = indicator with value 1 if belongs to corresponding industry; else 0.

A set of six linear models are thus generated and used in the OLS regression. Table 5 presents the results of the regression analysis of the six models. The results indicate institutional ownership to have significant positive influence on firm performance, both for ROA and LNTQ. When domestic and foreign institutional ownership are separately assessed, foreign institutional ownership has a significant positive effect on ROA and LNTQ but domestic institutional ownership shows a negative influence on LNTQ. Control variables – LEV and BETA have notable significant negative impact on ROA and LNTQ. Other control variables like ADVT and B_SIZE have significant positive influence while R&D and B_INDEP show negative influence on performance. SIZE and B_NED show mixed effects.

**Table 5. OLS Regressions Results of Performance on Institutional Ownership**

| Independent Variables | Dependent Variable | | | | | |
|---|---|---|---|---|---|---|
| | ROA | | | | LNTQ | |
| (Constant) | (1) | (2) | (3) | (4) | (5) | (6) |
| | 31.692 | 29.765 | 31.146 | 1.423 | 1.25 | 1.51 |
| | (15.81)** | (14.93)** | (15.74)** | (10.1)** | (9.22)** | (10.93)** |
| **INST_OWN** | 0.05 | | | 0.003 | | |
| | (3.28)** | | | (3.64)** | | |
| **DOM_IO** | | 0.001 | | | -0.005 | |
| | | (0.05) | | | (-4.38)** | |
| **FORGN_IO** | | | 0.055 | | | 0.008 |
| | | | (2.58)* | | | (7.85)** |
| **AGE** | 0.003 | 0.003 | 0.006 | -0.0004 | -0.000005 | 0.00004 |
| | (0.45) | (0.51) | (1.04) | (-1.07) | (-0.01) | (0.11) |
| **SIZE** | -0.895 | -0.657 | -0.833 | 0.019 | 0.04 | 0.008 |
| | (-6.27)** | (-5.08)** | (-6.01)** | (2.03)* | (4.5)** | (0.83) |
| **LEV** | -23.334 | -23.429 | -23.457 | -1.324 | -1.335 | -1.333 |
| | (-11.2)** | (-11.2)** | (-11.2)** | (-20.72)** | (-20.89)** | (-20.91)** |
| **R&D** | -0.102 | -0.103 | -0.102 | -0.002 | -0.002 | -0.002 |
| | (-3.09)** | (-3.13)** | (-3.12)** | (-1.45) | (-1.51) | (-1.39) |
| **ADVT** | 0.143 | 0.154 | 0.138 | 0.031 | 0.031 | 0.029 |
| | (2.4)* | (2.61)** | (2.31)* | (6.48)** | (6.66)** | (6.3)** |
| **BETA** | -6.608 | -6.784 | -6.693 | -0.433 | -0.452 | -0.43 |
| | (-13.25)** | (-13.45)** | (-13.43)** | (-15.5)** | (-16.31)** | (-15.43)** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **B_SIZE** | 0.23 | 0.266 | 0.24 | -0.002 | 0.001 | -0.004 |
| | (3.7)** | (4.19)** | (3.88)** | (-0.68) | (0.3) | (-1.16) |
| **B_NED** | -0.027 | -0.026 | -0.025 | 0.005 | 0.005 | 0.005 |
| | (-2.01)* | (-1.89) | (-1.84) | (5.48)** | (5.72)** | (5.69)** |
| **B_INDEP** | -0.001 | 0.002 | -0.001 | -0.007 | -0.007 | -0.007 |
| | (-0.09) | (0.15) | (-0.09) | (-7.87)** | (-7.57)** | (-8.22)** |
| **Industry** | Yes | Yes | Yes | Yes | Yes | Yes |
| **Dummies used** | | | | | | |
| **R -Square** | 0.220 | 0.218 | 0.220 | 0.337 | 0.338 | 0.345 |
| **Adj R -** | 0.216 | 0.214 | 0.216 | 0.334 | 0.335 | 0.341 |
| **Square** | | | | | | |
| **F** | 47.010 | 47.270 | 46.930 | 99.850 | 101.480 | 104.310 |
| **p-value** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| **No. of Obs.** | 4095 | 4095 | 4095 | 4095 | 4095 | 4095 |
| ****. Significant at the 0.01 level. *. Significant at the 0.05 level** | | | | | | |

Source: Compiled by authors

## Endogeneity and 2SLS Regression

Extant literature have pointed out that incorporating the endogenous nature of ownership variable while assessing its effects on performance is imperative for arriving at accurate conclusions (Liang et al., 2011; Demsetz and Villalonga, 2001). To address this issue Durbin, Wu-Hausman tests of endogeneity are performed. Further a set of simultaneous equations are formulated for applying 2SLS regression, as follows:

Firm Performance it = b0 + b1 (Ownership variable it) + b2-10 (Control variables it : AGE, SIZE, LEV, R&D, ADVT, BETA, B_SIZE, B_NED, B_INDEP) + b11-20 (Industry dummies it)+ e it

……same as equation (1)

Ownership variable it = b0 + b1 (Firm Performance it ) + b2-10 (Control variables it: AGE, SIZE, LEV, BETA, GROWTH, HPR)
+ b11-20 (Industry dummies it) + e it
…… equation (2)

where,

Firm Performance = represented by ROA and LNTQ each taken separately
as dependent variable in equation 1 for Table 6
and as endogenous variable in equation 2 for Table 7

Ownership variable = INST_OWN, DOM_IO and FORGN_IO substituted individually
as endogenous variable in equation 1 for Table 6
and as dependent variable in equation 2 for Table 7.

The results of Durbin-Wu-Hausman tests confirm the existence of endogeneity between Ownership variable and Performance. Table 6 presents the results of 2SLS regression with Performance as dependent variable. The results indicate that each of the endogenous variables for the three models - INST_OWN, DOM_IO and FORGN_IO has significant negative effect on both performance measures – ROA and LNTQ. Exogenous control variables like SIZE, ADVT, B_SIZE, B_NED and B_INDEP show significant positive effect on Performance variables. Consistent with results of OLS regression, coefficients of LEV, R&D, and BETA have significant negative values. Age has mixed effect on performance with positive effects seen in case of domestic institutional investors, and negative effects for foreign institutional investors.

## Table 6. 2 SLS Regression results of Performance on Institutional Ownership

| *Independent Variables* | | **Dependent Variable** | | | | |
|---|---|---|---|---|---|---|
| | | **ROA** | | | **LNTQ** | |
| (Constant) | -32.057 | -10.564 | -48.264 | -5.901 | -3.427 | -7.729 |
| | (-1.49) | (-0.61) | (-1.34) | (-2.41)* | (-1.73) | (-1.66) |
| ***Endogenous variables*** | | | | | | |
| **INST_OWN** | -1.596 | | | -0.186 | | |
| | (-2.94)** | | | (-3.02)** | | |
| **DOM_IO** | | -3.111 | | | -0.366 | |
| | | (-2.42)* | | | (-2.52)* | |
| **FORGN_IO** | | | -3.078 | | | -0.357 |
| | | | (-2.19)* | | | (-1.97)* |
| Exogenous variables | | | | | | |
| **AGE** | 0.02 | 0.227 | -0.169 | 0.002 | 0.026 | -0.02 |
| | (1.43) | (2.42)* | (-2.1 0)* | (1.00 ) | (2.45)* | (-1.96) |
| **SIZE** | 6.993 | 3.83 | 9.287 | 0.926 | 0.56 | 1.185 |
| | (2.67)** | (2.04)* | (2.03)* | (3.12)** | (2.64)** | (2.02)* |
| **LEV** | -26.486 | -26.846 | -21.958 | -1.686 | -1.731 | -1.158 |
| | (-8.17)** | (-7.52)** | (-5.83)** | (-6.56)** | (-5.49)** | (-3.25)** |
| **R&D** | -0.137 | -0.105 | -0.161 | -0.006 | -0.002 | -0.008 |
| | (-3.9)** | (-5.34)** | (-2.82)** | (-1.1) | (-0.34) | (-1.02) |
| **ADVT** | 0.505 | 0.033 | 1.052 | 0.072 | 0.017 | 0.135 |
| | (3.08)** | (0.23) | (2.36)* | (3.87)** | (1.05) | (2.4)* |
| **BETA** | -12.447 | -12.246 | -11.986 | -1.104 | -1.085 | -1.046 |
| | (-5.57)** | (-4.74)** | (-4.31)** | (-4.64)** | (-3.9)** | (-3.1)** |
| **B_SIZE** | 1.439 | 1.226 | 1.768 | 0.136 | 0.112 | 0.174 |
| | (3.31)** | (2.8)** | (2.46)* | (2.88)** | (2.35)* | (1.91) |
| **B_NED** | 0.013 | 0.071 | -0.068 | 0.009 | 0.016 | -0.0004 |
| | (0.41) | (1.36) | (-1.53) | (2.78)** | (2.8)** | (-0.08) |
| **B_INDEP** | 0.111 | 0.044 | 0.191 | 0.006 | -0.002 | 0.015 |
| | (2.31)* | (1.1) | (1.98)* | (1.16) | (-0.39) | (1.26) |
| **Industry Dummies used** | Yes | Yes | Yes | Yes | Yes | Yes |
| **Robust t - values used** | Yes | No | Yes | No | Yes | No |
| **F** | 14.600 | 12.080 | 8.490 | 7.610 | 5.350 | 3.310 |
| **p-value** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| **No. of Obs.** | 4095 | 4095 | 4095 | 4095 | 4095 | 4095 |
| ***Test of endogeneity*** | | | | | | |
| Durbin: Chi -square(1) | 27.828** | 25.367** | 26.687** | 136.465** | 127.364** | 135.797** |
| Wu -Hausman: F (4,4073) | 27.868** | 25.408** | 26.718** | 140.411** | 130.747** | 139.700** |
| ***Over identification test*** Hansen's J / Saran chi-square (1) | 0.092 | 0.849 | 0.839 | 0.010 | 0.083 | 0.114 |
| p-value | 0.762 | 0.357 | 0.360 | 0.919 | 0.773 | 0.736 |

**t - values in parentheses. ** Significant at the 0.01 level. * Significant at the 0.05 level.**

Source: Compiled by authors

**Table 7. 2 SLS Regression results of Institutional Ownership on Performance**

| *Independent Variables* | | | **Dependent Variable** | | | |
|---|---|---|---|---|---|---|
| | INST_OWN | | DOM_IO | | FORGN_IO | |
| (Constant) | -63.113 | -33.06 | -16.794 | -9.283 | -49.366 | 23.191 |
| | (-8.65)** | (-12.56)** | (-6.03)** | (-5.41)** | (-7.94)** | (-11.19)** |
| **Endogenous variables** | | | | | | |
| **ROA** | 1.092 | | 0.248 | | 0.968 | |
| | (4.87)** | | (2.85)** | | (5.07)** | |
| **LNTQ** | | 0.75 | | -0.322 | | 0.992 |
| | | (0.53) | | (-0.34) | | (0.83) |
| **Exogenous variables** | | | | | | |
| **AGE** | 0.009 | 0.014 | 0.073 | 0.074 | -0.059 | -0.055 |
| | (0.91) | (1.95) | (13.35)** | (14.04)** | (-6.65)** | (-10.37)** |
| **SIZE** | 5.803 | 5.324 | 1.793 | 1.697 | 3.988 | 3.555 |
| | (26.41)** | (38.02)** | (17.57)** | (18.76)** | (21.31)** | (33.14)** |
| **LEV** | 23.86 | -0.43 | 5.058 | -1.163 | 22.986 | 1.931 |
| | (4.36)** | (-0.19) | (2.36)* | (-0.77) | (4.94)** | (0.96) |
| **BETA** | 4.047 | -3.562 | -0.01 | -1.986 | 5.019 | -1.559 |
| | (2.28)* | (-3.95)** | (-0.01) | (-3.36)** | (3.32)** | (-2.16)* |
| **GROWTH** | 0.000003 | -0.000008 | -0.00001 | -0.00001 | 0.00001 | 0.000003 |
| | (0.05) | (0.000004)* | (-3.81)** | (-5.29)** | (0.28) | (0.95) |
| **HPR** | -0.015 | -0.006 | -0.005 | -0.002 | -0.011 | -0.004 |
| | (-4.72)** | (-2.45)* | (-2.97)** | (-1.72) | (-4.15)** | (-1.96) |
| **Industry Dummies** | Yes | Yes | Yes | Yes | Yes | Yes |
| **used** | | | | | | |
| **Robust t - values used** | No | Yes | Yes | Yes | No | Yes |
| **F** | 54.610 | 124.670 | 72.600 | 90.690 | 31.250 | 84.110 |
| **p-value** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| **No. of Obs.** | 4095 | 4095 | 4095 | 4095 | 4095 | 4095 |
| **Test of endogeneity** | | | | | | |
| Durbin: Chi -square(1) | 43.068** | 0.097 | 6.118* | 0.167 | 53.677** | 0.651 |
| Wu -Hausman: F (4,4076) | 43.323** | 0.097 | 6.099* | 0.166 | 54.138** | 0.649 |
| **Over identification test** Hansen's J / Saran chi -square (4) | 38.447 | 134.853 | 46.107 | 53.467 | 25.814 | 123.830 |
| p-value | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

**t - values in parentheses. * * Significant at the 0.01 level. * Significant at the 0.05 level.**

Source: Compiled by authors

Table 7 shows results for 2SLS regression where ownership variable is dependent variable. Results indicate ROA to exhibit significant positive influence on INST_OWN, DOM_IO and FORGN_IO. LNTQ displays positive effect on INST_OWN and FORGN_IO and a negative effect on DOM_IO but the coefficients are not statistically significant. Control variables like SIZE and LEV show positive influence on institutional ownership. AGE has significant positive effect on DOM_IO but a negative effect on FORGN_IO. Effects of other variables like BETA, GROWTH and HPR are largely negative.

## Discussion, Conclusion and Suggestions

The results of OLS regression initially indicate positive influence of overall institutional ownership on performance. Foreign institutional ownership has positive effect on performance. Domestic institutions however exhibit a negative effect. Results of endogeneity tests confirm the presence of endogenous relationship between institutional ownership and performance. When endogeneity is factored in the 2SLS regression, the results clearly indicate significant negative influence of overall institutional ownership on performance. This negative effect persists even for domestic and foreign institutional ownership. However, when ownership is taken as dependent variable, the 2SLS regression reveals a significant positive effect of performance on overall institutional ownership. This positive effect holds good even for domestic and foreign institutional investor ownership. Overall results lead to rejection of all three null hypotheses.

To put the findings succinctly, institutional investors, be it domestic or foreign, are attracted to hold shares of high performing companies. On the other hand, higher ownership stakes by institutional investors do not increase firm performance. The findings contradict the results of studies like McConnell and Servaes (1990), Douma et al. (2006), Tsai and Gu (2007), Sakawa and Watanabel (2020) and Abedin et al.(2022). These findings rather corroborate with the findings of Bhattacharya and Graham (2007) and Charfeddine and Elmarzougui (2010) as far as the negative effect of institutional ownership on performance is concerned. The present study partially endorses findings of Kansil and Singh (2018) to the extent that performance positively impacts institutional ownership. Analogous to Kang and Stulz (1997), this study also documents the investment preference of institutional investors towards large size firms and firms with good accounting performance.

Institutional investors do not necessarily take up active monitoring role as envisaged in the literature but rather view their ownership in the firms as mere short term investments. As Coffee (1991) points out, institutional investors act as passive monitors owing to reasons like liquidity pressures from their own investors, conflict-of-interest with the investee firm's management, 'short-termism' attitude of fund managers and to some extent overregulation. Diversification policies adopted to mitigate unsystematic risk keeps their exposure to individual firms at minimal levels. Institutions like mutual funds, banks and insurance companies are further bound by exposure limits placed by regulators. This 'thin-equity' problem diminishes their ability and incentive to exert pressure on management for performance improvements. They would rather choose to divest their stakes from poorly performing firms and fetch outperformers in the open market than pressing for action against management or execution of corporate restricting plans. Thus preferring the 'exit' option over 'voice' option appears to be cost effective. As average institutional holdings continues to be below 25 percent levels, well-coordinated monitoring efforts by all the institutional investors coming together is yet to prove effective in the Indian context.

The present study provides additional evidence on understanding the relationship between institutional ownership and performance and offers inputs for policy makers, institutional investor and academicians. Policy makers and regulators can create an atmosphere of well-regulated proxy advisors to induce constructive activism among the dispersed institutional investors. Relaxing the firm level exposure limits can also nudge the institutional investors to have their skin in the game. Institutional investors also need to encourage fund managers to ensure active representation in corporate voting decisions that enhance the value of their investments. Further research studies may focus on understanding the interaction effects of promoter holdings on firm performance in the presence of institutional ownership.

*Clause 2 of Regulation 44 (1) of Securities and Exchange Board of India (Mutual Funds) Regulations, 1996 puts a limit on investment by mutual fund to 10 percent of paid-up capital of the investee company.*

*Section 5 of Master Direction- Reserve Bank of India (Financial Services provided by Banks) Directions, 2016 puts a general limit of 10 percent of paid-up capital of the investee companies other than own subsidiaries of the bank*

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