

Relation between foreign ownership and firm value – Fixed-effect panel threshold regression analysis

Fixed-effect
panel threshold
regression

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Ruchi Kansil

The Institute of Chartered Accountants of India, Delhi, India

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Abstract

Purpose – The paper examines the differential impact of various firm characteristics on firm value across various threshold levels of foreign ownership.

Design/methodology/approach – Using a panel of 408 Indian publicly listed companies for the period during 2010–2018, a fixed-effect panel threshold regression model is adapted to study the threshold effects between foreign ownership and firm value. Tobin's Q is used as a proxy for firm value.

Findings – The study identifies three threshold levels, that is, four threshold regions in which foreign ownership changes its slope considerably. Various firm characteristics impact firm value differently in these four regions.

Research limitations/implications – The study employs observations of the past nine years on variables identified as firm characteristics impacting firm value. Some variables are dropped due to the problem of multicollinearity. The employed variables may not be exhaustive in nature.

Practical implications – The present study implies that there exists no impact of foreign ownership on the value of the firm. Foreign investors invest for financial considerations and not with the objective of governing the firms. The governance effect of foreign investments is negligible, so their activism in the firms needs to be encouraged.

Originality/value – The study employs a novel approach to study the impact of foreign ownership on firm value applying fixed effect panel data threshold regression, considering foreign ownership as a proxy of corporate governance.

Keywords Foreign ownership, Corporate governance, Firm value, Fixed effect panel threshold regression, India, Emerging economy

Paper type Research paper

1. Introduction

Investments when made outside the home country are called foreign investments and can be in either of the two forms - foreign institutional investment and foreign direct investment. Foreign institutional investment inflows are found to be more in response to government actions and regulations which in turn often navigate firm-level corporate governance changes (Gillan and Starks, 2003). Foreign direct investments are a source of transfer of managerial and corporate governance structures along with technology, job creation and productivity spillovers (Ananchotikul, 2007). In a nutshell, foreign investments could be a cause of the development of certain structures of corporate governance of the recipient countries. There exists sufficient evidence of foreign investors owning a considerable amount of equity shareholdings across the globe, wherein the average is at least 30% for all world markets (De La Cruz *et al.*, 2019). Same is the case for India, wherein 30% of the total market capitalization of listed corporations is owned



JEL Classification — C33, G23, G32, G34, G38, L25

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by foreign investors. For the year end 2017, out of this 30%, 13% is held by institutional investors, 14% is held by private corporations, and the balance of 3% is held by public sector and strategic individuals (De La Cruz *et al.*, 2019). Thus, a closer look at the firm-level ownership information concludes that the increase in foreign ownership is driven by shareholdings of institutional investors. Likewise, foreign institutional investment advances improved allocation of capital and monitoring of firm performance and governance leading to reduction in agency problems (Vo, 2017; Celik and Isaksson, 2013; Kang and Kim, 2010; Ko *et al.*, 2007; Ananchotikul, 2007; Gillan and Starks, 2003).

Empirical research has led to the continuing debate on the role of foreign investors in governance initiatives (Huang and Zhu, 2015; Fernando, 2014). On one hand, better or good governance attracts foreign equity, and on the other, the increased foreign investment would enforce positive governance changes (Himmelberg *et al.*, 1999; Ananchotikul, 2007). Foreign ownership as a form of corporate governance is deep rooted even though the cause and effect of the relationship between foreign ownership and governance is difficult to establish. Whatever may be the direction of causality, foreign ownership as one of the mechanisms of good corporate governance is well established (Altawalbeh, 2020). Such mechanisms become imperative in an emerging economy like India where domestic savings cannot meet the demands of capital, and hence, external capital is much needed (Sikdar, 2006).

Foreign owners' effective and significant monitoring of firms of the recipient economies would bring benefit in the form of maximizing value of the firm (Imam and Malik, 2007; Chevalier *et al.*, 2006; Khanna and Palepu, 1999). The value of the firm with high foreign ownership would be more than value of firms with low foreign ownership, specifically called foreign ownership effect (Huang and Shiu, 2009). Such an effect is due to the foreign investor's ability to screen the stocks and influence the management of firms after they have invested in. The stock screening ability of the foreign investors depends upon the resources, information, skill and expertise they possess. At the same time, foreign investors have the ability to influence management due to their tremendous knowledge and capabilities. The influence of foreign investors in managing the firms may take many forms. They may exercise their voice or exit or be loyal and do nothing. Raising of voice by foreign investors is dependent upon their investment policies, costs of intervention, legal rights and restrictions vis a vis their equity stakes and the choice of other institutions to act or not similarly. Group intervention can exert strong influences leading to lesser investments in a firm, fall in stock prices, bad market reputation and/or increase in the cost of capital. However, collective intervention is practically very difficult to establish.

Another aspect that needs mention is the fact that foreign investments to gain control would generally be long-term in nature as against any other investment without the motive of control, which will be a short-term one (Chevalier *et al.*, 2006; Kimura and Kiyota, 2004). The first class of foreign investors would monitor, govern and manage the firms for shared or private benefits of control. The second class of foreign investors would sell their stakes in adverse situations and would not actively participate in corporate affairs. In both the cases, the value of the firm will be impacted. Thus, the theoretical and practical importance of examining the relationship between foreign ownership and firm value is immense.

Accordingly, an insightful research topic which is still unexplored in the Indian context remains: Whether foreign ownership as a corporate governance mechanism affects value of the firm or not? Whether or not the effect varies at various levels of foreign ownership? The study will help one to understand the asymmetric threshold effect of foreign ownership on firm value and infer the ambience of corporate governance in the Indian context.

2. Review of the literature

2.1 Foreign ownership and corporate governance

Previous research studied activism of foreign firms in monitoring the corporate governance of the firms they invest in. Many studies have endorsed foreign ownership as a mechanism to

improve corporate governance in emerging markets and consequently reduce agency problems (Bowman and Min, 2012; Aggarwal *et al.*, 2011; Ananchotikul, 2007; Mangena and Taurangana, 2007; Xu *et al.*, 2005; Shleifer and Vishny, 1997). These investors can influence management activities or monitor firms directly by their ownership stake and indirectly by trading their shares despite costs involved in doing so. Practically, these costs are incurred only by large shareholders within their own personal investment constraints, investment objectives and preferences for liquidity. Another related aspect is that investment by institutional investors and trading of equity shares in stock markets would lead to increased liquidity, information symmetries and volatility in stock markets. As a result, the overall market infrastructure would improve facilitating efficient use of capital along with capital mobility across countries. These are especially relevant for an emerging economy because the variation in capital costs of domestic markets and that of international markets exists. Further, these findings are particularly relevant and important for developing economies where investor protection is especially weak and foreign capital investment is particularly significant. Practically, strong commitment of large foreign owners and their potential monitoring role would bring stability of foreign inflows in the emerging economies where the fear of reverse flow of foreign capital is quite persistent. Many factors like improper capital market infrastructure, laws and regulations contribute toward the same.

The picture of large foreign shareholder monitoring that emerges from previous studies is a mixed one. Holderness and Sheehan (1988) did not discern a significant relation of large shareholdings with firm performance, that is, being activists in governance. A similar finding is revealed for institutional investors, typically mutual funds by Sarkar and Sarkar (2000). However, it is found that foreign institutional investors' minority stakes do improve corporate governance, and the engagement in postacquisition governance activities is less of foreign block acquirers as against that of domestic block acquirers (Ananchotikul, 2007). A study by Chevalier *et al.* (2006) questioned whether foreign owners' participation leads to better corporate governance practices in emerging countries with a focus on the capital invested in the firms for examining the corporate governance practice. It is seen that owners by virtue of their size impact corporate governance. Such large (block) shareholder may be a family group, institutional investor(s) or any other. Large shareholders monitoring depends on the technical nature of the industry the firm is in (Zeckhauser and Pound, 1990) and has a significant relation with the director's shareholdings (McConnell and Servaes, 1990). Large shareholdings are found to be more or less long-term as well as stable investments (Stiglitz, 1999). The presence of large domestic shareholders in emerging markets has led to ineffective corporate governance as found by Gibson (2003), and concentrated domestic shareholdings will augment foreign shareholdings whereas dispersed domestic shareholdings will decrease foreign shareholding as found by Choi *et al.* (2014).

2.2 Foreign ownership and firm characteristics

Previous studies have examined the relationship between foreign ownership and various firm characteristics namely, firm value, performance, profitability, market capitalization, size, leverage, growth and age (Sarkar and Sarkar, 2000). Foreign ownership is found to be positively related to firm value (Nguyen *et al.*, 2020; Kao *et al.*, 2019; Fitri *et al.*, 2019). Also, studies suggest that foreign institutional investment increases firm performance probably due to foreign institutional investor's ability to choose stocks that diversify their global portfolios and provide high valuations (Huang and Shiu, 2009; Khanna, 2002). Many past studies suggest that the bigger the firm size, the more will be the foreign investment (Mukaria *et al.*, 2020; Choi *et al.*, 2014; Bokpin and Isshaq, 2009; Ko *et al.*, 2007; Mangena and Taurangana, 2007; Liljeblom and Löflund, 2005; Tong and Ning, 2004; Anderson *et al.*, 2001; O'Brien and Bhushan, 1990), and lower the long-term leverage, the more will be the foreign

investment (Gurunlu and Gursoy, 2010; Huang and Song, 2006; Anderson *et al.*, 2001; Kang and Slutz, 1997; Rajan and Zingales, 1995; Titman and Wessels, 1988; Jensen and Meckling, 1976), barring only a few exceptions (Wahab *et al.*, 2008; Liljeblom and Löflund, 2005). Likewise, foreign investors prefer stock with large capitalization (Bokpin and Isshaq, 2009; Mangena and Tauringana, 2007; Ko *et al.*, 2007; Liljeblom and Löflund, 2005; Kang and Slutz, 1997) and low book to market ratio (Ko *et al.*, 2007) as suggested by many previous studies. This is based on the idea that all investments are for profits, so more the profitability of firms, more will be the foreign investments (Choi *et al.*, 2014; Fu and Wu, 2013; Mangena and Tauringana, 2007; Liljeblom and Löflund, 2005; La Porta *et al.*, 1998; Kang and Slutz, 1997). However, the relation between profitability of firms and foreign ownership is at times downward sloping wherein the profitability and growth of domestic firms can be enhanced by small initial foreign shareholdings, but a large share of foreign capital would reduce firms' profitability as revealed by Fu and Wu (2013). The reason for the same is believed to be that since foreign firms have strong ties with their home nations, they tend to ignore social causes of countries they invest in and their interests, beliefs or attitudes would be for their private gains only (Gollakota and Gupta, 2006).

Some other studies have reported the impact of large or concentrated foreign shareholdings on firm characteristics. An inverse relation of large foreign ownership with stock price volatility is found by Li *et al.* (2011) in a study relating to thirty-one emerging economies including India. The study states that strong commitment of large foreign owners and their potential monitoring role would bring stability of foreign inflows in the emerging economies where the fear of reverse flow of foreign capital is quite persistent. Many factors like improper capital market infrastructure, laws and regulations contribute toward the same.

In this paper, it is maintained that foreign ownership is an important mechanism of corporate governance, that is, foreign ownership is a proxy for corporate governance of firms. This empirical study contributes to the present literature in two respects: Firstly, panel data for Indian publicly listed companies is employed to explore the relation between foreign ownership and firm value. Secondly, Hansen's (1999) advanced panel threshold regression model is applied to determine whether or not the effect varies at various levels of foreign ownership. The results in this paper are consistent with the argument that foreign ownership does not reduce the classical agency problem between owners and managers (Bokpin and Isshaq, 2009; Ananchotikul, 2007). These results are contrary to the evidence indicating that foreign control can reduce the classical agency problem between owners and managers (Aggarwal *et al.*, 2011; Mangena and Tauringana, 2007; Xu *et al.*, 2005; Shleifer and Vishny, 1997; Fama and Jensen, 1983).

The paper proceeds as follows: Section 2 describes the research design. Section 3 presents findings of the study. Section 4 discusses and concludes and Section 5 states implications of the study.

3. Research design

The present study explores the relationship between foreign ownership and firm value by employing the panel data regression model. Balanced panel data for a sample of 408 Indian publicly listed companies included in the S&P BSE 500 Index of the Bombay Stock Exchange and Nifty 500 Index of the National Stock Exchange as on March 31, 2018 has been the basis of sample selection. After considering common firms in both the indices and eliminating both financial firms (Swarup, 2011; Arun and Turner, 2004) as well as those whose data were not complete and could not be found (Kumar, 2004), the final sample had 408 companies observed over a nine-year time horizon from year end 2010 to year end 2018, giving 3672 firm-year observations. As the severe, full-blown Covid-19 pandemic and the financial crisis of 2009 may have affected the year-end balance sheets of 2009 and 2019, the sample is taken for the

period 2009–2010 and 2017–2018. These data are obtained from Prowess, a database provided by the Centre for Monitoring the Indian Economy (CMIE) for Indian companies which is comparable to a combination of Compustat and The Centre for Research in Security Prices (CRSP) for the US firms (Balasubramanian *et al.*, 2009).

The research hypothesis tested with this study is as follows:

- H0.* There is no significant impact of foreign ownership on firm value in Indian listed companies.

3.1 Variables studied

The present study employs foreign ownership as a proxy for corporate governance which is defined as the percentage of shares held by all the foreign institutional investors in the firm. The proxy for firm value is Tobin's Q (dependent variable) which captures market expectations of future earnings as against the various accounting measures of value which reflect a tangible balance sheet effect (Das, 2017; Dwaikat and Queiri, 2014; Alfaraih *et al.*, 2012; Lin and Chang, 2010; Ragothaman and Gollakota, 2009; Shin Ping and Tsung Hsien, 2009; Klein *et al.*, 2005; Demsetz and Villalonga, 2001; McConnell and Servaes, 1990). The following regression function is employed to examine the above stated hypothesis:

Tobin's $Q = f$ (foreign ownership, age, debt to equity ratio, current ratio, sales, beta, business risk, opportunities, asset structure)

Tobin's Q ratio is a commonly accepted measure of efficiency and future opportunities of the firm (Chen *et al.*, 2008). All the stated variables are used to investigate the relationship between foreign ownership and firm value (Li *et al.*, 2010; Al Najjar, 2010; Al-Najjar and Taylor, 2008; Liljeblom and Löflund, 2005; Sarkar and Sarkar, 2000; Kumar, 2004), and to further investigate whether there is an asymmetric threshold effect of foreign ownership on firm value (Dushnitsky and Lenox, 2006). The details of all variables employed in the regression are summarized in Table 1. Table 2 presents the descriptive statistics of the panel data sample of the period 2010–2018. The total number of firms is 408 with 3672 firm-year observations. Tobin's Q has an overall mean of Rs. 4.11 with not much difference in within and between SD. The overall mean of foreign ownership is 10.10%. As for the exogenous variables, the overall firm's mean age is 37 years with debt equity ratio of 0.97%. The overall current ratio is quite high at 1.67. The within and between variation of sales, beta and asset structure is also quite high indicating variation across panels. The mean business risk is 4.85 and opportunity is 0.01. Based on the panel data test of normality (xtsktest), the null is rejected at 10% level of significance, indicating residuals are not normally distributed. The joint test for normality one has $\chi^2(2) = 5.43$ with p value 0.0662, and the joint test for normality on u has $\chi^2(2) = 2.88$ with p value = 0.2370.

3.2 The panel regression model

Firm Value (Tobin's Q) is taken as the dependent variable and foreign ownership (FO), age, debt to equity ratio (DER), current ratio (CR), sales (Sal), beta, business risk (BR), opportunities (Opp) and asset structure (AS) are taken as exogenous variables in the panel data regression model given in Equation (1).

$$\begin{aligned} \text{Tobin}_{it} = & \beta_0 + \beta_1 \text{FO}_{it} + \beta_2 \text{Age}_{it} + \beta_3 \text{DER}_{it} + \beta_4 \text{CR}_{it} + \beta_5 \text{Sal}_{it} + \beta_6 \text{Beta}_{it} + \beta_7 \text{BR}_{it} \\ & + \beta_8 \text{Opp}_{it} + \beta_9 \text{AS}_{it} \end{aligned} \quad (1)$$

The panel data model is run on STATA version 15, and model diagnose testing is performed. The Breusch–Pagan / Cook–Weisberg test for heteroskedasticity is insignificant, with $\chi^2(1) = 529.22$, Prob > $\chi^2 = 0.0000$, indicating presence of heteroscedasticity. Further, the

Variable name (Symbol)	Measure of variable	Significance of variable
Firm value (Tobin's Q)	Market value per share/book value per share as on the last day of the financial year (In Indian rupees)	Signal of future performance and capital gains. High firm value means firm would perform better and may bring more capital gains to the investors
Foreign ownership (FO)	Sum of equity shareholding of foreign institutional investors (in percentage)	More the foreign ownership, more the incentive to monitor the firm
Age	Total number of years since the year of inception of the firm calculated as the difference between each of the end of the financial year of study and the year of incorporation of the company (in years)	Firm age to have a negative effect on performance as long as older firms may be poorly managed under archaic rules dictated by members of the founding family
Debt to equity ratio (DER)	Leverage is the total debt/total assets of the firm (in percentage)	The leverage ratio (debt to assets) can, on the one hand, improve performance by limiting managerial misbehavior and by serving as a signal of high quality, but, on the other hand, a high leverage may lead to asset substitution and underinvestment
Current ratio (CR)	Calculated by dividing current assets by current liabilities. Current assets include inventories, trade receivables, accrued income, cash balance, bank balance and other short-term receivables. Current liabilities include short-term loans, accounts payable, acceptances, deposits and advances from customers, accrued liabilities and other current liabilities (in ratio)	Higher the current ratio, more is the liquidity and value of the firm
Sales (Sal)	Net operating revenues earned by a company by selling their products or services (in millions Indian rupees)	More sales means more diversification, more economies of scale and scope, more professionalized management and less severity on financial constraints, demand supply mismatch and productivity
Beta	Market risk - calculated across a long time series of trading	Higher the beta, the more volatile is the value of the firm
Business risk (BR)	SD of return on total assets calculated by taking the return on total assets for the year end and preceding four years as an indicator for firms' business risk (in percentage)	Higher the volatility of returns, higher the probability of default, hence higher the business risk leading to lower value of the firm
Opportunities (Opp)	Opportunity refers to the growth opportunities available with a company which is measured as intangibles divided by total assets of the firm. Intangible includes goodwill, computer software, patents, copyrights, motion picture films, film negatives, telecom service licenses, fishing licenses, import quotas, franchises, customer loyalty, marketing rights, brands, etc (in millions Indian rupees)	Future profits or value depends upon available growth opportunities
Asset structure (AS)	Fixed assets ratio: fixed assets/total assets (in percentage)	Tangible assets are expected to influence debt availability which in turn impacts ownership structure and value of the firm

Table 1.
Variable studies

Variable	Mean	SD	Min	Max	Observations
Firm value (Tobin's Q)	overall	9.631064	-145.1136	266.6667	N = 3672 n = 408 T = 9
	between	6.355177	-5.913727	95.70697	
Foreign ownership (FO)	within	7.242729	-135.0835	175.0761	
	overall	10.10562	0	55.64	
	between	8.730782	0	44.96222	
	within	5.105199	-17.48465	37.86202	
Age	overall	24.04969	1	153	
	between	23.93674	5	149	
Debt to equity ratio (DER)	within	2.582341	33.28922	41.28922	
	overall	1.978928	0	39.93	
Current ratio (CR)	between	1.269685	0	10.77556	
	within	1.519068	-9.743235	31.77757	
	overall	1.685984	0	25.86	
	between	1.038549	0.3177778	8.592989	
Sales (Sal)	within	1.329025	-6.116639	23.49416	
	overall	267722.9	0.1	5034766	
	between	242403.3	152.0267	3410296	
	within	114211.4	-3344218	1770433	
Beta	overall	0.3684007	-0.2	2.9	
	between	0.3206119	0.2788889	2.108599	
Business risk(BR)	within	0.1820743	-0.087458	1.920778	
	overall	8.094023	0	237.9485	
	between	6.011523	0.5554717	92.35177	
	within	5.427113	-85.74622	150.4514	
Opportunities (Opp)	overall	0.0502445	0	0.5986225	
	between	0.0422798	0	0.4539629	
	within	0.0272181	-0.218473	0.4015656	
	overall	0.1782639	0.0004596	0.9565217	
Asset structure (AS)	between	0.1630254	0.0036752	0.7426596	
	within	0.0725165	-0.108997	0.9657448	

Table 2.
Descriptive statistics

Wooldridge test for autocorrelation in panel data with $F(1, 407) = 1.264$, $\text{Prob} > F = 0.2616$ proves no first order autocorrelation. The assumption of no multicollinearity is met with variance inflation factors (vif) ranging from 1.01 to 1.11. The F test of all fixed intercepts being zero is significant at 1% level of significance (F Stat 5.72, p value 0.000) suggesting presence of firm specific effects or heterogeneity among firms. The Hausman test of comparison of random effects and the fixed effects model suggest that the fixed effect is appropriate with $\chi^2(8) = 31.50$ and p value = 0.0001. At the outset, the fixed effect model is accepted. For the fixed effect model, a postestimation modified Wald test for groupwise heteroskedasticity is performed; the $\chi^2(408) = 0.000$, $\text{Prob} > \chi^2 = 0.0000$ indicates groupwise heteroskedasticity. Pesaran's test of cross-sectional independence = 3.264, $\text{Pr} = 0.0011$ indicates cross-sectional dependence in data (data are not independent). As a result, with heteroskedastic and correlated errors across panels, generalized least squares (GLS) regression with panels (correlated) is performed. The results of fixed effect, random effect and the GLS model are tabulated in Table 3. Since the fixed effect GLS with heteroskedastic and cross-sectional correlation is suitable for the dataset, the findings of Column 4 of Table 3 are discussed. Only two variables, BR and AS are found to be significant. Rest all exogenous variables including foreign ownership are insignificant. The results are quite surprising; hence, another suitable model needs to be explored.

3.3 Sector effects

Further, the sample companies represent all the major industrial activities divided into eight sectors, namely, basic materials, consumer discretionary goods & services (CDGS), diversified, energy, fast moving consumer goods (FMCG), Healthcare, industrials and utilities and information technology and telecom. Out of 408 companies, the number of companies belonging to each sector and their percentage in the total sample is stated in Table 4. The fixed effect panel regression model omits all sector dummies except sector 2 due to collinearity. The p value of the same, that is, CDGS sector numbered 2 is insignificant indicating no industry effects in the data. In the random effects model p value of only sector 2, that is, CDGS (0.080) and sector 5, that is, FMCG (0.006) is significant at 10 and 1% level of significance, respectively, indicating sector effects on firm value.

3.4 The endogeneity and outliers effect

Another matter of concern while evaluating the impact of foreign ownership on firm value is the endogeneity of the ownership variable (Kumar, 2004; Himmelberg *et al.*, 1999). A suitable form of regression in that case is an instrumental variable regression wherein lagged variables of foreign ownership will be regressed on firm value (Kumar, 2004). The fixed effect instrumental variable regression with one lag (the first-differenced model), two lags and three lags are performed (unreported regression). The Davidson–MacKinnon test of exogeneity indicates that instrumental variable regression is not required for the dataset. The p value for one lag (the first-differenced model), two lags and three lags models are 0.3109, 0.2613 and 0.2697, respectively. Thus, endogenous predictor effects on the estimates are not meaningful and the model does not suffer from the endogeneity of foreign ownership.

Few outliers were found in the data as per H test, R student test and Cook's D test. Removing the outliers is not the best option instead a robust regression is been run. The results of robust regression after controlling for outliers are presented in Column 5 of Table 3. The results are not found to be significant.

3.5 The fixed effect panel threshold model

The above results of GLS with heteroskedastic and cross-sectional correlation gave insignificant coefficients of exogenous variables whereas the set of exogenous variables

Col. 1 Dependent variable : Firm value (Tobin's Q)	Col. 2 Fixed effect model	Col. 3 Random effect model	Col. 4 GLS with heteroskedastic with cross-sectional correlation	Col. 5 Robust fixed effect model
Variables				
Foreign ownership (FO)	0.0009524 (0.0266842)	-0.0058897 (0.0204095)	-0.1363949 (0.1680428)	0.0009524 (0.164543)
Age	-0.0078372 (0.0525931)	-0.0070668 (0.0123365)	-0.0307278 (0.1228806)	-0.0078372 (0.0481663)
Debt to equity ratio (DER)	-0.0347699 (0.0889967)	-0.0206336 (0.0837454)	-0.3149416 (0.8483962)	-0.0347699 (0.1918978)
Current ratio (CR)	-0.130086 (0.0988056)	-0.1754629 (0.0938194*)	1.322513 (1.310355)	-0.130086 (0.1730089)
Sales (Sal)	1.62E-06 (0.00000111)	7.34E-07 (8.32E-07)	0.0000246 (0.0000272)	0.0000 (0.000)
Beta	-0.2536608 (0.7258015)	-1.474223 (0.5840776**)	-3.819218 (3.036534)	-0.2536608 (1.063864)
Business risk (BR)	0.0079504 (0.0234399)	0.0526719 (0.0213105**)	0.43507 (0.2076772**)	0.0079504 (0.0272826)
Opportunities (Opp)	-1.68345 (4.695822)	-1.760553 (3.925498)	6.181677 (41.06351)	-1.68345 (1.846845)
Asset structure (AS)	-0.9548495 (1.796004)	-2.216688 (1.309207*)	-24.01997 (10.07387**)	-0.9548495 (1.782515)
Constant	5.044987 (2.160292**)	6.565369 (0.9838155***)	14.21846 (6.920097***)	5.044987 (2.644552)
F /Wald χ^2 (9)	0.54 0.8445	20.38 0.0157**	16.52 0.0569*	0.49 0.8808
p value				
R -sq				
within	0.0015	0.0007		0.0015
between	0.0098	0.0825		0.0098
overall	0.005	0.0284		0.005
rho	0.40385444	0.33901888		0.40385
Observations	3,672	3,672	3,672	3,672
Number of companies	408	408	408	408
Note(s): Standard errors in parentheses. Tobin's Q is a function of foreign ownership, age, debt equity Ratio, current ratio, sales, beta, business risk, opportunity and asset Structure				
*Significant at the 0.10 level (2-tailed); **Significant at the 0.05 level (2-tailed); ***Significant at the 0.01 level (2-tailed)				

Table 3.
Panel data regression results

Table 4.
Categorization of
sample firms as per
sector

chosen are determinants of firm value (Li *et al.*, 2010; Al-Najjar, 2010; Al-Najjar and Taylor, 2008; Liljeblom and Löflund, 2005; Sarkar and Sarkar, 2000; Kumar, 2004). On a closer look it is found that foreign ownership is nonlinear in nature (Figure 1), and thus the impact of foreign ownership would vary as the slope of the curve changes. In such cases, fixed effect panel threshold analysis (Nguyen and Chen, 2020; Wang, 2015; Hansen, 1999) is performed where firm value (Tobin's *Q*) is a dependent variable, foreign ownership is a threshold variable and various firm characteristics are taken as control variables.

S. No	Sector	Number of companies	Percentage of companies
1	Basic materials	73	17.89
2	Consumer discretionary goods & services (CDGS)	104	25.49
3	Diversified	12	2.94
4	Energy	13	3.19
5	Fast moving consumer goods (FMCG)	37	9.07
6	Healthcare	40	9.80
7	Industrials and utilities	96	23.53
8	Information technology and telecom	33	8.09
	Total	408	100

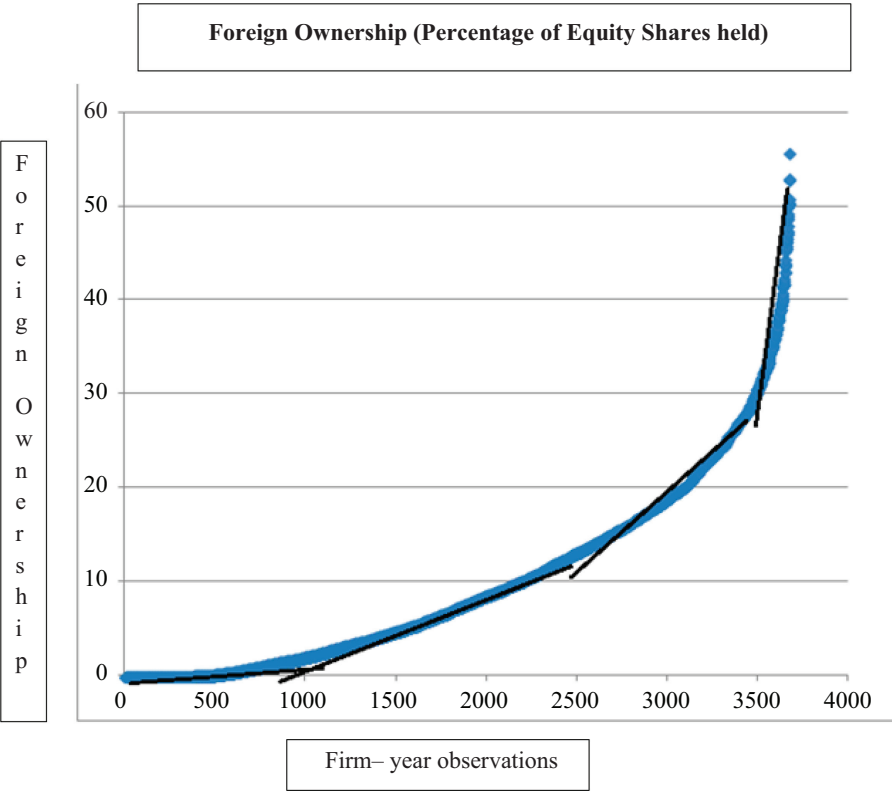


Figure 1.
Foreign ownership of
3672 firm-year
observations

3.6 The Panel unit root test

The fixed effect panel threshold regression requires all variables to be stationary so that regression results are not spurious in nature. The Harris–Tzavalis unit-root test is designed for cases where N is relatively large, and the time dimension T is small. The test helps to remove cross-sectional means to control for contemporaneous correlation. The null hypothesis is panels containing unit roots (not stationary). The results of the Harris–Tzavalis unit-root test with rho statistic and its p -value are stated in Table 5. All variables are found to be stationary in nature since the nulls of the unit root are rejected.

First, a single-threshold model is fitted. The threshold variable is trimmed off 5% at both sides to be searched for the threshold estimator. For the single-threshold model, null hypothesis (H0) (the linear model) and alternate hypothesis (Ha) (the single-threshold model), F statistic is highly significant. Therefore, we reject the linear model and fit a double-threshold model and so forth. The results are tabulated in Table 6. In the threshold-effect test table, double corresponds to null hypothesis (H0) (the single-threshold model) and alternate hypothesis (Ha) (the double-threshold model) and triple corresponds to null hypothesis (H0) (the double-threshold model) and alternate hypothesis (Ha) (the triple-threshold model).

Th-3 is the same as Th-1 but with a slight change in the lower level threshold of 4.7100 instead of 4.6650 as shown in Table 7. The p value of the triple-threshold model is significant, and hence, the model is accepted.

Variable	Rho (p value)
Tobin's Q	0.0349 (0.0000***)
Foreign ownership (FO)	0.6623 (0.0058***)
Age	0.000 (0.0000***)
Debt to equity ratio (DER)	0.0193 (0.0000***)
Current ratio (CR)	0.008 (0.000***)
Sales (Sal)	−0.1528 (0.0000***)
Beta	0.1932 (0.0000***)
Business risk (BR)	0.1017 (0.0000***)
Opportunities (Opp)	0.0689 (0.0000***)
Asset structure (AS)	0.5715 (0.0000***)

Note(s): *Significant at the 0.10 level (2-tailed); **Significant at the 0.05 level (2-tailed); ***Significant at the 0.01 level (2-tailed)

Table 5.
Harris–Tzavalis unit
root test

	Single threshold effect test	Double threshold effect test	Triple threshold effect test
Threshold value	4.7500	4.7500 7.1600–7.2500	4.7500 7.1600–7.2500
F	4.0500	17.9200	20.6000
p -value	0.0000*	0.0000*	0.0000*
Confidence interval of F at 5%	4.6650–4.8200	7.0100–7.2500 7.1600–7.3300	7.0100–7.2500 7.1600–7.3300

Note(s): *represent significance at the 1% level of significance

F statistics and p -values result from repeating the bootstrap procedure 300 times for each of the three bootstrap tests

Table 6.
Tests for threshold
effects

Table 7.
Threshold estimator
(level = 95)

4. Findings
The findings of fixed effect panel threshold regression are reported in Table 8. In region 1, where the threshold foreign ownership is minimum (being less than or equal to 4.7500), DER, Sal and BR are only significant. This implies that firm value is sensitive toward the proportion of debt in the capital structure and sales of the firm. Variations in sales will increase the operating risk as well as the probable default on account of debt financing. This is justified by the negative coefficient of BR. Perhaps, the firm value is quite low; thereby, age, CR, Beta, Opp and AS are not significant. Table 9 mentions the percentage of observations falling in each region. Nearly 41 % of observations fall in this region. The second region called Region 2 denotes the threshold range of foreign ownership greater than 4.7500 but less than

Model	Threshold	Lower	Upper
Th-1	4.750	4.665	4.820
Th-21	7.160	7.010	7.250
Th-22	7.250	7.160	7.330
Th-3	4.750	4.710	4.820

Table 8.
Threshold regression
with region varying
variables

Dependent variable: Firm value (Tobin's Q)				
Independent variables	Fixed effect panel threshold regression			
	Region 1	Region 2	Region 3	Region 4
Age	−0.039 (0.426)	−0.18 (0.000***)	0.078 (0.5)	−0.036 (0.44)
Debt to equity ratio (DER)	0.283 (0.022**)	1.111 (0.000***)	7.86 (0.053*)	−0.378 (0.000***)
Current ratio (CR)	−0.076 (0.656)	−0.041 (0.853)	−14.73 (0.000***)	−0.002 (0.981)
Sales (Sal)	0 (0.067*)	0 (0.912)	0 (0.005***)	0 (0.39)
Beta	−0.174 (0.824)	−1.77 (0.106)	−28.974 (0.011**)	−0.742 (0.313)
Business risk (BR)	−0.054 (0.035**)	1.028 (0.0000***)	3.959 (0.0000***)	0.052 (0.124)
Opportunities (Opp)	3.898 (0.509)	−37.834 (0.0000***)	224.349 (0.0000***)	−2.448 (0.649)
Asset structure (AS)	−2.59 (0.173)	13.992 (0.000***)	135.756 (0.005***)	−0.987 (0.617)
Constant		6.200 (0.002***)		
Note(s): Standard errors in parentheses. Tobin's Q is the dependent variable. Foreign ownership is the threshold variable. Age, debt equity ratio, current ratio, sales, beta, business risk, opportunity and asset structure are the exogenous ones				
*Significant at the 0.10 level (2-tailed); **Significant at the 0.05 level (2-tailed); ***Significant at the 0.01 level (2-tailed)				

Table 9.
Categorization of firm-
year observations
according to the
threshold region

Region	Region according to bullwhip ratio	Firm-year observation	Percentage of observations
1	Ratio ≤ 4.7500	1501	40.88
2	4.7500 < ratio ≤ 7.1600	323	8.8
3	7.1600 < ratio ≤ 7.2500	12	0.33
4	Ratio > 7.2500	1836	50
Note(s): Threshold ratio with the firm-year observations lying in the particular observation			

or equal to 7.1600. In this region, age, DER, BR, Opp and AS are significant. Only CR, Sal and Beta are insignificant. The coefficient of age and Opp being negative signifies that for older firms and firms with higher intangibles, the value of the firm will be less. Region 3 in which foreign ownership is greater than 7.1600 and less than or equal to 7.2500 has all variables being significant except for age. The coefficient of DER is nearly seven times and that of BR is nearly three times that of region 2. It is surprising to find out that only 12 observations fall in this region. The impact of Opp has turned out to be both positive and as large as Rs. 224.349 million for Rs. one million increase in Opp. In the fourth region with foreign ownership greater than 7.2500, only DER is significant and negatively impacts firm value. Rest all variables are insignificant. Exactly 50% of the observations fall in this region. An interesting finding is that majority of firms either fall into region 1 or region 4. This suggests that foreign owners either invest too low or too high in the firms.

5. Discussion and conclusions

This study has examined empirically the relationship between foreign ownership and firm value using panel data of Indian listed firms over the period 2010–2018 from a corporate governance perspective. Firm specific effects or heterogeneity among firms explaining cross-sectional dependence are documented. The results conclude that foreign ownership does not significantly influence firm value similar to [Kumar \(2004\)](#) and in contrast to [Huang and Shiu \(2009\)](#). Foreign ownership is also not found to be endogenous. Thus, foreign ownership as a mechanism of good governance is found to be ineffective in India. One of the other useful extensions of the results is that debt financing is significant in all regions indicating that value of the firm is influenced by its debt structure. The firm's debt structure and not foreign ownership impacts the value of the firm.

The concentration of observations in region 1 and region 4 highlights the fact that the foreign investors invest either on the lower side or higher side. Such results are probably because Indian firms are mostly family firms where the control and management of the firm is in the hands of the family or promoter group. Such families or promoter groups control and manage firms either themselves or through their appointees, irrespective of the fact whether they own majority of the shareholdings or not. Foreign investors generally do not intervene in the affairs of the company or at times, join hands with the family owners. The monitoring by foreign shareholders would depend on two dimensions, namely, the motive of their investments and the existing shareholding pattern of the recipient firms.

Twofold objectives of foreign investors are stated: one for financial considerations, just like any other investment for returns as per their risk–return tradeoffs and another to manage and control the firm's they invest in. In the first case, activism on the part of foreign investors is least expected. In the second case, when the objective of foreign investor is to manage or control the firm, it could be through equity stake or through control over management. Control of the firm through equity stake refers to having voting right(s) to vote and participate in shareholder meetings where various corporate decisions are taken. However, such voting right(s) is proportionate to the proportion or number of equity shares owned. The higher the proportion of equity shares, the more are the voting rights. The term “controlling interest” is often used when majority of shares are held by a single shareholder or a group acting in concert. Controlling interest shareholders monitor and control the firm either themselves or through managers acting as their stewards. Control over management can be via direct influence on the corporate strategy and selection of the corporate top management team. Else, activist owners could occupy a seat on the board in order to monitor or intervene in the affairs of the board ([Aggarwal et al., 2011](#)). In some cases, delegation of rights to the board wherein compensation and other mechanisms are aligned to share price maximization is also practiced by controllers. Lastly, control over management can be via relying on market

mechanism for corporate control, where the managers face the threat of takeover. In addition, foreign investments to gain control would generally be long-term in nature as against any other investment without the motive of control which will be a short-term one. The first class of foreign investors would monitor, govern and manage the firms for shared or private benefits of control. The second class of foreign investors would sell their stakes in adverse situations and would not actively participate in corporate affairs.

Another dimension of monitoring by foreign shareholders is the existing shareholding pattern in the recipient firms, which could either be dispersed or concentrated. The dispersed shareholdings mean that there is no dominant shareholder(s). Large numbers of scattered individuals, firms or entities are the shareholders. Such firms are run, managed and controlled by agents or appointees of dispersed shareholders. The real (de facto) controllers (controlling managers) have specific contractual rights to control the firm and the residual control rights remain with dispersed owners (Grossman and Hart, 1986). Thus, these managers do not have equivalent cash flow rights. Practically, the dominance could be by one single shareholder or by the collation of many shareholders forming a group which is easier for geographically proximate multiple activists at large firms (Artiga González and Calluzzo, 2019). In the case of concentrated shareholdings, a significant amount of equity stakes is in the hands of one or few shareholders who would influence the firm and are the controllers of the firm. They are real (de facto) controllers with equivalent cash flow rights, often called controlling shareholders. In case, controlling shareholders are expected to exert significant amount of expropriation of other shareholders, then foreign investors would invest and mitigate such a problem (Choi *et al.*, 2014).

In a nutshell, foreign shareholders would act as active monitors of these controlling managers or controlling shareholders. Xu *et al.* (2005) suggest that foreign investors' involvement in corporate governance practices often significantly reduce expropriation by controlling shareholders in emerging markets. On the contrary, foreign investors may collude with controllers and join hands to expropriate the minority (Ananchotikul, 2007). Therefore, it is learnt that foreign shareholders could play distinct roles in the firms they invest in. The existing shareholding pattern of the recipient firm as well as the motive of investment of foreign investors would create any one of the four possible scenarios as depicted in Table 10. Quadrant 1 depicts a dispersed ownership structure of the recipient firm and the foreign investor wishes to gain control over the firm. This scenario seems practically facile in the sense the foreign investor can buy stocks from the open market to the extent desirable. Quadrant 2 depicts concentrated ownership of the recipient firm where in less free float stocks are available in the open market to purchase. Since the motive of the foreign investor is to gain control over the firm, takeover, alliances or collusions with the present dominant group would take place (Hansmann and Kraakman, 2004). Quadrant 3 refers to a normal usual investment by a foreign shareholder where in the motive is not to gain control over the firm. Investment, to whatever extent, by the foreign investor would be based on considerations other than control which could be return, risk, portfolio diversification or any other. Quadrant 4 depicts concentrated ownership of the recipient firm and the foreign investor does not wish to gain control over the firm. In such a scenario, the investment by the foreign investors in a firm

Table 10.
Monitoring and
Control by foreign
investor

Domestic shareholdings	Motive of investment by foreign investor	
	Control	No control
Dispersed	Quadrant 1 High investment	Quadrant 3 Investment based on considerations other than control
Concentrated	Quadrant 2 Takeover, alliances or collusions	Quadrant 4 Low investment

might be low, probably due to lesser free float shares, in alignment with foreign investor(s) strategy of holding a diversified portfolio (Choi *et al.*, 2014).

The spillover of foreign shareholders monitoring and controlling the invested firms, termed as “activism”, has long been expected, yet it is still slightly away from passivity (Varottil, 2012) and needs a strong momentum to be embraced. It is seen that various professional bodies, regulators, exchanges and proxy firms all around the globe, are pressing on the need for shareholder activism. The existing literature has established an equivocal conclusion of the relationship between foreign shareholdings and foreign shareholders’ activism. Though, activism is mostly seen with large shareholdings, the results of control could be efficient monitoring as well as good governance of the firms (Jiang and Habib, 2009). The monitoring benefits can surely be encashed for foreign investors in region 4 because their shareholdings are fair enough. This is in line with Poulsen *et al.* (2010) submission that foreign shareholders activism is high with higher ownership stakes and low with lower ownership stakes. It is worth considering that monitoring involves certain costs attached to it. Practically, these costs will be incurred only by large shareholders within their own personal investment constraints, investment objectives and preferences for liquidity wherein marginal benefits of such monitoring would be much more than the marginal costs (Pound, 1988). The efficient monitoring hypothesis (Shleifer and Vishny, 1989; Pound, 1988) delineates the positive effect of large shareholdings wherein such large shareholdings give large shareholders stronger incentives and greater power at a lower cost to monitor the firms. Shleifer and Vishny (1989) and Pound (1988) suggest that the institutional owners would actively monitor the board of the investee companies due to the consideration of their own risks. They are efficient and possess greater expertise and power at doing so as compared to the dispersed small investors. The larger the institutional ownership, the more efficient the monitoring exerted by these shareholders through various mechanisms which could be either formal or informal such as voting power, shareholder activism and election of board members. The marginal benefits of such intervention would be much more than the marginal costs (Pound, 1988) which would lead to higher firm performance (McConnell and Servaes, 1990). (Hassan and Yero, 2012; Ghabdian *et al.*, 2012; Siregar and Utama, 2008; Wang, 2006) tested efficient monitoring hypothesis and suggested that even in family-owned firms institutional large shareholders have a strong incentive to actively monitor and influence management so as to protect their significant investments. Their monitoring can reduce agency costs and the scope of managerial opportunism to engage in earnings management. Further, the controlling shareholders focus more on the long term leading to lesser burden on management to meet short-term earnings expectations. Thus, ownership concentration limits the manager’s discretionary behavior as per the efficient monitoring hypothesis (Ali *et al.*, 2007).

Another important aspect of large shareholdings is their inherent nature of being long-term in nature. Long-term shareholdings are committed to active monitoring and control of corporate affairs with various interests in the firm leading to high firm performance and firm value. The more the shareholdings, the longer will be period of investment, the greater is the incentive to monitor and vice versa. Large ownership is perceived to be the solution for the free rider problem rising from dispersed private ownership. The positive effects of large shareholdings are being documented by Hoskisson *et al.* (1994) and Jara-Bertin *et al.* (2008). Large shareholdings would provide and incentivize large shareholders toward either of the two benefits: shared benefits of control or private benefits of control (Holderness, 2003). The shared benefits of control have positive impacts, for example, lesser threat of expropriation of minority by management, which could be reflected in abnormal share prices (Mikkelsen and Ruback, 1985a, b), demand of high performance from management leading to higher firm performance and value. Though the higher benefits are accrued to large shareholders, the minority will also be benefitted. At times, large shareholders might intervene in corporate decision-making such that it brings private benefits and gains to them. They seem least concerned for rest of the

stakeholders. They may themselves expropriate the minority, influence management and board of directors (Shivdasani and Yermack, 1999) to enjoy private benefits of control accessible only to them, also called opportunistic behavior (Barclay and Holderness, 1989). Accordingly, large shareholders can both mitigate and exacerbate the agency problems. The way large shareholders would like to monitor, control and run the firm matters. Large shareholdings can lead to higher firm value and performance if large shareholders work for a shared sense of value, that is, stakeholder wealth maximization (Freeman, 1994).

6. Implications of the study

It is the time that emerging economies procure the entire governance benefits of foreign ownership. The findings of this paper have important implications for corporate governance practitioners, regulators, investors, policymakers, corporate as well as researchers. The results would push governance practitioners, policymakers, regulators, stock exchanges and think tanks to rethink how the activist role of foreign investors in the governance of the firm can be exploited. Furthermore, the results offer several implications for corporate policies. Firstly, as per the global risk-sharing phenomenon suggesting foreign ownership along with domestic ownership, corporates should encash the associated valuation benefits (Chan *et al.*, 2009). Secondly, foreign ownership from economies with strong shareholder protection as well as corporate governance regimes may bring in their better corporate governance practices which would lead to higher firm valuation and at times, even termination of poorly performing management (Aggarwal *et al.*, 2011). Thirdly, the study enhances knowledge of the firm's financial characteristics that influence the value of the firm, which in turn would guide the firms if in case they wish to access foreign capital.

Foreign investments fall in two extreme regions, either low or high. On the one side, investments are for financial considerations and not for governing or managing the firms. On the other, the investments are large enough for activist behavior of foreign investors. Last but not the least, the study would help firms of other emerging economies like Indonesia, Thailand and Pakistan to broaden their understanding and formulate policies to attract foreign capital.

Finally, the robustness of the results of this study is emphasized since these results are generated by using the GLS regression method which takes account of heteroskedasticity and cross-sectional dependence of panel data. In addition, threshold effects are generated using the fixed effect panel threshold model which takes care of heterogeneity and structural breaks in the relationship between variables (Wang, 2015). All stakeholders including policymakers, regulators and investors need to be aware of the possible impacts of foreign ownership on the value of the firm. Looking at the current initiatives for activism of the institutional investors and the foreign investors in the governance of the firm, future studies might contradict these results. However, future research can be done considering more exogenous variables.

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Corresponding author

Ruchi Kansil can be contacted at: ruchikansil@gmail.com