Block Trades, Market Reaction and Monitoring Role: Evidence from India

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Abstract

We investigate the role of diverse class of blockholders in family firms by examining market reaction (3-day CAR) to increase in block purchases. We classify firms based on whether family has ownership (promoter holds greater than 20% equity), operational (family is CEO or MD), and/or strategic control (family is chairperson on board). We classify blockholders based on their role to impact primary or secondary agency cost in these firm: insiders, pressure-resistant and pressure-sensitive. We find that abnormal returns for increase in pressure-resistant and insider purchases is positive and significant (5.2% and 4.6% respectively) compared to pressure-sensitive blocks (-1.2%), suggesting governance benefits. Increase in pressure-resistant and insider purchases do not appear significant when family has complete control. Pressure-resistant net purchases has positive wealth effect only when family has operational control (outsider is the chairperson). Insider net-purchases has positive impact only when the family has ownership, but neither operational or strategic control. Moreover, the role of insider is attenuated when the family has strategic control. These results bring to focus that increase in block purchases by insiders has more positive effect on professionally managed firms, and pressure resistant on family managed firms. The former suggests alignment effect while latter reflects reduction in entrenchment effect. We also find that 2010 regulatory amendment regarding minimum public shareholding has positive impact on block purchases.

JEL Classification: G20, G32, G34

Keywords: Blockholders, Block ownership identity, Corporate Governance

1. Introduction

"Blockholders are ubiquitous. Virtually every corporation, of every size, in every country has them. Blockholders are heterogeneous. Each has its own determinants, incentives, and consequences; these considerations are likely to vary by country." (Edmans and Holderness, 2017, p. 2 and p. 4). Edmans and Holderness (2017) suggest that the differences in institutional setting and regulatory environments across countries makes it interesting to study how different categories of blockholders ameliorate or exacerbate their effectiveness in monitoring the managers. This paper examines the relation between short-term market reaction and diverse class of blockholders using a large sample of block trades[1] in Indian family firms spanning from 2005–2015.

Most prior blockholder literature assumes that "blockholders" are indistinguishable from each other (Shleifer and Vishny, 1997; Makhija and Spiro, 2000; Morck, Wolfenzon, and Yeung, 2004). While some recent evidence suggests that diverse blockholders impact firm performance in different ways (Edmans, 2013; Hadlock and Schwartz-Ziv, 2017), these studies are set in the context of markets where diffused ownership is common. Studying the role of blockholder governance on performance of family firms might provide insights different from those present in the exiting literature. Interestingly, India provides one such setting where firms have concentrated family ownership (Chakrabarti, Megginson and Yadav, 2008), and most often the dominant blockholder is an insider. While extant literature on blockholder typology identifies *pressure-resistant* and *pressure-sensitive* groups[2] as broad categories, the family ownership setting in India, allows to identify and classify *insiders* (promoters, promoter group companies, promoter trusts) as a separate class of blockholders.

The theory of blockholder governance is framed as a trade-off between two effects: the reduction of primary agency cost (principal-agent) due to separation between ownership and control, for the reason that blockholders have the incentive and the resources to monitor the managers better (alignment effect; Shleifer and Vishny, 1986; Sarkar and Sarkar, 2000); and the increased secondary agency cost (principal-principal) resulting from the ability of the blockholders to expropriate the (diffuse) minority shareholders (entrenchment effect; Dharwadkar et al., 2000; Claessens, Djankov, Fan and Lang, 2002; Morck et al., 2005). The context of family firms, and insider-blockholders interacting with multiple outsider blockholders (pressure-resistant and pressure-sensitive), results in governance effects that are varied and more complex than a simple trade-off between these two effects. That is, diverse categories blockholders have different incentives, engage in different forms of governance, and are affected by firm characteristics in different ways, leading to varied effects on firm outcomes. Our study is positioned in this context and allows us to enrich the understanding of the relative role of blockholders in reducing primary and/or secondary agency issues in family

[1] SEBI vide its circular no. MRD/DoP/SE/Cir-19/05 dated September 2, 2005 issued guidelines for defining block trade/block deal as, "*A trade, with a minimum quantity of 5,00,000 shares or minimum value of Rs. 5 crores executed through a single transaction on a separate window of the stock exchange will constitute a "block deal"*.

[2] Pressure-resistant category include investment firms and independent individual investors (includes HUF), that are in better position to actively monitor target firm due to their fiduciary responsibility and economic incentive to protect their investments. Corporations are recognised as pressure-sensitive category due to their conflict of interest with target firms emerging from either current or potential business interests and product-market synergies (Brickley, Lease, and Smith, 1988; Allen and Phillips, 2000; Fee, Hadlock, and Thomas, 2006; Hutchinson, Seamer and Chapple, 2015; Muniandy, Tanewski, and Johl, 2016).

firms. To test this non-monotonic relation, we classify firms based on whether a firm has ownership control (family holds greater than 20% equity), and/or operational control (family is CEO or MD), and/or strategic control (family is chairperson on board), and how the presence of multiple blockholders impact shareholder wealth in these various settings.

Prior studies use performance metrics related to profitability (return-on-assets, ROA) or valuation ratios (Tobin's Q) to study the effect of blockholders (Selarka, 2005). In contrast, we focus on the stock market reaction to diverse class of blockholder trades (Barclay and Holderness, 1991; Chan et al., 1997; Park et al., 2008). We contend that blockholder-trades could impact future cash-flows that accrue to minority shareholders, either directly or through signalling. Without an effect on cash flows, it would be hard to explain stock price changes described in the literature (Barclay and Holderness, 1991, 1992). By using actual trades (rather than the block-holding), we mitigate the possibility of an unrelated event affecting the value of the firm.[3] In order to connect the blockholder presence to stock price changes, we examine short-term market reaction (3-day cumulative abnormal returns, CAR) around block purchases and sales for pressure-resistant, pressure-sensitive and insider blockholder categories using a large sample of the block buy and sell trades from 2005–2015 in India.

The prevalence of blockholder ownership universally raises a fundamental question regarding their role in effectively monitoring management. Khanna and Palepu (2000) and Sarkar and Sarkar (2012)[4] argue that monitoring by large shareholders in developing countries may not be as effective as in developed countries due to variety of reasons. In this context, we identify a regulatory amendment in 2010, that raised the minimum public shareholding to a uniform 25 per cent for all private listed companies, to ensure increased liquidity, price discovery, increased access to capital, and enhanced corporate governance by reducing entrenchment by promoter holding. Such exogenous regulatory intervention provides a natural setting to test whether changes in the institutional ownership landscape in India, has an impact on the role of diverse blockholder trades on shareholder wealth, during post regulatory reforms period (2011 –2015).

Our study contributes to the blockholder literature in at least four different ways. First, prior research identifies two classes of blockholders: individual investors and financial institutions as pressure-resistant, and corporations as pressure-sensitive blockholders (Park et al., 2008; Edmans and Holderness, 2016). We complement the blockholder heterogeneity by including insider blockholders as a distinctive group. Second, we distinguish between different settings of family owned, family managed and professionally managed firms. We use these distinctions to analyse the dynamics associated with divergent blockholders' preferences and goals. Third, we provide insights on the impact of blockholder trades on financial markets by examining the short-term market reaction. While most prior studies examine block purchases and sales independently (Barclay and Holderness, 1991; Park et al., 2008), we analyse increase in block

[3] Our maintained hypothesis is that in the absence of other confounding events, an abnormal stock market reaction is attributable to the trade. In particular, blockholder trades result in a change of power balance among the investors of the firm and therefore, the market reaction to this trade is likely to reflect the expected effect of this change in power balance on the agency costs of the firm.

[4] Poor availability of information on performance of firms due to inadequate disclosure norms, opaqueness associated with insider ownership arising due to pyramiding, crossholding and association with large number of privately held firms, the generic tendency towards 'insider control and ownership' and plagued with weak investor protection.

purchases across blockholder categories. That is, we account for the increase in purchases by one category with respect to block sales by other categories – for example, how does market react when a pressure-resistant blockholder buys a block from either a pressure-sensitive or insider blockholder? Finally, we contribute to the corporate governance literature since our study considers important corporate governance reforms that have impacted the institutional ownership conditions in India.

Our main findings are as follows: Wealth effects around the three-day CAR for increase in pressure-resistant and insider block trades is positive and significant (5.2% and 4.6% respectively) compared to pressure-sensitive blocks (-1.2%), suggesting governance benefits Increase in pressure-resistant and insider purchases do not appear significant when family has complete control. Pressure-resistant net purchases has positive wealth effect only when family has operational control (outsider is the chairperson). Insider net-purchases has positive impact only when the family has ownership, but neither operational nor strategic control. Moreover, the role of insider is attenuated when the family has strategic control. These results bring to focus that increase in block purchases by insiders has more positive effect on professionally managed firms, and pressure resistant on family managed firms. The former suggests alignment effect while latter reflects reduction in entrenchment effect. We also find that 2010 regulatory amendment regarding minimum public shareholding has positive impact on block purchases.

The rest of the paper is organized as follows. In section 2, we provide a brief review of the institutional specificities and corporate governance reforms in India. Section 3 discusses prior literature on blockholder governance leading to various hypothesis development. Section 4 describes the data and methodology. In section 5, we discuss our main results and section 6 provides additional analysis. Section 7 concludes and provides avenues for future research.

2. Institutional Specificities and Corporate Governance Reforms in India

The institutional specificities of developing markets such as India are absence of well-developed capital and managerial market, less active takeover market, business practices that give greater importance to implicit trust-based contracting, and ownership structures that characterize business groups and family firms (Sarkar and Sarkar, 2012). The Indian corporate sector witnessed a series of corporate governance reforms, that gathered momentum from late nineties. The first round of reforms in 2001, amendment to Clause 35 of the Listing Agreement, differentiated the ownership structure in Indian firms into two major constituents – promoters and non-promoters holding at least 1% of outstanding equity. Post April 2006[5] the disclosure standards changed towards greater transparency, requiring complete disclosure of the identity and shareholding of all persons under Promoter and Promoter Group irrespective of any cut-off level, as well as greater detail of public shareholding under which institutions and non-institutions (corporate bodies) got reported separately.

From February 2009[6], Regulation 8A of the Takeover Regulations was amended to include formats for disclosures of pledged shares by promoter and promoter groups, and Clause 35 and

[5] SEBI vide its circular no. SEBI/CFD/DIL/LA/2006/13/4 dated April 13, 2006 issued amendment to Clause 35 of Equity Listing Agreement.

[6] The Securities and Exchange Board of India (SEBI) vide its circular no. SEBI/CFD/DIL/LA/2009/3/2 dated February 03, 2009 issued amendments to the Equity Listing Agreement; Clause 35 – disclosure regrading

41 of the Equity Listing Agreement underwent further amendments to provide for disclosures of pledged shares by promoters and related matters. This amendment was introduced in the wake of Satyam saga, as pledging of shares could result in a change of ownership if the promoter is unable to redeem those shares by repaying the loan[7]. Hence, disclosure of pledged shares was meant to improve transparency regarding promoter's borrowings and revealing the risk of investing in such firms during economic downturn and falling share prices if the promoter decides to sell the shares to meet margin calls. The next major amendment in 2010[8] was related to minimum public shareholding of 25% among privately listed firms. Ministry of Finance vide press release dated June 4, 2010 stated that: "A dispersed shareholding structure is essential for the sustenance of a continuous market for listed securities to provide liquidity to the investors and to discover fair prices. Further the larger the number of shareholders, the less is the scope for price manipulation." The intent of increasing the minimum public shareholding to 25% was to ensure increased liquidity, price discovery, increased access to capital, reduce entrenchment by promoter holding and thus mitigate price manipulation in stock markets.

Though 2009 and 2010 appear as important corporate governance reforms in India, one might argue that material changes pertaining to shareholding pattern and ownership disclosure happened in 2002 and 2006[9]. Whereas, the amendment in 2010, enabled change in the institutional landscape among Indian firms, that is firms transitioned from concentrated insider ownership to slightly dispersed ownership, hence providing opportunity for outsider blockholders (financial institutions and corporations) to increase their stake in family firms. Therefore, we believe the period (2011—2015) provides a natural setting to capture changes in important corporate governance practices that impact institutional ownership setting in India.

3. Literature and Hypothesis Development

3.1 Blockholder Heterogeneity

Extant literature identifies broad typology of blockholders[10]: financial institutions and individual investors as *pressure-resistant* and corporations as *pressure-sensitive* (Brickley, Lease, and Smith, 1988; Hutchinson, Seamer and Chapple, 2015). The family firm setting characterised with concentrated ownership, allows to identify *insiders* as a separate class of blockholders. Henceforth, our categories of blockholders are *pressure-resistant*, *pressure-sensitive* and *insiders.*

shareholding pattern of persons belonging to "Promoter and Promoter group" that includes shares pledged, encumbered or otherwise, and Clause 41– reporting the shareholding pattern of promoter and promoter group in quarterly financial results of the company.

[7] For detailed discussion on share pledge loans and promoter holding in Indian firms, refer to NSE white paper: https://www.nseindia.com/research/content/nse_nyu/NSE_White_Paper_3.pdf

[8] Securities and Exchange Board of India (SEBI) vide Circular no. CIR/CFD/DIL/10/2010 dated December 16, 2010 has issued a circular on amendment to the Equity Listing Agreement which inter-alia provides amendment to Clause 40A on minimum public shareholding of 25%.

[9] We thank the discussant for this excellent suggestion on introspecting on minor vs material changes in a regulatory amendment.

[10] This compelling distinction is driven by theory, not by actual observed evidence of monitoring because it relies on recognizing significant (potential) business relationships that investors have with block firms.

Among *pressure-resistant* blocks we observe two categories; 1) investment firms, hedge funds, mutual funds, pension funds, private equity, investment advisory and brokerage firms, foreign institutional investors, and financial institutions that include commercial banks and insurance companies; 2) individual investors (includes HUF). These blockholders are in better position to actively engage in monitoring activities due to their fiduciary responsibility to protect their investments. Chen et al. (2007) show that independent financial institutions with long term investment perspective have a stronger incentive to monitor with arguably low cost of monitoring. Park et al. (2008) show that block trades by activist and strategic block purchases manifest as positive market reaction, compared to financial blocks. Chan et al. (1997) and Barclay and Holderness (1991) find stock price increases when blockholders eventually acquire the firm. However, there are contradicting views with regards to commercial banks and insurance companies, one view suggest that these institutions might have potential business interest in block firms, hence would not be effective monitors (Brickley et. al., 1988). The opposing view is that banks[11] have relative benefit in monitoring firms due to their ability to access inside information (Lehmann and Weigand, 2000).

Next, we focus on *corporations* as part of *pressure-sensitive* blocks. Corporations could be private or public corporations, within same industry or business groups. Pressure-sensitive blockholders are largely those who might have current or potential business relations with the firm. Corporate blockholders enjoy certain private benefits not available to institutional and individual blockholders. For example, corporate blockholders enjoy synergistic benefits in terms of market collaborations between the purchasing firm and the invested firm (Allen and Phillips, 2000; Fee et al., 2006; Barclay et al., 2009). These blockholders might not be as effective in monitoring and play a less important governance role since they would be less likely to object questionable practices for fear of losing business (Ferreira and Matos, 2008; Chen et al., 2007). Also, corporate blockholders are different from other types of blockholders since they also suffer from agency problems and require effective monitoring mechanisms themselves. Barclay and Holderness (1991) argue that corporate blockholders rely on their representatives on the boards of their invested firms to pursue their private benefits of control. Therefore, we classify corporations as pressure-sensitive blocks.

Finally, we categorise the *insider* blockholders (promoters, promoter group companies, promoter trusts, and insider directors) as a separate group, since they are neither independent nor pressure-sensitive investors. The traditional outlook towards insiders associated with family firms may use ownership as an entrenchment device to extract private benefits. However, given a large amount of wealth at stake, these large insider shareholders have the incentive to monitor actively, scrutinize management, and curb rent extraction (Shleifer and Vishny, 1986; Sarkar and Sarkar, 2000). Moreover, promoters with large amounts of assets in the form of securities and their actions could also serve as a strong signalling mechanism to minority investors.

[11] Our study includes banks and insurance companies as part of pressure-resistant blocks. The argument of banks having potential business interests would hold good for commercial banks, which brings the focus on debt overhang issues, and in such cases the bank is generally not interested in monitoring, rather focus on recovering the debt. However, our sample of banks consists mainly of foreign banks and very few insurance companies, hence we find it logical to add banks and insurance companies to pressure-resistant category of blockholders.

The above discussion and typology of blockholders leads us to highlight our main hypothesis as follows.

H1a: Block trades by *pressure-resistant* blockholders will be positively associated with abnormal returns (CAR).

H1b: Block trades by *pressure-sensitive* blockholders will be negatively associated with abnormal returns (CAR).

H1c: Block trades by *insider* blockholders will be positively associated with abnormal returns (CAR).

3.2 Corporate Governance Reforms

A set of corporate governance reforms is discussed in section 2 that is pertinent to the period of the study spanning from 2005—2015. Among various reforms, the amendment to Clause 40A in 2010 resulting in minimum public shareholding of 25% among private listed firms, impacted the change in the institutional landscape in India, leading to dilution of promoter holding in family firms. Firms transitioned from concentrated insider ownership to dispersed ownership, hence providing opportunity for outsider blockholders (financial institutions and corporations) to increase their ownership in family firms. We also believe that the 2011—2015 sample period, witnessed enhanced transparency and public reporting of promoter and promoter groups shareholding due to the 2009 Clause 35 and 41 amendments. Therefore, the period, 2011—2015 provides a natural setting to test the impact of regulatory interventions on the role of blockholders, as perceived by the short-term market reaction to these block trades. Hence, we conjecture that block trades by pressure-resistant blockholders will have positive impact on shareholder wealth for the period 2011—2015, due to increased ownership, as well as transparency in information regarding insider holding.

H2: Block trades by *pressure-resistant* blockholders will be positively associated with abnormal returns for the period 2011—2015 compared to pre—2011 period, due to 2010 regulatory amendment in favour of minimum public shareholding.

3.3 Family Managed and Professionally Managed Firms

The traditional outlook for family managed firms supports the prevalence of entrenchment over alignment (Morck et al., 1988), implying opportunistic behavior by founding family members in expropriating firms' resources through excessive compensation, special dividends and perquisites, and self-dealings (Anderson and Reeb, 2003; Masulis et al., 2011). In contrast, several studies provide evidence that a high level of insider ownership leads to greater alignment of interest between insiders and minority shareholders' long-term interests (Jensen and Meckling, 1976; Demsetz and Lehn, 1985; Ali et al., 2007). That is, given a large amount of wealth at stake, these insider shareholders themselves have the incentive to monitor actively, scrutinize management, and curb rent extraction (Shleifer and Vishny, 1986).

We examine these mixed results by constructing five different categories of family firms. Following Anderson and Reeb (2003), our basic definition of family ownership is when promoter equity holding is greater than 20 percent. We then separate family owned and

managed firms (FOFM) from family owned and professionally managed firms. For FOFM firms, at least one family member is the chairperson of the board and holds the executive position such as CEO or MD. Among family owned but professionally managed firms, we distinguish between FONFM firms where the family member retains a strategic non-executive position (promoter is the chairperson of the board however not CEO or MD) and FOPM firms where the family members have neither executive nor non-executive positions. We also account for a situation where family holds only operational control without the strategic position (FONPM). In our setting, the widely held firms are defined as non-family firms (NFOPM), where family ownership is less than 20% and family is neither chairperson on the board, nor CEO or MD.

Prior literature in family firms (Villalonga and Amit, 2006; Singla, Veliyath and George, 2014) show that role of blockholders' governance and their incentive to govern could differ between family managed and professionally managed firms, leading to non-monotonic relation between them. That is, the role of a pressure-resistant blockholder would be more relevant in family firms with complete (FOFM), operational (FONPM) and strategic control (FONFM), which suggests that they mitigate the expropriation by insiders, while the role of insiders is attenuated in these firms due to increase in secondary agency issues. In contrast, insiders would have a larger role to play in professionally managed firms where family has skin-in-the-game and alignment of interest with minority shareholders. Hence, we hypothesize, block trades by insiders in FOFM (full control), FONPM (operational control) and FONFM (strategic control) firms could be value-reducing since they have greater opportunities to reap private benefits of control indicating the presence of entrenchment or the secondary (principal-principal) agency problems. However, role of insiders in professionally managed firms (FOPM, NFOPM) could be viewed as value enhancing from the alignment of interest perspective, thus reducing primary (principal-agent) agency problems. Alternatively, block trades by pressure-resistant blockholders could be value enhancing in most firms due to their fiduciary responsibility. Having said that, the role of pressure-resistant blockholders would have greater relevance towards reducing secondary agency problem in family managed firms would, than reducing primary agency problem in professionally managed family firms due to alignment of insider goals with minority shareholders. In this regard, Pagano and Röell (1998) find that the presence of outsider blockholders reduces concerns of controlling shareholder wealth expropriation in family managed firms. Maury and Pajuste (2005) find that family firm performance is enhanced if the second blockholder is a large outside shareholder. In contrast, Villalonga and Amit (2006) find that outside blockholders fail to be effective monitors in family managed firms due to complete control. Table 1, explains the competing perspectives from agency theory and the role of diverse blockholders among the family firm categorization. Against this backdrop, we develop the following hypothesis to examine the role of pressure-resistant and insiders blockholders in in FOFM, FONPM, FONFM, FOPM and NFOPM firms. In the study, pressure-sensitive category is considered as the control group.

H3a: The positive relation between abnormal returns and increase in net purchases by pressure-resistant (insider) blockholders in FOFM firms is strengthened (weakened).

H3b: The positive relation between abnormal returns and increase in net purchases by pressure-resistant (insider) blockholders in FONPM firms is strengthened (weakened).

H3c: The positive relation between abnormal returns and increase in net purchases by pressure-resistant (insider) blockholders in FONFM firms is strengthened (weakened).

H3d: The positive relation between abnormal returns and increase in net purchases by pressure-resistant and insider blockholders in FOPM firms is strengthened.

H3e: The positive relation between abnormal returns and increase in net purchases by pressure-resistant and insider) blockholders in NFOPM firms is strengthened.

4. Data, Variables and Methods

4.1 Data

SEBI vide its circular no. MRD/DoP/SE/Cir-19/05 dated September 2, 2005 issued guidelines for execution of block trades on stock exchanges using a separate window, therefore our data includes block trades from December 2005 to March 2015 executed on the Bombay Stock Exchange (BSE)[12]. The data on block trades is obtained from CMIE Prowess that includes information on the firm name, deal date, client name, block size, price per share, and value of block. To categorise block trades into different blockholder categories (pressure-resistant, insider and pressure-sensitive), we use comprehensive reports on shareholding pattern available on the Bombay Stock Exchange. To identify individual investors, we use internet sources. We further obtain data on institutional ownership, stock prices, firm-level financials and national industrial classification (NIC) from CMIE-Prowess database.

The initial sample consists of block trades (buy and sell) for ten-year period from December 2005—March 2015 comprising of 636 firms on which block trades took place (henceforth as block-deal firm). This results in 2547 buy-side and 2320 sell-side block trades, considering multiple block trades by the same firm on a given date. When we exclude financial and utility firms from the initial sample, our intermediate sample comprises of 325 block-deal firms. Further, the firm-level sample reduces to 321 block-deal firms, based on availability of closing prices and stock returns for the estimation window, t-150 to t+10.

Our primary variable of interest is cumulative abnormal returns (CAR) calculated around the date of block trade. We compute and test CAR at the firm-level and for each blockholder category[13]. At the firm-level, we have 934 unique block trade transactions, and the sample for blockholder categories is 1321 block trades (buy, sell and net-buy) due to multiple entries. However, in the regression analysis since all the independent variables are not available, the final sample for different model specifications varies from 1300-1308 block trades depending on information on ownership holding (family firms classification), corporate governance measures and financial variables. The sample selection table is given in Annexure 2. Our dependent and independent variables are described in the section below. Our dependent and independent variables are described in the section below.

[12] We use block trades on Bombay Stock Exchange simply because these trades were higher in number compared to National Stock Exchange (NSE).

[13] The computation of CAR at the firm-level has unique entries, that is, block trades that happen on the same date for the same firm. And CAR around blockholder categories consists of multiple entries, that includes, block trades on the same date on multiple firms by a blockholder category.

4.2 Variables

The variables used in our empirical analysis can be grouped into three categories, (i) dependent variable measuring market reaction to block trades (3–day cumulative abnormal returns, CAR) calculated using the Fama-French three-factor model. (ii) primary variable of interest that classifies blockholders into pressure-resistant, insider and pressure-sensitive blocks (iii) secondary variables of interest that includes regulatory amendment and family firm classification (iii) other control variables such deal size, corporate governance mechanisms, and firm-level financials which might also affect market reaction to block trades.

4.2.1 Dependent Variable – Cumulative Abnormal Returns (CAR)

We measure market reaction to block trades (purchases, sales and net-purchases) by diverse blockholder categories (pressure-resistant, insider and pressure-sensitive) using the Fama-French 3-factor model (Fama and French, 1993). The 3-day event window is defined as -1, 0, and +1 days relative to the date of block trade (purchase and sale). The estimation window for calculating CAR returns is (-150, -30)[14] days. Announcements that had missing returns on any of the three days are dropped from the analysis. We consider the risk-free rate to be 7.38% and the 3 factors are drawn from Agarwalla et al. (2013), adjusted for survivorship bias. The model is given as follows:

$$R_{jt} - R_f = \alpha_j + \beta_1\left(R_{mt} - R_f\right) + \beta_2 SMB + \beta_3 HML + \varepsilon_{jt} \quad (1)$$

where R_{jt} is the return for stock j in period t, R_f is the risk-free rate of return, $\left(R_{mt} - R_f\right)$ is the market premium, SMB measures the historic excess returns of small market capitalization stock over big market capitalization stocks, HML is the historic excess returns of value stocks over growth stocks.

4.2.2 Independent Variable – Blockholder Categories

Our main independent variable is blockholder categories. The Bombay Stock Exchange (BSE) provides comprehensive reports on shareholding pattern of all BSE listed companies on a quarterly basis. The report provides shareholding information on persons belonging to "Promoter and Promoter Group" and "Public" that includes financial institutions, and non-institutions such as bodies corporate and individuals. We hand collect data from shareholding pattern reports and match them to the block trades data from Prowess, and categorise blockholders into four main categories: 1) individuals (includes HUF), 2) investment firms (that include mutual funds, investment advisory and brokerage firms, pension funds, hedge funds, private equity, foreign Institutional Investors, commercial banks and insurance companies), 3) corporations (private and public companies, within same industry or business groups), and 4) insiders (includes promoters, promoter companies, promoter trusts). This classification is further re-grouped into pressure-resistant, pressure-sensitive and insider blockholders, where pressure resistant category includes individuals and investment firms, and pressure sensitive category comprises of corporations.

[14] We also vary the event window to (-2, 2), (-3, 3), (-5, 5) and (-10, 10) days, and estimation window to (-180, -30) and (-200, -30) days, to check for robustness of results (not reported).

Following prior studies on blockholder voice and exit (Edman and Manso, 2008; Bharath, Jayaraman, and Nagar, 2013; Edmans, 2014), we estimate CAR around block purchases and sales for pressure-resistant, pressure-sensitive and insider blockholder categories. However, these results do not differentiate trades across (and within) block categories which could give us the better measure of increase in net purchases in one category of blockholders. To elaborate, we expect market reaction to be different if a pressure-resistant blockholder buys from another pressure-resistant versus if the purchase is from a pressure-sensitive or insider blockholder. The former refers to within blockholder trades, and the latter explains across blockholder trades. To account for such combination of trades, we aggregate buy (and sell) trades across blockholder categories, and define a measure called "net-purchases" that accounts for increase in block purchases by pressure-resistant, pressure-sensitive and insider block trades, across blockholder categories. For example, the measure of pressure-resistant net-purchase is all trades for which the buyer was pressure-resistant blockholder and seller was either pressure-sensitive or insider blockholder. This detail excludes trades where the buyer and seller belong to the same blockholder category. Therefore, it accounts for increase in block purchases by one category with respect to block sales by other categories. The number of block trades for each blockholder category is given in Table 3, Panel B. The largest buy-group is insiders, (577 purchases), followed by pressure resistant (463 buys) and pressure sensitive category (281 buys). The largest sell group is pressure-resistant (612 sales), followed by insider (502 sales) and pressure-sensitive (207 sales). The Net-Buy trades inform that insiders report highest across-group trades, followed by pressure-resistant and pressure-sensitive.

4.2.3 Regulatory Dummy

We use 2010 amendment to Clause 40A resulting in minimum public shareholding of 25% among private listed firms as a regulatory control. The variable is defined as Regulation 2010, which is a dummy taking a value 1 for the period 2011—2015 and 0 otherwise (2005—2010).

4.2.4 Family Firms

We categorize firms into five categories: A family owned and managed firm (FOFM) is defined as one where the promoter holds more than 20% equity, and the promoter is the chairperson of the Board and CEO or MD. A family-controlled, not family managed (FONFM) firm is defined as one where the promoter holds more than 20% equity and the promoter is the chairperson on board, however the promoter does not hold any executive position of CEO or MD. A family-controlled but professionally managed (FOPM) firm is defined as one where promoter holds more than 20%, but the CEO or MD and the chairperson is a non-promoter. A Family Ownership and Professionally Managed (FONPM) firm where promoter holds more than 20%, and the promoter holds only operational control (CEO or MD) but without the strategic position of being the chairperson of the firm. In our setting, the widely held firms are defined as non-family firms (NFOPM), where family ownership is less than 20% and family is neither chairperson on the board, nor CEO or MD.

4.2.5 Corporate Governance

The market reaction to block trades would depend on existing internal governance mechanisms, however there are diverging agreements regarding various governance mechanisms used by firms (Coles et al., 2008; Adams and Ferreira, 2007). Sarkar and Sarkar (2000) and Bennedsen, Kongsted, and Nielson (2008) acknowledge relation between optimal board size and firm value, where optimal board size is linked to firm characteristics such as size of the firm, age, and industry affiliation as well as other unobserved factors. Ghosh (2006) and Jackling and Johl (2009) finds evidence that larger boards lead to poorer performance in India. Regarding board independence, Haldea (2010) suggests that independent directors in majority of Indian companies are appointed by the management and the promoters largely to fulfil regulatory norms rather than to be active monitors. Sarkar and Sarkar (2009) document that busy independent directors add value to a firm by helping the management with their expertise and external social connections. Existing literature also highlights that one of the channels of expropriation of controlling shareholders is through executive positions on the board (Fan and Wong, 2002; Bertrand et al., 2003; Friedman et al., 2003). In India there is prevalence of insider dominated board of directors, such as promoter and executive directors on board, who enjoy substantial ownership and control and often hold top executive positions with the objective of controlling the firm (Carney and Gadajlovic, 2002; Gomes-Mejia et al., 2003).

Given this background, we consider board size, percentage of independent and executive directors as proportion of total directors on board, as important internal monitoring mechanism. The Prowess database contains information on directors from company annual reports and corporate governance reports, that includes names of directors, director's designation as executive, promoter or independent[15], as well as the identification of whether the promoter of the company holds management positions of CEO or chairperson on the board.

4.2.6 Firm level Financials

Consistent with prior literature we examine the market reaction to block trades using firm-level financials as controls. First, we expect block size (in percentage terms with respect to outstanding shares) to be a significant explanatory factor for the wealth effect. Greater the proportion of block ownership, larger is the likelihood that the benefit of monitoring will exceed the cost (Park et. al., 2008). Second, we control for total assets to account for size of the firm, price to book ratio and leverage. The literature suggests decrease in firm value as firms becomes larger and more diversified (Lang and Stulz, 1994; Sarkar and Sarkar, 2000), amount of leverage is the firm could signal external monitoring (Hutchinson and Gul, 2004; Chen and Jaggi, 2000), and price to book ratio could be interpreted as undervaluation signalling effect (Choi, 1991). We also take into account industry specific effects as investor preferences be driven by particular industries (Hartzell and Starks, 2003), and year effects from 2005–2015.

[15] Directors are classified as independent if they do not hold executive position, or have not held executive position for last three years, do not hold one per cent or more ownership and are not related to the promoter/s of the firm.

The definition of all the variables is given in Table 1.

4.3 Model

Our dependent variable is 3-day cumulative abnormal return (CAR), corresponding to the Fama-French 3-factor model. Our primary independent variable is blockholder categories described as, pressure resistant, pressure sensitive and insider blocks. In our benchmark model as shown in equation 2, we control for block deal characteristics (percentage deal size), corporate governance characteristics (board size and percent of independent and executive directors on board) and firm level financials (total assets, PB and leverage). We vary the benchmark model by considering block sales and net-purchases for every blockholder category.

$$CAR = a + bPressure\ Resistant_{buy/sell/netbuy} + cInsider_{buy/sell/netbuy} + dPercentage\ Deal\ Size + eBoardsize + fIndependent\ Directors + gExecutive\ Directors + hTotalAssets + iPB + jLeverage + Industry\ Dummies + Year\ Dummies + \varepsilon \quad (2)$$

For the rest of the analysis, net-purchases is our main independent variable that captures across-group increase in block purchases. We add the effect of regulation 2010, ownership structure (family-owned and family owned-managed firms), corporate governance controls, large institutional holding to later models, alongside other financial controls. We present the comprehensive model specification in equation 3, while we add or remove variables to test various hypothesis described in section 3.

$$CAR = a + bPressure\ Resistant_{netbuy} + cInsider_{netbuy} + dPercentage\ Deal\ Size + eBoardsize + fIndependent\ Directors + gExecutive\ Directors + hTotalAssets + iPB + jLeverage + KRegulation2010 + mFamilyFirms + nLarge\ Institutional\ holding + Industry\ Dummies + YearDummies + \varepsilon \quad (3)$$

The results are discussed in Section 5.

5. Results

5.1 Announcement Effects

Table 2 reports descriptive statistics for all block firms with announcement of block trades being the unit of analysis. All variables (except dummy variables) are winsorized at 1% and 99% levels. Table 3 Panel A reports CAR for different event time periods. The block trades in our sample are associated with average abnormal stock-price increase of 3.7% for the 3-day CAR. Abnormal returns reduce around 3% as our period increases to 5-days and more. Table 3 Panel B presents CAR for buy, sell and net-buy trades across different blockholder categories. The three-day CAR for buy trades for pressure-resistant (2.2%) and insider (2.9%) blockholders is positive and highly significant, suggesting that market perceives these trades as value enhancing, especially promoter buying stake may serve as a strong signalling mechanism (Sarkar and Sarkar, 2000). Purchases by pressure-sensitive blockholders is negative (-0.03%) but not significant. Contrary to the literature on blockholder exit, CAR for sell trades appear positive and significant for pressure-resistant (0.07%), pressure-sensitive

(2.4%) and insider (2.5%) blockholders. This raises an important question about who the blockholder is selling to (or buying from), leading to our analysis on within and across-group block trades. Therefore, we compute market reaction to net-buys that implies increase in ownership across blockholder categories. The results suggest that market perceives increase in pressure-resistant (5.2%) and insider (4.6%) ownership as value-enhancing, while increase in pressure-sensitive ownership (-1.2%) shows negative CAR.

To elaborate the results on purchases across blockholder categories (net-buy), we report mean CAR for within-group and across-group block trades in Panel C of Table 3. The results highlight that the highest CAR is when a pressure-resistant blockholder buys from insiders and pressure-sensitive blockholders. Similarly, market reacts positively to increase in insider block purchases from pressure-resistant and pressure-sensitive categories. However, CAR is negative for block purchases by pressure-sensitive category, especially when the seller is pressure-resistant blockholders.

In Panel D, we report CAR for family firm classification. The CAR is highest when the family has full control (FOFM), followed by when the family has high ownership but professionally managed (FOPM), however non-family firms show negative wealth effects (significant at 5% levels). Consistent with prior literature, family managed firms have higher wealth effects than professionally managed firms (Anderson and Reeb, 2003; Villalonga and Amit, 2006). Next, in Panel E we report market reaction to blockholder trades across family firm classification. The results show that increase in pressure-resistant ownership across family managed firms is economically and statistically more significant than professionally managed firms, suggesting the role of investment firms in reducing secondary agency problems in family firms. Increase in insider ownership in FOPM firms and professionally managed firms shows the higher CAR than family managed firms, while increase in pressure-sensitive blockholders in professionally managed firms is considered as value-reducing (significant at 1% levels). Panel F indicates whether blockholder trades across family firm classification is statistically different from each other. In most cases the difference of means across family firm classification is significant. More importantly, role of pressure-resistant and pressure-sensitive blockholders is considered to add more value in family managed firms compared to professionally managed firms, conversely the market reaction to increase in insider ownership in professionally managed firms is higher than their own family managed firms. In Table 4, we report the correlation among different variables used in the study. While some of the independent variables show significant correlation, the magnitude of correlation is low.

5.2 Determinants of CAR

We relate blockholder categories (pressure-resistant, pressure-sensitive and insider) to 3-day CAR while considering 2010 regulatory amendment and family firm structure. We control for block size, corporate governance characteristics (board size, percent of independent, executive and promoter directors on board), and firm level financials (size, PB and leverage) of block firms.

Table 5 presents the baseline results as we test the effect of pressure-resistant and insider blockholder categories on CAR for buy, sell and net-buy trades, while considering pressure-sensitive as the control group. In column 1, the coefficient of pressure-resistant and insider blockholders, is positive and highly significant (at 1% levels) compared to pressure-sensitive

category. This result is consistent with Chen et al. (2007) that independent institutions with long-term investments specialize in monitoring and influencing firms. Results support the contention that insiders' due to large stakes have incentive to monitor actively, scrutinize management, and curb rent extraction, and also signal their confidence in the firm to minority shareholders (Shleifer and Vishny, 1986; Sarkar and Sarkar, 2000). In column 2, we explore wealth effects for sell trades, and consistent with blockholder exit literature, the relation between pressure-resistant (and insider) sell trades and CAR is negative (at 10% levels). In column 3, we consider block trades across-groups, that is increase in pressure-resistant, pressure-sensitive and insider blockholders. These results are consistent with our hypothesis 1, the differential effect of pressure-resistant and insider net-purchases on abnormal returns is positive and significantly higher than the pressure-sensitive blockholders.

Larger deal size has positive impact on CAR (at 5% levels). Board size and effect of independent directors as outsider monitors is insignificant in most cases. This result supports Haldea (2010) that independent directors in majority of Indian companies are appointed to fulfil regulatory norms rather than to be active monitors. Market reaction to block purchase is negatively correlated with proportion of executive directors on board, supporting the concern of expropriation by controlling shareholders through executive positions on the board (Bertrand et al., 2003; Perry and Peyer, 2005). Among financial variables, small sized and undervalued firms have positive and highly significant effect on CAR, while presence of leverage show positive effect on CAR (only at 10% levels).

In Table 6, we introduce regulatory dummy that captures amendment in 2010 to the Equity Listing Agreement regarding minimum public shareholding of 25% in private firms. In Column 1, the regulatory dummy is positive and significant (at 10% level), indicating positive impact of regulatory amendment on CAR post 2010. In column 2, we interact blockholder categories with the 2010 regulatory amendment, the results show that positive impact of net block purchases by pressure-resistant and insider blockholders on CAR is greater for the period 2011—2015, than in the pre-regulatory period. For sake of robustness, in Column 3 and 4, we show sub-sample analysis of block trades before and after 2010 respectively. These results are consistent with hypothesis 2, and thus support Khanna and Palepu (2000) argument that the role of blockholders in emerging markets shows greater effectiveness in the post regulatory reforms period that facilitate higher ownership for non-promoter blockholders, as well as greater transparency in disclosures about insider holding.

In Table 7, we examine the market reaction towards increase in blockholder purchases across classification of family firms because the roles and incentives of pressure-resistant and insider blockholders differ in such settings. These results are shown using a sub-sample analysis of blockholder trades across family firms[16]. Column 1 pertains to FOFM firms with highest level of principal-principal conflict where family holds complete control. Contrary to hypothesis 3a, we do not find significant impact of pressure-resistant blockholders in FOFM firms. However, our result support Villalonga and Amit (2006) findings that outside blockholders fail to be effective monitors in family managed firms with complete control. Also,

[16] We test the non-monotonic effect between blockholder types and short-term market returns (CAR) using event effect in different family firm settings. However, we are unable to identify the significant difference between-groups due to high collinearity between the insider group and family firm classification.

increase in insider trades do not have significant impact on CAR in FOFM firms. The results for FONPM firms in column 2 show positive impact of pressure-resistant blockholder trades, thus supporting hypothesis 3b in reducing the secondary principal-principal agency issues due to greater insider control in such firms. However, the role of pressure-resistant blockholders shows insignificance in column 3 for FONFM firms, when insiders have strategic control. Nonetheless, we find partial support to hypothesis 3c, because the relation between increase in insider block purchases and CAR is negative. This result supports the entrenchment perspective that insiders with higher ownership and strategic control (even without operational control) can lead to expropriation of minority shareholders. With respect to FOPM firms in column 4, we find that increase in ownership by insiders is perceived as value enhancing by the market compared to pressure-resistant blockholders, thus partially supporting hypothesis 3d and alignment of interest effect between insider blockholders and minority shareholders (Demsetz and Lehn, 1985). Incidentally, we do not find any significant impact of pressure-resistant trades in such firms. In column 5, the results show no significant impact of pressure-resistant and insider increase in purchases in non-family firms (NFOPM).

In column 6 and 7, we construct two groups of family managed and professionally managed firms. We hypothesize that a pressure-resistant blockholder would be more relevant in family managed firms with complete (FOFM), operational (FONPM) and strategic control (FONFM), because they mitigate the expropriation by insiders. In contrast, insiders would have a larger role to play in professionally managed firms where family has skin-in-the-game and alignment of interest with minority shareholders. Overall the results suggest that increase in block purchases by insiders has more positive effect on professionally managed firms, suggesting alignment effect (Shleifer and Vishny, 1986; Sarkar and Sarkar, 2000). While pressure-resistant blockholders have positive and significant impact on family managed firms[17] (Park et al., 2008).

6. Additional analysis

In Table 8, we test the contention that incremental benefit from trades by pressure-resistant blockholders and corporate governance mechanisms, including presence of prior institutional holding are substitutes (and not complements) for one another. In column 1, we interact pressure-resistant category of blockholders with board size, percent of executive and independent directors. The co-efficient for interaction between pressure-resistant blockholders and independent directors is negative and significant at 10% levels, while positive and highly significant for interaction with executive directors. Consistent with Park et al. (2008), the results imply that as executive directors increase on board (or independent directors decrease on board), the market perceives monitoring benefits from pressure-resistant blockholders as value-enhancing, because the internal corporate governance mechanism is weak. We do not find any significant result with respect to board size. In column 2, we present the sub-sample analysis, however the corporate governance variables do not appear significant.

[17] We run a comparison of slope coefficients for insider and pressure-resistant blockholder categories in family managed vs professionally managed firms. The slope coefficient for insider net-buy is significantly higher in professionally managed (FOPM, NFOPM) firms (difference in mean 0.059, p value 0.000). However, in case of pressure resistant net-buy the difference is not significant across family and professionally managed firms

Next, we test the presence of external monitoring through prior institutional holding while evaluating the market reaction to blockholders. In column 3, we first control for large institutional holding (greater than 5% ownership) during the quarter prior to the block trade. In column 4, we interact large institutional holding with pressure-resistant and insider blockholders. While large institutional holding itself does not have impact on CAR, we find that additional trades by pressure-resistant blockholders has negative relation to CAR in the presence of prior institutional large holding (> 5%). However, this result does not hold for increase in insider trades. The results in the sub-sample analysis in column 4 (>5% holding) and 5 (<5% holding) is consistent. These results support Shleifer and Vishny (1986) and Maug (1998) that incremental monitoring-related benefit from an additional blockholder in the presence of large shareholding is likely to diminish.

7. Conclusion

In this paper, we examine market reaction to block trades by different blockholder categories in a developing market setting characterized by dominance of family-owned and managed firms, and regulatory amendments impacting ownership disclosures and institutional structures. Our univariate results suggest the three-day CAR corresponding to increase in pressure-resistant and insider blocks is positive and highly significant, while wealth effects surrounding pressure-sensitive corporates is negative (at 10% levels). The wealth effects surrounding family-managed firms is economically and significantly higher than professionally-managed firms and non-family firms.

Our multivariate results are consistent with the univariate analysis in which we test the impact of increase in blockholder trades (pressure-resistant, pressure-sensitive and insider categories) on 3-day CAR while controlling for regulatory amendment, family firms, block's corporate governance characteristics, deal size (percentage) and firm financials. Increase in pressure-resistant and insider block trades, have larger positive and significant market reaction compared to pressure-sensitive blocks. These findings support the motive that pressure-resistant blocks have the economic incentive to monitor (Chen at al., 2007), and insiders' increase in ownership could also serve as a strong signalling mechanism to minority investors (Shleifer and Vishny, 1986; Sarkar and Sarkar, 2000).

However, the role of pressure-resistant and insider blocks may differ accordingly to the strategic, operational or complete control held by family in such firms. Our results establish that pressure-resistant blockholder net purchases have more effect on family firms than on non-family firms, which suggests that they help reduce the effect of entrenchment and potential expropriation by family members. However, this result is consistent for settings where family has partial control (operational) rather than complete control (Villalonga and Amit, 2006). Intuitively, the role of insiders is greater in professionally managed firms where insiders have substantial ownership, thus supporting the incentive alignment argument (Ali et al., 2007). As expected, an investment and insider blockholder trade has a higher impact than a corporate blockholder trade in these settings.

The Indian setting allows us to test the changes in corporate governance landscape that effect blockholder ownership. An important regulatory amendment to this effect was the minimum public shareholding of atleast 25% that allowed dilution of promoter control in these

firms. Our findings show positive impact of this regulatory amendment on trades by pressure-resistant and insider blockholders post 2010. Moreover, this period also experienced greater transparency in disclosures about insider holding, thus consistent with Khanna and Palepu (2000). Results from the additional analysis, support Park et al. (2008), that additional benefit from increase in by pressure-resistant and insider blockholders, and corporate governance mechanisms including the presence of prior institutional holding, are substitutes for one another. That is, in the presence of internal and external monitoring mechanisms, the role of additional blockholders is attenuated. Future research could be directed towards validating impact of monitoring role by pressure-resistant and insider blockholders on firm value, by relating accounting as well as market-based measures of performance to diverse blockholder categories.

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Table 1: Agency theory Perspective among Family Firm Categorisation

	Family Firm categories	Description	Agency Perspective (AP)	Potential Role of Blockholders and Consequences
1	Family Ownership and Family Managed (FOFM)	Promoter holding > 20% + Promoter is Chairperson of the Board and also holds management position of CEO/MD/CMD.	Principal-Agent (PA) conflict is not existent in such firms due to alignment of manager and owner interests, but more susceptible to Principal-Principal (PP) conflict due to insider power to exploit minority shareholders.	• Block trades by Investment blockholders is perceived as value-enhancing because they mitigate Type 2 error (also depends on how strong the family control is). • Block trades by Insiders is perceived as value reducing in due to entrenchment perspective, leading to increase in Type 2 error. • Block trades by Corporations are considered value-reducing since they are pressure-sensitive.
2	Family Ownership and Not Professionally Managed (FONPM)	Promoter holding > 20% + Promoter is NOT Chairperson of the Board, but Promoter is CEO/MD/CMD.	Reduced PA conflict as incentive alignment due to family ownership and complete management control, but increased PP conflict as expropriation is be high, as due to family self-dealings and no participation in strategic vision.	• Block trades by Investment blockholders is perceived as value-enhancing for reducing type 2 error. • Block trades by Insiders is perceived as value reducing for increasing type 2 error. • Block trades by Corporations are considered value-reducing since they are pressure-sensitive.
3	Family Ownership and Not Family Managed (FONFM)	Promoter holding > 20% + Promoter is Chairperson of the Board and NOT CEO/MD/CMD.	Power to exploit minority shareholders with high ownership concentration (>20%). PP conflict due to ownership and presence on board. However, one could also argue the presence of PA conflict due to professional managers. However, insiders have the	• Block trades by Investment blockholders is perceived as value-enhancing in reducing Type 1 error, and there could be alignment of goals between investment blockholders and family owners. • Block trades by Insiders is perceived as value reducing due to control in ownership

			knowledge and incentive to monitor managers due to presence on board.	as well as strategic decisions on the board. • Block trades by Corporations are considered value-reducing since they are pressure-sensitive.
3	Family Ownership and Professionally Managed (FOPM)	Promoter holding > 20% + Promoter is NOT Chairperson of the Board and NOT CEO/MD/CMD.	PA conflict is very high. Incentive to monitor is high, but monitoring costs are also high as outside management could delay, distort or conceal critical information from non-management family owners.	• Block trades by Investment blockholders is perceived as value-enhancing for reducing type 1 error. • Block trades by Insiders is perceived as value enhancing for reducing type 1 error and alignment of goals between insider blockholders and shareholders. • Block trades by Corporations are considered value-reducing since they are pressure-sensitive.
5	No Family Ownership and Professionally Managed (NFOPM)	Promoter holding < 20% + Promoter is NOT Chairperson of the Board and NOT CEO/MD/CMD.	PA conflict is very high; Lower concentration increases monitoring costs for insiders in such firms.	• Block trades by Investment blockholders is perceived as value-enhancing for reducing type 1 error. • Block trades by Insiders is perceived as value enhancing for reducing type 1 error. • Block trades by Corporations are considered value-reducing since they are pressure-sensitive.

Table 2: Descriptive Statistics of Cumulative Abnormal Returns of Blockholder Trades across various blockholder categories and family firm categorisation and Control Variables

Variable Name	Unit	*N*	Mean	Median	SD	Min	Max
CAR (Full sample)	Categorical	1321	0.019	0.012	0.082	-0.170	0.296
Pressure Resistant Buy	Categorical	463	0.021	0.007	0.076	-0.170	0.296
Insider Buy	Categorical	577	0.029	0.017	0.076	-0.170	0.296
Pressure Sensitive Buy	Categorical	281	-0.003	0.009	0.095	-0.170	0.296
Pressure Resistant Sell	Categorical	612	0.007	0.003	0.083	-0.170	0.296
Insider Sell	Categorical	502	0.025	0.015	0.076	-0.170	0.296
Pressure Sensitive Sell	Categorical	207	0.044	0.025	0.083	-0.123	0.296
Pressure Resistant Net-Buy	Categorical	159	0.052	0.045	0.087	-0.144	0.283
Insider Net-Buy	Categorical	227	0.456	0.025	0.079	-0.151	0.296
Pressure Sensitive Net-Buy	Categorical	221	-0.012	0.002	0.098	-0.170	0.296
FOFM	Categorical	315	0.036	0.015	0.078	-0.159	0.397
FONPM	Categorical	210	-0.003	-0.0003	0.091	-0.170	0.296
FONFM	Categorical	260	0.027	0.023	0.065	-0.170	0.296
FOPM	Categorical	310	0.007	0.019	0.039	-0.170	0.296
NFOPM	Categorical	205	-0.011	-0.017	0.094	-0.170	0.296
Family Managed	Categorical	785	0.078	0.013	0.022	-0.170	0.296
Professionally Managed	Categorical	515	0.013	0.010	0.086	-0.170	0.296
Percentage Deal Size Buy	Percentage	1311	2.028	0.715	4.869	0	79.688
Percentage Deal Size Sell	Percentage	1311	1.953	0.667	4.957	0	79.688
Board Size	Nos.	1321	7.886	8	4.581	0	22
Independent Director	Nos.	1321	3.735	4	2.500	0	12
Executive Director	Nos.	1321	5.160	5	3.603	0	18
Percentage of Independent Director	Percentage	1321	0.413	0.474	0.232	0	1
Percentage of Executive Director	Percentage	1321	0.314	0.286	0.236	0	1
Log Assets	Percentage	1318	9.010	8.812	1.995	4.177	14.715
PB	Ratio	1321	3.231	1.500	5.251	0	59.48
Leverage	Ratio	1321	0.378	0.081	1.460	0	11.239
Regulation 2010	Categorical	1321	0.719	1	0.450	0	1
Large Inst. Holding	Categorical	1321	0.517	1	0.500	0	1

Table 3: Market Reaction to Blockholder Trades (buy, sell and net-buy)

Panel A: Cumulative Abnormal Returns (CAR) for Block trades

CAR	Mean CAR
(-1, +1)	0.03**
(-2, +2)	0.029**
(-3, +3)	0.031*
(-5, +5)	0.033
(-10, +10)	0.03

Panel A shows CAR results for all block trades between 2005—2015. The number of trades in these block firms is 934 CAR is calculated using Fama-French 3-factor model where the estimation window is (-150, -30) days. *p<0.10, **p<0.05, ***p<0.001.

Panel B: Cumulative Abnormal Returns for blockholder trades (Buy, Sell and Net-buy) around Diverse Blockholder categories.

Blockholder Category	Buy Mean CAR	*N*	Sell Mean CAR	*N*	Net-buy Mean CAR	*N*
Insider	0.029***	577	0.025***	502	0.046***	227
Pressure Sensitive	-0.003	281	0.024***	207	-0.012*	221
Pressure Resistant	0.022***	463	0.007**	612	0.052***	159
Total blockholder trades		1204		1281		585[a]

Panel B shows CAR for blockholder trades (across blockholder categories) for Buy, Sell and Net-Buy. Net-buy calculates increase in blockholder trade across blockholder categories, and does not consider blockholder trades within the same category i.e. corporate-corporate (60), insider-insider (350) and investment-investment (304). *p<0.10, **p<0.05, ***p<0.001.

Panel C: Cumulative Abnormal Returns for block trades within same blockholder categories and across different blockholder categories

Buyer	Seller	Mean CAR	*N*
Pressure Sensitive	Pressure Sensitive	0.032***	60
Insider	Insider	0.018***	350
Pressure Resistant	Pressure Resistant	0.005	304
Insider	Pressure Sensitive	0.047***	78
Pressure Sensitive	Insider	0.026**	62
Pressure Resistant	Pressure Sensitive	0.051***	69
Pressure Sensitive	Pressure Resistant	-0.027***	159
Pressure Resistant	Insider	0.052***	90
Insider	Pressure Resistant	0.045***	149

Panel C shows CAR for block trades (firm level) within the same blockholder types, for example, Insider buying shares from another Insider, and across different blockholder types i.e. Insider buying shares from either Pressure Sensitive or Pressure Resistant blockholders. *p<0.10, **p<0.05, ***p<0.001.

Panel D: Cumulative Abnormal Returns for block trades around Family Firms categorisation

Family Firm Classification	Description	Mean CAR	*N*
FOFM	Full Family Control	0.036***	315
FONPM	Family Ownership and only Operational Control	-0.004	210
FONFM	Family Ownership and only Strategic Control	0.028***	260
FOPM	Family Ownership but Professionally managed	0.030***	310
NFOPM	Non Family firms	-0.012**	205
Total Family firms			1300
Family managed (FOFM+FONPM +FONFM)	Family full control + Operational control	0.023***	785
Professionally managed (FOPM + NFOPM)	Professionally managed/No family full or operational control	0.013***	515

*p<0.10, **p<0.05, ***p<0.001.

Panel E: Cumulative Abnormal Returns for Blockholder Trades (Buy, Sell and Net-buy) among Family Firms categorisation

Family Firms	Pressure Resistant			Insider			Pressure Sensitive		
	Buy	Sell	Net-Buy	Buy	Sell	Net-Buy	Buy	Sell	Net-Buy
FOFM	0.033***	0.029***	0.063***	0.037***	0.032***	0.053***	0.037**	0.057***	0.043**
FONPM	0.023**	-0.017**	0.089**	-0.001	0.003	0.007	-0.029**	0.012	-0.028*
FONFM	0.037***	0.019***	0.070***	0.015***	0.031***	0.010	0.062***	0.044**	0.042**
FOPM	0.0001	0.030	0.026**	0.059***	0.026***	0.084***	0.027***	0.034***	0.024***
NFOPM	0.019*	-0.038***	0.033*	0.017**	0.005	0.023***	0.061***	0.044**	-0.082***
Family Managed	0.032***	0.012**	0.046***	0.020***	0.024***	0.031***	0.009	0.042***	0.005
Profess-ionally Managed	0.008	.001	0.021**	0.047***	.022***	0.062***	-0.024**	0.043***	-0.036***

*p<0.10, **p<0.05, ***p<0.001.

Panel F: Difference of Means test for diverse blockholder categories across family categorisation for Net-Buy Trades

Difference of Mean test between family firms' categories	Pressure Resistant		Insider		Pressure Sensitive	
	Mean CAR	*N*	Mean CAR	*N*	Mean CAR	*N*
FOFM – FONFM	-0.001	159	0.011***	219	0.004	215
FOFM – FOPM	0.008**	159	-0.013**	219	0.001	215
FOFM – FONPM	0.008*	159	0.013***	219	0.014***	215
FOFM – NFOPM	0.009*	159	0.009**	219	0.031***	215
FONFM – FOPM	0.010**	159	-0.025***	219	-0.002	215
FONFM – FONPM	0.009*	159	0.002	219	0.010***	215
FONFM – NFOPM	0.010*	159	-0.002	219	0.027***	215
FOPM – FONPM	-0.001	159	0.026***	219	0.013***	215
FOPM – NFOPM	-0.000	159	0.022***	219	0.030***	215
FONPM – NFOPM	0.001	159	-0.004**	219	0.017**	215

*p<0.10, **p<0.05, ***p<0.001.

Table 4: Correlation Table

The Table shows the correlation coefficient among the dependent variable and the independent variables in the sample. The variables are CARFF11(1), Pressure Resistant Buy (2), Insider Buy (3), Pressure Sensitive Buy (4), Pressure Resistant Sell (5), Insider Sell (6), Pressure Sensitive Sell (7), Pressure Resistant Net Buy (8), Insider Net Buy (9), Pressure Sensitive Net Buy (10), FOFM (11), FOFNM (12), FOPM (13),FONPM (14), NFOPM (15), Family Managed (16), Professionally Managed (17), Percentage Deal Size Buy (18), Percentage Deal Size Sell (19), Regulation 2010 (20), Board Size (21), Independent Director (22), Executive Director (23), Log Assets (24), PB (25), Leverage (26). *p<0.05.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
CARFF11	1																									
Pressure Resistant Buy	0.02	1																								
Insider Buy	0.10*	-0.65*	1																							
Pressure Sensitive Buy	-0.14*	-0.38*	-0.46*	1																						
Pressure Resistant Sell	-0.15*	0.29*	-0.36*	0.11*	1																					
Insider Sell	0.06*	-0.28*	0.41*	-0.17*	-0.73*	1																				
Pressure Sensitive Sell	0.13*	-0.02	-0.05	0.08*	-0.40*	-0.34*	1																			
Pressure Resistant Net Buy	0.15*	0.50*	-0.33*	-0.19*	-0.34*	0.14*	0.28*	1																		
Insider Net Buy	0.15*	-0.34*	0.52*	-0.24*	0.18*	-0.36*	0.23*	-0.17*	1																	
Pressure Sensitive Net Buy	-0.18*	-0.33*	-0.39*	0.86*	0.23*	-0.09*	-0.19*	-0.17*	-0.20*	1																
FOFM	0.12*	-0.06*	0.11*	-0.07*	-0.14*	0.13*	0.02	0.00	0.01	-0.09*	1															
FOFNM	0.05	0.02	0.10*	-0.16*	-0.06*	0.11*	-0.06*	0.03	0.00	-0.15*	-0.28*	1														
FOPM	0.08*	0.04	-0.03	-0.01	0.12*	-0.10*	-0.03	0.01	0.08*	-0.02	-0.32*	-0.28*	1													
FONPM	-0.12*	-0.07	-0.04	0.13*	-0.06*	0.07*	-0.02	-0.08*	-0.14*	0.11*	-0.25*	-0.22*	-0.25*	1												
NFOPM	-0.16*	0.07*	-0.17*	0.13*	0.16*	-0.23*	0.10*	0.04	0.04	0.17*	-0.25*	-0.22*	-0.24*	-0.19*	1											
Family Managed	0.00	-0.09*	0.06*	0.04	-0.17*	0.17*	0.00	-0.06*	-0.1*	0.00	0.68*	-0.41*	-0.46*	0.53*	-0.36*	1										
Prof Managed	-0.02	0.11*	-0.07*	-0.05	0.16*	-0.17*	0.00	0.07*	0.08*	-0.02	-0.69*	0.41*	0.46*	-0.53*	0.36*	-0.97*	1									
Percentage Deal Size Buy	0.14*	-0.07*	0.13*	-0.08*	-0.12*	0.11*	0.02	0.02	0.03	-0.08*	-0.05	0.08*	0.08*	-0.05*	-0.07*	-0.09*	0.09*	1								
Percentage Deal Size Sell	0.13*	-0.07*	0.14*	-0.09*	-0.15*	0.14*	0.02	0.03	0.02	-0.08*	-0.07*	0.07*	0.04	0.01	-0.05	-0.05	0.06*	0.87*	1							
Regulation 2010	-0.02	-0.07	0.02	0.05	0.15*	-0.09*	-0.08*	-0.14*	-0.03	0.04	-0.04	-0.01	0.09*	0.04	-0.08*	-0.02	0.00	-0.03	0.00	1						

Board Size	-0.03	0.15*	-0.14*	0.00	0.05	0.03	-0.11*	-0.05	-0.2*	0.03	-0.04	0.08*	0.16*	-0.06*	-0.18*	-0.07*	0.08*	-0.02	0.00	0.17*	1				
Independent Director	0.10*	0.09*	-0.01	-0.09*	-0.03	0.11*	-0.11*	0.01	-0.14*	-0.08*	0.08*	0.05	0.18*	-0.06*	-0.30*	0.03	-0.01	0.06*	0.04	0.26*	0.45*	1			
Executive Director	-0.20*	-0.17*	-0.07*	0.27*	0.16*	-0.04	-0.16*	-0.16*	-0.12*	0.32*	-0.01	-0.20*	-0.05	0.24*	0.04	0.16*	-0.17*	-0.04	-0.03	0.31*	0.23*	0.03	1		
Log Assets	-0.07*	0.14*	0.11*	-0.30*	0.12*	-0.12*	0.00	-0.12*	0.13*	-0.31*	0.06*	0.04	-0.01	-0.11*	0.01	-0.03	0.04	-0.19*	-0.16*	-0.07*	0.29*	-0.08*	-0.22*	1	
PB	-0.16*	0.07*	-0.13*	0.07*	0.10*	-0.01	-0.11*	-0.06*	-0.17*	0.12*	-0.03	0.00	-0.06*	-0.04	0.15*	-0.06*	0.06*	-0.04	-0.05	-0.13*	0.05	-0.14*	0.09*	-0.16*	1
Leverage	0.01	0.05	-0.01	-0.04	0.02	-0.15*	0.17*	-0.03	0.12*	-0.05	-0.04	-0.10*	0.03	-0.03	0.16*	-0.06*	0.06*	-0.06*	-0.05	0.16*	0.07*	-0.08*	0.00	-0.03	0.02

Table 5: Regression analysis of the wealth effects of Buy, Sell and Delta trades, as a function of blockholder categories, while controlling for corporate governance and block's financials. Dependent Variable: CAR

The Table shows the regression results corresponding to determinants of *CAR*. The independent variables are block categories (pressure-resistant and insider), percentage deal size, corporate governance characteristics (board size, percent of independent and executive directors on board), and firm financials (Log Assets, PB, Leverage). We include industry and year dummies. The definition of the variables is given in Table 1. Column (1) contains buy-side block trades, column (2) contains sell-side block trades, and column (3) shows results for delta-trades. Standard Errors are in parentheses. *p<0.01, **p<0.05, ***p<0.001

Variable name	(1)	(2)	(3)
Pressure Resistant Buy	0.020**		
	(0.006)		
Insider Buy	0.020**		
	(0.006)		
Pressure Resistant Sell		-0.017*	
		(0.007)	
Insider Sell		-0.017*	
		(0.007)	
Pressure Resistant Net Buy			0.029***
			(0.007)
Insider Net Buy			0.030***
			(0.006)
Percentage Deal Size Buy	0.001**		0.001**
	(0.000)		(0.000)
Percentage Deal Size Sell		0.001**	
		(0.000)	
Board Size	0.001	0.000	0.001
	(0.001)	(0.001)	(0.001)
Independent Director	0.014	0.025	0.026*
	(0.013)	(0.013)	(0.013)
Executive Director	-0.066***	-0.067***	-0.059***
	(0.011)	(0.011)	(0.011)
Log Assets	-0.009***	-0.008***	-0.008***
	(0.001)	(0.001)	(0.001)
PB	-0.003***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)
Leverage	0.004*	0.004*	0.004**
	(0.002)	(0.002)	(0.002)
Constant	0.106***	0.123***	0.098***
	(0.016)	(0.017)	(0.016)
Year Dummy	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes
N	1308	1308	1308
Adj. *R*2	0.151	0.150	0.166

Table 6: Regression analysis of the wealth effects of block trades, as a function of blockholder categories, while incorporating the effect of regulatory intervention, and controlling for corporate governance and block's financials.

Dependent Variable: CAR

The Table shows the regression results corresponding to determinants of *CAR* while incorporating the regulatory intervention in 2010 related to Equity Listing. The independent variables are block categories (pressure-resistant and Insider), Percentage Deal Size, corporate governance characteristics (board size, percent of executive and independent directors on board), firm financials (PB, Log Assets, Leverage) and regulatory dummy (=1 post 2010 regulation, else 0). We include industry and year dummies. The definition of the variables is given in Table 1 In column (1), we consider the effect of regulation dummy 2010. In column (2), we introduce interaction between regulation 2010 dummy and the blockholder categories. In column (3) we conduct sub-sample analysis for firms in the pre-regulation period, and column (4) presents results for post-regulation period. Standard Errors are in parentheses. *p<0.01, **p<0.05, ***p<0.001.

Variable Name	(1)	(2)	(3)	(4)
Pressure Resistant Net Buy	0.031***	0.006	0.009	0.042***
	(0.007)	(0.011)	(0.011)	(0.009)
Insider Net Buy	0.032***	-0.005	-0.011	0.045***
	(0.006)	(0.012)	(0.012)	(0.008)
Percentage Deal Size Buy	0.001**	0.001**	0.002*	0.001*
	(0.000)	(0.000)	(0.001)	(0.001)
Board Size	0.001	0.000	-0.002	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Independent Director	0.021	0.022	-0.008	0.037*
	(0.013)	(0.013)	(0.023)	(0.016)
	-	-		-
Executive Director	0.063***	0.059***	0.018	0.064***
	(0.011)	(0.011)	(0.033)	(0.013)
	-	-		-
Log Assets	0.007***	0.007***	-0.005	0.008***
	(0.001)	(0.002)	(0.002)	(0.002)
	-	-	-	-
PB	0.002***	0.002***	0.002**	0.003***
	(0.000)	(0.000)	(0.001)	(0.001)
Leverage	0.004*	0.004*	0.000	0.004*
	(0.002)	(0.002)	(.)	(0.002)
Regulation 2010	0.037*	0.002		
	(0.017)	(0.019)		
Regulation 2010*Pressure Resistant Net Buy		0.040**		
		(0.014)		
Regulation 2010*Promoter Net Buy		0.050***		
		(0.014)		

Constant	0.065**	0.100***	0.073*	0.100***
	(0.022)	(0.024)	(0.031)	(0.020)
Industry Dummy	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes
N	1308	1308	369	939
Adj. *R*2	0.168	0.178	0.095	0.211

Table 7: Regression analysis of the wealth effects of block trades, as a function of blockholder categories, while considering the effect of family-owned and family-managed firms, and controlling for corporate governance and block's financials.

Dependent Variable: CAR

The Table shows the regression results corresponding to determinants of *CAR* in the presence of family ownership and management. Columns (1) shows results for FOFM (Promoter ownership of greater than 20% and Promoter is Chairman and either CEO or MD). Results for FONPM (Promoter holding > 20% + Promoter is NOT Chairperson but Promoter is CEO or MD) are shown in column 2. Column 3 shows results for FONFM (Promoter holding > 20% + Promoter is Chairperson of the Board but NOT a CEO or MD). Column 4 shows results for FOPM (Promoter holding > 20% + Promoter is NOT Chairperson of the Board or CEO or MD). Column 5 shows result for NFOPM (Promoter holding < 20% + Promoter is NOT Chairperson of the Board or CEO or MD). Family Managed and Professionally Managed Results are given in columns 6 and 7 respectively. All specifications include net buy for block categories (pressure-resistant, pressure-sensitive and insider), percentage deal size, corporate governance characteristics (board size, percent of executive and independent directors on board), firm financials (PB, Log Assets, Leverage) and regulatory dummy (=1 post 2010 regulation, else 0). We include industry and year dummies. Standard Errors are in parentheses. *p<0.01, **p<0.05, ***p<0.001

	FOFM (1)	FONPM (2)	FONFM (3)	FOPM (4)	NFOPM (5)	Family Managed (6) (FOFM + +FONPM + FONFM)	Professionally Managed (7) (FOPM +NFOPM)
Pressure Resistant Net Buy	0.024	0.104***	0.014	0.019	-0.006	0.037***	0.023*
	(0.014)	(0.031)	(0.011)	(0.013)	(0.021)	(0.009)	(0.011)
Insider Net Buy	0.019	0.019	-0.027**	0.053***	0.028	0.012	0.071***
	(0.013)	(0.032)	(0.010)	(0.013)	(0.036)	(0.008)	(0.011)
Percentage Deal Size	0.008***	0.001	0.000	0.002	-0.002	0.002*	0.001
	(0.001)	(0.003)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Board Size	0.000	-0.002	-0.000	-0.001	0.005	0.000	0.000
	(0.001)	(0.004)	(0.001)	(0.001)	(0.004)	(0.001)	(0.001)

Independent Director	0.052	0.020	-0.068*	-0.006	-0.033	0.008	0.027
	(0.030)	(0.066)	(0.027)	(0.032)	(0.046)	(0.019)	(0.021)
Executive Director	-0.041	-0.008	-0.040	0.056*	-0.062	-0.066***	-0.031
	(0.032)	(0.074)	(0.025)	(0.025)	(0.059)	(0.017)	(0.018)
Log Assets	-0.009**	-0.000	-0.011***	-0.007	-0.018***	-0.007***	-0.008**
	(0.003)	(0.008)	(0.002)	(0.004)	(0.005)	(0.002)	(0.003)
Leverage	0.010	-0.042	0.005	-0.006	0.015*	-0.002**	-0.001
	(0.007)	(0.031)	(0.024)	(0.004)	(0.006)	(0.001)	(0.001)
PB	-0.002	0.001	-0.004***	-0.001	0.001	0.003	0.007***
	(0.001)	(0.003)	(0.001)	(0.001)	(0.002)	(0.006)	(0.002)
Regulation 2010	-0.018	0.010	-0.015	-0.015	-0.030	-0.001	0.058*
	(0.027)	(0.064)	(0.022)	(0.026)	(0.049)	(0.016)	(0.029)
Constant	0.091*	0.002	0.210***	0.104*	0.212***	0.096***	0.043
	(0.043)	(0.100)	(0.030)	(0.047)	(0.059)	(0.025)	(0.035)
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	315	210	251	308	203	776	511
Adj. R*2*	0.166	0.056	0.315	0.250	0.462	0.099	0.317

Table 8: Regression analysis of the wealth effects of block trades, as a function of blockholder categories, and interaction with corporate governance characteristics and large institutional holding.

Dependent Variable: CAR

The Table shows the regression results corresponding to determinants of *CAR* in the presence of blockholder categories and their interaction with corporate governance variables. In Column (1) we interact pressure-resistant blockholders with board size piece, percent of executive and independent directors on board. To avoid issues of multicollinearity, we use mean centered values of the interaction variables. In column (2) we present subsample of pressure-resistant block firms. Column (3) shows results for large institutional holding as a control and interacted with pressure resistant net buy and insider net buy, mean centered. In Column (4), we show results for sub sample where institutional holding is greater than 5% and column (5) shows results for institutional holding less than 5%. All specifications include other independent variables, percentage deal size, corporate governance characteristics (board size, percent of executive and independent directors on board), firm financials (PB, Log Assets, Leverage), regulatory dummy (=1 post 2010 regulation, else 0), industry and year dummies. Standard Errors are in parentheses. *p<0.01, **p<0.05, ***p<0.001

Variable Name	(1)	(2)	(3)	(4)	(5)
Pressure Resistant Net Buy	0.047**		0.065***	0.013	0.061***
	(0.016)		(0.010)	(0.007)	(0.012)
Insider Net Buy	0.033***		0.033***	0.024**	0.030**
	(0.007)		(0.009)	(0.008)	(0.011)
Percentage Deal Size Buy	0.001**	0.002	0.001**	0.002	0.001
	(0.000)	(0.002)	(0.000)	(0.001)	(0.001)
Board Size	0.001	0.001	0.001	-0.002*	0.002
	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Independent Director	0.023	-0.047	0.008	-0.041*	0.019
	(0.014)	(0.047)	(0.013)	(0.016)	(0.021)
Executive Director	-0.074***	-0.009	-0.064***	0.017	-0.077***
	(0.012)	(0.042)	(0.011)	(0.017)	(0.017)
Log Assets	-0.007***	-0.016*	-0.008***	-0.008***	-0.007*
	(0.002)	(0.007)	(0.002)	(0.002)	(0.003)
Leverage	0.003*	0.019*			
	(0.002)	(0.008)			
PB	-0.002***	-0.009***	-0.002***	-0.001*	-0.003***
	(0.000)	(0.002)	(0.000)	(0.001)	(0.001)
Regulation	0.042*	0.061	0.044*	0.027	0.041
	(0.017)	(0.050)	(0.018)	(0.015)	(0.024)
Boardsize* Pressure Resistant Net Buy	-0.002				
	(0.002)				
Independent Director*Pressure Resistant Net Buy	-0.065*				

	(0.031)				
Executive Director*Pressure Resistant Net Buy	0.135***				
	(0.039)				
Large Institutional Holding			0.009		
			(0.006)		
Large Institutional Holding*Pressure Resistant Net Buy			-0.058***		
			(0.014)		
Large Institutional Holding*Insider Net Buy			0.005		
			(0.013)		
Constant	0.058*	0.191**	0.058*	0.095***	0.059
	(0.024)	(0.068)	(0.025)	(0.019)	(0.040)
Industry Dummy	Yes	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes	Yes
N	1308	157	1308	675	633
Adj R2	0.177	0.312	0.176	0.149	0.265

Annexure 1

Variable Definitions

Variable Name	Definition	Source
Dependent Variables		
CAR	Cumulative Abnormal Return where the abnormal return is calculated using Fama-French 3 factor model: $R_{jt} - R_f = \alpha_j + \beta_1(R_{mt} - R_f) + \beta_2 SMB + \beta_3 HML + \varepsilon_{jt}$ where R_{jt} is the return for stock j in period t, R_f is the risk free rate of return, $(R_{mt} - R_f)$ is the market premium, SMB measures the historic excess returns of small market capitalization stock over big market capitalization stocks, HML is the historic excess returns of value stocks over growth stocks, the event window is (-1, +1) and the estimation window is (-150, -30)	Authors' Calculation
Independent Variables		
Pressure Resistant Buy (Sell)	An indicator variable that takes the value of 1 if the block buyer (seller) is an investment firm, such as, banks, mutual funds, investment advisory and brokerage firms, insurance companies, pension funds, hedge funds, private equity, foreign institutional investor, or an independent individual investor, and 0 otherwise.	Authors' categorisation
Insider Buy (Sell)	An indicator variable that takes the value of 1 if the block buyer (seller) is either a promoter, promoter company, promoter trust, executive/promoter director, and 0 otherwise.	Authors' categorisation
Pressure Sensitive Buy (Sell)	An indicator variable that takes the value of 1 if the block buyer (seller) is a corporate firm (private or public), and 0 otherwise	Authors' categorisation
Pressure Resistant Net-Buy	An indicator variable that takes the value of 1 if the block buyer belongs to Investment Buy category and the block seller belongs to either Corporate or Insider category	Authors' categorisation
Insider Net-Buy	An indicator variable that takes the value of 1 if the block buyer belongs to Insider Buy category and the block seller belongs to either Corporate or Investment buy category	Authors' categorisation

Pressure Sensitive Net-Buy	An indicator variable that takes the value of 1 if the block buyer belongs to Corporate Buy category and the block seller belongs to either Investment or Insider category	Authors' categorisation
Family Ownership and Family Managed (FOFM)	Promoter holding > 20% + Promoter is Chairperson of the Board and CEO or MD.	Authors' Categorisation
Family Ownership and Professionally Managed (FONPM)	Promoter holding > 20% + Promoter is NOT Chairperson but Promoter is CEO or MD.	Authors' Categorisation
Family Ownership and Not Family Managed (FONFM)	Promoter holding > 20% + Promoter is Chairperson of the Board but NOT a CEO or MD.	Authors' Categorisation
Family Ownership and Professionally Managed (FOPM)	Promoter holding > 20% + Promoter is NOT Chairperson of the Board or CEO or MD.	Authors' Categorisation
Non-Family Firms (NFOPM)	Promoter holding < 20% + Promoter is NOT Chairperson of the Board or CEO or MD.	Authors' Categorisation
Family Managed	FOFM + FONPM + FOFNM	Authors' Categorisation
Professionally Managed	FOPM + NFOPM	Authors' Categorisation
Regulation 2010	A dummy variable that takes the value of 1 for block trades from 2011—2015, and value of 0 for trades between 2005—2010.	CMIE Prowess
Percentage Deal Size	Total number of shares purchased during the block trade as a percentage of the total shares outstanding on the day of the deal.	Authors' categorisation
Board Size	Total number of Directors on the board	CMIE Prowess
Independent Director	Percentage of Independent Directors on the board of Directors	CMIE Prowess
Executive Director	Percentage of Executive Directors on the board of Directors	CMIE Prowess
PB	Price to Book Ratio	CMIE Prowess
Leverage	Long Term Debt to Net-worth Ratio	CMIE Prowess

Total Assets	Logarithm of Total Assets	CMIE Prowess
Inst. Holding	Percentage of shares held by institutional investors in the block deal firm one quarter before the block deal	CMIE Prowess
Large Inst. Holding	A dummy variable that takes the value of 1 if the Institutional Holding is greater than 5%, or 0 otherwise	Authors' Categorisation

Annexure 2

Sample selection of block-deal firms and block trades

No of Firms	636	Buy Trades	2547	Sell Trades	2320
Total No of Financial and Utility Firms	311				
No. of Firms for which CAR could not be calculated	4				
Block-deal Firms and Block Trades	321 (636-311-4)	Buy Trades	1321	Sell Trades	1321
Net Buy (Buy trades – Minus Sale Trade)	1321				
Missing Data for Independent Variables Percentage Deal Size Asset Size	 10 3				
Final Sample for Regression	1308 (1321-10-3)				
Missing Data for ownership holding	21				
Final Sample for Regression with ownership classification	1227 (1321-21-3) (21 observations include 10 observations for which Percentage deal size is missing)				

Figure 1: Moderating role of blockholders while relating family firm Governance to shareholder returns