

Insider Ownership and Stock Price Performance: How Greater Concentrations of Insider Ownership Affects Returns of Firms with Various Price-to-Earnings Ratios

By:

Robert Houmes
Jacksonville University

Robert Boylan
Jacksonville University

Denise Dickins
East Carolina University

Insider Ownership and Stock Price Performance: How Greater Concentrations of Insider Ownership Affects Returns of Firms with Various Price-to-Earnings Ratios

Abstract

In this study we investigate the impact that high insider ownership (HIO) has on the stock price returns of firms with high P/Es (top 20%) and low P/Es (bottom 20%). Our results are somewhat surprising. We find that HIO firms with high P/Es tend to sustain high stock price returns over time. We also find that HIO firms with low P/Es tend to sustain low stock price returns over time. Our findings are significant because they conflict with most existing studies that investigate the relationship between P/E ratios and stock price returns. Up until now most studies have shown that firms with high P/Es tend to experience low stock price returns over time and most firms with low P/Es tend to experience relatively higher stock price returns over time.

We believe that our results can be partially explained by agency theory. Agency theory posits that as ownership becomes more concentrated in managers, costs associated with separation of ownership and control are reduced (Jensen and Meckling 1976). As these agency costs decrease, firms become more profitable, leading to enhanced stock price returns (Oswald and Jahera 1991, among others).

We posit that HIO has a positive impact on firms with high P/Es and an insignificant or negative impact on firms with low P/Es. Our argument is that firms with consistently high P/E multiples have resource and market advantages and also have the synergy of relatively lower agency costs which yields sustainable comparative advantage when compared to other firms. Consequently, incentives associated with aligning the interests of capable managers of high P/E firms with the interests of the other shareholders mitigates the mean regressing tendency of high P/E firms to under-perform.

Conversely, HIO firms with low P/Es may have disadvantages because poorly performing management is entrenched due to their ownership positions. This ownership interest makes it difficult to replace these poorly performing management teams. Boards of Directors may either be unwilling or unable to remove entrenched CEOs. This inability to change top management may well explain why these low P/E firms tend to experience low stock price returns over time, thereby mitigating the tendency of most low P/E firms to revert toward the mean.

I. Introduction

Earning multiples reflect expectations of future performance. The greater and more timely a firm's realized earnings, the greater their value. Accordingly, one would expect companies with higher than average P/Es to outperform their competitors in terms of future earnings, and companies with lower than average P/Es to under perform their competitors.

A long standing anomaly of the semi-strong form of the efficient market theory (Fama 1970) is the tendency for low P/E firms to systematically earn higher stock price returns, and high P/E firms to systematically earn lower returns (Basu 1977; Dreeman and Lufkin 1997; Campbell and Shiller 2001). Explanations for this anomaly include that *ex post* returns reflect the trade-off between risk and reward as low P/E firms may be considered riskier, hence investors require higher returns (and vice versa). Alternatively, low P/E firms may outperform high P/E firms because excessively pessimistic investors may systematically under price certain stocks (and vice versa); or under-valued and over-valued stocks may simply regress to the mean (Tversky and. Kahneman 1981).

Agency theory suggests that firms with high insider ownership have a higher probability of aligning owner interest with management actions, which reduces costs (Jensen and Meckling 1976) because managers are more likely to act like owners, maximizing returns. Prior studies support this assertion. For example, Oswald and Jahera (1991) find a positive relationship between insider ownership and return on assets, return on equity, and excess returns; and Hudson et al. (1992) find a positive relationship between insider ownership, firm size and abnormal returns.

Griffith (1999), Morck et al. (1998), and Chen et al. (1993) all find that the relationship between insider ownership and firm value (generally measured as Tobin's q) is non-monotonic; the relationship is dependent upon the percentage of insider ownership. In general, they find that small levels of insider ownership and large levels of insider ownership are positively related to firm value, while average levels are found to be negatively related to firm value.

This study contributes to understanding the relationship between insider ownership and firm performance by examining the impact that high insider ownership (HIO) has on the stock price returns of firms with high P/Es (top 20%) and low P/Es (bottom 20%). Contrary to prior evidence regarding P/Es and

ex post returns, and insider ownership and returns, we conjecture that factors uniquely associated with low P/E firms and high P/E firms serve to alter these relationships. Specifically, we hypothesize and find that for both HIO firms with low P/E firms, and HIO firms with high P/Es, levels of insider ownership interact to diminish the tendency for these firms to experience mean regressing *ex post* returns.

Partitioning our sample into firms with very high and very low P/Es, we further find that for low P/Es firms, high levels of insider ownership interact with P/Es to diminish the tendency for these firms to experience mean regressing high *ex post* returns. In addition, for high P/E firms, the interaction of high levels of insider ownership with P/Es diminishes the tendency for these firms to earn low *ex post* returns.

Our findings, of HIO firms with low P/Es, suggest that the market may perceive that boards of low P/E value firms may either be unwilling or unable to remove poorly performing and entrenched CEOs, and *ex post* returns reflect these perceptions. For high P/E value firms, however, the interaction of reduced agency costs with competent management has rewarded boards and stockholders with relatively higher stock market returns.

The results of our study may be beneficial to investors in assessing value, providing both value- and growth-investors useful information in their forecasts of firm performance. For example, value-investors, who might find certain low P/E firms attractive, should consider avoiding long positions in low P/E firms with high insider ownership. Similarly, growth-investors might want to consider a long position in high P/E firms with high insider ownership. Our results also suggest that a portfolio of low P/E firms with low IO would likely outperform a portfolio of low P/E firms with high insider ownership.

This paper proceeds as follows. In Section II, we develop our hypotheses. In Section III we describe our sample and summarize the study's methodology. In Section IV we provide results; and in Section V conclusions are presented.

II. Hypotheses Development

The future realization of expected cash flows is partly a function of management capability and the faculty of governance to monitor that capability. Hence, earnings multiples not only reflect financial performance expectations but also prospects about management's ability to realize those expectations. For example, a low P/E may not only reflect the market's forward looking expectations of financial under performance, but may also reflect the inability of management to alter this outcome. Although effective

boards could remove poorly performing executives and initiate a change in leadership, entrenched managers with high levels of ownership are more likely to be immune from such actions. That is, even though they may have run the company into the ground, boards have little recourse against poorly performing entrenched CEO with high levels of insider ownership.

Another deterrent against ineffective leadership is the threat of takeover associated with a merger or acquisition. Prior research shows that the likelihood of a merger or acquisition is greater for low P/E firms. Palepu (1986) suggests that high P/E firms have incentives to takeover low P/E firms since the new combination will result in an instantaneous increase in the target firm's P/E. Wansley (1984) suggests a positive association between the likelihood of being acquired and a lower P/E. Meador et al. (1996) show that "cheap" market-to-book firms are more likely to be involved in mergers. Although the threat of takeover should provide an incentive for managers of low P/E firms to enhance performance, or a vehicle to remove managers that are unable to enhance earnings multiples, when insider ownership is high, the ability of acquiring firms to target low P/E companies is reduced. Hence, the potential for value increasing merger and acquisition activity is diminished when insider ownership is high. Therefore, when firms have low P/Es and management ownership is high, we expect that the *ex post* favorable returns typically earned by low P/E firms is diminished. More formally stated,

H1a: *Ex post* returns are mean regressing based on a firm's P/E, but high levels of insider ownership interact with P/Es to diminish this tendency.

H1b: The impact of the interaction between high insider ownership and low P/Es diminishes the tendency of low P/E firms to experience *ex post* mean regressing high returns.

High P/E multiples in part reflect the market-assessed ability of managers to achieve and sustain superior earnings growth. Compared to managers of low P/E firms, managers of high P/E firms have been successful in maximizing share value, hence the ability of the board of directors to remove successful managers, and the availability of takeover strategies is less relevant in terms of investors' expectations for future returns. High earnings multiples also reduce the likelihood of hostile takeovers, consequently the ability of managers with high insider ownership to stave off takeover attempts in high P/E firms is less significant. Therefore, we predict that for high P/E firms, increased alignment of interests between shareholders and capable managers who have been relatively successful in maximizing the value of their

firm should mitigate the tendency for high P/E firms to under-perform.

More formally stated:

H2: The impact of the interaction between high insider ownership and high P/Es diminishes the tendency of high P/E firms to experience ex post mean regressing low returns.

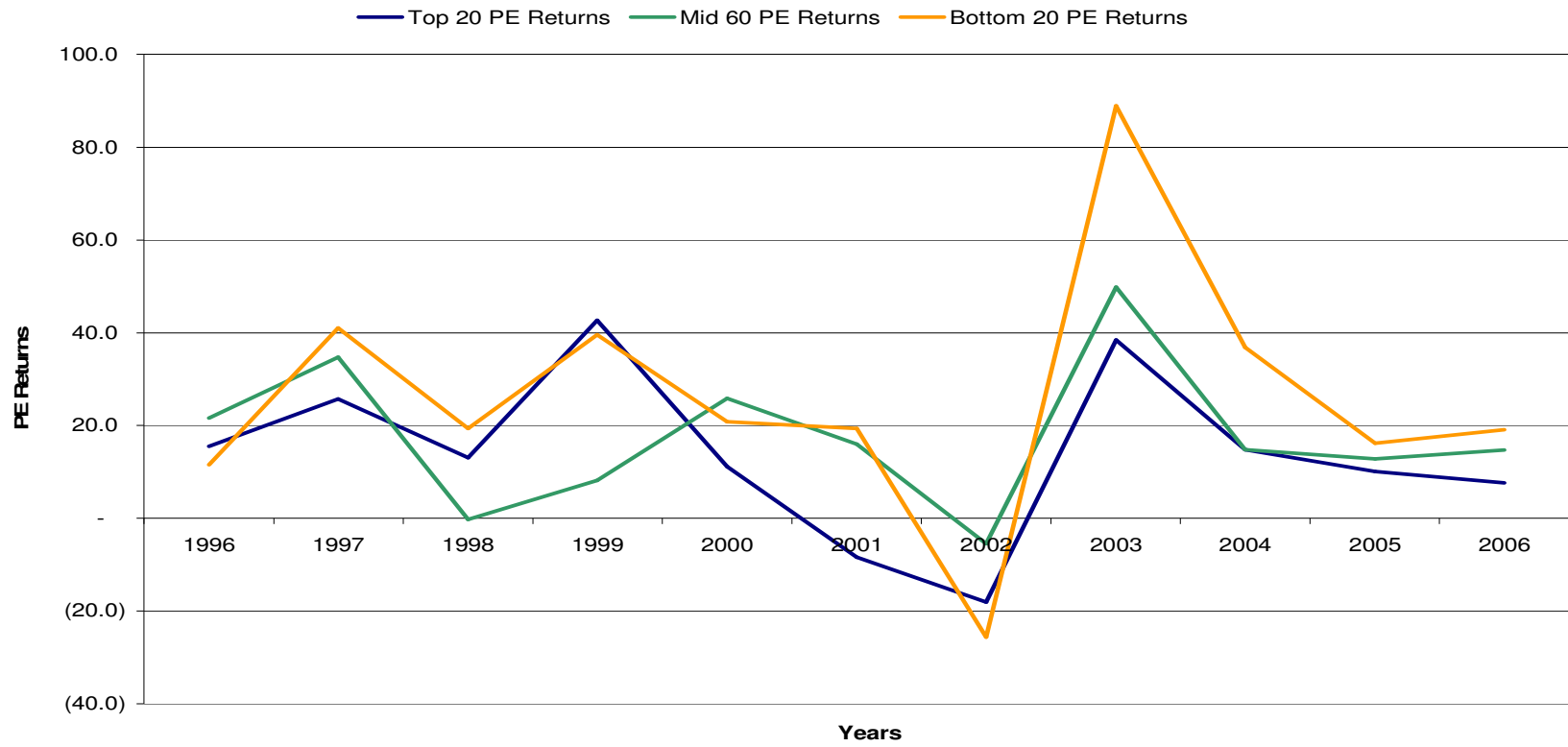
III. Methodology

Sample data for the 1993 to 2006 period of this study was collected from two sources. We obtained CEO stock ownership data from ExecuComp. ExecuComp contains fiscal year data collected from the annual proxy statements of firms listed on the Standard and Poor's (S&P) 500, the S&P MidCap 400 and S&P SmallCap 600 Index. Execucomp includes data for currently active companies that have been removed from these indices as well as past years when new firms are added, hence, the total number of firms for most years is greater than 1,500 (Cadman 2006). Annual financial accounting data was obtained from the Compustat North American data base for both active and research files.

From the total available observations with data sufficient to estimate the equations below we eliminate all firms with SICs ranging from 6000 to 6999 due to the unique incentives which may exist for financial services firms. Since the distribution for returns are typically right skewed, we winsorize returns and volatility variables in the top one-half of one percent. Our final sample consists of 6,546 firm year observations.

Consistent with the results of prior studies, we measure performance as the one year return to shareholders with dividends reinvested (RET_t). Figure I depicts that a portfolio of firms in the lowest 20-percent of a rank-ordered listing of P/Es of the sample firms, calculated annually ($B20PE_{it-1}$), outperformed portfolios of firms in both the middle 60-percent and top 20-percent in eight of eleven years. Further, a portfolio consisting of firms with P/Es in the top 20-percent ($T20PE_{it-1}$) performed worse than firms in both the middle 60-percent and bottom 20-percent portfolios in eight out of eleven years.

Figure I
1 Year Returns W/ Dividends Reinvested for Top 20 Mid 60 & Bottom 20 PE Ratio Portfolios



To examine how increased insider ownership may affect this result, we interact membership in the two P/E portfolios with a measure of the CEO's one-year lagged common stock ownership¹ in the firm, and estimate the following equation:

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

Where,

RET_{it} is firm i 's one year return to shareholders with dividends reinvested;

P/E_{it-1} is one of three measures, P/E_{it-1} , a continuous variable measured as the price-to-earnings multiple of firm i , or $T20PE_{it-1}$, an indicator variable equal to one if firm i 's P/E is in the top quintile of a rank ordered listing of P/Es, and is zero otherwise; or is $B20P/E_{it-1}$, an indicator variable equal to one if firm i 's P/E is in the bottom quintile of a rank ordered listing P/Es, calculated annually, and is zero otherwise;

$HighIO_{it-1}$ is an indicator variable equal to one if the percentage of firm i 's CEO percentage of stock ownership is at least 15 percent, and is zero otherwise;

$P/E_{it-1} * HighIO_{it-1}$ is the interaction term between the lagged measures of P/E and IO; and

$CONTROLS$ are intended to proxy for the effect of size, leverage, volatility, industry, and year on returns, as prior research has shown them to be related. Specifically, to control for the size effect on returns, firm i 's end of fiscal year t natural log of assets ($\ln ASET_{it}$), is included (Keim 1983, Fama and French 1993).

Leverage is firm i 's end of fiscal year t long term debt divided by end of year t assets (LEV_{it}), and is expected to be negatively associated with returns consistent with the results of Chaplinsky and Niehaus.

(1993). Volatility ($VOLT_{it}$) is stock price volatility used in calculating Black-Scholes values for firm i 's options which is determined over the prior 60 month period, and is expected to be positively associated

with returns (Black and Scholes 1973). Industry effects are controlled for as suggested by Mingfang and

Simerly (1995) by including indicator variables representing firms' membership in two-digit SICs. We also

include indicator variables for each year in the period of the study to control for other factors not captured

¹ We use the CEO as our proxy for manager entrenchment as much of the agency theory literature focuses on the CEO as being the primary source of agency problems (e.g., Jensen 1989). Our measure of insider ownership does not include common stock equivalents (e.g. stock options) held by the CEO as these data are only reported by Execucomp when the CEO's ownership percentage, including common stock equivalents, is greater than 1% of the firm's diluted common stock. Presumably, including common stock equivalents in the calculation of IO would not have a significant impact on the study's results.

by our model.

The intercept is suppressed to permit inclusion of all of the year and SIC dummy variables; and for ease of interpretation, the coefficients on SIC and Year variables are not presented in the tables that follow.

A significantly negative coefficient on P/E_{it-1} , combined with a significantly positive coefficient on $P/E_{it-1} * HighIO_{it-1}$, suggests that *ex post* returns are related to P/E and are mean regressing; but are also influenced by high levels of insider ownership such that the interaction of insider ownership and P/E diminish this mean-regressing tendency, consistent with the predictions of hypothesis 1a. A significantly positive coefficient on $B20P/E_{it-1}$, combined with a significantly negative coefficient on $B20P/E_{it-1} * HighIO_{it-1}$, suggests that low P/E firms earn higher *ex post* returns, but these returns decrease when insider ownership is high, supporting hypothesis 1b. A significantly negative coefficient on $T20P/E_{it-1}$, combined with an significantly positive coefficient on $T20P/E_{it-1} * HighIO_{it-1}$, suggests that high P/E firms earn lower *ex post* returns, but these returns increase when insider ownership is high, supporting hypothesis 2.

IV. Results

Correlations between earnings multiples, insider ownership and control variables are provided in Table 1.

Table 1
Pearson Correlations of Price to Earnings Multiples, High Insider Ownership and Control Variables

	RET _{it}	P/E _{it-1}	B20 P/E _{t-1}	T20 PE _{it-1}	HiIO _{it-1}	P/E* HighIO _{it-1}	T20PE _{it-1} * HighIO _{it-1}	B20P/E _{t-1} * HighIO _{it-1}	lnASET _{it}	LEV _{it}	VOLT _{it}
RET _{it}	1	-.010 (.436)	.053 (.000)	-.042 (.001)	.016 (.204)	.023 (.066)	.012 (.323)	-.008 (.508)	.005 (.710)	-.042 (.001)	.024 (.053)
P/E _{it-1}	.010 (.436)	1	-.221 (.000)	.263 (.000)	.005 (.707)	.501 (.000)	.099 (.000)	-.006 (.000)	.009 (.482)	-.027 (.026)	-.005 (.691)
B20P/E _{t-1}	.053 (.000)	-.221 (.000)	1	-.250 (.000)	-.037 (.003)	-.062 (.000)	-.079 (.000)	.275 (.000)	-.178 (.000)	.144 (.000)	.414 (.000)
T20PE _{it-1}	-.042 (.001)	.263 (.000)	-.250 (.000)	1	.006 (.610)	.074 (.000)	.314 (.000)	-.069 (.000)	.019 (.124)	-.113 (.000)	.082 (.000)
HighIO _{it-1}	.016 (.204)	.005 (.707)	-.037 (.003)	.006 (.610)	1	.101 (.000)	.433 (.000)	.379 (.000)-	-.009 (.480)	-.067 (.000)	-.038 (.002)
P/E* HighIO _{it-1}	.023 (.066)	.501 (.000)	-.062 (.000)	.074 (.000)	.101 (.000)	1	.235 (.000)	-.136 (.000)	.009 (.463)	-.006 (.653)	-.011 (.380)
T20PE _{it-1} * HighIO _{it-1}	.012 (.323)	.099 (.000)	-.079 (.000)	.314 (.000)	.433 (.000)	.235 (.000)	1	-.022 (.080)	.011 (.395)	-.057 (.000)	.016 (.190)
B20P/E _{t-1} * HighIO _{it-1}	-.008 (.508)	-.086 (.000)	.275 (.000)	-.069 (.000)	.379 (.000)	-.136 (.000)	-.022 (.080)	1	-.018 (.138)	.059 (.000)	.096 (.000)
lnASET _{it}	.005 (.710)	.009 (.482)	-.178 (.000)	.019 (.124)	-.009 (.480)	.009 (.463)	.011 (.395)	-.018 (.138)	1	.237 (.000)	-.343 (.000)
LEV _{it}	-.042 (.001)	-.027 (.026)	.144 (.000)	-.113 (.000)	-.067 (.000)	-.006 (.653)	-.057 (.000)	.059 (.000)	.237 (.000)	1	-.048 (.000)
VOLT _{it}	.024 (.053)	-.005 (.691)	.414 (.000)	.082 (.000)	-.038 (.002)	-.011 (.380)	.016 (.190)	.096 (.000)	-.343 (.000)	-.048 (.000)	1

RET_{it} is firm i's the one year return to shareholders with dividends reinvested;

P/E_{it-1} is firm i's price-to-earnings multiple;

B20P/E_{t-1} is an indicator variable equal to one if firm i's P/E is in the bottom quintile of a rank ordered

T20PE_{it-1} is an indicator variable equal to one if firm i's P/E is in the top quintile of a rank ordered listing of P/Es, and is zero otherwise;

HighIO_{it-1} is an indicator variable equal to one if the percentage of firm i's CEO ownership is at least 15 percent, and is zero otherwise;

PE*HighIO_{it-1} the interaction term between the interaction term between T20PE_{it-1}*HighIO_{it-1};

T20PE_{it-1}*HighIO_{it-1} is the interaction term between T20PE_{it-1}*HighIO_{it-1};

B20P/E_{t-1}*HighIO_{it-1} is the interaction term between B20P/E_{t-1} and HighIO_{it-1} ;

Total Assets_{it} is a firm i's end of fiscal year t total assets;

LEV_{it} is firm i's end of fiscal year t long term debt divided by end of year t assets; and

VOLT_{it} is stock price volatility used in calculating Black-Scholes values for firm i's options which is determined over the prior 60 month period

Sample descriptive statistics are presented in Table 2.

Table 2
Descriptive Statistics
(n = 6,546)

Panel A: Min., Max. Means and Standard Deviations of Variables

	Minimum	Maximum	Mean	Std. Deviation
RET _{it}	-99.115	364.622	18.252	59.399
P/E _{it-1}	-3502.000	4843.000	21.431	159.855
B20P/E _{t-1}	.000	1.000	.200	.400
T20PE _{it-1}	.000	1.000	.200	.400
IO _{it-1}	.000	61.400	5.706	8.877
HighIO _{it-1}	.000	1.000	.117	.400
B20P/E _{t-1} *HighIO _{it-1}	.000	1.000	.019	.135
T20PE _{it-1} *HighIO _{it-1}	.000	1.000	.024	.153
Total Assets _{it}	1.905	248437.000	2007.966	6904.058
LEV _{it}	.000	3.387	.185	.190
VOLT _{it}	.119	1.275	.478	.212

RET_{it} is firm i's the one year return to shareholders with dividends reinvested;

P/E_{it-1} is firm i's price-to-earnings multiple;

B20P/E_{t-1} is an indicator variable equal to one if firm i's P/E is in the bottom quintile of a rank ordered listing P/Es, calculated annually, and is zero otherwise;

T20PE_{it-1} is an indicator variable equal to one if firm i's P/E is in the top quintile of a rank ordered listing of P/Es, and is zero otherwise;

IO_{it-1} is the percentage of common shares held by the firm's CEO;

HighIO_{it-1} is an indicator variable equal to one if the percentage of firm i's CEO ownership is at least 15 percent, and is zero otherwise;

B20P/E_{t-1}*HighIO_{it-1} is the interaction term between B20P/E_{t-1} and HighIO_{it-1} ;

T20PE_{it-1}*HighIO_{it-1} is the interaction term between T20PE_{it-1}*HighIO_{it-1};

Total Assets_{it} is a firm i's end of fiscal year t total assets;

LEV_{it} is firm i's end of fiscal year t long term debt divided by end of year t assets; and

VOLT_{it} is stock price volatility used in calculating Black-Scholes values for firm i's options which is determined over the prior 60 month period

As depicted, for sample observations, the average ex post return is 18.252, the average P/E is 21.431, and the CEO's average ownership is 5.707 percent. Of the sample companies, 11.7 percent have CEOs who own at least 15 percent of their firm's common stock. Firms in the top quintile of rank ordered earnings multiples have higher ownership (24%) than firms in the bottom quintile (19%).

Although not presented in Table 2, as previously described, the sample includes the years 1993 to 2006. The percentage of observations in each year ranges from 1.25 in 1993, to 9.18 in 2003 and 2004, and averages 7.14. Fifty-five two-digit SICs are represented by the sample observations. The percentage of

observations in each two-digit SIC ranges from .08 for SIC 83, to 11.84 for SIC 73, and averages 1.82.

Table 3 compares mean returns between firms in the bottom, top and middle three quintiles of P/Es and firms with high and other IO. Mean returns for low P/E firms are significantly lower when CEOs own more stock.

Table 3
Comparisons of Returns Between Levels of CEO Ownership and Price to Earnings Multiples

	High IO	All Other		
	Mean		Difference	P(two-tailed)
B20 P/E	14.721	25.529	(10.808)	.057
T20 P/E	22.868	11.915	10.953	.173
Mid 60 P/E	21.692	17.201	4.491	.056

High IO are firms with CEO ownership of at least 15 percent

B20PE are firms in the bottom quintile of a rank ordered listing of P/Es

T20PE are firms in the top quintile of a rank ordered listing of P/Es

M60PE are firms in the middle three quintiles of a rank ordered listing of P/Es

The mean return for B20 P/E firms with high IO is 14.721. The mean return for all other B20 firms is 25.53%. The converse is true for high value- high P/E firms. When CEO ownership of high P/E firms is higher, returns increase. Returns for high IO, high P/E firms are 22.87%. Returns for high P/E other IO other firms is 11.92%. Finally and in accordance with reduced agency costs via a more optimal alignment of manager-owner interests, for the middle three quintiles, returns increase when IO is higher.

The estimation of equation 1 is presented in Table 4.

Table 4
Estimation of Equation 1
(n = 6,546)

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

Measure of P/E:	P/E _{it-1}			B20P/E _{t-1}			T20PE _{it-1}		
	Coefficient	t-stat	Sig.	Coefficient	t-stat	Sig.	Coefficient	t-stat	Sig.
HighIO _{it-1}	3.930	2.028	.021*	7.153	2.854	.002**	2.496	.964	.335
P/E _{it-1}	-.010	-1.879	.030*	11.897	5.598	.000***	-7.643	-3.938	.000***
P/E* HighIO _{it-1}	.019	1.992	.023*	-16.679	-2.748	.003**	8.704	1.585	.057*
lnASET _{it}	1.313	1.994	.046*	1.588	2.409	.016*	1.462	2.215	.027
LEV _{it}	-14.365	-3.420	.001**	-17.380	-4.102	.000***	-16.185	-3.845	.000
VOLT _{it}	8.597	1.997	.046*	.396	.086	.931	9.365	2.175	.000
Adj. R ²									
F									

*, **, *** Significant at the p = .05, .01, and .001 levels. Tests for variables of interest HighIO_{it-1}, P/E, and P/E* HighIO_{it-1} are one-tailed.

RET_{it} is firm i's the one year return to shareholders with dividends reinvested;
P/E_{it-1} is firm i's price-to-earnings multiple;
B20P/E_{t-1} is an indicator variable equal to one if firm i's P/E is in the bottom quintile of a rank ordered listing P/Es, calculated annually, and is zero otherwise;
T20PE_{it-1} is an indicator variable equal to one if firm i's P/E is in the top quintile of a rank ordered listing of P/Es, and is zero otherwise;
IO_{it-1} is the percentage of common shares held by the firm's CEO;
HighIO_{it-1} is an indicator variable equal to one if the percentage of firm i's CEO ownership is at least 15 percent, and is zero otherwise;
lnASET_{it} is a firm i's end of fiscal year t total assets;
LEV_{it} is firm i's end of fiscal year t long term debt divided by end of year t assets; and
VOLT_{it} is stock price volatility used in calculating Black-Scholes values for firm i's options which is determined over the prior 60 month period.

In general, the coefficients on each of the control variables are significant and all conform to their predicted sign. As depicted, consistent with hypotheses 1a, the coefficient on P/E_{it-1} significantly negative and the coefficient on P/E_{it-1}* HighIO_{it-1} is also significantly negative. P/Es are negatively associated with *ex post* returns, but this mean regressing tendency is reduced by the effect of the interaction of high levels of insider ownership and P/E.

In accordance with prior studies, the significantly positive coefficient for B20P/E_{it-1} illustrates the mean regressing tendency for low P/E companies to earn higher returns. The coefficient on the interaction of high levels of insider ownership and low P/Es (HighIO_{it-1}*B20P/E_{it-1}) is significantly negative, however,

suggesting that the effect of this interaction is to reduce mean regressing higher *ex post* returns experienced by low P/E firms. Hypothesis 1b is supported.

The coefficient for $T20P/E_{it-1}$ is negative and significant. Hence, high P/E firms under-perform *ex post*. Interestingly, the coefficient for $T20P/E_{it-1} * HighIO_{it-1}$ is positive and significant. When earnings multiples are high, increased management ownership is associated with a reduced tendency for high P/E firms to achieve lower mean regressing returns. H2 is supported.

V. Conclusion

In this study we investigate how greater concentration of management ownership affects stock price performance across extreme levels of firm value. An anomaly of efficient equity markets is the systematic tendency for firms with low (high) price to earnings multiples (P/E) to earn higher (lower) returns than other firms (Basu 1977; Dreeman and Lufkin 1997; Campbell and Shiller 2000).

Agency theory asserts that as ownership becomes more concentrated in management, costs associated with separation of ownership and control are reduced. This reduction in costs leads to increased profits and higher stock market returns (Jensen and Meckling 1977). Increased levels of insider ownership have different agency cost connotations for differing levels of firm value. While the results of prior research suggest that HIO firms tend to have higher stock market returns, we find that this tendency does not hold for HIO firms with high or low P/E ratios. Instead, our results suggest that HIO firms with high P/Es can maintain profitability and do not have stock market returns that regress toward the mean, and HIO firms with low P/Es tend to maintain low P/Es over time and do not regress toward the mean. Our results also suggest that this relationship is non-monotonic across the spectrum of low P/E to high P/E firms.

For high P/E firms, we attribute our findings to resources, market advantages, and relatively lower agency costs which yield a sustainable comparative advantage when compared to other firms. Consequently, incentives associated with aligning the interests of capable managers of high P/E firms with the interests of the other shareholders mitigates the mean regressing tendency of high P/E firms to under-perform.

For low P/E firms we attribute our findings to weakened governance in HIO firms due to poorly performing managers with ownership positions which board members are either unable or unwilling to replace. Hence, the tendency for low P/E “value firms” to regress toward higher P/E ratios is less likely as the level of IO increases.

This study adds to the existing body of literature by examining how insider ownership affects the anomalous P/E-returns relationship. Hence, the results of this study may aid investors in assessing value, providing both value- and growth-oriented investors useful information for their forecasts of firm performance. For example, value-investors may want to consider avoiding low P/E firms with higher insider ownership and growth-investors may want to increase positions in high P/E firms with higher insider ownership.

References

- Basu, S. 1977. Investment performance of common stocks in relation to their price earnings ratios: A test of the efficient market hypothesis. *Journal of Finance* 32: 663-682.
- Black, F., and M. Scholes. 1973. The pricing of options and corporate liabilities. *The Journal of Political Economy* 81 (3): 637-659.
- Campbell, J., and R Shiller. 2001. Valuation ratios and the long-run stock market outlook: an update, Cowles Foundation Discussion Paper No. 1295. *Cowles Foundation for Research in Economics* 1 (17). Yale University.
- Cadman, B., D. Klasa, and S. R. Matsunaga. 2006. Does using ExecuComp database affect research results? Available at SSRN: <http://ssrn.com/abstract=869459>, accessed July 3, 2008.
- Chaplinsky, S., and G. Niehaus. 1993. Do inside ownership and leverage share common determinants? *Quarterly Journal of Business and Economics* 32 (4): 51-56.
- Chen, H., J. L. Hexter, and M. Y. Hu. 1993. Management ownership and corporate value. *Managerial and Decision Economics* 14 (4): 335-346.
- Dreman, D., and E. Lufkin. 1997. Do contrarian strategies work within industries? *Journal of Investing* (Fall): 6-37.
- Fama, E. 1970. Efficient capital markets: a review of theory and empirical work. *Journal of Finance* 25 (2): 383-417.
- Hudson, C. D., J. S. Jahera, Jr., and W. P. Lloyd. 1992. Further evidence on the relationship between ownership and performance. *The Financial Review* 27 (2): 227-239.
- Griffith, J. M. 1999. CEO ownership and firm value. *Managerial and Decision Economics* 20 (1): 1-8.
- Jensen, M., and W. Meckling. 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics* 3: 305-360.
- Keim, D. B. 1983. Size-related anomalies and stock return seasonality: further empirical evidence. *Journal of Financial Economics* 12 (1): 13-32.
- Fama, E. F., and K. R. French. 1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics* 33 (1): 3-56.
- Meador L., P. Church, and G. Rayburn. 1996. Development of prediction models for horizontal and vertical mergers. *Journal of Financial and Strategic Decisions* 9 (1): 11-23.

Morck, R., A. Shleifer, and R. Vishney. 1988. Management ownership and market evaluation: an empirical analysis. *Journal of Financial Economics* 20: 293-315.

Oswald, S. L., and J. S. Jahera, Jr. 1991. The influence of ownership on performance: an empirical study. *Strategic Management Journal* 12 (4): 321-326.

Palepu, K.G. 1986. Predicting takeover targets a methodology and empirical analysis. *Journal of Accounting and Economics* 8: 3-35.

Tversky, A., and D. Kahneman, 1981. The framing of decisions and the psychology of choice. *Science* 211: 454-458.

Wansley, J.A. 1984. Discriminant analysis and merger theory. *Review of Business and Economic Research* (Fall): 77-85.