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The effect of ownership structure on the price earnings ratio - returns anomaly

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Abstract

It is well known that firms with low price to earnings ratios (value firms) earn higher stock returns in the long term than high price to earnings firms (growth firms). This study investigates how insider ownership affects this relation. We show that when insider ownership is high, returns decline for low P/E firms and improve for high P/E firms. These findings are rationalized in the context of entrenchment and alignment of incentive effects. For low P/E firms, low stock returns reflect the inability of boards of directors and outside shareholders to influence poorly performing entrenched management. For high P/E firms, boards of directors and outside shareholders are less likely to intervene since higher returns reflect increased agency incentives for value-creating managers.

Key words: Agency theory, Governance, Insider ownership, Ownership structure, Price to earnings.

Data Availability: All analyses are based on publicly available data.

JEL Classification: G32

1. Introduction and motivation

Prior studies document the systematic tendency for firms with low price to earnings ratios (LPE) to earn higher stock returns and firms with high price to earnings ratios (HPE) to earn lower stock returns, in both the United States and in international markets (Campbell & Shiller, 2001; Capaul, Rowley, & Sharpe, 1993; Fama & French, 2002). In this study, we provide evidence that suggests insider ownership alters this relation. That is, when insider ownership is high, companies with low (high) price to earnings ratios earn lower (higher) stock returns. Similar results are obtained for operating performance; in the year following valuation, earnings decrease for high insider ownership-low price to earnings (HIO-LPE) firms and increase for high insider ownership-high price to earnings (HIO-HPE) firms.

We theorize that low price to earnings ratios (P/Es) are, in part, a function of management's inability to create value and therefore may suggest a lack of management capability. Although monitoring and the threat of sanctions by boards of directors and outside shareholders against poorly performing managers could mitigate this outcome, when these same managers own and control a significant portion of the firm, little can be done and returns decline. Conversely, when earnings multiples are high and entrenched managers have been successful in creating value, there is relatively little need for actions by boards. Indeed, high P/Es may reflect, at least in part, market-based assessments of management's ability to achieve superior operating results. Furthermore, a higher stock price reinforces agency incentives associated with the alignment of interests between managers and other shareholders. Consequently, relative to other high P/E firms, returns for firms with high insider ownership increase.

In contrast to prior research that document increasing (decreasing) returns for low (high P/E)

firms, results of this study document that in the presence of high insider ownership, returns decrease for low P/E firms and increase for high P/E firms. Using a similar methodology, we also investigate the effect of insider ownership on operating results for low and high P/E firms. Similar to our findings for stock returns, we show that the relation is modified by insider ownership; when insider ownership is high, operating performance decreases for low P/E firms and increases for high P/E firms.

Although entrenched high insider ownership may render boards ineffective, we argue that the relevancy of this effect is conditional on the value of the firm. That is, for HIO-LPE firms, the inability of boards to remove or change ineffective entrenched managers has value reducing implications and indeed may foster future poor performance. However, for highly valued firms where capable managers successfully have created value for themselves and other shareholders, board ineffectiveness is less relevant. Indeed, since a manager's personal wealth increases as the value of the firm rises, owner-manager alignment incentives to sustain high performance also increase.

The contributions of this study should be important to boards, investors, and researchers. To the extent that the relevance of boards' inability to monitor entrenched managers is conditional on high and low market valuations, investors and analysts should consider these factors. For example, if HIO impairs financial performance for low P/E firms, investors that favor value companies might enhance their investment performance by avoiding HIO-LPE firms. Conversely, growth investors might improve their investment performance by actively seeking ways to hold more high P/E firms with HIO. Finally, assumptions related to the optimal contracting between boards and managers could be modified to reflect changes in agency incentives related to high and low P/E firms when insider ownership is high.

2. Literature and hypotheses

Numerous prior studies report that firms with low price to earnings ratios outperform firms with high price to earnings ratios (Basu, 1977; Campbell & Shiller, 2001; Dreman & Lufkin, 1997). Skinner and Sloan (2002) provide evidence of the inferior returns of growth stocks and suggest that this is the result of excessively high expectations for future earnings.

Agency theory asserts that increased equity ownership by managers reduces costs associated with the principal-agent relation (Eisenhardt, 1989; Jensen & Meckling, 1976; Jensen & Murphy, 1988). Empirical research on the efficacy of this assertion within the context of high insider ownership has not, however, been definitive. Oswald and Jahera (1991) find positive associations between insider ownership and return on assets, return on equity, and excess returns. Hudson, Jahera, and Lloyd (1992) find a positive relation between insider ownership, firm size, and abnormal returns. Other studies instead identify a non-linear relation between ownership and performance. Using a cross-section of 371 *Fortune* 500 firms, Morck, Shleifer, and Vishny (1988) show that Tobin's Q initially increases at low levels of insider ownership (0 to 5%), then declines as ownership approaches 25%, and finally rises as ownership by directors exceeds 25%. They conjecture that costs associated with entrenched managers eventually give way to benefits induced by alignment of interests with outside shareholders. In a similar study, McConnell and Servaes (1990) show a curvilinear relation between Tobin's Q and the percentage of shares owned by insiders. They document an upward sloping curve until insider ownership reaches 50%, after which the slope turns slightly downward. Himmelberg, Hubbard, and Palia (1999) assert that the relation between insider ownership and financial performance is endogenous.

In a more recent study, Neumann and Voetmann (2003) document that a bell shaped curve characterizes the relation between management ownership and performance. They explain that at

a threshold of ownership, management takes advantage of shared ownership, which is evidenced by higher abnormal returns. Beyond this threshold, however, stock performance declines due to increasing management entrenchment. Davies, Hillier, and McColgan (2005) present results that show a double humped curve. They assert that at the second local maximum managers become sufficiently entrenched to ignore external monitoring, yet their interests remain insufficiently similar to those other shareholders. Eventually, at high levels of ownership, interests converge and Q rises with ownership (i.e., > 75% ownership). Bhabra (2007) shows that various measures of firm value (Tobin's Q, market to book, and return on equity) decrease at intermediate levels of insider ownership. Houmes, Boylan, and Dickins (2009) use preliminary results on the relation between stock performance and insider ownership to assert that agency costs associated with high ownership may alter alignment of interest incentives.

Although the findings of these studies differ, one common result is the value decreasing effect of high levels of insider ownership, suggesting that alignment of interest incentives may give way to the ineffectiveness of non-influential boards on entrenched managers. Weston, Kwang, Chung, and Siu (1998) report that hostile takeover attempts never have been effective when insider ownership is greater than 30%. Boyle, Carter, and Stover (1998) show an inverse relation between high insider ownership and the number of anti-takeover provisions. Stulz (1988) reports that when management ownership is high, the likelihood of takeover decreases significantly since high ownership managers are immune from important external controls and discipline.

In this paper, we link the two strands of literature to study the effect of insider ownership on the relation between earnings and performance. We argue that the relation is not unidirectional and that high insider ownership modifies this association. An important objective of senior

management is to increase shareholder value. By definition, high P/Es reflect the accomplishment of this important goal. Therefore, even though boards may have little recourse against entrenched equity holding managers, there is relatively little need to constrain or remove value creating executives of high P/E firms. Indeed, from a performance perspective, high valuation is prima facie evidence of able and competent leadership. Furthermore, rising stock prices enhance agency incentives as increases in the manager's personal wealth and stake in the firm coincide with similar increases for outside shareholders.

Conversely, low P/Es are evidence that managers have been unsuccessful in creating value. Indeed, the inability of managers to create value, even though they have much to lose through their large equity stakes, suggests particularly low capability. For these firms, the inability of boards to affect needed leadership change has especially severe value reducing implications.

Consequently, high levels of management ownership mitigate the well-known tendency for low (high) P/E firms to improve (reduce) financial performance. That is, relative to other low P/E firms, in the year following valuation, high insider ownership - low P/E firms exhibit lower financial performance. Conversely, the lower financial performance usually observed for high P/E firms increases. These assertions are tested in our main hypothesis that *high insider ownership reduces the tendency for low (high) P/E firms to achieve higher (lower) financial performance.*

3. Sample and methodology

3.1 Sample

From Compustat and ExecuComp¹ we obtain financial and insider ownership data over the

¹ ExecuComp files consist of data collected from the annual proxies of firms listed on the Standard and Poor's (S&P) 500, the S&P MidCap 400, and the S&P SmallCap 600 Index. They also include active companies that have been removed from these indices as well as past years when new firms are added. Although data is available beginning in 1992, data collection begins with

period 1995-2012. In addition, we obtain end of fiscal year buy and hold returns with dividends reinvested and end of fiscal year stock prices per share from the Center for Research in Stock Prices (CRSP). The primary tests of this study examine the relation between financial performance and insider ownership conditional on P/E. Financial performance is measured according to the firm's market (returns) and operating (earnings) performance. After eliminating firms with missing Compustat and CRSP data, the total number of firm year observations for our models is 12,138. All continuously measured variables are winsorized across the pooled sample at the 1st and 99th percentiles.

3.2 Methodology

Univariate tests and linear regression are used to evaluate the relation between financial performance and lagged high insider ownership conditional on lagged levels of P/Es. High insider ownership and P/Es are lagged in all models because the effects of high insider ownership conditional on valuation are hypothesized to precede financial performance. The following describes each approach.

3.3 Univariate tests: High insider ownership, price to earnings, and financial performance

For our preliminary tests, we create portfolios according to high and low P/E to compare the difference in mean returns between high CEO insider ownership and other insider ownership firms. In their study of ownership structures, La Porta, Lopez-de-Silanes, and Shleifer (1999) contend that company ownership of greater than 10% is a significant control threshold. The SEC defines an insider as someone with greater than 10% ownership; i.e., insiders include "beneficial owners" of 10% or more of the firm's equity securities.² Therefore, we define high insider

1995 due to the small number of observations in prior years 1992 – 1994.

² Securities and Exchange Act of 1934, Section 16(a) (2) (c) (15 U.S.C. 78p (a) (2) (c)) as amended by the Act. Section 30(h)

ownership as beginning when the CEO owns at least 10% of the common shares outstanding. For robustness, we also include tests for firms with CEO ownership of at least 15%.

To make comparisons, firms are stratified into the highest 20% (*Top_Quintile_P/E_{t-1}*), middle 60% (*Middle_60Percent_P/E_{t-1}*), and lowest 20% (*Bottom_Quintile_P/E_{it-1}*) of ranked ordered P/Es.³ For each P/E level, three portfolios are formed, consisting of firms with insider ownership of at least 10%, 15%, and 20% (*IO_10Percent_{t-1}*, *IO_15Percent_{t-1}*, and *IO_20Percent_{t-1}*) and firms with insider ownership less than 10%, 15%, and 20% (*Other IO_{t-1}*) for a total of 18 portfolios. Within each P/E group, year *t* market measures, mean buy, and hold size adjusted returns (*ARET_t*) with dividends reinvested are compared between high insider ownership and other insider ownership firms.

Excess returns are estimated using Barber and Lyon's (1997) methodology. We first obtain buy and hold raw returns with dividends reinvested from CRSP and then stratify them into size quintiles according to their lagged market value of equity, which we measure as common shares outstanding times the beginning of fiscal year price. Abnormal returns are equal to each firm's actual return less the mean return for each quintile. That is:

$$ARET_{it} = RET_{it} - E(R_{it}) \text{ where:} \quad (1)$$

RET_{it} is firm *i*'s one year *t* buy and hold return, and *E(R_{it})* is the one year expected returns for security *i* where *E(R_{it})* is the mean return for each year *t* size quintile.

3.4 Multivariate tests: High insider ownership, price to earnings, and financial performance

Petersen (2009) reports that 42% of studies using panel data do not adjust standard errors, potentially inflating t-statistics. To mitigate the potential impact of within firm correlations, we run regressions using clustered robust standard errors with 2,353 firm clusters for our main tests.

of the Investment Company Act of 1940 (15 U.S.C. 80a-29 (h)).

³ Although we make no predictions for the middle-60 P/E group, we include results for completeness.

Himmelberg et al. (1999) suggest that fixed effects estimators should be used when investigating the relation between managerial ownership and firm performance. To control for across years difference in returns and earnings, we include fixed effects models with dummy variables for years, with the exception of the base year, 1995. Finally we eliminate firms with SIC codes 4900 to 4991 and 6000 to 6199 (utilities, banks, etc.) since their operations are subject to unique regulatory requirements.

For our main tests (dependent variable financial performance [FP_{it}]), we use three models to estimate the effects of our variables of interest, controlling for other factors: a raw returns model (RET_{it}), a size adjusted returns model ($ARET_{it}$), and an earnings model (ERN_{it})⁴.

3.5 Variable of interest: High insider ownership ($HighIO_{it-1}$)

Prior research documents a non-linear relation between levels of high insider ownership and stock performance (Bhabra, 2007; Davies et al., 2005; Neumann & Voetmann, 2003). As stated previously, to mitigate the potential effects of nonlinearity on results and in accordance with prior research and SEC guidance, we use indicator variables equal to 1 (0 otherwise) to identify CEO ownership of at least 10%, 15%, and 20% ($IO_{10Percent_{t-1}}$, $IO_{15Percent_{t-1}}$, and $IO_{20Percent_{t-1}}$) ownership.

3.6 Variables of interest: low and high price to earnings ($Bottom_Quintile_P/E_{it-1}$ and $Top_Quintile_P/E_{it-1}$)

Price to earnings ratio is the end of fiscal year price per share of common divided by the end of fiscal year earnings before extraordinary items per share. P/Es are stratified into quintiles and assigned an indicator variable equal to 1 and 0 otherwise for the lowest ($Bottom_Quintile_P/E_{it-1}$)

⁴ Size adjusted abnormal returns are defined in the previous section and earnings are measured as the fiscal year t changes in earnings before extraordinary items scaled by year $t-1$ total assets.

and highest ($Top_Quintile_P/E_{it-1}$) quintiles. To test our main hypothesis, we interact the variables for the lowest and highest P/E quintiles with the $IO_10Percent_{t-1}$, $IO_15Percent_{t-1}$, and $IO_20Percent_{t-1}$ dummies; i.e., $Bottom_Quintile_P/E * IO_10Percent_{it-1}$ and $Top_Quintile_P/E * IO_10Percent_{it-1}$, $Bottom_Quintile_P/E * IO_15Percent_{it-1}$ and $Top_Quintile_P/E * IO_15Percent_{it-1}$, $Bottom_Quintile_P/E * IO_20Percent_{it-1}$ and $Top_Quintile_P/E * IO_20Percent_{it-1}$. A negative (positive) coefficient for the low (high) price to earnings and high insider ownership interaction terms would support our hypothesis that insider ownership reverses the widely documented tendencies for low P/E firms to earn higher returns and high P/E firms to earn lower returns.

3.7 Control variables

We use a number of control variables to account for their potential effects on the cross sectional variability of our dependent variables for financial performance. In both returns and earnings models, the natural log of a firm's fiscal year-end total assets ($lnASET_{it}$) is used to control for size effects. Natural logs are used to reduce heteroscedasticity and support the constant variance assumption of OLS. (As described previously, we include size adjusted returns estimated according to their market value as one of our measures of financial performance. Nevertheless, to further reflect size effects that market value may not capture we also include $lnASET_{it}$ in our $ARET_{it}$ model). Financial leverage exacerbates the effect that changes in sales have on earnings. Increased debt also may affect monitoring and actions by equity holding managers. Therefore, we include the end of fiscal year long term debt scaled by total assets (LEV_{it}) in all models.

Prior studies assert that the relation between returns and insider ownership may be endogenous as informed managers with private inside information may choose to increase or

decrease ownership in anticipation of future changes in financial performance (Himmelberg et al., 1999). This could be true particularly for managers with high insider ownership. Although using lagged values of insider ownership should, at least in part, control for endogeneity in our models, we also include additional variables to control for managers' anticipatory changes in the percentage of common shares owned in each of the years t (DEL_t) and $t-1$ (DEL_{t-1}). Including changes in ownership in both years is a particularly strong control in that it captures the effect of changes in the percentage of insider ownership in both the year of and the year prior to when financial performance is measured.

The general model is specified as follows:

$$FP_{it} = \alpha_1 CONTROLS + \alpha_2 HighIO_{it-1} + \alpha_3 P/E_{it-1} + \alpha_4 HighIO_{it-1} * P/E_{it-1} + e_{it} \quad (2)$$

4. Results

4.1 Descriptive statistics

We present the descriptive statistics for variables in the regression models for firm year observations pooled over 1995 to 2012 in Tables 1 and 2. Table 1 includes minimum, maximum, mean, and median values of these variables. Results show that 14.7% of the firms have insider ownership of at least 10% and that 9.4 % have at least 15%. Mean (median) one year buy and hold raw returns are 13.90% (8.50%) and buy and hold abnormal returns are -.009% (-4.42%).

Insert Table 1

Pearson correlations presented in Table 2 show that firms with high insider ownership are smaller and have less debt. Buy and hold raw and abnormal returns are both positively correlated with earnings changes. Low (high) P/E, $t-1$ firms are positively (negatively) correlated with year t returns. Low P/E firms have fewer assets and more leverage. Relative to other firms, high P/E firms have greater insider ownership and low P/E firms have less insider ownership.

Insert Table 2

4.2 Results of univariate tests: High insider ownership, price to earnings, and size adjusted abnormal returns

For each lagged high, low, and medium P/E portfolio (*Top_Quintile_P/E_{it-1}*, *Bottom_Quintile_P/E_{it-1}*, and *Middle_60Percent_P/E_{t-1}*), we show results for comparisons of size adjusted year t mean returns ($ARET_{it}$) between alternative levels of lagged high insider ownership at the 10%, 15%, and 20% levels (*IO_10Percent_{it-1}*, *IO_15Percent_{it-1}*, and *IO_20Percent_{it-1}*) and other lagged IO ownership (*Other IO_{t-1}*) firms in Table 3. As expected, in the absence of high insider ownership, the returns for firms in the highest and lowest P/E quintiles are negative and positive, respectively. For example, when insider ownership is less than 15% (*Other IO_{t-1} ARET_t*), the mean size adjusted abnormal return for the highest P/E quintile (*Top_Quintile_P/E_{it-1}*) portfolio is -4.38%. The return for the lowest P/E quintile (*Other IO_{t-1} ARET_t* and *Bottom_Quintile_P/E_{it-1}*) is 3.24%. However, when insider ownership is equal to or greater than 15% (*IO_15Percent_{t-1} ARET_t*), returns for the highest and lowest P/E quintiles are 4.04% and -5.49%, respectively. Hence, for the highest P/E quintile of firms, the difference in mean returns for firms with CEO ownership of at least 15% and firms with less than 15% is a statistically significant 8.43%. Differences in mean returns are similarly higher when insider ownership is either greater than or equal to 10% and 20%. When insider ownership is at least 10% and 20%, the difference in returns for the highest P/E quintile is 7.96% ($p = .000$) and 9.03% ($p = .006$), respectively. For the bottom quintile of P/E firms the difference in year t returns for firms with at least 10%, 15% and 20% are -3.28% ($p = .120$), -8.73% ($p = .062$), and -8.80% ($p = .079$). These findings suggest that high insider ownership mitigates the tendency for high (low) P/E firms to earn lower (higher) returns and provide preliminary support for our

hypothesis.

Insert Table 3

4.3 Results of multivariate tests: High insider ownership, price to earnings, and financial performance

Tables 4 and 5 display the results from regressions of abnormal and raw returns on controls and variables of interest intended to capture the effect of insider ownership on returns for the lowest (*Bottom_Quintile_P/E * HighIO_{it-1}*) and highest (*Top_Quintile_P/E * HighIO_{it-1}*) quintiles of P/E. We conduct these tests across three levels of CEO ownership: when the CEO owns at least 10%, 15%, or 20% of the common shares outstanding.

Regarding controls, Table 4 shows that abnormal returns increase with firm size and leverage. Estimates for changes in CEO ownership that occur in the year of (*DEL_{it}*) and year prior (*DEL_{it-1}*) to financial performance generally are negative, suggesting that CEOs may be selling into strength and buying into weakness.

Coefficients for the lowest (*Bottom_Quintile_P/E_{it-1}*) and highest (*Top_Quintile_P/E_{t-1}*) P/E quintiles are significantly positive and negative. Hence, in accordance with prior studies, low (high) P/E firms earn higher (lower) returns in the year following valuation. Findings for our variables of interest show, however, that this result reverses when CEO ownership is high. That is, in the presence of high insider ownership, low P/E firms earn lower returns and high P/E firms earn higher returns. In particular, when insider ownership is high, the estimates for the bottom P/E quintile of firms at each of the 10%, 15%, and 20% levels of CEO ownership are significantly negative ($p = .046$, $.006$, and $.014$). Conversely, at these same ownership levels, the coefficients are significantly positive for the high price to earnings portfolios ($p = .038$, $p = .062$, and $p = .044$). Hence, after including controls, we find that high insider ownership mitigates the

tendency for low P/E firms to earn higher following year abnormal returns and high P/E firms to earn lower following year abnormal returns.

Insert Table 4

As reported in Table 5, results are similar when we use our raw returns measure of financial performance. For each of the levels of CEO ownership, returns for low P/E firms decrease in the presence of high insider ownership ($p = .062, .008, \text{ and } .024$) and increase for high P/E firms ($p = .055, .071, \text{ and } .051$).

Insert Table 5

Table 6 presents results when earnings (ERN_{it}) is used as our dependent variable. The results for our variables of interest are similar to those for the returns models. In the year following valuation, earnings decrease (increase) for low (high) P/E firms when insider ownership is high. Specifically, when insider ownership is equal to or greater than 10%, 15%, and 20%, the coefficients for our low P/E firms are negative at the $p = .112, .032, \text{ and } .004$ levels. The coefficients across the same levels of insider ownership for our high P/E companies are positive and significant ($p = .034, .035, \text{ and } .030$). These results provide evidence that the favorable (unfavorable) effect of high insider ownership on high (low) P/E firms' returns may be extended to earnings. That is, in the year following valuation, high insider ownership increases earnings for high P/E firms and decreases earnings for low P/E firms.

To summarize, coefficients for firms in the lowest quintile of P/Es are positive across all our models. In the subsequent period and relative to other firms, low P/E firms generally earn higher returns and higher earnings. In addition, the coefficients for the highest quintile of P/E firms in our returns models are negative. In the subsequent year, high P/E firms earn lower returns. When insider ownership is high, however, returns decline for low P/E firms and increase for high

P/E firms. Hence, similar to our univariate returns tests, results show that the higher (lower) returns typically achieved by low (high) P/E companies decrease (increase) when insider ownership is high. And finally, in the year following valuation, high insider ownership increases earnings for high P/E firms and decreases earnings for low P/E firms.

Insert Table 6

5. Sensitivity tests

To further assess the robustness of our results, we conduct the following sensitivity tests. Factors unique to certain industries may affect ownership structure and / or the market's perception of the growth characteristics of the firm (or lack thereof). To control for this possibility, we include indicator variables equal to 1 and 0 otherwise for each of the 61, two-digit SIC industry groups represented in our sample. Results are generally confirmatory of the study's main findings. Also, in light of the unusual and extreme effects of the 2008 financial crisis, we eliminate the firm year observations for this period and rerun our main tests. Eliminating 2008 does not materially alter our findings.

Finally, incentives associated with insider ownership may extend to other senior executives, including the CFO. We investigate this conjecture by modifying our sample to include percentage of shares owned by the CFO. In particular, we measure insider ownership as the sum of the percentage of common shares outstanding for both the CEO and CFO and, similar to our primary tests, assign dummy variables equal to 1 for ownership levels of at least 10%, 15% and 20%. Results of tests for returns models show that while estimates for our insider ownership-P/E interaction terms are in the posited direction, the coefficients for the lowest quintile of P/E firms generally are not significant. Since percentage of ownership data is required for both the CEO and CFO, the number of firm year observations for the CEO-CFO sample is reduced to 4,385.

Hence the lack of significance may be, at least in part, a function of the reduced sample size.

6. Summary and conclusion

One explanation for the P/E-returns anomaly may be that returns reflect the trade-off between risk and reward as low P/E firms are riskier and investors, therefore, require higher returns (and vice versa). Alternatively, low P/E firms may outperform high P/E firms because of a notoriety effect. That is, excessively optimistic investors systematically overprice widely known glamour firms and underprice out of favor firms. Skinner and Sloan (2002) provide evidence of inferior returns to growth stocks and suggest that this is the result of excessively high expectations for future earnings. Lakonishok, Shleifer, and Vishny (1994) find that high market-to-book “glamour stocks” produce lower raw and size adjusted returns than lower market-to-book firms.

A considerable body of literature has examined the relation between ownership structure and performance. Using the anomalous P/E-returns relation as a framework, we add to these prior studies by examining how the association between insider ownership and financial performance changes for low and high price to earnings firms. We assert that the effects of insider ownership on financial performance are modified by factors unique to extremely low and extremely high market valuations. Since low P/Es reflect the inability of managers to create value, board ineffectiveness induced by high insider ownership perpetuates poor performance. Conversely, high P/Es reflect able management and value creation. Hence, even though insider ownership is high, there is little need for boards to take action. Indeed, value creation connotes capable leadership and enhances agency incentives as the manager’s personal wealth and stake in the firm coalesce. Our analysis supports these assertions. When earnings multiples are low and insider ownership is high, the high returns normally earned by low P/E companies decline while

the lower returns normally earned by high P/E companies increase.

Potential research questions for further investigation include whether the value enhancing effects of more effective governance provisions hold when insider ownership is high, and, if so, whether they differ between high and low value firms. Prior studies show that financial performance increases with effective governance (Gompers, Ishii, & Metrick 2003). Hence, in spite of their dominant ownership position, when managers with large personal stakes in their firms perceive the value enhancing effects of visible and effective governance, they may have incentives to consider voluntary implementation of such provisions.

In addition, this study measures value (P/E) in the year preceding financial performance. Anderson and Brooks (2006) show that the ability of P/Es to predict returns increases when more years of earnings history are used. They demonstrate that the widely documented difference in returns between value and glamour firms almost doubles when P/Es are calculated using average earnings over the last eight years. Also, in their seminal work on the returns anomaly, De Bondt and Thaler (1984) find that firms with high prior years abnormal returns earn negative abnormal returns in future years. Future research, therefore, might consider using alternative valuation measures and windows.

Finally, Houmes and Skantz (2101) document the tendency of high P/E firms to, in the year after valuation, report high discretionary accruals and use these findings to assert that managers of overvalued high P/E firms attempt to manage earnings higher. Further research that investigates the effect that high insider ownership may have on these earnings management tendencies might add to the current body of earnings quality literature.

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Table 1
Descriptive Statistics

RET_{it} is firm i 's year t return to shareholders with dividends reinvested. $ARET_{it}$ is firm i 's size adjusted year t buy and hold return with dividends included. ERN_{it} is firm i 's year t change in earnings scaled by year t assets. \lnASET_{it} is the natural log of firm i 's year t total assets. LEV_{it} is firm i 's year t long term debt divided by end of year t assets. DEL_t is the year t change in firm i 's percentage of shares owned by the CEO. DEL_{t-1} is the year $t-1$ change in firm i 's percentage of shares owned by the CEO. $IO_10Percent_{it-1}$ is an indicator variable equal to 1 if the percentage of firm i 's CEO ownership at end of year $t-1$ is at least 10%, and 0 otherwise. $IO_15Percent_{it-1}$ is an indicator variable equal to 1 if the percentage of firm i 's CEO ownership at end of year $t-1$ is at least 15%, and 0 otherwise. $IO_20Percent_{it-1}$ is an indicator variable equal to 1 if the percentage of firm i 's CEO ownership at end of year $t-1$ is at least 20%, and 0 otherwise. $Bottom_Quintile_P/E_{it-1}$ is an indicator variable equal to 1 if firm i 's end of year $t-1$ P/E is in the bottom quintile of a rank ordered listing of P/Es, and 0 otherwise. $Top_Quintile_P/E_{it-1}$ is an indicator variable equal to 1 if firm i 's end of year $t-1$ P/E is in the top quintile of a rank ordered listing of P/Es, and 0 otherwise.

Variables	Minimum	Maximum	Mean	Median	Std. Deviation
RET_{it}	-79.162	233.78	13.904	8.498	49.951
$ARET_{it}$	-105.401	224.29	-.009	-4.416	49.596
ERN_{it}	-.324	.437	.009	.006	.091
\lnASET_{it}	-2.431	14.983	7.240	7.050	1.639
LEV_{it}	.000	3.387	.044	.000	.133
DEL_t	-53.570	61.551	-.224	.000	2.965
DEL_{t-1}	-53.570	56.340	-.262	.000	3.097
$IO_10Percent_{it-1}$	.000	1.000	.147	.000	.345
$IO_15Percent_{it-1}$	.000	1.000	.094	.000	.282
$IO_20Percent_{it-1}$	.000	1.000	.061	.000	.238
$Bottom_Quintile_P/E_{it-1}$	.000	1.000	.200	.000	.401
$Top_Quintile_P/E_{it-1}$	.000	1.000	.200	.000	.398

Table 2
Pearson Correlations⁵

	<i>RET_{it}</i>	<i>ARET_{it}</i>	<i>ERN_{it}</i>	<i>lnASET_{it}</i>	<i>LEV_{it}</i>	<i>DEL_t</i>	<i>DEL_{t-1}</i>	<i>IO_10</i> <i>Percent_{it-1}</i>	<i>IO_15</i> <i>Percent_{it-1}</i>	<i>IO_20</i> <i>Percent_{it-1}</i>	<i>Bottom_</i> <i>Quintile_</i> <i>P/E_{it-1}</i>	<i>Top_</i> <i>Quintile_</i> <i>P/E_{it-1}</i>
<i>RET_{it}</i>	1	.993 (.000)	.314 (.000)	-.010 (.258)	.026 (.006)	-0.038 (.000)	-.006 (.508)	.025 (.007)	.014 (.115)	.012 (.170)	.067 (.000)	-.044 (.000)
<i>ARET_{it}</i>		1	.310 (.000)	.059 (.000)	.032 (.000)	-.040 (.000)	-.009 (.346)	.018 (.044)	.010 (.262)	.008 (.361)	.028 (.002)	-.035 (.000)
<i>ERN_{it}</i>			1	-.044 (.000)	-.024 (.009)	.001 (.937)	.005 (.602)	.010 (.277)	.003 (.763)	.000 (.979)	.175 (.000)	.017 (.057)
<i>lnASET_{it}</i>				1	.166 (.000)	.013 (.154)	.020 (.026)	-.085 (.000)	-.067 (.000)	-.053 (.000)	-.176 (.000)	-.057 (.000)
<i>LEV_{it}</i>					1	.014 (.120)	.027 (.003)	-.074 (.000)	-.058 (.000)	-.038 (.000)	.079 (.000)	-.031 (.001)
<i>DEL_t</i>						1	-.093 (.000)	-.225 (.000)	-.226 (.000)	-.219 (.000)	.018 (.043)	-.016 (.083)
<i>DEL_{t-1}</i>							1	.024 (.007)	.054 (.000)	.081 (.000)	.022 (.013)	-.027 (.003)
<i>IO_10Percent_{it-1}</i>								1	.771 (.000)	.633 (.000)	-.048 (.000)	.040 (.000)
<i>IO_15Percent_{it-1}</i>									1	.822 (.000)	-.034 (.000)	.040 (.029)
<i>IO_20Percent_{it-1}</i>										1	-.022 (.016)	.022 (.013)
<i>Bottom_</i> <i>Quintile_</i> <i>P/E_{it-1}</i>											1	-.249 (.000)
<i>Top_</i> <i>Quintile_</i> <i>P/E_{it-1}</i>												1

⁵ Variables are as previously defined in Table 1. (p values) are two-tailed.

Table 3**Comparisons of size adjusted returns between levels of CEO ownership and price to earnings multiples**

$IO_10Percent_{t-1} ARET_t$ are the year t average size adjusted abnormal returns to shareholders with dividends reinvested for firms with CEO ownership of at least 10% lagged one year. $IO_15Percent_{t-1} ARET_t$ are the year t average size adjusted abnormal return to shareholders with dividends reinvested for firms with CEO ownership of at least 15% lagged one year. $IO_20Percent_{t-1} ARET_t$ are the year t average size adjusted abnormal return to shareholders with dividends reinvested for firms with CEO ownership of at least 20% lagged one year. $Other IO_{t-1} ARET_t$ are the year t average size adjusted abnormal return to shareholders with dividends reinvested returns for firms with CEO ownership of less than 10, 15, and 20% lagged one year. $Bottom_Quintile_P/E_{t-1}$ are firms in the bottom quintile of a rank ordered listing of P/Es lagged one year. $Top_Quintile_P/E_{t-1}$ are firms in the top quintile of a rank ordered listing of P/Es lagged one year. $Middle_60Percent_P/E_{t-1}$ are firms in the middle three quintiles of a rank ordered listing of P/Es lagged one year.

(N = 12,138)

	$IO_10Percent_{t-1} ARET_t$	$Other IO_{t-1} ARET_t$	Difference $ARET_t$	(p, one tail) $ARET_t$
$Top_Quintile_P/E_{t-1}$	3.080	-4.881	7.961	0.000
$Bottom_Quintile_P/E_{t-1}$	-0.282	2.996	-3.278	0.120
$Middle_60Percent_P/E_{t-1}$	2.446	-0.219	2.655	0.005
	$IO_15Percent_{t-1} ARET_t$	$Other IO_{t-1} ARET_t$	Difference $ARET_t$	(p, one tail) $ARET_t$
$Top_Quintile_P/E_{t-1}$	4.043	-4.382	8.425	0.004
$Bottom_Quintile_P/E_{t-1}$	-5.485	3.240	-8.725	0.062
$Middle_60Percent_P/E_{t-1}$	2.428	-0.090	2.518	0.068
	$IO_20Percent_{t-1} ARET_t$	$Other IO_{t-1} ARET_t$	Difference $ARET_t$	(p, one tail) $ARET_t$
$Top_Quintile_P/E_{t-1}$	4.831	-4.198	9.029	0.006
$Bottom_Quintile_P/E_{t-1}$	-5.715	3.087	-8.802	0.079
$Middle_60Percent_P/E_{t-1}$	2.428	-.090	2.518	0.068

Table 4

Financial Performance (abnormal returns) for levels of CEO ownership

$$ARET_{it} = \alpha_1 CONTROLS + \alpha_2 P/E_{it-1} + \alpha_3 HighIO_{it-1} + \alpha_4 P/E_{it-1} * HighIO_{it-1} + e_{it}$$

Significance (p) is shown in parentheses under coefficients. Tests for variables DEL_{it} , DEL_{it-1} , $HighIO_{it-1}$, $Bottom_Quintile_P/E_{it-1}$, $Bottom_Quintile_P/E * HighIO_{it-1}$, $Top_Quintile_P/E_{it-1}$, and $Top_Quintile_P/E * HighIO_{it-1}$ are one-tailed. FP_{it} is the measure of market performance $ARET_{it}$ where: $ARET_{it}$ is firm i 's year t size adjusted return to shareholders with dividends reinvested. $lnASET_{it}$ is the year t natural log of firm i 's year t total assets. LEV_{it} is firm i 's year t long term debt divided by end of year t assets. DEL_{it} is the year t change in firm i 's percentage of shares owned by the CEO. DEL_{it-1} is the year $t-1$ change in firm i 's percentage of shares owned by the CEO. $HighIO_{it-1}$ is an indicator variable equal to 1 if the percentage of firm i 's CEO ownership at end of year $t-1$ is at least either 10 ($IO_10Percent_{it-1}$), 15 ($IO_15Percent_{it-1}$) or 20 ($IO_20Percent_{it-1}$) percent, and 0 otherwise. $Bottom_Quintile_P/E_{it-1}$ is an indicator variable equal to 1 if firm i 's end of year $t-1$ P/E is in the bottom quintile of a rank ordered listing of P/Es and, 0 otherwise. $Top_Quintile_P/E_{it-1}$ is an indicator variable equal to 1 if firm i 's end of year $t-1$ P/E is in the top quintile of a rank ordered listing of P/Es, and 0 otherwise. $Bottom_Quintile_P/E * HighIO_{it-1}$ is the interaction between the bottom P/E quintile and high insider ownership firms. $Top_Quintile_P/E * HighIO_{it-1}$ is the interaction between the top P/E quintile and high insider ownership firms.

Owners	<i>IO 10Percent_{it-1}</i>		<i>IO 15Percent_{it-1}</i>		<i>IO 20Percent_{it-1}</i>	
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
<i>lnASET_{it}</i>	1.801 (.000)	1.601 (.000)	1.767 (.000)	1.575 (.000)	1.767 (.000)	1.576 (.000)
<i>LEV_{it}</i>	6.057 (.007)	6.473 (.003)	6.042 (.007)	6.277 (.005)	5.929 (.008)	6.161 (.005)
<i>DEL_{it}</i>	-.527 (.001)	-.523 (.001)	-.566 (.001)	-.563 (.001)	-.585 (.001)	-.582 (.001)
<i>DEL_{it-1}</i>	-.241 (.065)	-.246 (.062)	-.234 (.072)	-.250 (.054)	-.241 (.065)	-.251 (.054)
<i>HighIO_{it-1}</i>	4.842 (.000)	2.179 (.082)	4.196 (.009)	.560 (.384)	3.898 (.026)	-.275 (.450)
<i>Bottom_Quintile_P/E_{it-1}</i>	3.845 (.004)		3.793 (.004)		3.525 (.006)	
<i>Bottom_Quintile_P/E * HighIO_{it-1}</i>	-7.912 (.046)		-13.133 (.006)		-13.385 (.014)	
<i>Top_Quintile_P/E_{it-1}</i>		-3.328 (.001)		-2.953 (.002)		-2.914 (.002)
<i>Top_Quintile_P/E * HighIO_{it-1}</i>		5.694 (.038)		6.373 (.062)		8.044 (.044)
Adj. R ²	.080	.080	.080	.080	.080	.080
N	12,138	12,138	12,138	12,138	12,138	12,138

Table 5

Financial performance (raw returns) for levels of CEO ownership

$$RET_{it} = \alpha_1 CONTROLS + \alpha_2 P/E_{it-1} + \alpha_3 HighIO_{it-1} + \alpha_4 P/E_{it-1} * HighIO_{it-1} + e_{it}$$

Significance (p) is shown in parentheses under coefficients. Tests for variables DEL_{it} , DEL_{it-1} , $HighIO_{it-1}$, $Bottom_Quintile_P/E_{it-1}$, $Bottom_Quintile_P/E * HighIO_{it-1}$, $Top_Quintile_P/E_{it-1}$, and $Top_Quintile_P/E * HighIO_{it-1}$ are one-tailed. FP_{it} is the measure of market performance RET_{it} where: RET_{it} is firm i 's year t return to shareholders with dividends reinvested. $lnASET_{it}$ is the year t natural log of firm i 's year t total assets. LEV_{it} is firm i 's year t long term debt divided by end of year t assets. DEL_{it} is the year t change in firm i 's percentage of shares owned by the CEO. DEL_{it-1} is the year $t-1$ change in firm i 's percentage of shares owned by the CEO. $HighIO_{it-1}$ is an indicator variable equal to 1 if the percentage of firm i 's CEO ownership at end of year $t-1$ is at least either 10 ($IO_10Percent_{it-1}$), 15 ($IO_15Percent_{it-1}$) or 20 ($IO_20Percent_{it-1}$) percent, and 0 otherwise.

$Bottom_Quintile_P/E_{it-1}$ is an indicator variable equal to 1 if firm i 's end of year $t-1$ P/E is in the bottom quintile of a rank ordered listing of P/Es and, 0 otherwise.

$Top_Quintile_P/E_{it-1}$ is an indicator variable equal to 1 if firm i 's end of year $t-1$ P/E is in the top quintile of a rank ordered listing of P/Es, and 0 otherwise. $Bottom_Quintile_P/E * HighIO_{it-1}$ is the interaction between the bottom P/E quintile and high insider ownership firms. $Top_Quintile_P/E * HighIO_{it-1}$ is the interaction between the top P/E quintile and high insider ownership firms.

Ownership	$IO_10Percent_{it-1}$		$IO_15Percent_{it-1}$		$IO_20Percent_{it-1}$	
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
$lnASET_{it}$	-0.125 (.653)	-0.387 (.156)	-0.162 (.562)	-0.538 (.054)	-0.162 (.561)	-0.536 (.054)
LEV_{it}	6.468 (.003)	7.318 (.001)	6.421 (.004)	7.301 (.001)	6.290 (.005)	7.185 (.001)
DEL_{it}	-0.482 (.002)	-0.487 (.002)	-0.528 (.001)	-0.521 (.002)	-0.546 (.001)	-0.537 (.001)
DEL_{it-1}	-0.189 (.122)	-0.185 (.128)	-0.182 (.132)	-0.190 (.122)	-0.191 (.121)	-0.191 (.121)
$HighIO_{it-1}$	5.116 (.000)	1.854 (.115)	4.240 (.008)	.681 (.307)	3.958 (.0721)	.068 (.472)
$Bottom_Quintile_P/E_{it-1}$	7.219 (.000)		7.187 (.000)		6.905 (.000)	
$Bottom_Quintile_P/E * HighIO_{it-1}$	-6.978 (.062)		-12.118 (.008)		-11.704 (.024)	
$Top_Quintile_P/E_{it-1}$		-4.563 (.000)		-4.541 (.000)		-4.505 (.000)
$Top_Quintile_P/E * HighIO_{it-1}$		5.079 (.055)		6.077 (.071)		7.635 (.051)
Adj. R ²	.083	.086	.083	.081	.082	.081
N	12,138	12,138	12,138	12,138	12,138	12,138

Table 6

Financial performance (earnings) for levels of CEO ownership

$$ERN_{it} = \alpha_1 CONTROLS + \alpha_2 P/E_{it-1} + \alpha_3 HighIO_{it-1} + \alpha_4 P/E_{it-1} * HighIO_{it-1} + e_{it}$$

Significance (p) is shown in parentheses under coefficients. Tests for variables DEL_{it} , DEL_{it-1} , $HighIO_{it-1}$, $Bottom_Quintile_P/E_{it-1}$, $Bottom_Quintile_P/E * HighIO_{it-1}$, $Top_Quintile_P/E_{it-1}$, and $Top_Quintile_P/E * HighIO_{it-1}$ are one-tailed. FP_{it} is the measures of operating performance ERN_{it} , where: ERN_{it} is firm i 's year t change in earnings scaled by year $t-1$ assets. $lnASET_{it}$ is the year t natural log of firm i 's year t total assets. LEV_{it} is firm i 's year t long term debt divided by end of year t assets. DEL_{it} is the year t change in firm i 's percentage of shares owned by the CEO. DEL_{it-1} is the year $t-1$ change in firm i 's percentage of shares owned by the CEO. $HighIO_{it-1}$ is an indicator variable equal to 1 if the percentage of firm i 's CEO ownership at end of year $t-1$ is at least either 10 ($IO_10Percent_{it-1}$), 15 ($IO_15Percent_{it-1}$) or 20 ($IO_20Percent_{it-1}$) percent, and 0 otherwise.

$Bottom_Quintile_P/E_{it-1}$ is an indicator variable equal to 1 if firm i 's end of year $t-1$ P/E is in the bottom quintile of a rank ordered listing of P/Es and, 0 otherwise.

$Top_Quintile_P/E_{it-1}$ is an indicator variable equal to 1 if firm i 's end of year $t-1$ P/E is in the top quintile of a rank ordered listing of P/Es, and 0 otherwise. $Bottom_Quintile_P/E * HighIO_{it-1}$ is the interaction between the bottom P/E quintile and high insider ownership firms. $Top_Quintile_P/E * HighIO_{it-1}$ is the interaction between the top P/E quintile and high insider ownership firms.

Owners	$IO_10Percent_{it-1}$		$IO_15Percent_{it-1}$		$IO_20Percent_{it-1}$	
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
$lnASET_{it}$	-0.01 (.550)	-0.02 (.000)	-0.01 (.514)	-0.02 (.000)	-0.01 (.514)	-0.02 (.000)
LEV_{it}	-0.013 (.004)	-0.005 (.270)	-0.013 (.004)	-0.005 (.243)	-0.013 (.004)	-0.005 (.243)
DEL_{it}	.001 (.341)	.001 (.250)	.001 (.460)	.001 (.294)	.001 (.416)	.001 (.321)
DEL_{it-1}	.001 (.450)	.001 (.291)	.001 (.421)	.001 (.261)	.001 (.412)	.001 (.284)
$HighIO_{it-1}$	.006 (.002)	-0.001 (.450)	.006 (.022)	-0.003 (.162)	.006 (.035)	-0.005 (.083)
$Bottom_Quintile_P/E_{it-1}$	.041 (.000)		.041 (.000)		.041 (.000)	
$Bottom_Quintile_P/E * HighIO_{it-1}$	-0.011 (.112)		-0.022 (.032)		-0.032 (.004)	
$Top_Quintile_P/E_{it-1}$		.002 (.135)		.003 (.089)		.003 (.072)
$Top_Quintile_P/E * HighIO_{it-1}$		.010 (.034)		.013 (.035)		.015 (.030)
Adj. R ²	.047	.019	.048	.019	.048	.020
N	12,138	12,138	12,138	12,138	12,138	12,138