

Agency costs, board structure and institutional investors: case of India

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Abstract

Purpose – The author examines the role of board structure and institutional investors in dealing with the agency issues for the Indian firms by taking the data of NSE-500 nonfinancial firms for the period 2010–2019.

Design/methodology/approach – The author applies dynamic panel data methodology to deal with endogeneity concerns prevalent in corporate finance variables.

Findings – The agency view is consistent with the board size in the context of India. The author observed that the board size has a harmful effect on agency cost. A larger board size may create a coordination problem, or CEO may find it easy to thrust his or her decisions on board. The author also noticed that firms should have sizeable institutional ownership, particularly pressure-insensitive investors, in equity as they can reduce agency-related issues.

Originality/value – This study focuses on one of the largest emerging economies, i.e. India.

Keywords Agency cost, Board structure, Institutional investors, Governance

Paper type Research paper

1. Introduction

Generating wealth for shareholders is one of the most important goals of firms. However, due to agency conflicts, it may take a back seat, and managers may pursue their own goals (Jensen and Meckling, 1976). The conflict of interest leads to a situation where the management (Agent) may take decisions that are detrimental to the shareholders (Principal), and it requires cost in terms of monitoring the activities of the management (Jensen, 1986; Jensen and Meckling, 1976). Eisenhardt (1989) argues that agency problems arise when both the management and shareholders have different goals, and monitoring the activities of management is difficult and costly for the shareholders. These agency costs are even higher in countries having weak protection available to investors and ineffective legal systems (Gugler *et al.*, 2003).

To overcome these problems, substantial emphasis has been laid on corporate governance that has gained a prominent place in academics and the corporate world. The conflict of interest between the shareholders and management is the classical agency conflict (Fama and Jensen, 1983; Jensen and Meckling, 1976). The stewardship theory states that the shareholders' wealth will be increased if there is a unity of command in the management wherein the top executive person is holding the chair (Donaldson and Davis, 1991). Resource dependency theory considers the directors' role in bringing and using the resources for maximising the value of the firm (Jackling and Johl, 2009).

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[La Porta et al. \(1997\)](#) argue that the Anglo-Saxon countries, mainly comprising of US and UK, have a good protection of shareholders rights and interests and their capital markets are also easily accessible by the corporates with substantial gains for shareholders whereas in continental Europe and most of the Latin America that are considered as nations with weak protection of shareholders have relatively low penetration in capital markets. Furthermore, [La Porta et al. \(1999\)](#) found that widely held corporate ownership is an elusive concept. It is only prevalent in the US and other common law countries, whereas the concentration of ownership characterises countries with weaker protection of minority interests. This concentrated ownership lies not only in the hands of families, but States are also found to have a controlling interest in many firms. This situation leads to intense agency problems wherein expropriation of minority interest is quite common.

As far as India is concerned, the formal corporate governance mechanism got an impetus when the Securities and Exchange Board of India (SEBI) appointed a committee in 1999 under the chairmanship of Kumar Mangalam Birla. As a result of the recommendation of this committee, SEBI introduced clause 49 about the listing agreement. It mainly focussed on the duties and responsibilities of the board of directors. It was followed by forming different committees such as the Naresh Chandra Committee in 2002, Narayan Murthy committee in 2003 and JJ Irani committee in 2005. These committees further strengthened the position of shareholders and recommended that they be at the helm of affairs to decide about the appointment and removal of directors and their remuneration. The situation has been consolidated and further given legal sanction in the Companies Act, 2013. We can notice that institutionalising the corporate governance system in India started a little late compared to the developed world and is based on the Anglo-American model. The ownership structure is different in India, which is dominated by powerful institutional investors and promoters in contrast to the developed world, making it an interesting case to examine the role of the governance system on agency costs in India. More explicitly, we intend to analyse the role of independent directors, board size and institutional directors on agency costs.

There are a few studies available that have analysed the role of corporate governance systems on agency costs ([Allam, 2018](#); [Ang et al., 2000](#); [Owusu and Weir, 2018](#); [Singh and Davidson, 2003](#)). [Allam \(2018\)](#) analysed UK firms and found the positive role of having a large board. Furthermore, the firms' value can be maximised by following good corporate governance practices such as following the recommended board composition. We can notice that most of the studies are conducted for developed economies. These inputs give us the motivation to conduct our research. We undertake this study to analyse the role of board structure in terms of its size, independence on the agency costs. [Allam \(2018\)](#) mentioned the problems associated with previous works in terms of endogeneity issues and ordinary least square methods of estimating regression equations. We use system GMM dynamic panel methodology in our study to pass over the shortcomings mentioned above in econometrics methods. [Muniandy et al. \(2016\)](#) suggested that taking institutional investors as a single homogeneous group can lead to erroneous results. These investors should be further categorised into different groups to get a better insight into their role in the firms' decision-making.

Consequently, we classify institutional investors in terms of their possible business relationship with the investing firms. This leads to categorised the institutional investors into two groups: one having potential business interest, popularly known as the pressure-sensitive, and the second group having only investment relationship with investing firm, i.e. pressure-insensitive investors. The plan of the study is as follows. A review of literature and hypotheses formation takes place in the second part of the study. [Section 3](#) describes the data and methodology used in the study. [Section 4](#) presents the results obtained from data analysis. The conclusions are provided in the last part of the study.

2. Literature review and hypotheses development

[Gordon \(2007\)](#) argued that the regulators had paid significant emphasis over the past five-six decades to ensure enhanced independence of the directors, mainly due to many recent corporate scandals such as WorldCom, Enron to name a few. Agency costs may also lead to suboptimal capital allocation, as observed in the study ([Aktas et al., 2019](#)). The authors noticed that the proportion of firms with a high inefficient capital allocation is found primarily on firms having high agency costs, especially in the duality of CEO. [Bhagat et al. \(2008\)](#) further mention that the directors who are not associated with the firm or have any business dealings with the firm play an essential role in ensuring the proper functioning of the board. Most of the studies have credited prominent firms' performance to board independence ([Baysinger and Butler, 1985](#)). [Agrawal and Knoeber \(1996\)](#), on the other hand, observed the adverse impact of NED directors on Tobin's Q. Thus, we notice that there is no conclusive evidence regarding the role of board independence on firm performance. An effective board can also reduce the firm's risk, as reflected by ([Baulkaran and Bhattarai, 2020](#)). The authors used the Board Shareholder Confidence index and its constituents and found that the board effectiveness significantly reduces the firm's risk. The authors further suggest that this risk reduction would percolate towards lowering the cost of capital and increasing the value for the firms. [McKnight and Weir \(2009\)](#) observed that the proportion of non-executive directors on board has been increased in response to the combined code. They do not find the representation of non-executive directors influencing the agency costs of the firms indicating that more non-executive directors do not benefit the shareholders in terms of reducing the agency costs. However, when they use several acquisitions to measure agency costs, they found that a higher proportion of non-executive directors is associated with lower agency costs. They suggest that for firms with more non-executive directors, acquisitions may be viewed as a way of reducing agency conflicts. Board independence can play a positive role in enhancing the firm's performance, as noted by ([Mishra and Mohanty, 2018](#)). This study is based on the data for Indian firms for the period of 2010–2014. This study suggests the constructive role of good governance practices in augmenting the performance of firms in the emerging economy. Given the above discussion, we formulate the hypotheses.

H1. Board independence is inversely related to agency costs.

H2. Non-executive directors are inversely related to agency costs.

There are two differing views regarding the board size offered by agency theory and resource dependency theory. The agency theory view held by [Jensen \(1993\)](#) states that with the increase in the size of the group, a fall in its efficiency is found due to problems of coordination and communication. [Yermack \(1996\)](#) argued that the smaller boards are more effective in enhancing the performance of the board as a close-knit group can discuss and reach solutions faster than the large group. Also, it can be reasonably assumed that the directors can bring resources to the firm and provide them with expert opinions that will help enhance the efficiency and ultimately, the firm's performance ([Nicholson and Kiel, 2007](#)). [Muniandy et al. \(2016\)](#) used the data of Australian firms for 2000–2012 and observed that the board size is positively associated with the ROA. The influence of large boards on firm performance within the context of agency problems is not very clear ([Cheng, 2008](#)). The large board size is also ineffective in managing the related party transactions and often result in the inappropriate utilisation of firms' resources. For instance, [Fooladi and Farhadi \(2019\)](#) examined the issue of related party transaction by classifying these into two categories: beneficial and detrimental related party transactions. They noted the damaging effect of large board sizes on firm performances. At the same time, they also observed that all related party transactions are not unhealthy.

H3. There is a positive association between board size with agency cost.

There is a mixed review regarding the impact of institutional shareholders on agency costs. Pressure resistant investors have big claims at stakes; thus, they monitor the firms' activities more professionally and actively to achieve gains from their investments (Brickley *et al.*, 1988). Mutual funds, pension funds, etc. are included in this category. Pressure-sensitive investors are usually the banks and other financial institutions that have a business relationship with the firms. These institutions have the investment interest and, more importantly, business interest with the firms because they mostly vote as per the management's desires due to the risk of losing clients (Brickley *et al.*, 1988). Gompers and Metrick (2001) analyse large institutional shareholders by taking data for the time 1980–1996 and found that they have significant predictive ability to forecast the returns for the firms. Saini and Singhania (2018) attempted to understand the performance of foreign firms in the context of good corporate governance practices. They observed that the performance of the firms having FDI shows a positive association with governance practices, whereas private equity firms exhibit a negative relationship with board size and independence. They attribute the high costs of board meetings as a possible explanation for this phenomenon. Denis *et al.* (1997) examined the role of equity ownership in affecting agency costs. They found that NED equity ownership leads to low diversification in the firm. However, it is not detrimental to the shareholders' interests as this lower diversification does not result in reduced value for the firms. A study based on German firms by Schäuble (2019) classified the governance variables into two groups: external and internal. Audit fee, audit size and industry specialisation are treated as the constituent of external corporate governance.

In contrast, managerial ownership, managerial remuneration and the presence of an audit committee form part of the internal corporate governance system. The results show that the industry specialised or extensive audit firms can mitigate agency costs. On the other hand, managerial ownership also negatively affects the agency costs of the firms. Overall, it is suggested that a sound governance system helps in reducing agency costs. Cornett *et al.* (2007) noticed that increasingly institutional shareholders are taking over the role of boards as they assert their rights to force management to make good decisions. They report that the ownership and the number of institutional shareholders also affect the cash flow returns.

Furthermore, they reveal that this relationship is more pronounced for pressure-insensitive institutional investors. Elyasiani and Jia (2010) also conducted their study on the same lines and found that both classes of institutional shareholders influence the profitability; however, once again, it is the pressure-insensitive investors who have a more noticeable impact on the firms' performance. Katti and Raithatha (2018) examined the issue of agency costs in the context of India by using the data for the time 2005–2014 pertaining to the firms listed in Bombay stock exchange. The authors focused on the role of CEO duality and board structure and found that the CEO duality helps in reducing the agency costs for Indian stand-alone firms. They also identified that the large number of independent directors can help reducing the agency costs for business group firms. We further augment this study by taking institutional ownership into account; moreover, we dig a bit deeper by also categorising the institutional ownership into two sub-categories of pressure-sensitive and pressure-insensitive groups.

H4. There is a positive role of institutional investors in affecting agency costs.

H5. There is a different effect of pressure-sensitive and pressure-insensitive institutional investors on agency costs.

3. Data set

3.1 Sample data

We examine the relationship between agency costs and board structure and also institutional investors by taking the data from the companies listed in India's National Stock Exchange.

The sample includes all the nonfinancial firms forming the part of NSE-500 index. The period of the study is 2010–2019. The sample consists of firms from 22 industries. The primary source of data is the Prowess database. Other sources include annual reports of the firms.

3.2 Dependent variables

Ang *et al.* (2000) used the total sales to total asset ratio (STAR) as a proxy for agency cost. This ratio tells us about the effectiveness of the firm in using its assets. They further argue that the agency costs increase for the firms having a low value of STAR; thus, this ratio is inversely related to the agency cost. The higher this ratio, the better is the situation as it suggests low agency cost. Several previous studies have used asset utilisation as a proxy for agency costs (McKnight and Weir, 2009; Singh and Davidson, 2003). McKnight and Weir (2009) also mention the two main issues related to using this ratio; first, the higher sales may not be taken as a measure of wealth creation for shareholders as it may not actually result in profit and secondly, the cash flows generated by high sales may be used by the management for increasing their perks rather than increasing the value of the firm. Despite these drawbacks, this ratio has been used extensively in the literature and provide us with a good proxy for agency costs. We also use an alternative measure of agency cost to check the robustness of the results. The second measure of agency cost used in this study is the operating expense to sales ratio (OPSR). We deduct the cost of goods sold, total interest expenses and compensation from the total expenses to arrive at operating expenses (Ang *et al.*, 2000). It can reflect the discretionary expenses that are incurred to generate sales. Agency costs are directly related to this ratio. A high value of this ratio indicates a high level of agency costs of a firm.

3.3 Explanatory and control variables

BI represents the board composition and defined as the proportion of independent directors in total members of the board. BSIZE is the size of the board. NED shows the percentage of non-executive directors. We represent the percentage institutional investors' shareholding as INS; PRS and PRI measure percentage shareholding by pressure-sensitive and pressure-insensitive investors, respectively. SIZE is the natural logarithm of sales. MTB shows growth, and it is the market-to-book value ratio. LIQUIDITY is liquidity ratio measured as current asset divided by current liabilities. CASH is defined as Cash and Equivalent divided by Total asset minus cash and equivalent. TOBIN is Tobin's Q computed by adding the MV of equity and BV of debt divided by the TA. DIV is computed as the dividend paid during the year divided by the total asset. TD is defined as total debt divided by the total assets of the firm. The controls variables are selected based on previous research studies (Allam, 2018; Katti and Raithatha, 2018; Owusu and Weir, 2018; Schäuble, 2019).

3.4 Model specification and summary statistics

We use the following models in our study:

$$\text{Agency Cost}_{it} = \omega_i + \lambda_1 \text{Agency Cost}_{i,t-1} + \sum_{j=2}^n \lambda_j (\text{Board}_{ij}) + \sum_{j=n+1}^m \lambda_j (\text{Institutional Investors}_{ij}) + \sum_{j=m+1}^k \lambda_j \text{Control}_{ij} + \epsilon_{it}$$

Prior studies have observed that the relationship between agency cost and corporate governance may suffer from endogeneity issues (McKnight and Weir, 2009). The econometric

methodology for estimating the model used in this study is the GMM dynamic panel (Arellano and Bover, 1995; Blundell and Bond, 1998). We check the validity of the model as suggested by Roodman (2009) with AR(2) and SARGAN test. The description and construction of variables are stated in Appendix 1.

The agency cost is measured by using the operating expense to sales ratio (OPSR), and the second proxy of agency cost is the sales to asset ratio (STAR). Table 1 shows that the average value of OPSR is 0.70, whereas the STAR has a value of 1.17 on average. We observe that the average board size is 11.89 and BI is 43.26%.

We also notice that the proportion of non-executive directors is about 71% of total directors. The shareholding of institutional investors is on an average of 23.51%. Furthermore, we notice that pressure-sensitive investors constitute 4% of total institutional ownership, and the rest is held by pressure insensitive investors. Thus, we find a significant proportion of institutional shareholding is coming from pressure-sensitive investors. Pearson's correlation analysis result is presented in Table 2. We find that most of the board structure variables are significantly correlated with agency cost. INS is negatively associated with agency cost, though PRS investors are positively correlated with agency cost.

4. Empirical analysis

4.1 Estimation of model

We find that the BSIZE is positively related to OPSR at a 10% significance level in model 2, indicating larger the board size, the higher is the agency cost, as reflected in Table 3. Similarly, we find that BSIZE reduces STAR as it is negatively associated with it at 5% and 10% significance level for model 3 and model 4, respectively. However, STAR is an inverse of agency cost; thus, the higher the board size, the lower the STAR and consequently, the higher the agency cost. This supports hypothesis H3, and we find the agency view consistent with the board size in the context of India. The board size has a harmful effect on agency cost. This is in confirmation with the agency theory view (Jensen, 1993). The large board size may create a coordination problem, or CEO may find it easy to thrust his or her decisions on board. The NED presence reduces the OPSR as we notice the t -values are -1.97 and -2.86 for models 1 and 2, respectively. It means that the NED results in low agency costs.

Further, we notice that NED positively influences STAR, with t -values being 2.93 and 3.12, respectively, for models 3 and 4. As we know, STAR is an inverse proxy of agency cost; thus,

Variable	Observation	Mean	Standard deviation
BI	2,957	0.4326	0.1399
BSIZE	2,957	11.897	3.9647
NED	2,882	0.7107	0.1710
INS	2,960	0.2351	0.1424
PRS	2,960	0.0445	0.0594
PRI	2,960	0.1905	0.1299
TD	2,949	0.4087	0.2090
DIV	2,957	0.2281	0.1650
TOBIN	2,957	1.6795	1.1598
SIZE	2,946	10.267	1.5124
MTB	2,960	4.8746	3.387
LIQUIDITY	2,946	1.9744	1.2950
OPSR	2,949	0.7021	0.2880
STAR	2,946	1.1732	0.4135

Source(s): Estimated by author

Table 1.
Descriptive statistics

Table 2.
Pearson's correlation
analysis

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 STAR	1													
2 OPSR	0.015	1												
3 BI	0.099*	-0.005	1											
4 BSIZE	-0.028	0.038	-0.210*	1										
5 NED	0.043*	-0.076*	0.299*	0.011	1									
6 INS	0.053*	-0.017	0.253*	0.244*	0.144*	1								
7 PRS	-0.077*	0.046*	0.029	0.306*	0.052*	0.404*	1							
8 PRI	0.022	-0.040*	0.263*	0.127*	0.132*	0.808*	-0.009	1						
9 TD	0.197*	0.082*	-0.056*	-0.056*	-0.103*	-0.159*	-0.016	-0.163*	1					
10 DIV	0.113*	-0.026	-0.011	0.015	0.034	0.037	0.020	0.031	-0.227*	1				
11 TOBIN	0.183*	0.079*	0.045*	-0.039	0.070*	0.032	-0.117*	0.089*	-0.257*	0.411*	1			
12 SIZE	0.302*	0.206*	0.045*	0.456*	-0.117*	0.248*	0.341*	0.115*	0.161*	0.028	-0.105*	1		
13 MTB	0.071*	0.105*	0.004	-0.024	0.014	-0.039	-0.052*	-0.012	-0.022	0.083*	0.528*	-0.066*	1	
14 LIQUIDITY	-0.083*	0.035	0.026	-0.003	0.023	-0.013	-0.013	-0.016	-0.224*	0.045*	0.032	-0.119*	-0.008	1

Source(s): Estimated by author. * denotes 5% significance level

Model	1 OPSR	2 OPSR	3 STAR	4 STAR
LAGGED DEPENDENT	0.259*** (15.50)	0.260*** (14.82)	0.775*** (12.06)	0.790*** (12.08)
BI	-0.016 (-0.34)	-0.014 (-0.31)	-0.044 (-0.64)	-0.087 (-1.18)
BSIZE	0.003 (0.78)	0.003* (2.31)	-0.008** (-2.77)	-0.006* (-2.42)
NED	-0.110* (-1.97)	-0.114** (-2.86)	0.042** (2.93)	0.050** (3.12)
INS	-0.164** (-3.05)		0.290** (2.97)	
PRS		0.105 (0.97)		-0.690* (-2.55)
PRI		-0.205** (-3.19)		0.224** (3.13)
TD	0.082 (0.94)	0.083 (0.98)	0.067 (1.40)	0.062 (1.36)
DIV	-0.277 (-0.74)	-0.275 (-0.75)	-0.006 (-0.03)	0.014 (0.06)
TOBIN	0.000 (0.47)	0.00011 (0.52)	0.001* (2.08)	0.000 (1.88)
SIZE	0.025 (1.56)	0.022 (1.57)	0.040** (2.65)	0.042* (2.58)
MTB	0.001 (1.61)	0.001 (1.57)	-0.000** (-2.62)	-0.000** (-2.29)
LIQUIDITY	0.003*** (5.35)	0.003*** (5.33)	-0.000** (-2.94)	-0.000** (-2.71)
AR(2) <i>p</i> -value	0.234	0.212	0.179	0.193
SARGAN <i>p</i> -value	0.263	0.534	0.301	0.411

Source(s): Estimated by author. 1%, 5% and 10% level of significance is depicted by “***, ** and *” respectively

Table 3.
Effect of board
structure and
institutional ownership
on agency costs

we infer that NED will mitigate the firm’s agency costs. This may be the reason that regulators and laws across the world encourage firms to opt for more NED directors on board to alleviate agency conflicts. This result confirms hypothesis H2, as suggested in previous literature (Bhagat *et al.*, 2008) about the beneficial role of non-executive directors on the board.

We find that institutional investors are negatively and significantly associated with the OPSR at a 5% significance level for model 1. It means the presence of institutional investors can help to dampen the agency conflicts in a firm. We also notice that INS has a favourable effect on STAR, as shown by a *t*-value equal to 2.97 for model 3, thus reflecting that the presence of institutional investors enhances the asset utilisation capacity of the firm and reducing the agency cost. This supports hypothesis H4. Both the measures of agency cost indicate that the firms should have sizeable institutional ownership in equity as they are assumed to reduce the agency-related issues. General investors’ faith will also be high in such firms that will enable them to enhance their value and market position in such competitive times. On further investigation, we notice that PRS investors negatively impact STAR with a *t*-value equal to -2.55 for model 4, revealing high agency costs for the firms with more PRS investors. It may be expected as PRS investors, due to their business relationship with the firms, usually votes on the lines of management and do not challenge them due to fear of losing business clients. PRS positively impacts OPSR, but this variable is not having a significant relationship and does not warrant more attention.

On the other hand, PRI has a negative and significant effect on OPSR at a 5% significance level, indicating that this class of institutional investors is more relevant in reducing agency conflicts. These institutional investors are positively and significantly associated with STAR at a 5% level, again showing their role in diminishing the agency cost of the firms as reflected in the previous literature (Brickley *et al.*, 1988) about the utility of PRI. This finding supports hypothesis H5.

4.2 Additional results: large and small firms

This section discusses the results obtained by dividing the sample firms into two classes based on size. The firms with less than the median size value of all the firms are categorised as

small-sized firms, and the rest are treated as large firms. From Table 4, we notice that the BI is positively related to STAR with a *t*-value equal to 3.10, as shown in model 8. It indicates that the higher the proportion of independent directors on the board, the more is the asset utilisation and consequently, the lower is the agency costs. However, we did not find BI to be significantly related to OPSR.

We notice that BSIZE has a negative and positive effect on STAR and OPSR respectively at 10%, 5% and 10% for models 6, 7 and 8, as depicted in Table 4. It shows that large board size is of problem to the shareholders as it tends to increase the agency costs. The large board size does not provide any improvements in the corporate governance system. The NED has a positive effect on STAR with *t*-value equal to 2.96 and 2.98 respectively for model 7 and 8, indicating its beneficial effect in reducing the agency costs, thereby playing a positive role in mitigating the agency conflicts within a firm. NED is negatively associated with the OPSR at a 5% significance level for model 5 and 6, reflecting their role in reducing the agency tensions within the firm. The NED variable that is considered a sign of a sound governance system has a positive role in influencing the agency costs of the firm. Thus, we can infer that a suitable governance mechanism can benefit the shareholders by pushing management to make value-enhancing decisions. Institutional shareholding is positively and significantly associated with STAR and negatively associated with OPSR at 5% and 10%, respectively, as shown in model 7 and 5, indicating their importance in plummeting agency costs. Further investigation reveals the negative impact of PRI on agency costs and the positive association of PRS. Overall, we infer that institutional shareholder, particularly PRI, has a vital role in dealing with agency costs and protecting the interest of the shareholders.

We examine the agency costs of small size firms in governance features and institutional investors, and results are reported in Table 5. We find that NED has a favourable effect on STAR with *t*-values equal to 2.86 and 2.93 for models 11 and 12, respectively, reflecting its agency conflicts reducing capabilities just like we obtained from earlier analysis. It is also negatively and significantly associated with the OPSR with a *t*-value equal to -2.04 for model 10, showing a negative effect on agency cost. We did not find any other board structure

Model	5 OPSR	6 OPSR	7 STAR	8 STAR
LAGGED DEPENDENT	0.305** (2.91)	0.283* (2.39)	0.496*** (4.94)	0.504*** (5.71)
BI	-0.014 (-0.46)	-0.017 (-0.55)	0.209 (1.36)	0.330** (3.10)
BSIZE	0.005 (0.39)	0.006* (2.15)	-0.018** (-2.93)	-0.011* (-2.21)
NED	-0.045**(-3.11)	-0.047** (-2.86)	0.077** (2.96)	0.107** (2.98)
INS	-0.308* (-2.10)		0.056** (2.83)	
PRS		0.092 (0.90)		-1.140** (-3.25)
PRI		-0.043* (-2.26)		0.227** (3.13)
TD	0.055 (1.26)	0.054 (1.22)	0.283 (1.70)	0.245 (1.68)
DIV	-0.046 (-0.58)	-0.049 (-0.61)	0.477 (1.63)	0.499* (1.98)
TOBIN	-0.000 (-1.42)	-0.000 (-1.31)	0.000 (0.48)	0.000 (0.20)
SIZE	0.003 (0.71)	0.004 (0.78)	0.079 (1.90)	0.106** (2.74)
MTB	-0.000 (-0.52)	-0.000 (-0.56)	0.022* (2.30)	0.022* (2.38)
LIQUIDITY	-0.000 (-0.16)	-0.000 (-0.20)	-0.002 (-0.68)	-0.002 (-0.75)
AR(2) <i>p</i> -value	0.552	0.489	0.546	0.571
SARGAN <i>p</i> -value	0.563	0.151	0.373	0.447

Note(s): This table can be accessed at <https://drive.google.com/file/d/121gbbeQX8Yf0jo5lfQn3KEQge08FrMOG/view?usp=sharing>

Source(s): Estimated by author. 1%, 5% and 10% level of significance is depicted by “***”, “**” and “*” respectively

Table 4.
Result for large firms

Model	9 OPSR	10 OPSR	11 STAR	12 STAR
LAGGED DEPENDENT	0.126** (2.68)	0.124* (2.48)	0.874*** (18.64)	0.874*** (18.89)
BI	0.023 (0.19)	0.023 (0.20)	0.0213 (0.44)	0.026 (0.59)
BSIZE	-0.012 (-1.87)	-0.012 (-1.66)	-0.004 (-1.70)	-0.004 (-1.64)
NED	-0.214 (-1.91)	-0.202* (-2.04)	0.085** (2.86)	0.085** (2.93)
INS	0.578 (1.22)		-0.131 (-1.70)	
PRS		-0.377 (-0.80)		-0.219 (-1.53)
PRI		-0.610 (-1.36)		-0.123 (-1.67)
TD	0.096 (0.81)	0.097 (0.82)	0.045 (1.31)	0.048 (1.46)
DIV	-0.605 (-1.48)	-0.646 (-1.49)	-0.070 (-0.60)	-0.063 (-0.52)
TOBIN	0.002 (1.59)	0.002 (1.59)	0.000 (1.60)	0.000 (1.58)
SIZE	0.121 (1.25)	0.123 (1.21)	0.0373* (2.24)	0.0357* (2.29)
MTB	0.000 (0.74)	0.000 (0.78)	-0.000442** (-3.05)	-0.000435** (-3.05)
LIQUIDITY	0.004*** (4.36)	0.004*** (4.38)	-0.000314* (-2.35)	-0.000343* (-2.41)
AR(2) <i>p</i> -value	0.117	0.261	0.299	0.301
SARGAN <i>p</i> -value	0.4	0.207	0.364	0.473

Note(s): This table can be accessed at <https://drive.google.com/file/d/1vrE-qiHy6Cptf1n1echZWgN7YAJoMF0i/view?usp=sharing>

Source(s): Estimated by author. 1%, 5% and 10% level of significance is depicted by “***”, “**” and “*” respectively

Table 5.
Result for small firms

indicator having a significant relationship with the agency costs. We also notice that there is no significant association of INS and their two classes, i.e. PRI and PRS, with agency costs, unlike previous results for large firms.

4.3 Additional results: high- and low-profit firms

In this section, we explore the results by creating two subsamples from our complete data set based on the firms' profitability. We compute the median value of the profits before interest and taxes. We use the median value to construct two subsamples. The firms with the value of profits before interest and taxed above the median value are considered high-profit firms, and the rest are grouped under the low-profit category. The results for high and low-profit firms are presented in Tables 6 and 7, respectively.

Table 6 depicts the results for high-profit firms. We observe that the lagged dependent variable is highly significant for all the models. Among all the board structure variables, we find that BI is significant for STAR at a 5% level for models 15 and 16. It is having a positive effect on STAR. It means higher board independence and lower is agency costs. Besides BI, we do not find any other board structure variable playing any role in resolving agency issues. INS negatively affects OPSR with *t*-value equal to -2.08 in model 13, thereby reducing the agency costs. We get the same results from another proxy of agency costs, i.e. STAR. We find that INS has a positive influence on STAR at a 5% level as shown in model 15, which is inverse of agency costs, thus once again, we find that INS help reduces the agency costs of the firms. On the other hand, we notice that PRI investors do not play any role for high-profit firms, whereas we find the presence of PRS investors increases the agency cost measured based on both the proxies, i.e. STAR and OPSR, as shown in model 14 and 16.

Table 7 reports the results for the low-profit firms estimated by using system GMM econometric methodology. The value of the lagged dependent variable is significant for all the models justifying the use of dynamic panel data methodology. First, we analyse the board structure variables. We find that only the NED variable is significant for both STAR and OPSR, while the rest of the board structure variables are insignificant. We notice that NED is

Model	13 OPSR	14 OPSR	15 STAR	16 STAR
LAGGED DEPENDENT	0.478*** (4.30)	0.479*** (4.56)	0.852*** (13.97)	0.838*** (13.66)
BI	-0.025 (-0.89)	-0.013 (-0.59)	0.115** (2.91)	0.136** (3.12)
BSIZE	0.000 (0.45)	0.000 (0.31)	-0.002 (-0.64)	-0.002 (-0.62)
NED	-0.027 (-0.98)	-0.026 (-1.02)	0.093 (1.91)	0.088 (1.85)
INS	-0.018* (-2.08)		0.210** (2.89)	
PRS		0.117** (2.74)		-0.583* (-2.36)
PRI		0.007 (0.17)		0.125 (1.09)
TD	0.043 (1.19)	0.044 (1.31)	0.249* (2.29)	0.201 (1.96)
DIV	-0.051 (-0.73)	-0.055 (-0.85)	-0.002 (-0.01)	0.034 (0.15)
TOBIN	-0.000 (-0.21)	-0.000 (-0.04)	0.000 (0.46)	0.000 (0.42)
SIZE	-0.005*** (-8.46)	-0.010*** (-8.84)	0.023*** (5.04)	0.026* (2.58)
MTB	-0.029** (-2.88)	-0.006*** (-5.40)	0.025*** (4.86)	0.004*** (5.60)
LIQUIDITY	0.023*** (4.83)	0.021* (2.17)	-0.014*** (-12.56)	-0.006*** (-7.15)
AR(2) <i>p</i> -value	0.425	0.693	0.354	0.585
SARGAN <i>p</i> -value	0.224	0.217	0.293	0.117

Note(s): This table can be accessed at <https://drive.google.com/file/d/11u7eInPoMPkv8FVQe1sE3mtzbOm3UFWn/view?usp=sharing>

Source(s): Estimated by author. 1%, 5% and 10% level of significance is depicted by “***”, “**” and “*” respectively

Table 6.
Result for high-profit firms

Model	17 OPSR	18 OPSR	19 STAR	20 STAR
LAGGED DEPENDENT	0.120*** (6.24)	0.126*** (5.55)	0.596*** (6.09)	0.592*** (6.09)
BI	0.199 (1.76)	0.166 (1.47)	-0.176 (-1.62)	-0.177 (-1.69)
BSIZE	-0.008 (-1.13)	-0.008 (-1.18)	-0.007 (-1.64)	-0.006 (-1.54)
NED	-0.293* (-2.35)	-0.273* (-2.36)	0.144** (3.23)	0.121* (2.70)
INS	-0.507* (-2.13)		0.368** (2.92)	
PRS		-0.083 (-0.19)		-0.881** (-2.65)
PRI		-0.494 (-1.97)		0.348** (2.79)
TD	0.150 (1.05)	0.139 (1.31)	0.237** (2.83)	0.215** (2.67)
DIV	0.971 (0.86)	1.258 (1.09)	0.293 (0.28)	0.098 (0.10)
TOBIN	0.004*** (4.52)	0.004*** (4.34)	0.000 (0.77)	0.000 (0.75)
SIZE	0.079* (2.13)	0.070 (1.66)	0.062** (2.90)	0.070** (3.04)
MTB	-0.033*** (-3.55)	-0.002 (-1.76)	0.024*** (5.22)	0.005*** (6.29)
LIQUIDITY	0.003*** (8.06)	0.003*** (7.40)	0.000 (0.14)	0.000 (0.19)
AR(2) <i>p</i> -value	0.526	0.195	0.359	0.111
SARGAN <i>p</i> -value	0.318	0.157	0.429	0.163

Note(s): 4. This table can be accessed at <https://drive.google.com/file/d/1SvZVpqnj3qR3KJ1o9zxOkFGO-kuU59OU/view?usp=sharing>

Source(s): Estimated by author. 1%, 5% and 10% level of significance is depicted by “***”, “**” and “*” respectively

Table 7.
Result for low-profit firms

negatively associated with OPSR at a 10% significance level for models 17 and 18 and positively related to STAR at 5% and 10% significance level for model 19 and 20, respectively. It indicates that a sound governance system, as reflected by a higher proportion of non-executive directors, has a positive role in dealing with agency conflicts. INS has a significant positive effect on STAR with a *t*-value equal to 2.92, reflecting that the presence of institutional investors is associated with the lower agency costs.

Further, we find that PRS have a negative effect and PRI positively impact STAR at a 5% significance level as depicted in model 20. It means that PRS investors' presence is associated with higher agency costs, whereas PRI is more relevant in minimising the agency costs for the low-profit firms. This finding is similar to the main results we get for the complete sample data set.

5. Summary and conclusions

Our study intended to analyse board structure and institutional investors' role in dealing with agency issues for Indian firms. We also noticed that recent attention is paid to understand the role of various class of institutional investors on firm performance by dividing them into subgroups (Jelinek and Stuerke, 2009; Muniandy *et al.*, 2016). To incorporate this, we extended our study to analyse the role of pressure-sensitive and pressure insensitive investors and aggregate investors in influencing the agency costs by taking the date of NSE-500 nonfinancial firms for the period 2010–2019. We use dynamic panel data methodology to deal with endogeneity concerns that are prevalent in corporate finance variables.

The agency view is consistent with the board size in the context of India. We observed that the board size has a harmful effect on agency cost. A larger board size may create a coordination problem, or CEO may find it easy to thrust his or her decisions on board. Board size increases the agency costs, whereas the proportion of non-executive directors lessens the agency costs of the firms. Both the measures of the agency cost indicate that the firms should have sizeable institutional ownership in equity as they are assumed to reduce the agency-related issues. Pressure-insensitive investors negatively affect agency costs, meaning that this class of institutional investors is more relevant in reducing agency conflicts. We did not find a significant association of pressure-sensitive investors with agency cost.

The firms with large and small size and firms with high and low profits were examined separately to understand their unique issues and considerations. We find that board size, board independence and non-executive directors; all these aspects of board structure are relevant for large size firms. We find these variables significant for large firms wherein higher board independence and non-executive directors reduce the agency costs. On the other hand, board size increases the agency costs for the firms. Institutional investors also similarly affect the large firms, as we found for the total sample firms. A similar analysis was done for small firms. Based on the results, we found that none of the corporate governance indicators plays a vital role for small firms barring the proportion of non-executive directors. Besides, institutional investors were also proved to be ineffective in dealing with agency costs. It shows us that small firms are ridden with agency issues, and systems for protecting the interest of a shareholder in such firms should be of paramount importance to increase the investor's faith. For high-profits firms, only board independence was significant among all the board structure variables. We also found that institutional investors, particularly pressure-insensitive, can decrease the agency costs for high-profit firms. For low-profit firms, we find institutional investors, as well as its two categories, are relevant for low-profit firms. Their nature is similar to our observations for the full sample data set. Overall, we conclude that the firms with a good governance system in the form of small board size and more non-executive directors perform better in resolving the agency conflicts in a firm. Institutional investors are also significantly associated with agency costs reflecting their importance in corporate decision makings and wealth maximisation goals of the firm.

The main limitation of the study is that we did not incorporate any governance index based on board structure and other aspects of governance such as board meetings, CEO duality and boardroom diversity etc. The future work may be the extension of this research paper by including family-owned firms as they have different functioning compared to the widely held firms. The CEO's behaviour, especially those who hold the chairmanship of the

board, can also have implications for agency cost. These aspects can be studied in future to know more about the workings of the agency costs for the firms. The significant implication of this study for prospective investors is that they should consider the proportion of non-executive directors and institutional investors while making an investment decision. Investors should pay special attention to the firms with higher non-executive directors and institutional investors, particularly pressure-insensitive investors, as their presence results in low agency costs that may well be translated into greater wealth for them.

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Variable code	Variable description	Variable construction	Variables source
BI	Board Independence	Independent Directors/Total Directors on board	Prowess Database/ Annual Reports
BSIZE	Size of the Board	Total number of directors on board	Prowess Database/ Annual Reports
NED	Non-Executive Directors	Non-executive Directors/Total Directors on board	Prowess Database/ Annual Reports
INS	Institutional Investors	Institutional Investors' shareholding/ Total shareholding	Prowess Database
PRS	Pressure-Sensitive Investors	Pressure-Sensitive Investors' Shareholding/Total Shareholding	Prowess Database
PRI	Pressure-Insensitive Investors	Pressure-Insensitive Investors' Shareholding/Total Shareholding	Prowess Database
TD	Total Debt	Total Debt/Total Asset	Prowess Database
DIV	Dividend Paid	Dividend Paid/Total Asset	Prowess Database
TOBIN	Tobin's Q	(MV of equity + BV of Debt)/Total Asset	Prowess Database
SIZE	Size of firm	Natural log of assets	Prowess Database
MTB	Market-to-Book value	Market-to-Book value	Prowess Database
LIQUIDITY	Liquidity	Current Assets/Current Liabilities	Prowess Database
OPSR	Operation expenses as a percentage of sales	Operating expense/Sales	Prowess Database
STAR	Sales to Total Assets	Sales/Total Assets	Prowess Database

Table A1.

Variables description

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