An Investigation of the Association between Ownership Structure and Financial Performance of Pharmaceutical Companies in India: A Panel Study

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Abstract

Purpose – The main purpose of the present research is to study the relationship and impact of Ownership Structure i.e. Promoters', Indian Institutional Investors' and Foreign Institutional Investors' shareholdings on the financial performance of the selected Pharmaceutical companies listed in Bombay Stock Exchange (BSE).

Design/Methodology/Approach – The study applies panel data regression analysis to a sample of pharmaceutical companies listed in BSE during the period 2004-2014.

Findings –The paper finds that promoters' shareholding is positively and significantly related to both the financial measures i.e. Return on Equity (ROE) and Return on Assets (ROA). There is insignificant negative relationship between foreign institutional shareholding and both financial performance measures. The same insignificant negative relationship was found between Indian institutional shareholding and ROE but ROA is insignificantly and positively affected by the Indian Institutional shareholding.

Practical implications – To improve the performance and accordingly the value of companies, the percentage of promoters' ownership should be increased as it has positive linkages with the financial performance. Further, it will help the investors to pay special attention to the type of ownership and ownership concentration of companies while making the investments.

Keywords: India, Corporate governance, Ownership structure, financial performance, Panel data

Introduction

Corporate Governance is achieving prominence for companies across the globe. Good corporate governance practices are essential for sustainable business that aims to generate long-term value to its shareholders and other stakeholders. A transparent, ethical and responsible corporate governance structure essentially stems from the inherent will and fervour for good governance implanted in the business entity. The global financial crisis during the recent past, along with some of the big corporate crashes and frauds have realistically

revealed that while the corporate governance super structure in India is fairly strong, there are certain flaws that may have their roots in the ethos of business entities. It is by now well recognised that sound Corporate Governance is one of the pre-requisites for attracting capital, both at the national and corporate levels. In the words of the Task Force on Corporate Governance established by the Organisation for Economic Co-operation and Development (OEDC), "The degree to which corporations observe basic principles of corporate governance is an increasingly important factor for investment decisions". Globally, investor opinion surveys conducted by McKinsey & Company have confirmed that "Corporate Governance remains a great concern for institutional investors", with an overpowering majority of them being willing to pay a premium for companies demonstrating consistent compliance to high governance standards.

There is mixed evidence in the literature across the world with regard to the role of ownership structure in enhancing the financial performance of the companies.

Hiraki T. et al (2003) examined the alternative corporate governance mechanisms working in manufacturing companies in Japan and used Panel data on the Equity ownership and bank loans of these manufacturing companies. It was found that managerial ownership is monotonically and positively related to firm value. Further, Filatotchev, I. et al (2005) analysed the effect of ownership structure and board characteristics on performance in large, publicly traded companies. It was revealed that share ownership by institutional investors and foreign financial institutions in particular, is associated with the better performance. The same association of foreign financial institutions with performance was also demonstrated by Patibandla M. (2006). The results empirically showed that foreign institutional investors' shareholding has a positive effect on corporate performance in terms of profitability. However, the companies that depend on government finance institutions for external finance showed decline in performance. These results were also supported by Omran M.(2009) where ownership concentration and ownership identity, in particular foreign investors proved to have a positive impact on firm performance, while employee ownership concentration has a negative impact on firm performance. So far as individual ownership is concerned, Stefdnescu C. A. (2011) found negative correlation between the shareholders structures (presence of individual ownership) and bank value. It was revealed from the study that those banks that still have individuals within its ownership instead of institutions performed lower. But in this study shareholding provenience (presence of foreign investors) significantly influenced the bank performance and supported the earlier findings of Drakos (2002), Jemric and Vujcic (2002) and Choi and Hasan (2005). All these studies concluded that the level of foreign ownership improved the overall performance of the banking system. Additionally, Hasan and Marton (2003) found that bank efficiency is more positively related to foreign ownership than it is to state ownership. They argued that foreign investors provide outside monitoring of managers and bring technological advances. Further, Fries and Taci (2005) found that privatised banks with majority of foreign ownership are most efficient. Bonin et al. (2005) found that foreign-owned banks are significantly more cost efficient than are domestic banks. The main reasons behind the association between high performance and foreign ownership are, first, foreign owners are more likely to have the ability to keep an eye on managers, and provide them with performance-based motivation, such that they are more serious, provide investors with the right information, and avoid the entrenchment of any submissive behaviour that destabilises the value creation of the firm. Second, the technology provided by foreign investors facilitates managers to improve their competence by reducing operating expenses and generating savings for the firm. However, Nikiel and Opiela (2002) observed that domestic banks are more profit efficient than foreign banks, and Lensink et al. (2008) find that an increase in foreign ownership is negatively linked to banking efficiency. The same results were also documented by Mollah S. et al (2012) have taken the market-based performance measures as dependent variable i.e. Log (Market Capitalisation) and the results of their study suggested that all major ownership concentration groups (e.g. Sponsor, Institutional investors, Government and Foreign) are destructive to companies' financial performance and value except minority shareholdings (e.g. Public), which is consistent to the tenets of agency theory (i.e. conflict between majority and minority owners). It is dispersed ownership that improves companies' performance and mitigates agency conflicts in the corporate sector of Botswana stock market. Choi H. M. et al (2012) found that foreign block ownership contributes to enhancing firm value through independent monitoring and expertise only when foreign investors are indented to do so. Foreign ownership impairs firm value when it rises to a level of concentrated ownership, with its attendant control of board members as representatives of the foreign investors. Kumar N. & Singh J. P. (2013) found a significant positive association of promoter ownership with firm performance. The regression results suggest that companies with high ownership concentration of promoters have high market valuations (Tobin's Q). The same results were also supported by Sheikh N. H., Wang Z. and Khan S. (2013) found the negative relationship between managerial ownership (ratio of shares owned by the CEOs, directors and their immediate family members to total outstanding common shares) and performance. Alipour, M. (2013) applied panel data regression (Two-stage least-squares)

analysis to a sample of companies listed in TSE during the period 2005-2009. It was found that ownership concentration is positively related to ROE, and that ownership concentration is negatively related to ROA. Moreover, state, family, and individual ownership are negatively related to performance, and firm (legal person) and institutional ownership are positively related to performance. The paper also highlighted that higher firm profitability requires a more diffused ownership structure. On the other hand, Arouri H. Et al (2014) used a dataset of 58-listed banks of Gulf Co-Operation Council (GCC) countries and examined the effect of ownership structure and board composition on bank performance as measured by Tobin's Q and market to book value by using multivariate regression analysis. The result showed that the extent of family ownership, foreign ownership and institutional ownership has a significant positive association with bank performance. However, government ownership does not have a significant impact on performance.

Data and Methodology

Data

This paper attempts to examine the relationship between ownership structure and financial performance. Although the key aspects of corporate governance are important to all types industries but this research work focus on the pharmaceutical companies in India. As per the latest report presented by the Corporate Catalyst India Private Limited (CCI) the growth rate of pharmaceutical sector in India is about 8-9 percent annually. More than 20,000 registered units were fragmented across the country and report said that 250 leading pharmaceuticals companies control 70 percent of the market share with stark price competition and government price regulations. Data on corporate performance and ownership structure has been collected using PROWESS Database and from the annual reports of the sample companies listed in Bombay Stock Exchange (BSE). The final sample set, after deleting companies with incomplete data, consists of 140 observations for 14 Indian pharmaceutical companies listed in Bombay Stock Exchange. The sample companies were selected from the BSE 200 as the companies in this Index accounts for about 72 percent of market capitalisation of all the companies listed on BSE (Kumar N. & Singh J. P., 2013). These companies in the sample have been studied over the period of 2004-2014.

Variables

Three types of variables i.e. Dependent (Performance), Explanatory (Ownership) and Control variables are used in this study and their definitions are largely adopted from existing literature. Two accounting- based measures Return on Assets (ROA) and Return on Equity (ROE) are used as Dependent (Performance) variables. Return on Assets is directly related to management's ability to efficiently utilise corporate assets, which ultimately belong to shareholders (Ujunwa A., 2012). Return on Equity (ROE) is the indicator of maximisation of shareholders' wealth, which in the terms of Anglo-Saxon model is the basic purpose of corporate governance. Key independent variables include Promoters' shareholding (PSH), Indian Financial Institutions' Shareholding (ISH) and Foreign Institutional investors' shareholding (FII). Different control variables such as firm size- Firm's Total Assets (Size), Debt-Equity ratio (LEVERAGE), Age of companies from the date of incorporation (AGE) and total Sales (SALES) have been included in the study. The variables have been considered in the study to take care of the problem of endogenity. Many prior studies have used these variables as control variables as these are correlated with firm performance (Hermalin and Weisbach, 1991; Vafeas and Theodorou, 1998; Bonn et al., 2004; Boone et al., 2007; Yammeesri and Herath, 2010).

Methodology

Panel data methodology is used to draw the results because the sample contained both cross-sectional data and time series data. Moreover, panel data sets are better able to identify and estimate effects that simply are not detectable in pure cross-sectional or pure time-series data (Sheikh et al, 2013).

After having discussion on the extant literature, the following null hypotheses are to be tested:

Ho1- Promoters' Shareholding has no significant influence on firm's financial performance.

Ho2-Indian Institutional Shareholding has no significant influence on firm's financial performance.

Ho3-Foreign Institutional Investors' Shareholdings has no significant influence on firm's financial performance.

Panel Data regression models are used to determine the relationship between Ownership structure and Financial Performance. The basic model of the study is as follows:

$$\text{Performance}_{it} = \alpha + \beta\,(\text{Ownership variables}) + \gamma\,(\text{Control variables}) + \varepsilon_{it}$$

Where:

Performance_{it} = Financial performance of *i*th firm at time period "t"

Ownership variables = Ownership pattern of the *i*th firm

Control Variables = Variables other than ownership variables affects the performance of the *i*th firm

ε_{it} = Error term

So, following two models are used in the study to draw conclusions:

Model 1: $ROA = \alpha + \beta_1 (PSH) + \beta_2 (ISH) + \beta_3 (FII) + \gamma_1 (LEV) + \gamma_2 (SALES) + \gamma_3 (SIZE) + \gamma_4 (AGE) + \varepsilon_{it}$

Model 2: $ROE = \alpha + \beta_1 (PSH) + \beta_2 (ISH) + \beta_3 (FII) + \gamma_1 (LEV) + \gamma_2 (SALES) + \gamma_3 (SIZE) + \gamma_4 (AGE) + \varepsilon_{it}$

Empirical results

Descriptive statistics

All the Data analysis has been done using the E-views software. Descriptive statistics of dependent and explanatory variables used in this study are presented in Table I which indicates that average Return on Assets and Return on Equity is 12.76 and 23.63 percent, respectively. On an average 51.78 percent of total outstanding shares are owned by the promoters which shows that they hold a significant proportion of ownership pattern where as on average 11.23 and 11.25 percent of shares are owned by the Indian institutions and foreign financial investors.

Table: 1 (Descriptive Statistics)

Statistics	ROA (%)	ROE (%)	PSH (%)	ISH (%)	FII (%)
Mean	12.76200	23.63407	51.78914	11.23916	16.25219
Median	12.78000	24.47500	52.15000	11.07500	15.28000
Maximum	25.52000	43.44000	74.79000	35.42000	49.26000
Minimum	0.370000	1.140000	18.83000	0.002100	0.126300
Std. Dev	5.496733	10.01833	14.60928	6.556277	9.222656
Skewness	0.026952	-0.163728	-0.417832	0.700435	0.569036
Kurtosis	3.125563	2.725944	2.595090	3.961207	3.149185
Jarque-Bera	0.108918	1.063619	5.029998	16.83707	7.685209
Probability	0.946997	0.587541	0.080863	0.000221	0.021438
Observations	140	140	140	140	140

Regression results

During the data analysis process, two regression equations were estimated in order to draw out the significant impact of ownership variables on the financial performance of the companies under study.

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First of all, condition of no multicollinearity among independent variables was checked. The results of correlation matrix are presented in Table II indicate that most of the correlations for explanatory variables are small and some of them are insignificantly large. So, there is no cause for concern about problem of multicollinearity among the explanatory variables.

Table II - Correlation Matrix

Included observations: 140							
Probability	PSH	ISH	FII	LEVERAGE	SALES	SIZE	AGE
PSH	1.000000						
Probability	-----						
ISH	-0.028365	1.000000					
Probability	0.7394	-----					
FII	-0.578427	-0.337249	1.000000				
Probability	0.0000**	0.0000**	-----				
LEVERAGE	-0.182855	-0.358990	0.058205	1.000000			
Probability	0.0306*	0.0000**	0.4945	-----			
SALES	-0.331034	0.223907	0.310511	-0.255252	1.000000		
Probability	0.0001**	0.0078*	0.0002**	0.0023**	-----		
SIZE	-0.171841	0.073686	0.314573	-0.295531	0.529162	1.000000	
Probability	0.0423*	0.3869	0.0002**	0.0004**	0.0000**	-----	
AGE	-0.127726	0.372736	-0.027370	-0.279371	0.158409	0.264453	1.000000
Probability	0.1326	0.0000*	0.7482	0.0008**	0.0616	0.0016**	-----

Note: Significant at: *5 and **1 percent levels.

After checking absence of multicollinarity and before applying the panel data regression, stationarity of all the variables being studied was checked using unit root test. A stationary series can be defined as one with a constant mean, constant variance and constant auto co-variances for each given lag. The use of non-stationary data can lead to spurious regressions (Brooks C, 2008). Unit root test was used to check whether a series is stationary or not. Unit root test are based on testing the null hypothesis that series is not stationery (Kozhan R., 2010). The results of the unit root test are presented here in table III as follows:

Table III: Results of Unit Root Test of variables (Pharmaceutical Sector)

Panel unit root test: Summary					
Automatic lag length selection based on SIC: 0 to 1					
Newey-West automatic bandwidth selection and Bartlett kernel					
Series	Method	Statistic	Prob.**	Cross-sections	Obs.
	Null: Unit root (assumes common unit root process)				
ROE	Levin, Lin & Chu t*	-5.26894	**0.0000***	14	122
ROA	Levin, Lin & Chu t*	-5.97707	**0.0000***	14	121
PSH	Levin, Lin & Chu t*	-106.874	**0.0000***	13	116
ISH	Levin, Lin & Chu t*	-3.07275	**0.0018***	14	122
FII	Levin, Lin & Chu t*	-1.99287	**0.0231***	14	122
LEVERAGE	Levin, Lin & Chu t*	-16.7494	**0.0000***	13	112
SALES	Levin, Lin & Chu t*	-3.06285	**0.0000***	14	122
SIZE	Levin, Lin & Chu t*	-3.66723	**0.0001***	14	125
AGE	Levin, Lin & Chu t*	-20.7474	**0.0000***	9	72
*= Significant at 5 percent level of significance.					

The above table depicted that all the variables are stationary in nature. The p value of these variables is less than 5 percent. This means null hypothesis is rejected and the series are stationary in nature.

Selection of appropriate method:

Initially, two ways Fixed Effect Method was applied to ROE and ROA models. The fixed effects drawn from the models were tested using redundant fixed effect test. The test results are presented in table IV.

Table IV: Redundant Fixed Effects Tests (Pharmaceuticals Sector)

	ROE			ROA		
Effects Test	Statistic	d.f.	Prob.	Statistic	d.f.	Prob.
Cross-Section F	6.495448	(13,118)	0.0000*	7.909165	(13,118)	0.0000*
Cross-Section Chi-square	75.566816	13	0.0000*	87.732312	13	0.0000*

(*= significant at 5 percent level of significance)

So, null hypothesis is rejected here for these two performance variables which mean that the fixed effects are significant at 5 percent level of significance. So, Fixed Effect Method can be applied here instead of Constant Coefficient Method. To choose between Fixed Effect Method and Random Effect Method, the Hausman test for random effects is used. The table V depicts the results of Hausman Test.

Table V: Correlated Random Effects – Hausman Test

	ROE			ROA		
Test Summary	Chi-Sq. Statistic	D.f.	Prob.	Chi-Sq. Statistic	D.f.	Prob.
Cross-section random	0.000000	8	1.0000	0.000000	8	1.0000
Period random	0.000000	8	1.0000	0.000000	8	1.0000
Cross-section and period random	0.000000	7	1.0000	0.000000	7	1.0000

The test accepted the hypotheses that individual effects are purely random and uncorrelated with the predictors. So the basic assumption of random effect model is fulfilled. So, finally Random Effect Method is applied to the ROE and ROA model.

Empirical results from the Random Effect Method are presented in Model 1 (see Table VI) indicate that promoters' Shareholding is statistically significant and positively related to the Return on Equity. On the other hand, Foreign Institutional investors' shareholding and Indian Institutional shareholding is negatively related with ROE but relationship is insignificant. There is no autocorrelation between the error terms as Durbin -Watson is near to 2 (Andy Field, 2005). Here R-square is 0.338 means approximately 34% of variation in the ROE is explained by the independent variables. The most important part of the table is F-ratio and associated significance value of that F-ratio. For this data f-statistic is 8.37 which is significant at $p<0.01$. Therefore we can conclude regression model overall predicts ROE significantly well.

Table VI: Model 1- (Dependent variable-ROE) (Two Way Random Effect Model)

Total panel (balanced) observations: 140				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.699779	8.036006	1.082600	0.2810
PSH	0.333707	0.109914	3.036071	**0.0029**
ISH	-0.071150	0.156202	-0.455497	0.6495
FII	-0.090461	0.111757	-0.809437	0.4197
DEBT_EQUITY	-1.436622	1.161795	-1.236554	0.2185
SALES	3.07E-10	6.65E-11	4.626817	**0.0000**
SIZE	-2.30E-10	3.62E-11	-6.347346	**0.0000**
MKTCAP	-1.54E-11	6.58E-12	-2.346870	**0.0204**
AGE	0.083925	0.071260	1.177738	0.2410
R-squared	**0.338321**	F-statistic		8.372638
Adjusted R-squared	**0.297913**	Prob(F-statistic)		**0.000000**
S.E. of regression	6.739941	Durbin-Watson stat		**1.950305**

Results shown in Model 2 (see Table VII) indicate that Promoters' Shareholding is statistically significant and positively related to the Return on Assets. On the other hand, Foreign Institutional investors' shareholding is negatively related with ROA but this relationship is insignificant at 5% level of significance. There is no autocorrelation between the error terms as Durbin -Watson is near to 2(Andy Field, 2005). Here R-square is 0.340391 means approximately 34 percent of variations in the ROA are explained by the independent variables. For this data F-statistic is 8.450300 which is highly significant at $p<0.001$. Therefore, we can conclude that regression model overall predicts ROA significantly well.

Table VII: Model 2- (Dependent variable-ROA) (Two Way Random Effect Model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.679253	4.106940	1.869824	0.0637
PSH	0.124822	0.057383	2.175239	**0.0314**
ISH	0.030978	0.075899	0.408143	0.6838
FII	-0.039102	0.053883	-0.725691	0.4693
DEBT_EQUITY	-2.089336	0.557818	-3.745555	**0.0003**
SALES	1.68E-10	3.24E-11	5.175626	**0.0000**
SIZE	-1.07E-10	1.75E-11	-6.138560	**0.0000**
MKTCAP	-5.93E-12	3.19E-12	-1.858969	0.0653
AGE	0.009257	0.037986	0.243698	0.8078
R-squared	**0.340391**	F-statistic		8.450300
Adjusted R-squared	**0.300109**	Prob(F-statistic)		**0.000000**
S.E. of regression	3.217627	Durbin-Watson stat		**1.925969**

Further, Assumption of Hetroscedasticity and normality of residuals is also checked on the residuals of both the Models. The residuals graph of both the models ROE and ROA are presented in Figure 1 and Figure 3 respectively. Under the null hypothesis of a normal distribution, the Jarque-Bera statistic is distributed as with 2 degrees of freedom. The reported Probability is the probability that a Jarque-Bera statistic exceeds (in absolute value) the observed value under the null hypothesis—a small probability value leads to the rejection of the null hypothesis of a normal distribution (Jarque & Bera, 1980). The value of Jarque-Bera is 2.943960 (p=0.229471) for Model 1 (see Figure 2) and 6.632695 (p= 0.059824) for Model 2 (see Figure 4). For the residual series, we accept the hypothesis of normal distribution at the 5% level in Model 1 and Model 2 respectively. In order to check the assumption of heteroscedasticity, the regression results were tested in STATA software. The Breusch-Pagan / Cook-Weisberg test for heteroskedasticity accepted the null hypothesis of constant variance with the values chi2 (1) = 0.14; Prob. > chi2 = 0.7084 and chi2 (1) = 0.72; Prob. > chi2 = 0.3972 for Model 1 and Model 2 respectively.

Figure 1: Residual Graph (Model 1: ROE -Two Way Random Effect Model)

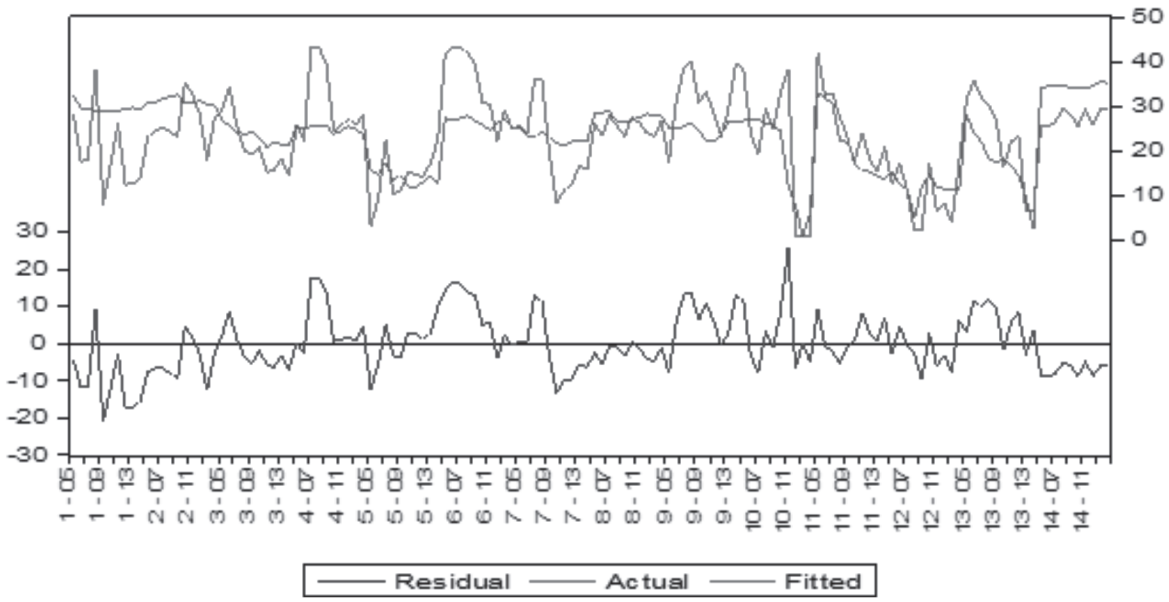


Figure 2: Normality of Residuals (Model 1: ROE -Two Way Random Effect Model)

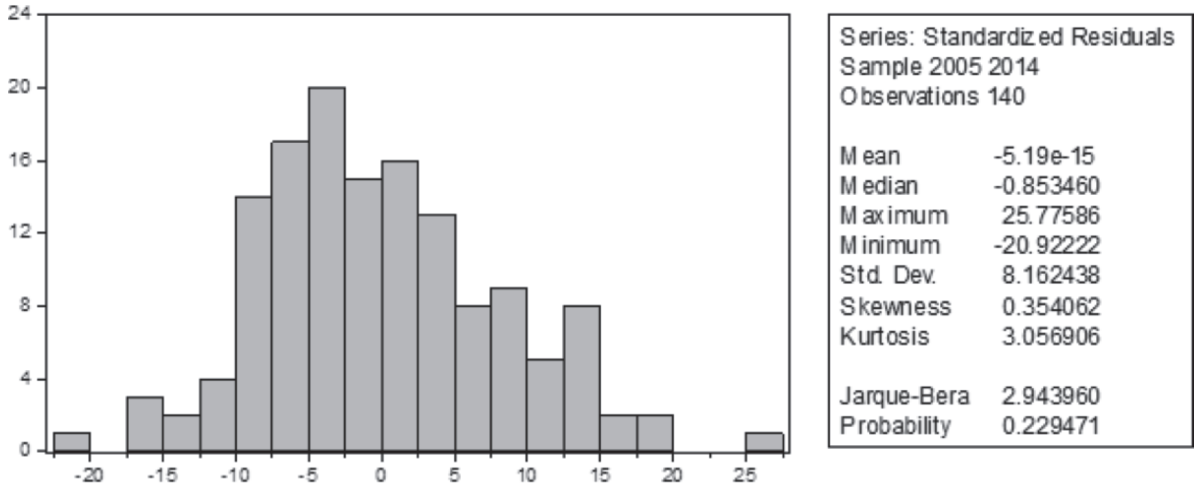


Figure 3: Residual Graph (Model 2: ROA -Two Way Random Effect Model)

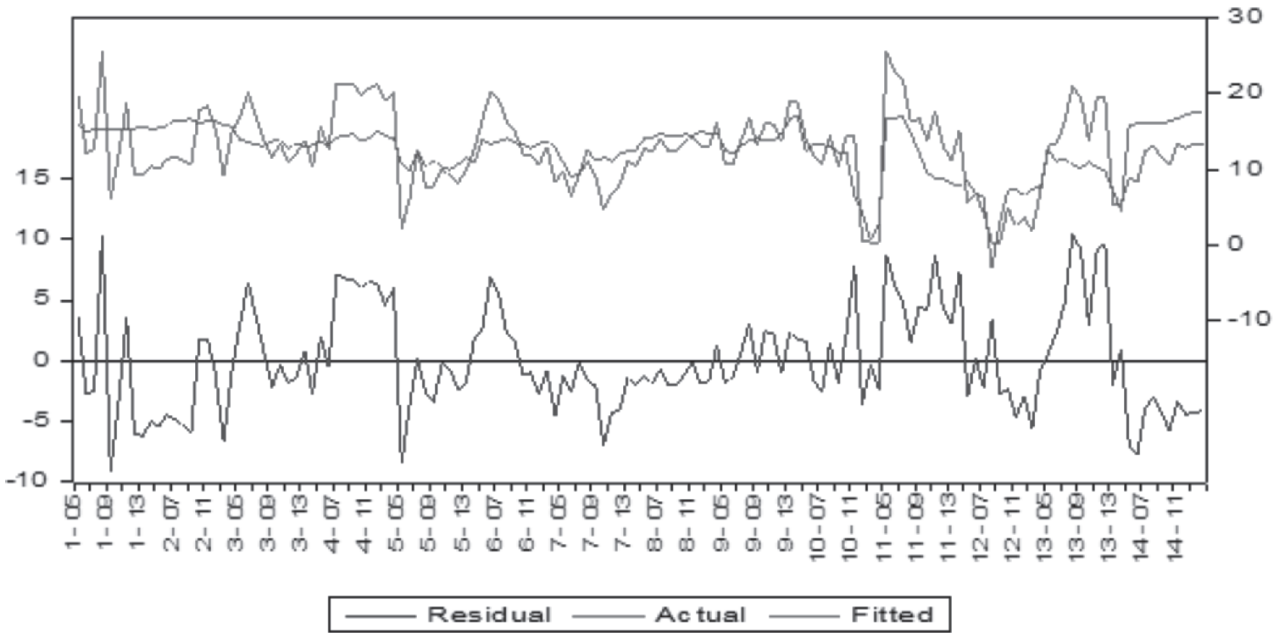
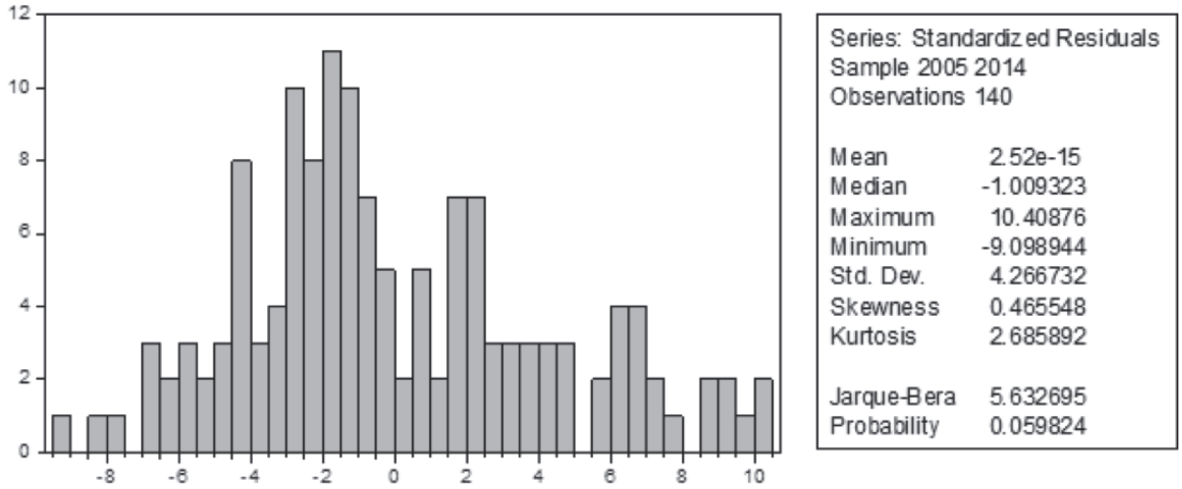


Figure 4: Normality of Residuals (Model 2: ROA -Two Way Random Effect Model)



So, it is concluded that promoters' Shareholding is statistically significant and positively related to both ROE and ROA. There is insignificant negative relationship between foreign institutional shareholding and both financial performance measures. The same insignificant negative relationship was found between Indian institutional shareholding and ROE but ROA is insignificantly and positively affected by the Indian Institutional shareholding.

Discussion on empirical results

Promoters' ownership and India

There are at least two types of dominant shareholders in Indian context. The first type is state ownership, which is apparent in India's public sector units (PSUs). When the state controls a firm, it is obvious that in spite of protecting the interests of investors and shareholders state can use its authority to achieve the objectives of politicians. The second type of dominant shareholders noticeable in family owned or controlled business groups. In this type, the promoters

(together with their friends and relatives) are often the dominant shareholders, with large, minority stakes; government owned financial institutions often hold comparable stakes, and the balance is held by the general public. In 2002, the average shareholding of promoters (and their allies) in all Indian companies was in excess of 45%. Even with significantly smaller shareholdings, the promoters effectively become the dominant shareholders because a large proportion of the shares are then held by state-owned financial institutions that have historically played a passive role in the governance of companies (Rajagopalan N. & Zhang Y., 2008). In addition to the corporate governance issues arising from the dominant shareholders as discussed above there exists an additional issue i.e. promoters' (who may not be holding the majority of the shares) shareholding in Indian companies. Being promoter they have superior information about the affairs of the company and can use the resources of the company for their self-interest. For example in the Satyam episode B. Ramalinga Raju (Chairman of Satyam computer services) and his family were the promoters of the Satyam held only 5% of the total share of the company as compared to the institutional shareholding (60%) on 31st December, 2008. The promoters continued to exercise significant powers in the management of the company though they were not the major shareholders. It was only the diffused nature of the remaining shareholding of the company which helped the promoters to exercise their power disproportionate to their voting rights. It is not necessary that high promoters' shareholding always lead to opportunistic behaviour and destruct the performance. Dominant shareholders (may not be promoters) can benefit, at the expense of minority shareholder interests, through both economic and social mechanisms (Dharwadkar et al., 2000).

Conclusions

The study investigates the impact of ownership pattern on the financial performance of Indian pharmaceutical companies listed on BSE during 2004-2014. Empirical results indicate that Promoters' Shareholding is statistically significant and positively related to both ROA and ROE and support the earlier finding of Kumar N. & Singh J. P. (2013) who found a significant positive association of promoter ownership with firm performance in India and the regression results suggested that companies with high ownership concentration of promoters have high market valuations (Tobin's Q). So, higher ownership provides the promoter enough incentive and control to monitor and enhance firm value. The empirical results of this research support the agency theory that high ownership lends a hand to reduce agency cost by having more alignment effect. To improve the performance and accordingly the value of companies, the percentage of promoters' ownership should be increased as it has positive linkages with the financial performance. Further, it will help the investors to pay special attention to the type of ownership and ownership concentration of companies while making the investments.

From the existing review of literature on link between governance and performance it is proposed that there should be provision of adopting a uniform Performa of shareholding pattern for every company so that effect of various categories in Indian institutional shareholding pattern i.e. Insurance companies, Mutual Funds, Banks and financial institution can be studied separately as the total effect of Indian institutional shareholding is insignificant in this study but studying the effect of each category of Indian institutions could bring out the interesting results. Further, director shareholding is also not stated in corporate governance reports of some of the companies. This could have also been studied. Finally, this study proposed to explore other way relationship i.e. the impact of performance measures on the ownership structure of the companies.

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