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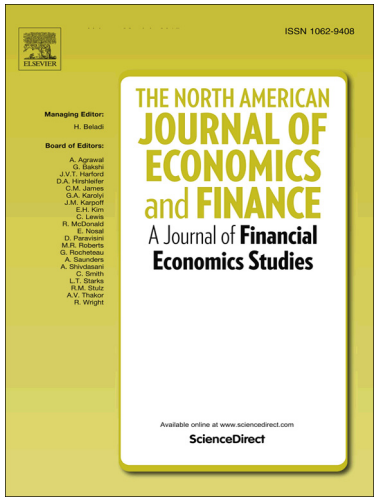

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The Effect of Block Ownership on Future Firm Value and Performance

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The Effect of Block Ownership on Future Firm Value and Performance

Abstract: This paper examines the performance of the investment decisions of block owners. The block ownership data is obtained from Dlugosz, Fahlenbrach, Gompers, and Metrick (2006). We find that firm valuation (measured by Tobin's Q), operating performance (measured by changes in return on assets) and stock performance (measured by excess buy and hold returns) are positively and significantly related to the previous years' level of block ownership both in terms of the size of the ownership and the number of blockholders. Our results are robust to endogeneity concerns. Regarding whether a specific blockholder is an "insider" or an "outsider" to the firm, we find that the ownership of "outside" blockholders is a key determinant in explaining future firm performance. Note though that this category makes up about two-thirds of the aggregate amount of blockholding in Dlugosz et al. (2006) database, and also includes all blockholders not classified in other categories. In general, we attribute the superior performance to the presence of more blockholders. We also find an inverse association between the volatility in blockownership and the ex-post firm performance measures.

Keywords Block Ownership; Corporate Value; Financial Performance; Stock Return

Paper Type Research Paper

JEL Classification G32; G34

The Effect of Block Ownership on Future Firm Value and Performance

1. Introduction

Holderness (2009) states that "*relatively little research addresses ownership by all large-percentage shareholders, which differs from inside ownership to the extent that large shareholders are not directors or officers*." This study attempts to address Holderness's concerns by investigating the effect of different levels of block ownership as well as the various forms of inside and outside ownership on a number of aspects of corporate performance and value. A blockholder is defined as an entity that owns five percent or more of a company's shareholding. We also address the call of Ducassy and Montandrau (2015) for further and more in-depth research investigation on ownership structure and their influence on the firm from a financial perspective.

Since the work of Berle and Means (1932), ownership concentration has become a key area of research in the field of corporate governance (see Kumar and Zattoni, 2015). One of the issues being highlighted in this sphere is that large blockholders positively affect firm value. Blockholders will help minimize the agency problem between the managers and the owners of the firm. This is particularly important as the diffused shareholders with smaller holdings in the firm are unlikely to help monitor the firm. Proponents of large blockholders suggest that this group provides a voice—for example, by limiting managerial discretion—to minimize agency costs and to increase firm value (see, for example, Schleifer and Vishny, 1986).

In contrast to the presence of a single large blockholder to enhance firm value, academics also argue that large blockholders can expropriate wealth from small shareholders, which should adversely affect the firm value as large blockholders try to seek private benefits

(La Porta, Lopez-De-Silanes, Shleifer and Vishny, 2002). As the role of a large blockholder is treated differently depending on whether they are classified as either an insider or an outsider, Demsetz and Lehn (1985) caution that regressions of firm value and performance are fraught with endogeneity concerns. We address such issues as explained in the methodology section.

We use the classification of block ownership by Dlugosz et al. (2006), i.e., affiliated; nonofficer director; Employee Share Ownership Plans (ESOP), officer director and outside blockholder to examine how corporate performance is linked to the shareholdings of the various categories of blockholders. We measure different aspects of performance, i.e., using Tobin's Q to assess valuation, changes in return on asset to measure operating performance and buy and hold returns in excess of the Standard & Poor's S&P500 Index to measure stock performance.

The current study is based on a sample of 1,658 firms listed in the United States (U.S.) over the period 1996 to 2001. The advantage of using Dlugosz et al. (2006) is that several cleaning measures have been already applied to ensure their robustness and reliability (e.g., Chen and Yur-Austin, 2007; Konijn et al., 2011) to enable us to examine the relationship between block ownership and firm value and performance using multivariate analyses. We choose to conduct our analysis in the U.S. context for two main reasons. First, it is well documented that institutional investors dominate corporate ownership in the US. Gompers and Metrick (2001) associate the differences between individual and institutional investors to the legal environment in which institutional investors have a fiduciary role. The Prudent-Man principle has facilitated such a role in the U.S. since 1974 (Longstreth, 1986). Second, the U.S. market is characterized as having a highly diffuse pattern of share ownership, which Berle and Means (1932) described as the 'separation of ownership and control.' Jensen and Meckling (1976) examined this conflict through the agency theory where

the firm represents a nexus of contracts between the principals and agents. Despite diffused ownership, Holderness (2009) states that controlling shareholders exert a great deal of influence on corporate governance. According to Edmans (2014), the definition of blockholder is ambiguous, but empirical research uses the 5% ownership level as the threshold to identify block shareholders (similar to the U.S. Securities and Exchange Commission Act requirements for mandatory public disclosure of ownership in the U.S. (Morck et al., 1988)).

Our analysis yields several interesting findings. We find that firm valuation (measured by Tobin's Q), operating performance (measured by changes in return on assets) and stock performance (measured by excess buy and hold returns) are positively and significantly related to the previous years' level of block ownership both in terms of the size of the ownership and the number of blockholders. Our results are robust to endogeneity concerns. Regarding whether a specific blockholder is an "insider" or an "outsider" to the firm, we find that the ownership of "outside" blockholders is a critical determinant in explaining future firm performance. Note though that this category makes up about two-thirds of the aggregate amount of blockholding in Dlugosz et al. (2006) database, and also includes all blockholders not classified in other categories. Thus, we attribute the superior performance to the presence of more blockholders generally.

We also demonstrate the importance of the stability of blockownership. More precisely, we test the effect of the volatility in the annual blockownership on ex-post firm performance. We find the association to be negative, i.e., the higher the volatility in the blockownership, the lower is the firm performance in the following year.

The rest of the paper proceeds as follows. We review the literature and formulate the hypotheses in the next section. Data collection is explained in Section 3. Our methods are

explained in Section 4. Findings and discussions are presented in Section 5. The final section concludes the paper.

2. Literature Review and Hypotheses Development

Following Dlugosz et al. (2006), we classify blockholders into five groups, i.e., non-officer director blockholders, Employee Shareholder Ownership Plan (ESOP), affiliated blockholders, officer blockholders and outside blockholders, respectively. Below, we develop our hypothesis by linking corporate performance to each blockholder category.

2.1 Non-officer Director blockholders

On the whole, previous research on block ownership could be split into two main areas. The first area covers outside ownership, excluding all categories of insiders as well as a firm's officers (e.g., Edmans, 2014; Elyasiani and Jia, 2010; Smith, 1996; Woidtke, 2002). The second area covers insider ownership (e.g., Akbar et al., 2016; Bushee 2001; Goranova et al., 2007; Wahba, 2015). Overall, the findings are mixed, and this could be because different categories of blockowners exert distinct effects on firm performance.

Besides their focus on firm performance, blockholders are widely linked to corporate monitoring and governance. Research shows that large blockholders are able to monitor managers and provide better control over managers' behavior, which attenuates agency cost (Edmans, Fang and Zur, 2013; Jensen and Meckling, 1976; Shleifer and Vishny, 1986). In a recent study by Kaya and Lumpkin-Sowers (2017), the authors assert that measures of sound governance are likely to be correlated with the type of blockholders. Based on this notion they divided blockholders into five categories like Dlugosz et al. (2006) and examined if the ownership stake of each blockholder group changes when the economy turns into a recession

as in 2001 following a state of expansion in 1999. We add to the literature by linking expected firm performance with blockownership.

Dharwadkar et al. (2008) argue that the portfolio effect of large institutional investors should be included alongside firm-level variables due to their influence on the level of executive compensation as well as their effectiveness as corporate monitors. Their results further indicate a positive association between portfolio blockholding and pay for performance. Interestingly, Dharwadkar et al.'s findings do not support that large stock owners have more effect on portfolios of large firms (Ryan and Schneider, 2002). Instead, Dharwadkar et al. show that large investors are better at monitoring small firms in which they have a significant stake. In their concluding remarks, Dharwadkar et al. (2008) echo Hoskisson et al.'s (2002) argument to consider the different types of block owners in examinations of the relationship between the size of blockholder ownership and investee firm performance.

The limited research on how various groups of inside blockholders are likely to affect firm performance is more evident when the relationship between firm performance and non-officer stock ownership is considered. This can be explained by Edmans (2014) assertion that non-officers are difficult to identify either as insiders or outsiders because of their role and the way they engage in firm governance. Among the few papers that attempted to address this issue is Bhagat and Tookes (2012), who show that holding stocks voluntarily by outside directors is positively related with firm performance while mandatory ownership is not linked to corporate performance. As non-officers and outside directors exert less managerial responsibilities and governance powers, it is appropriate to treat them as a distinct group of block owners. Therefore, in this study, we consider non-officers as a separate blockholder category, which is likely to affect firm performance, and hypothesize that:

HYPOTHESIS 1: Firm performance is positively correlated with the size of the non-officer director blockholders' ownership.

2.2 ESOP and affiliated blockholders

"Employee Stock Ownership Plan (ESOP) and affiliated groups" is the second typical category of blockholders who own shares in a firm. The literature on ESOP dates back to Louis Kelso[6] in 1956, who designed the first employee stock ownership plan in the U.S. (Hetter, 1977).

Outside the U.S., and using quantile regression on a sample of Taiwanese firms, Kuo and Yu (2013) debate that while issuing equity options incentivizes employees to maximize corporate welfare, yet the dilution in existing shareholders' ownership caused by the exercise of equity options acts as a disincentive. They further find that the association between employee stock ownership and stock returns depends on the firm's prior performance.

Brockman and Yan (2009) empirical results show no direct relationship between ESOP and firm-specific return. Though, when insiders are treated as one group, a positive relationship is found between their ownership and firm-specific return. Other researchers, such as Kaya and Lumpkin-Sowers (2017), state that employees' stock ownership is likely to change in an economic recession due to their unique characteristics (including how they perceive the element of risk and future cash flows) leading many scholars to treat ESOP as a separate blockholder group in their research methodology. They also note that in theory ESOP has less access to information and lower ability to monitor the firm compared to other blockholders. In line with Kaya and Lumpkin-Sowers (2017), we treat ESOP and affiliated investors separately from other blockholders' types in their ability to affect firm performance. We hypothesize that:

[6] http://kelsoinstitute.org/louiskelso/kelso-paradigm/who-what-and-why/(accessed 1 October 2018).

HYPOTHESIS 2a: Firm performance is positively correlated with the size of ESOP blockholders ownership.

HYPOTHESIS 2b: Firm performance is positively correlated with the size of affiliated blockholders ownership.

2.3 Officer Director blockholders

The positive relationship between directors or officers' stock ownership and firm performance is widely documented in the literature (see, for example, Agrawal and Knoeber, 1996 and Morck, et al., 1988). McLaughlin et al. (1996) note that the increase in firm value is due to managers becoming less entrenched, while Hermalin and Weisbach (1991) state incentives as a factor for the increase in firm value. Comparable to Bhagat et al. (2008), various studies document a non-linear relationship between the shareholdings of insider blockholders and performance, i.e., increases in performance due to increases in ownership are more noteworthy at lower levels of ownership than higher levels (also see Morck et al., 1988).

Bhagat and Tookes (2012) find that the directors' holdings exert a positive impact on a firm's return on assets. Nonetheless, Lins (2003) find that firms subject to high control rights by managers as opposed to cash flow rights create less value for shareholders; more cash flow inducements would assist in creating value. Firm value, as measured by Tobin's Q, is also influenced by managerial ownership (e.g., Hermalin and Weisbach, 1991; Lins, 2003). This leads us to infer that firm performance is likely to be affected by the size of officers' ownership and, therefore, we hypothesize that:

HYPOTHESIS 3: Firm performance is positively correlated with officer blockholders ownership.

2.4 Outside blockholders ownership

Sias et al. (2001) find that stock return is less correlated with institutional ownership while Cornett et al. (2007) document a positive association between institutional investors' ownership level and firm cash flow return. La Porta et al. (2002) and Claessens et al. (2002) also find a positive connection between firm value and the level of cash flow rights of large shareholders. The positive correlation between outside ownership and firm performance is based on the premise that an increase in the ownership of large investors pressurizes firms' managers to adopt investment and financing policies that contribute to a rise in earnings, an increase in assets' cash flow return and, ultimately, to high share prices. In a seminal work, Bushee (1998, 2001) splits stock owners to "transient," and fiduciary standard type of institutional investors and states that managers are more prone to pursuing short-term earning strategies rather than focus on creating long-term value through research and development (R&D). More recently, Erenburg et al. (2016) note that prior literature on the relationship between institutional holdings and firm performance are divided between the roles of institutional investors as either "influence-based" or "non-influence-based." The former suggesting causality and the latter is archetypal to a positive relationship between the share ownership size and performance. These assertions lead to the following hypothesis:

HYPOTHESIS 4: Firm performance is positively correlated with outside blockholders ownership.

We have identified two conceptual issues with direct relevance to the study aims and objectives: firm performance and blockholders ownership structure. Using the theoretical and empirical works of other scholars in this field of research (e.g. Aslan and Kumar, 2012; Coles, Lemmon and Meschke, 2012; Demsetz and Lehn, 1985; Edmans and Manso, 2011; Schleifer and Vishny, 1986; Wintoki et al. 2012) we provide the context on which we have dealt with each of these areas.

The initial step we have taken in this study is selecting the right financial measures of firm performance. Although, as noted in the previous section, the majority of scholars used TOBIN_Q as an indicator of firm performance, other financial measures cannot be dismissed for at least three reasons. First, TOBIN_Q is considered to be forward-looking while other financial measures, such as ROA, are backward looking. It enables us to assess both what the firm has achieved and what the managers are endeavoring to attain. Second, TOBIN_Q is affected by investor expectations while other financial measures are not (see Demsetz and Villalonga (2001) on the limitations of using TOBIN_Q). Third, economic indicators provide a different picture of the firm performance supporting the view presented by Demsetz and Villalonga (2001) that relying, for example, on TOBIN_Q as the only denominator, results in ignoring intangible assets that contribute into providing a misleading picture about firm performance.

In this study, we use a firm's Tobin's Q (TOBIN_Q), changes in annual return on asset (ΔROA) and one-year buy and hold return in excess of the return on the S&P500 index (EXCESS_BHR) as our performance measures. Following Kaplan and Zingales (1997) and Dlugosz et al. (2006), TOBIN_Q is used as a proxy for firm value (also see, Chung and Pruitt (1994)). Morck et al. (1988) find that TOBIN_Q for the Fortune 500 firms varies with managerial ownership. In this study, we predict that TOBIN_Q will increase with the percentage level of ownership of blockholders, as managers would be under pressure to pursue strategies that increase firm value.

ROA is an accounting-based performance measure, and according to Erenburg (2016), ROA is a suitable measure for established firms, and "*minimizes known biases of ROA as a performance measure*." The ROA is used to avoid any influence on return due to the capital structure of the firm. As argued earlier, we test the hypothesis that block ownership affects firms' ROA.

Firms further benefit from investments by long-term and stable buy and hold investors (Connelly et al., 2010). Bushee (1998) distinguish between "quasi-indexers" and "dedicated" investors, who both adopt a long-term orientation to stock investment.[7] Both groups are characterized as having low turnover and a long holding period. They are distinctive since the "quasi-indexers" hold well-diversified portfolios and adopt a passive buy and hold strategy while the "dedicated" investors hold large investments at target firms (Connelly et al., 2010; also see Chan et al., 2014).[8]

3. Data

The block ownership dataset is obtained from Dlugosz et al. (2006) and covers the sample period 1996 to 2001. There are 1658 firms and 6574 firm-year observations. The panel data set is unbalanced. The distribution of the sample is presented in Table 1.

[**Insert Table 1 about here**]

Block ownership definition is based on the Securities and Exchange Act 1934 rule 13d-1(a), which considers block ownership as a person or an entity that owns more than 5% of the shares outstanding in a company (Edmans, 2014).

4. Research Methodology

We test the effect of the sum of share ownership by all blockholders (SUMBLKS) on next year's firm performance. We also examine the impact of the total number of blockholders

[7] The positive effects of institutional ownership on corporate governance is well documented in the literature, for instance, Dugall and Millar (1999); Jory and Ngo (2016); Farooqi et al. (2017); Jory et al. (2017a, b); among others.

[8] As argued earlier, a further theoretical consideration adopted in the present study is the use of an appropriate firm ownership structure (e.g., Aslan and Kumar, 2012; Demsetz and Lehn, 1985; Schleifer and Vishny, 1986). Segregating between inside and outside blockholders is a popular method in assessing the link between block ownership and firm performance (also see Demsetz and Villalonga, 2001). For example, given their insider influence, managerial ownership (i.e., insider ownership) should be treated differently from outside block owners.

(NUMBLKS). Separately, the dataset allows us to analyze the effects of the following subgroups of block owners: (1) percentage of share ownership by all blockholders (SUMBLKS); (2) percentage of shares held by all affiliated blockholders (SUMAFLIN); (3) percentage of share ownership by all non-officer director blockholders (SUMDIR); (4) percentage of shares held by all ESOP-related blockholders (SUMESOP); (5) percentage of shares ownership by all officer blockholders (SUMOFF); and (6) percentage of shares held by all outside blockholders (SUMOUT). These categories are also presented and measured in numbers as follows: (i) number of all blockholders (NUMBLKS); (ii) number of affiliated blockholders (NUMAFLIN); (iii) number of non-officer director blockholders (NUMDIR); (iv) number of ESOP related blockholders (NUMESOP); (v) number of officer blockholders (NUMOFF); (vi) number of outside blockholders (NUMOUT). Similar to Lins (2003) study, tests are carried out independently for each type of inside ownership in relation to firm value and performance.

We then use three main financial measures to capture the effect of blockholder ownership on the selected firms' value and performance: (i) Tobin's Q (TOBIN_Q); (ii) change in return on assets (ΔROA); and (iii) buy and hold stock returns in excess of the S&P500 index return (EXCESS_BHR). The definition of each of these financial measures is given in Appendix 1.

We then run the following multiple regression equation:

$$Performance_{i,t} = \beta_1 Ownership_{i,t-1} + \beta_2 Leverage_{i,t-1} + \beta_3 Tangibility_{i,t-1} + \beta_4 \log(Total\ Assets)_{i,t-1} + \beta_5 Altman\ Z\ Score_{i,t-1} + \alpha_i + u_{i,t} \quad (1)$$

where

α_i $(i = 1 \ldots . n)$ is the unknown intercept for each entity (n entity-specific intercepts); $Performance_{i,t}$ is the dependent variable (DV) where i = entity and t = time; it represents either TOBIN_Q, or EXCESS_BHR or ΔROA in alternate regressions. $Ownership$

represents either SUMBLKS or NUMBLKS or the different types of SUMBLKS and NUMBLKS in alternate regressions (see Appendix 1); $u_{i,t}$ is the error term.

We include four control variables (i.e., leverage ratio; tangibility; log total assets; and Altman Z score) which are considered to cause an effect on the firm's performance alongside ownership. The leverage ratio is used to control for the financial status of firms since higher leverage is expected to mitigate agency costs. Bushee (1998, 2001) uses leverage as a proxy for firm risk, in particular, financial distress. Further, Dharwadkar et al. (2008) suggest that using leverage as a control measure may limit the extent of risk-taking. This implies a positive correlation between leverage and performance (see Jensen, 1986). However, with high leverage, there may be a negative effect if there are risks of financial distress and or bankruptcy.

With regard to the association between tangibility and firm valuation, we note that a firm with more tangible assets would be viewed as more stable since creditors would consider the physical assets as adequate collateral for the loans extended to such firms. In relation to firm size, we argue that—compared to a smaller firm—a larger firm necessitates more investment for the same level of block ownership. We control for firm size, which is measured as the natural logarithm of the firm's total assets (see Demsetz and Villalonga (2001); Dharwadkar et al. 2008). Large-established firms tend not to generate as much growth in value as smaller and younger firms. While, Altman's Z-score is frequently used as a proxy for financial distress (see Bhagat and Bolton, 2008), yet it is a composite score of several other financial measures and, therefore, captures the effects of quite a few variables that would influence firm value and performance. The remaining variables are defined in Appendix 1. Descriptive statistics on the various variables are presented in Table 2.

To address issues with endogeneity, firstly, we measure our performance variables (i.e., TOBIN_Q, EXCESS_BHR and ΔROA) in year t, while the block ownership variables

(i.e., the main explanatory variables) are measured in year $t-1$. This setup ensures that the ownership variables are measured first, and firm performance is tracked subsequently. As a result, the one-year ahead performance measures are unlikely to cause the prior-year ownership measures. The time difference between the dependent variable and the set of independent variables, to some extent, mitigates concerns about the reverse causality problem.

Second, to capture any unobservable firm characteristics that jointly determine firm performance and block ownership, we include firm fixed effects (as will be shown in Tables 3-6). Third, we test whether block ownership Granger-cause investee firm performance by incorporating the lagged company performance measures (as will be shown in Table 7). Fourth, we conduct two-stage least squares (2SLS) regression with fixed effects and using instrumental variables. In the first stage, we use the average turnover in the stock of the firm as the instrumental variable to predict block ownership. We argue that average turnover proxies for a range of investment behaviors that are due to the costs of transacting stocks as well as other factors affecting market sentiment and, as a result, the investment behavior of blockholders. Average monthly turnover as an instrumental variable is correlated with blockholder investment behavior but less so with the omitted time-varying factors that are captured in the error term of the regression of firm performance. In the second-stage estimation, we regress firm performance on the fitted values of block ownership estimated from the first-stage regression (as will be shown in Table 8).

Elyasiani and Jia (2010) find that there is a positive relationship between firm performance and institutional ownership stability (also see Jafarinejad et al. (2015); Jory et al. (2017); Sakaki et al. (2017)). Consequently, we test the effect of the standard deviation in the annual block ownership on firm performance. Given that the sample period runs from 1996 to 2001, we calculate the standard deviation in ownership using the annual figures throughout

all the years. We then test the relationship between the standard deviation estimated at the end of the year 2001 (based on the six years annual figures ending in 2001), on the firm performance in the year 2002 using the following OLS regression (as shown in Table 9):

$$Performance_i = \alpha + \beta_1 Standard\ Deviation\ (Ownership)_i + \beta_2 Leverage_i + \beta_3 Tangibility_i + \beta_4 \log(Total\ Assets)_i + \beta_5 Altman\ Z\ Score_i + \varepsilon_i \quad (2)$$

All variables are defined in Appendix 1. To the extent that the stability in block ownership adds to firm performance, we expect to find an inverse association between the standard deviation in annual block ownership and firm performance.

5. Results and Discussions

Table 2 reports the mean, median and standard deviation for each category of blockholders over the sample period. In Panel A the descriptive statistics of the percentage of ownership held by different types of blockholders are presented. The results for standard deviation indicate higher fluctuations in the percentages of shares held by outside blockholders relative to those owned by insiders. Over the six years, the change in the standard deviation of all ESOP-related blockholders is minor; while the change in the standard deviation of shares held by other insiders' groups, particularly affiliated blockholders, is more significant. The mean values suggest that outside blockholders hold a higher percentage of shares than insiders. Amongst the insiders, the percentage of shares held for officer and affiliated blockholders is the highest, while it is the lowest for ESOP-related blockholders and non-officer directors. These results are consistent with the literature and confirm the assertion of La Porta et al (2002) that large blockholders overpower other small shareholders and justifies the need to split between the three categories of insiders in order to observe the actual effect of each group of blockholders on firm performance (also see Dlugosz et al., 2006).

[Insert Table 2 about here]

Panel B of Table 2 presents the descriptive statistics of the number of blockholders in our sample firms. Consistent with the results in Panel A, the number of outsider blockholders exhibit higher variation than insider blockholders, while affiliated blockholders and officer blockholders dominate the category of insider blockholders. These findings suggest that the higher the seniority of insiders, the more shares they tend to hold in a firm. The existence of large outside blockholders in our sample is consistent with the view that they are associated with reduced agency costs (also see, Schleifer and Vishny, 1986).

Panels C and D of Table 2 present the descriptive statistics of the performance variables and the control variables, respectively. The average values of TOBIN_Q and ROA are 1.98 and 0.04, respectively (see Panel C). The average values of Altman_Z, total assets, leverage, and tangibility are 4.66, 10, 224.95 (in $ millions), 1.41, and 0.31, respectively (see Panel D). Comparing these values to their respective minimum, maximum and the median figures, we observe that there are more extreme values in Altman_Z, total assets, and leverage and this provides a strong rationale for their inclusion as control measures as in doing so it enables us to correctly measure firm performance following Bushee (1998, 2001) and Dharwadkar et al. (2008).

Table 3 reports the fixed effects regressions of the three performance measures based on block ownership. The percentage held by all blockholders is positive for all performance measures with ΔROA showing the highest association with SUMBLKS. Leverage is negatively correlated with each of the three performance measures, while tangibility is only positively correlated with EXCESS_BHR. Altman_Z score has a positive effect on TOBIN_Q and is negatively correlated with both EXCESS_BHR and ΔROA. This finding contradicts the assertion that managers are likely to pursue "myopic investment behavior" as a method to fulfill their earning objectives and R&D investment plans in which case we would have observed a positive association between Altman_Z and each of firm value and

ROA. On the whole, the results indicate that block ownership is positively related to firm value and performance.

[Insert Table 3 about here]

In Table 4 we report the fixed effect regressions of performance measures based on each category of blockholder. The results indicate that all types of blockholders are positively correlated with TOBIN_Q, and SUMOFF has the highest association with TOBIN_Q followed by SUMDIR. SUMOUT and SUMESOP are the least correlated to TOBIN_Q with coefficient estimates of 0.005 and 0.004, respectively. The high correlation between SUMOFF and SUMDIR with TOBIN_Q compared to other categories of blockholders signifies that the seniority of directors is an important factor in enhancing firm value as they are directly involved in the firm decision making. To a lesser degree, three types of blockholders (i.e., SUMOUT, SUMESOP, and SUMOFF) exhibit a positive relationship with EXCESS_BHR. The same applies to ΔROA, although at a slightly higher level of correlation, particularly in the case of SUMOUT and SUMESOP, are observed. Unexpectedly, SUMDIR shows a negative correlation with both EXCESS_BHR and ΔROA. This could be due to a short-termism approach adopted by directors, an approach that yields long-term adverse consequences (in Dharwadkar et al. (2008), directors' pay and performance sensitivity are not significantly correlated). Overall, these results confirm our research hypotheses that firm performance is positively correlated with different types of block ownership. Also, the extent of the effect on firm performance varies across the different types of insider stock ownership, with officers and ESOP having a positive impact on all areas of firm performance while SUMDIR exerts more effect on firm value.

[Insert Table 4 about here]

The results based on the number of blockholders (see Table 5) are consistent with those based on the percentage of block ownership (see Table 3), i.e., they are positively correlated to TOBIN_Q, EXCESS_BHR, and ΔROA. Out of these three performance indicators, the accounting performance measure, i.e., ΔROA (with a coefficient of 0.059), is the most correlated with the number of blockholders followed by TOBIN_Q and EXCESS_BHR respectively. Out of the four control variables used log-total-assets and tangibility have the highest correlation with the three performance measures followed by Altman_Z and leverage.

[**Insert Table 5 about here**]

Table 6 reports the fixed-effects regressions of performance measures based on the numbers of the various types of blockholders. Similar to the results obtained in Table 4 for the percentage of blockholders, the numbers for the various categories of blockholders exhibit positive correlation with TOBIN_Q with NUMOFF and NUMDIR exhibiting the highest coefficients each, i.e., 0.109 and 0.107, respectively. This result supports our third hypothesis that firm performance is correlated with officer blockholder ownership and our proposition that the seniority of directors is an essential factor in determining firm value. The numbers of three types of blockholders, namely NUMOUT, NUMESOP, and NUMOFF are positively correlated with EXCESS_BHR while NUMAFLIN and NUMDIR exhibit a negative relationship with EXCESS_BHR.

Only three categories of blockholders (NUMAFLIN, NUMOUT, and NUMESOP) have a positive relationship with ΔROA, while NUMDIR and NUMOFF are negatively correlated with ΔROA. On the whole, these results confirm our assertion that blockholder ownership and firm performance are positively correlated. The exceptions are NUMDIR in relation to EXCESS_BHR and ΔROA, NUMAFLIN vis-à-vis EXCESS_BHR and NUMOFF

in respect of ΔROA. Another key finding is that inside blockholders show different degrees of correlation with the three performance measures, with NUMDIR and NUMOFF being more related to TOBIN_Q while NUMESOP exhibits a higher relationship with ΔROA.

[**Insert Table 6 about here**]

The fixed-effects regressions including lagged dependent variables are presented in Table 7. The results are positive and consistent both by percentage and number of blockholders across all the three performance measures. SUMBLKS and NUMBLKS show a higher correlation with ΔROA compared to TOBIN_Q and EXCESS_BHR.

[Insert Table 7 about here]

Table 8 reports the regressions using 2SLS. Across the four models used, blockholders (both by percentage and number) exhibit positive correlation with TOBIN_Q and EXCESS_BHR. These results further support our three main research hypotheses that blockholder ownership drives firm performance, and they are consistent with the academic literature, which argues that firm value and stock returns depend on the the level of stock ownership of insiders (Bhagat et al., 2008) and outsiders (Bhagat and Tookes, 2012). Leverage and log-assets-total are negatively correlated with TOBIN_Q and EXCESS_BHR; tangibility is positively correlated with them; while Altman_Z is positively related to TOBIN_Q and negatively related to EXCESS_BHR.

[Insert Table 8 about here]

To the extent that block ownership matters in determining the future firm value and both its stock and operating performances, high turnover in block ownership could prove detrimental to both the firm's value and future performance. For instance, if block owners are

wary of the future firm performance, they would look to divest the shares of the firm from their investment portfolio. This divestment would prove costly as it could depress the firm's share price further and transaction costs would add to the losses suffered by the divesting block shareholders. To address this issue, we test the consequences of high volatility in the shareholdings of blockholders. We use the standard deviation in the annual shareholdings over the sample period to measure volatility in block ownership. We then regress the next year's firm performance on the standard deviation in the yearly shareholdings as well as the control variables and present the findings in Table 9. We find that the coefficient of the variable representing the standard deviation of annual block ownership is negative and statistically significant. Economically speaking, high volatility in block ownership acts like a bad omen for the firm future performance. It is also possible that the change in ownership represents the future outlook of the shareholders, i.e., ownership position was reduced due to expected poor performance.

[Insert Table 9 about here]

The key takeaways are as follows: both the number of block owners and the size of their shareholdings matter for firm valuation and performance. This relationship is due to the economic value of having outside blockholders among the owners of the firm. We find that annual firm value and performance are both positively related to the previous year's level of block ownership and their numbers. Given the vital role these investors play in the determination of firms' performance, a high turnover in their ownership does not look favorably on both a firm's future performance and value.

6. Conclusion

Both the size of block ownership and the number of blockholders are positively related to ex-post firm value as measured by Tobin's Q, operating performance (as measured by changes in return on asset), and stock performance (as measured by the buy and hold stock return over and above the return generated by the S&P500 index). These results are robust to firm characteristics as well as over time. They are in addition to any time-varying association in the performance measures, as well as endogeneity. The standard deviation in the annual shareholdings of block owners is inversely related to both firm value and performance. The presence of outside blockholders (both in terms of numbers and the size of shareholdings) is positively associated with ex-post firm performance and value.

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Table 1: Distribution of firm-year observations

Year	Freq.	Percent	Cumulative
1996	972	14.79	14.79
1997	904	13.75	28.54
1998	1,292	19.65	48.19
1999	1,167	17.75	65.94
2000	1,156	17.58	83.53
2001	1,083	16.47	100.00
Total	6,574	100.00	

The sample period starts in 1996 and ends in 2001. There are 1658 firms generating 6574 firm-year observations. The panel data set is unbalanced.

Table 2: Sample Descriptive

	N	mean	median	stdev	min	max
Panel A: Percentage held by blockholders (%)						
SUMBLKS	6,574	23.42	20.80	17.84	0	92.60
SUMAFLIN	6,574	2.20	0.00	8.12	0	91.30
SUMOUT	6,574	16.40	13.50	15.22	0	92.60
SUMESOP	6,574	1.07	0.00	3.72	0	37.00
SUMDIR	6,574	1.29	0.00	5.14	0	83.70
SUMOFF	6,574	2.47	0.00	7.22	0	57.20
Panel B: Number of blockholders						
NUMBLKS	6,574	2.33	2	1.62	0	11
NUMAFLIN	6,574	0.13	0	0.40	0	4
NUMOUT	6,574	1.80	2	1.51	0	9
NUMESOP	6,574	0.10	0	0.31	0	2
NUMDIR	6,574	0.18	0	0.38	0	4
NUMOFF	6,574	0.18	0	0.46	0	4
Panel C: Performance Variables						
BHR	6,574	0.17	0.09	0.68	-0.97	26.19
BHR_SPRTRN	6,574	0.12	0.07	0.17	-0.13	0.31
EXCESS_BHR	6,574	0.05	-0.04	0.70	-1.18	26.00
TOBIN_Q	6,557	1.98	1.40	1.81	0.39	34.34
ROA	6,573	0.04	0.04	0.14	-4.58	0.70
Panel D: Control Variables						
ALTMAN_Z	6,377	4.66	3.34	6.52	-9.65	21.03
AT	6,	10,	1,	42,	6.	10

	574	224.95	556.47	559.22	27	51450
AVG_T	6,	1.1	0.	1.2	0.	15
URNOVER	574	9	78	9	02	.25
GROW	6,	0.1	0.	0.3	-	11
TH	559	3	08	6	1.00	.52
LEVER	6,	1.4	0.	13.	0.	96
AGE	542	1	65	11	00	8.43
TANGI	6,	0.3	0.	0.2	0.	0.
BILITY	457	1	26	4	00	97

Variables are defined in Appendix 1. N represents the number of firm-year observations. Stdev, min and max refer to standard deviation, minimum and maximum, respectively.

Table 2: Sample Descriptive (continued)

Panel E Correlation Analysis

	SUMBLKS	SUMAFLIN	SUMDIR	SUMESOP	SUMOFF	SUMOUT	NUMBLKS	NUMAFLIN	NUMDIR	NUMESOP	NUMOFF	NUMOUT	TOBIN_Q	OA
SUMAFLIN	.325													
SUMDIR	.233	0.011												
SUMESOP	.065	0.050	0.048											
SUMOFF	.347	0.021	.006	0.053										
SUMOUT	.742	0.111	0.054	0.111	0.051									
NUMBLKS	.766	.070	.137	.051	.210	.703								
NUMAFLIN	.232	.764	.012	0.039	.019	0.128	.140							
NUMDIR	.199	.014	.776	0.048	.016	0.034	.225	.052						
NUMESOP	.028	0.054	0.054	.888	0.062	0.118	.060	0.042	0.054					
NUMOFF	.313	0.028	.030	0.043	.833	0.019	.306	.015	.055	0.053				
NUMOUT	.611	0.111	0.047	0.098	0.027	.829	.876	0.124	0.028	0.106	.015			
TOBIN_Q	0.043	0.015	0.011	0.077	.041	0.039	0.047	0.009	0.003	0.087	.055	0.046		
OA	0.011	.010	.018	.012	0.010	0.023	0.027	.011	.021	.011	0.008	0.037	.202	
EXC_BHR	.027	0.012	0.003	0.026	.016	.038	.025	0.010	0.003	0.029	.017	.031	.285	.091

The variables are defined in the Appendix. The ownership variables are lagged by a year.

Table 3 : Fixed-effects regressions of performance measures based on block ownership

	Model 1 TOBIN_Q	Model 2 EXCESS_BHR	Model 3 ΔROA
SUMBLKS	0.006**	0.003**	0.059**
	(0.002)	(0.001)	(0.029)
LEVERAGE	-0.005	-0.003	-0.140
	(0.010)	(0.002)	(0.181)
TANGIBILITY	-0.319	0.615**	-7.867
	(0.344)	(0.215)	(5.386)
LNAT	-1.098***	-0.669***	1.046
	(0.063)	(0.039)	(1.037)
ALTMAN_Z	0.007*	-0.034***	-0.030
	(0.004)	(0.003)	(0.058)
CONSTANT	9.999*	4.741*	-

	**	**	5.949
	(0.505)	(0.311)	(8.283)
Number of firm-year observations	5838	6244	4631
Number of firms	1423	1560	1357
R-squared	0.127	0.152	0.005
F-stat	63.973	83.669	1.785
Prob>F	0.000	0.000	0.000
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes

All independent variables are lagged by a year. All variables are defined in Appendix 1. Coefficient estimates are reported. Standard error is reported in parentheses. *, ** and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

Table 4 : Fixed-effects regressions of performance measures based on type of block ownership

	Model 1	Model 2	Model 3
	TOBIN_Q	EXCESS_BHR	ΔROA
SUMAFLIN	0.012**	0.002	0.111
	(0.005)	(0.003)	(0.077)
SUMOUT	0.005**	0.003**	0.063**
	(0.002)	(0.001)	(0.031)
SUMESOP	0.004	0.002	0.068
	(0.010)	(0.006)	(0.150)
SUMDIR	0.017**	-0.002	-0.141
	(0.008)	(0.005)	(0.128)
SUMOFF	0.024***	0.005	0.005
	(0.008)	(0.005)	(0.126)

LEVERAGE	-0.007	-0.003	-0.128
	(0.010)	(0.002)	(0.182)
TANGIBILITY	-0.318	0.612**	-7.591*
	(0.344)	(0.215)	(5.391)
LNAT	-1.089***	-0.671***	0.963
	(0.063)	(0.039)	(1.039)
ALTMAN_Z	0.006	-0.034***	-0.029
	(0.004)	(0.003)	(0.058)
CONSTANT	9.885***	4.756***	-5.239
	(0.507)	(0.313)	(8.311)
Number of firm-year observations	5838	6244	4631
Number of firms	1423	1560	1357
R-squared	0.128	0.152	0.006
F-stat	46.256	59.875	1.48

			9
Prob>F	0.000	0.000	0.00
			0
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes

All independent variables are lagged by a year. All variables are defined in Appendix 1. Coefficient estimates are reported. Standard error is reported in parentheses. *, ** and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

Table 5 : Fixed-effects regressions of performance measures based on number of block owners

	Model 1	Model 2	Model 3
	TOBIN_Q	EXCESS_BHR	ΔROA
NUMBLKS	0.042**	0.031**	0.710***
	(0.016)	(0.010)	(0.245)
LEVERAGE	-0.003	-0.003	-0.132
	(0.010)	(0.002)	(0.181)
TANGIBILITY	-0.325	0.623**	-7.735
	(0.344)	(0.215)	(5.383)
LNAT	-1.108***	-0.670***	1.096
	(0.063)	(0.039)	(1.034)
ALTMAN_Z	0.007*	-0.034***	-0.029
	(0.004)	(0.003)	(0.058)

CONSTANT	10.120***	4.742**	-6.586
	(0.501)	(0.309)	(8.228)
Number of firm-year observations	5838	6244	4631
Number of firms	1423	1560	1357
R-squared	0.126	0.152	0.006
F-stat	63.589	84.046	2.272
Prob>F	0.000	0.000	0.000
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes

All independent variables are lagged by a year. All variables are defined in Appendix 1. Coefficient estimates are reported. Standard error is reported in parentheses. *, ** and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

Table 6 : Fixed-effects regressions of performance measures based on the number of block owners' type

	Model 1 TOBIN_Q	Model 2 EXCESS_BHR	Model 3 ΔROA
NUMAFLIN	0.096	-0.012	2.527**
	(0.076)	(0.047)	(1.194)
NUMOUT	0.038**	0.033*	0.739***
	(0.016)	(0.010)	(0.252)
NUMESOP	0.049	0.024	0.462
	(0.107)	(0.067)	(1.599)
NUMDIR	0.101	-0.023	-0.729
	(0.083)	(0.051)	(1.261)
NUMOFF	0.109	0.026	-0.016
	(0.084)	(0.052)	(1.386)
LEVERAGE	-0.004	-0.003	-

			0.133
	(0.010)	(0.002)	(0.181)
TANGIBILITY	-0.310	0.612**	-7.420
	(0.345)	(0.216)	(5.388)
LNAT	-1.104***	-0.672***	1.113
	(0.063)	(0.039)	(1.035)
ALTMAN_Z	0.007*	-0.034***	-0.025
	(0.004)	(0.003)	(0.058)
CONSTANT	10.063***	4.773**	-6.802
	(0.503)	(0.310)	(8.254)
Number of firm-year observations	5838	6244	4631
Number of firms	1423	1560	1357
R-squared	0.126	0.153	0.008
F-stat	45.493	60.149	1.900
Prob>F	0.000	0.000	0.000
Firm fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes

All independent variables are lagged by a year. All variables are defined in Appendix 1.

Coefficient estimates are reported. Standard error is reported in parentheses. *, ** and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

Table 7 : Fixed-effects regressions including lagged dependent variables

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	TOBIN_Q	EXCESS_BHR	ΔROA	TOBIN_Q	EXCESS_BHR	ΔROA
SUMBLKS	0.006***	0.005**	0.055**			
	(0.002)	(0.001)	(0.028)			
NUMBLKS				0.041***	0.043**	0.634***
				(0.016)	(0.009)	(0.230)
LEVERAGE	-0.007	-0.003*	-0.110	-0.006	-0.003	-0.103
	(0.010)	(0.002)	(0.170)	(0.010)	(0.002)	(0.170)
TANGIBILITY	-0.265	-0.357*	-8.890*	-0.270	-0.363*	-8.773*
	(0.340)	(0.207)	(5.051)	(0.340)	(0.207)	(5.048)
LNAT	-1.007***	-0.751***	-.448	-1.016***	-0.755***	-.479
	(0.063)	(0.037)	(0.973)	(0.062)	(0.037)	(0.970)
ALTM	-	-	-	-	-	-

AN_Z	0.032***	0.025***	0.019	0.032***	0.025***	0.018
	(0.005)	(0.002)	(0.054)	(0.005)	(0.002)	(0.054)
TOBIN_Q	0.215***			0.216***		
	(0.019)			(0.019)		
EXCESS_BHR		-0.266***			-0.264***	
		(0.014)			(0.013)	
CHANGE_ROA			-0.331***			-0.331***
			(0.015)			(0.015)
NUMBLKS			0.041***	0.043**		0.634***
			(0.016)	(0.009)		(0.230)
CONSTANT	9.090***	5.326**	-8.507	9.200***	5.385**	-8.925
	(0.505)	(0.301)	(7.774)	(0.501)	(0.299)	(7.722)
Number of firm-year observations	5838	6244	4625	5838	6244	4625
Number	1	1560	1	1	1560	1

of firms	423			357	423			357
R-squared	0.151		0.217	0.128	0.150		0.217	0.129
F-stat	7		117.53	4	7		117.42	4
	1.087	3		7.670	0.770	7		8.083
Prob>F	0.000		0.000	0.000	0.000		0.000	0.000
Firm fixed effects	Yes		Yes	Yes	Yes		Yes	Yes
Year fixed effects	Yes		Yes	Yes	Yes		Yes	Yes

All independent variables are lagged by a year. All variables are defined in Appendix 1. Coefficient estimates are reported. Standard error is reported in parentheses. *, ** and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

Table 8 : Fixed-effects Instrumental Variables regressions

	Model 1	Model 2	Model 3	Model 4
	TOBIN_Q	EXCESS_BHR	TOBIN_Q	EXCESS_BHR
SUMBLKS	0.100***	0.075***		
	(0.025)	(0.017)		
NUMBLKS			1.233***	0.894***
			(0.366)	(0.245)
LEVERAGE	-0.042***	-0.006**	-0.027	-0.006*
	(0.016)	(0.003)	(0.017)	(0.004)
TANGIBILITY	0.694	0.825**	1.229*	1.241***
	(0.495)	(0.334)	(0.692)	(0.468)
LNAT	-0.939***	-0.119*	-1.021***	-0.167**
	(0.088)	(0.062)	(0.093)	(0.066)
ALTMAN_Z	0.007	-0.033***	0.008	-0.032***
	(0.005)	(0.003)	(0.006)	(0.004)
CONSTANT	6.464***	-0.866	6.345***	-0.994
	(1.197)	(0.851)	(1.482)	(1.055)
Number	5838	6244	5838	6244

of firm-year observations				
Number of firms	1423	1560	1423	1560
Wald chi2(5)	13530	216	9210	149
Prob> chi2	0.000	0.000	0.000	0.000
Instrumented:	SUMBL KS	SUMBL KS	NUMBL KS	NUMBL KS
Instruments: LEVERAGE, TANGIBILITY, LNAT, ALTMAN_Z, AVG_TURNOVER.				

All independent variables are lagged by a year. All variables are defined in Appendix 1. Coefficient estimates are reported. Standard error is reported in parentheses. *, ** and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

Table 9: OLS Regression Of Volatility In Annual Block Ownership

	Model 1	Model 2	Model 3
	Tobin's Q	Excess_BHR	ΔROA
STD_SUMBLKS	-0.023***	-0.005*	-0.062*
	(0.008)	(0.003)	(0.034)
LEVERAGE	0.011	-0.003***	0.003*
	(0.009)	(0.001)	(0.001)
TANGIBILITY	-0.361***	0.024	0.199
	(0.110)	(0.056)	(0.487)
LNAT	0.050*	-0.034***	0.105
	(0.026)	(0.008)	(0.077)
ALTMAN_Z	0.157***	-0.005*	0.040*
	(0.028)	(0.003)	(0.017)
CONSTANT	0.761**	0.451***	-1.315*
	(0.318)	(0.080)	(0.723)
Number of observations	535	544	544
R-squared	0.463	0.051	0.014
Adjusted R-squared	0.458	0.042	0.004
F	15.350	5.763	2.207

Prob> F	0.000	0.000	0.052

All independent variables are lagged by a year. All variables are defined in Appendix 1. Coefficient estimates are reported. Standard error is reported in parentheses. Robust standard errors are used. *, ** and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

Appendix 1: Variable Definitions

Panel A: Percentage held by blockholders (%)	
SUMBLKS	Percentage Held by all Blockholders for that Firm-Year
SUMAFLIN	Percentage Held by all Affiliated Blockholders
SUMDIR	Percentage Held by all non-Officer Director Blockholders
SUMESOP	Percentage Held by all ESOP-related Blockholders
SUMOFF	Percentage Held by all Officer Blockholders
SUMOUT	Percentage Held by all Outside Blockholders
Panel B: Number of blockholders	
NUMBLKS	Number of all Blockholders for that Firm-Year
NUMAFLIN	Number of Affiliated Blockholders
NUMDIR	Number of non-Officer Director Blockholders
NUMESOP	Number of ESOP (Employee Share Ownership Plans) blockholders
NUMOFF	Number of Officer Blockholders
NUMOUT	Number of Outside Blockholders

Panel C: Performance Variables

TOBIN_Q	(AT + ME - BE)/AT
ROA	NI/AT
ΔROA	(ROA(t) – ROA(t-1))/ROA(t-1)
BHR	$\exp\left[\sum_{m=1}^{12} \ln\left(1 + CRSP\ monthly\ return\right)\right] - 1$
BHR_SPRTRN	$\exp\left[\sum_{m=1}^{12} \ln\left(1 + S\&P500\ monthly\ return\right)\right] - 1$
EXCESS_BHR	BHR – BHR_SPRTRN

Panel D: Control Variables

AT	Assets-Total
TANGIBILITY	PPENT/AT
GROWTH	(Sale(t)/Sale(t-1))-1
ALTMAN_Z	3.3*(EBIT/AT) +0.99*(SALE/AT) +0.6*(ME/LT) +1.2*(ACT/AT) +1.4*(RE/AT)
TURNOVER	Trading Volume/Shares Outstanding on a monthly basis
AVG_TURNOVER	Yearly average of TURNOVER
LEVERAGE	(DLTT+DLC)/SEQ where DLTT = Long-Term Debt-Total; DLC Debt in Current Liabilities-Total

Panel E: Other Variables

ME	PRCC_C*CSHO
BE	sum(SEQ, TXDB, ITCB, -PREF)

PREF	Either PSTKRV or PSTKL or PSTK
SEQ	Shareholders' Equity
PSTKRV	Preferred stock Redemption Value
PSTKL	Preferred stock Liquidating Value
PSTK	Preferred stock - Carrying Value, Stock (Capital)
TXDB	Deferred Taxes
ITCB	Investment Tax Credit
PRCC_C	Price Close-Annual-Calendar
CSHO	Common Shares Outstanding
SALE	Sales/Turnover (Net)
EBIT	Earnings Before Interest and Taxes
LT	Liabilities-Total
ACT	Current Assets-Total
RE	Retained Earnings
PPENT	Property, Plant and Equipment-Total (net)
NI	Net Income (Loss)
AVG_SUMBLKS	Average of annual SUMBLKS from 1996 to 2001
STD_SUMBLKS	Standard deviation in the annual SUMBLKS

Sources of data:

- Blockholder: Dlugosz J., Fahlenbrach R., Gompers P., Metrick A.. Large Blocks of Stock: Prevalence, Size, and Measurement, Journal of Corporate Finance , 2006, vol. 12 (pg. 594-618), Downloaded from http://faculty.som.yale.edu/andrewmetrick/data.html
- Monthly stock and market returns from University of Chicago's Center for Research in Security Prices (CRSP) database
- All financial variables are downloaded from COMPUSTAT.