CORPORATE GOVERNANCE, INVESTMENT ACTIVITY AND FUTURE EXCESS RETURNS

by

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ABSTRACT

In this dissertation, I investigate whether corporate governance affects the negative association between investment and future excess returns. Shareholders are concerned with the effectiveness of the firm's governance regime as a tool to reduce agency costs. In the absence of strong control over firm assets, managers may choose to invest in value-decreasing projects. The probability that managers select value-decreasing projects is an increasing (decreasing) function in investment activity (governance regime). At the time of investment, the capital market prices expected returns to the investment activity conditioned on the governance regime in place. This study examines future risk-adjusted returns to investment activities conditioned on low and high governance regimes. If the market correctly prices the governance environment and the expected returns to expenditures at time *t*, there should be no future risk-adjusted returns to either governance or expenditure information. I find that for firms with low external monitoring, and separately, for firms with high shareholder rights, lower (higher) investment activity results in positive (negative) future risk-adjusted returns. Implementing a trading strategy which holds low investment firms and shorts high investment firms results in 7.1% and 5.6% annual risk-adjusted returns when conditioned on low institutional holdings and high shareholder right, respectively. This study also provides preliminary evidence that outside blockholder and activist ownership is effective

in mitigating the negative association between investment activity and future excess returns through the shareholder rights mechanism. Finally, I provide evidence that the diversification discount associated with multi-segment firms is generally invariant to investment activity levels.

1. INTRODUCTION

In this paper I investigate whether corporate governance affects the negative association between investment and future returns. Shareholders are concerned with the effectiveness of the firm's governance regime as a tool to reduce agency costs. In the absence of strong control over firm assets, managers may choose to invest in value-decreasing projects. The probability of the manager's adverse-project selection is an increasing (decreasing) function of investment activity (governance regime). When investment activity is known, the capital market prices expected returns to the investment activity conditioned on the probability that value-decreasing projects were selected. Where investors correctly price the ability of the governance regime to mitigate agency costs inherent in expenditure activity at time *t*, future risk-adjusted returns should not be associated with either governance or expenditure information known at time *t*.

Titman, Wei and Xie (2004) (hereafter referred to as "TWX") study investment activity and future excess returns and find a predictable pattern between investment activity known at time *t* and future excess returns. Specifically, they find that low (high) investment activity firms are associated with positive (negative) future excess returns. They posit that this negative association is due to the tendency of investors to under-react to empire building by management. That is, they conjecture that investors initially underestimate agency costs associated with high investment activity.

If a firm's governance regime is effective in mitigating agency costs, TWX's negative association may not be consistent across high and low governance firms. The question that I ask is the following: Is investor under-reaction to agency costs the same across governance regimes?

My study considers two firm-specific proxies for corporate governance: institutional holdings and shareholder rights. These two proxies are closely associated with the monitoring function performed by stakeholders in the corporate governance framework. Lower institutional holdings are generally associated with less investor sophistication, less investor activism, less external stake-holding and a decreased information environment. In the absence of shareholder rights, managers are more likely to select negative NPV projects (or forego positive NPV projects) as shareholders may not be able to effectively censure managers. While investors may initially discount investment activity when the governance regime is poor, I posit that investors are more likely to under-react to the negative implications of investment activity in the low governance regime (as compared to the high governance regime).

When I study the future excess returns pattern associated with institutional holdings, my results are consistent with the notion that investors tend to under-react to over-investment for low governance firms. When studying *low* institutional ownership firms, I find that low (high) levels of investment activity are associated with positive (negative) future risk-adjusted annual returns. From

July 1, 1990 to June 30, 2006, a hedge portfolio which bought (shorted) low (high) investment activity firms earned annual risk-adjusted returns of 7.1%.

When studying *high* institutional ownership firms, I find results consistent with the notion that better monitoring, greater investor sophistication and an increased information environment combine to reduce investor under-reaction to agency costs inherent in investment activity. The hedge trading strategy described above results in an average annual excess return that, while positive, is not significantly different from zero. I interpret this finding as follows: First, the information environment is better for higher institutional ownership firms resulting in less initial market mis-pricing. The better information environment may be due to more sophisticated information processing or from more complete due diligence performed by investors at time *t*. If adverse selection exists, these investors obtain price protection at time *t*. Second, the result also suggests that these institutional owners are able to mitigate adverse project selection (high investment activity) or management's tendency to under-invest due to risk or effort aversion at time *t* through more efficient monitoring as a result of their concentrated ownership.

When I study the future excess returns pattern associated with shareholder rights, I find mixed results. When conditioning my study on *low* shareholder rights (as proxied by the inverse of the Gompers g-score), I find no significant difference among the future excess returns to investment activity levels.

However, when I condition my study on *high* shareholder rights, I find an unexpected result. Focusing on high shareholder rights firms, an investment strategy which bought (shorted) low (high) investment activity firms earned annual risk-adjusted returns of 5.6% from July 1, 1990 to June 30, 2006. If shareholders are better able to demand that only value-creating projects are selected, there should be less uncertainty as to the returns distribution of those projects. As such, investors should be better able to price the projects at time *t* and future excess returns would be unexpected. Upon closer examination of the returns to the investment activity, it appears that the result reported above is driven by a 7.8% positive excess return attributed to firms with slight underinvestment activity (as compared to previous investment activity).

Given that my proxy for shareholder rights is measured at the individual shareholder level, a possible failure is that shareholder rights are costly to enforce for the individual investor. As such, I partition the sample and study the question: Given high shareholder rights, can concentrated and/or activist owners mitigate the negative association between investment activity and future excess returns? I find evidence that concentrated (institutional holdings and outside blockholders) and activist ownership reduce the sensitivity of investment activity to future excess returns.

This study also attempts to determine whether institutional ownership mitigates the negative investment activity / excess returns association through

better information processing or through effective monitoring. When I study high institutional holdings firms, I find preliminary evidence that firms with lower concentrations of outside blockholders and activist owners have more negative excess returns to investment activity. This result suggests that specific types of institutional ownership are effective in mitigating agency costs associated with investment activities.

My study contributes to the literature on governance, investment activity and future returns in the following manner: Prior studies have focused on the separate associations between investment activity, corporate governance and future returns. These studies have found that 1) overinvestment is negatively associated with firm value and future excess returns, 2) corporate governance and shareholder rights are negatively associated with investment activity, and 3) corporate governance and shareholder rights are positively associated with firm value and excess returns. My study contributes to the literature by studying whether the governance regime affects the investment and future excess returns relation. Rather than studying the associations separately, I condition my study on the governance regime and then study the association between investment activity and future excess returns. My results provide preliminary evidence that the governance regime in place at the time of investment affects the investment activity and future excess returns association.

I also provide supplementary evidence related to the diversification discount associated with multi-segment firms. I test whether the negative association between investment activity and future excess returns is different between single- and multi-segment firms. Consistent with prior studies in the literature, I find that multi-segment (single-segment) firms are associated with negative (positive) future excess returns. The slope coefficients are generally negative (positive) for multi- (single-) segment firms, regardless of investment activity levels. Multi-segment firms consistently under-perform single-segment firms.

The remainder of the paper is organized as follows. Section 2 summarizes the theory and prior research work. I formulate my hypotheses in Section 3. Section 4 discusses the empirical methodology and variable selection. Section 5 presents the empirical results and sensitivity analyses. Section 6 summarizes and concludes.

2. THEORY AND PRIOR RESEARCH

2.1 Agency costs and monitoring

In their 1976 paper, Jensen and Meckling describe various sources of conflict between management and owners of the firm. Managers may choose to spend costly capital on a low-risk project, thereby reducing the present value of that project. Managers may also choose to forego investment in positive present value projects due to management risk- or effort-aversion. The authors refer to these actions as creating a "residual loss" in their framework of agency costs. Other contributors to residual loss include management perquisite consumption and increased compensation associated with empire building (Murphy 1985).

Easterbrook (1984) points out that management's risk aversion is a source of agency costs. By choosing "safe" investments, managers attempt to mitigate loss of employment as well as loss of wealth tied up in firm stock as a consequence of subsequent poor performance, or in the extreme, due to bankruptcy. Where management pays for these "safe" investments through more costly capital or underutilized free cash, the present value of the project is reduced leading to a decrease in firm wealth.

Jensen (1986) adds to the previous discussions of agency costs by studying the association between free cash flow and agency costs. Where cash flow is more than sufficient to fund all positive net present value projects, management must then choose whether to retain or return the excess cash. Free cash gives rise

to residual loss when, rather than returning excess cash to shareholders, it is invested in below cost of capital projects or wasted on "organizational inefficiencies."

Returning to Jensen and Meckling's 1976 classification, residual loss of wealth may be due to either selecting (foregoing) negative (positive) net present value projects. Calculating the present value, of course, relies on determining the appropriate cost of capital. Easterbrook (1984) points out that capital providers price in the riskiness of the project in addition to their expectations of management's actions after receiving the capital. However, where free cash is available, management is somewhat isolated from the pricing mechanism of the external markets. Management may deploy capital unaware of its full cost (including opportunity cost to the investor). Easterbrook notes the pricing efficiency associated with external capital providers. Specifically, these providers demand compensation (reduced prices) commensurate with the riskiness of the project. Firms that are forced to obtain capital from the external markets receive feedback as to the required returns for the contemplated projects.

As noted above, free cash flow insulates management from monitoring by capital providers. This insulation lets management select negative present value projects without fear of repercussions to wage or employment status. Easterbrook (1984) points out that existing shareholders may not be effective

monitors as they may find monitoring to be costly. An individual shareholder's cost of monitoring may outweigh the corresponding increase in wealth. Hence, when free cash is available, management may be more insulated from censure. Providers of new capital, however, are able to either bond management to a fixed investment activity and/or are better positioned (than the individual shareholder) to punish management for engaging in value-destroying activities. Shleifer and Vishny (1997) point out that concentration of ownership is an effective form of monitoring as coordinating voting by small shareholders is a costly proposition. Additionally, they point to providers of debt capital as effective monitors since their preference for a specific course of action given mis-management or default is generally written into debt covenants.

In summary, theory predicts that the management may not always restrict their investment activity to positive present value projects. When negative present value projects are selected (and conversely, when positive present value projects are rejected), shareholders suffer a loss of wealth. Theory predicts that this wealth loss is negatively associated with the effectiveness of the monitoring regime (by capital providers) at the time of the investment decision.

2.2 Empirical research

2.2.1 Investment activity and future returns

The literature on investment and returns is well established. McConnell and Muscarella (1985) study announcements of planned capital investments and

generally find a positive association between those announcements and abnormal returns. Loughran and Ritter (1995) show that the method of payment for the investment is important: firms using equity to finance investment generally see negative future returns. TWX studies the association between investment activity and future excess returns. They show that an excess returns pattern exists which is dependent on past investment activity. Namely, future excess returns are positively (negatively) associated with low (high) investment activity. A hedge portfolio which bought (shorted) low (high) investment activity firms earned 0.192% per *month* in risk-adjusted returns. Examining the association during the high takeover period (1984-1989) defined in the Holmstrom and Kaplan (2001) study, the negative association disappears. TWX interpret this as evidence that capital market participants were effective in mitigating the empire-building tendencies of management. TWX also examine investment and excess returns by conditioning on the availability of free cash and on the leverage ratio (as a proxy for non-committed cash) at the time of investment. They find that excess returns to their hedge strategy described above approximated 0.34% per *month* when studying high free cash firms only and approximated 0.42% per *month* when studying low leverage firms only.

2.2.2 Corporate governance and investment activity

Gompers, Ishii and Metrick (2003), study the power-sharing relationship between management and shareholders and its association with investment and

acquisition activity. They compute a measure, (*g-score*), which is an increasing function of the amount of power maintained by management through anti-shareholder actions[1]. They find that high levels of anti-shareholder actions are associated with increased levels of investments and acquisitions. They attribute the positive association between anti-shareholder actions and investment activity to the same agency costs argued above by Easterbrook (1984) and Shleifer and Vishny (1997), i.e. where management is able to isolate itself from the corrective action of current and future shareholders, adverse selection of investment activity is more likely to occur. Richardson (2006) finds that measures of anti-takeover actions (activist shareholders) have positive (negative) associations with abnormal investments, thereby providing corroborating evidence to the Gompers, et. al. (2003) work noted above.

2.2.3 Corporate governance and future returns / market value

The Gompers, et. al. (2003) study also tested the power-sharing relationship between management and shareholders and its association with firm value. Insulated managers are more likely to engage in wealth-destroying activities. Consistent with their expectations, they find a negative association between the level of anti-shareholder actions and firm value. Additionally, they find that

[1] Gompers, et. al. (2003) use the IRRC governance database and select 28 corporate governance provisions to construct an index of anti-shareholder actions. These provisions can be broadly classified as measures that delay hostile bidders, reduce voting rights, protect directors and officers from legal and/or wealth loss and protection measures that are automatically provided based on state law.

future excess returns are negatively associated with the level of anti-shareholder actions. That is, firms with fewer anti-shareholder actions outperformed those with more anti-shareholder provisions from 1990-1999. Larcker, Richardson and Tuna (2005) examine the association between firm-specific governance measures[2] and future excess returns and separately, firm value. They perform a factor analysis using various measures of corporate governance and find a positive association between a subset of the measures and future excess returns and separately, firm value.

As described above, prior work documents the following associations: First, overinvestment is negatively associated with firm value and future excess returns. Second, corporate governance and shareholder rights are negatively associated with overinvestment. Finally, corporate governance and shareholder rights are positively associated with firm value and excess returns. My dissertation contributes to the literature by studying whether the governance regime affects the overinvestment and future excess returns relation. Rather than examining the associations separately, I condition my study on the governance regime and then examine the association between investment activity and future excess returns.

[2] They use a 2002 assessment of corporate governance performed by Equilar and Shark Repellant which assigned values to governance variables broadly classified as board composition, stock ownership, institutional ownership, activist ownership, leverage, compensation mix and anti-takeover actions.

3. HYPOTHESES DEVELOPMENT

3.1 Investment activity and future returns

This paper builds on the empirical research performed by TWX that investigated future returns conditioned on investment activity from 1973-1995. The authors hypothesized and found that increased investment activity (measured as the ratio of capital expenditures to sales compared to the same activity in the prior three years) is associated with negative future risk-adjusted returns. As a starting point, I predict that the underlying association between over-investment and future excess returns still holds during my period of study (1991-2005):

H1: A negative association exists between investment activity and future excess returns.

3.2 Corporate governance, investment activity and future returns

This study seeks to determine whether or not the governance regime affects the negative association described in section 3.1 above. The two main proxies for governance used in this study are institutional holdings and shareholder rights. Shleifer and Vishny (1997) suggest that aggregated ownership and shareholder rights are key components in the governance environment of the firm as stakeholders have an interest in monitoring their investments.

Institutional ownership

Institutional owners can be thought of as serving a dual role in a governance capacity. The first is that of monitoring their ownership stake. Unlike individual investors, institutional owners are more likely to have an influence in the outcome of proxy votes due to their ability to aggregate blocks of shares. This ability provides some of the monitoring that Shleifer and Vishny (1997) suggest is critical in reducing agency costs in the firm. The other role is that of sophisticated investor. The institutional investor has a greater ability to gather and process information about the firm.

If institutional holdings proxy for monitoring and information processing, lower levels of institutional holdings would be associated with more agency costs and a decreased information environment. As discussed above, TWX suggest that the negative association between investment activity and future excess returns may be an indication that investors are not adequately sensitive to the agency costs associated with investment activity. If investors are not sensitive at time *t* to the higher agency costs inherent in the low governance environment, then future excess returns will be negative (positive) for high (low) investment activity firms with low institutional ownership. The corresponding hypothesis is stated in alternative form:

H2a: For low institutional holding firms, a negative association exists between investment activity and future excess returns.

If institutional owners adequately perform their functions as monitors and information processors, higher levels of institutional ownership should be associated with lower adverse project selection and better information processing. As monitors, institutional owners can aggregate votes in order to censure a management team that chooses to destroy firm value. Given greater investor sophistication, investors should be more aware of and would be more likely to properly discount agency costs included in the investment activity at time *t*. As such, it is less likely that future excess returns would be correlated with investment activity at time *t* for high institutional ownership firms. The corresponding hypothesis for high institutional ownership follows:

H2b: For high institutional ownership firms, no association exists between investment activity and future excess returns.

Shareholder rights

Management may choose to adopt certain measures which isolate the firm from the discipline of various capital market participants. Examples include adopting poison pills to reduce the likelihood of takeover or providing for staggered elections or majority voting requirements that make it difficult for dissenting shareholders to gain a foothold on the board. Where management is able to isolate itself from the censure of current or prospective owners, agency costs associated with investment activity are more likely to exist. If investors are not sensitive to the agency costs inherent in low shareholder rights firms, then

future excess returns will be negative (positive) for high (low) investment activity firms. The corresponding hypothesis is stated in alternative form:

H3a: For low shareholder rights firms, a negative association exists between investment activity and future excess returns.

Gompers, et. al. (2003) find that high shareholder rights firms have fewer acquisitions and a lower level of capital investment. If shareholder rights proxy for effective monitoring, then high shareholder rights firms should see lower agency costs associated with investment activity. The corresponding hypothesis for high shareholder rights follows:

H3b: For high shareholder rights firms, no association exists between investment activity and future excess returns.

Intuitively, my predictions follow from Jensen's 1986 work. That is, better governance leads to a reduction in agency costs associated with adverse project selection. Better monitoring / governance finds its way into firm value as value-creating (destroying) projects are selected (rejected). Relying on the TWX result that finds a predictable negative association between investment activity and future excess returns, I predict that the result is more likely to exist where the governance regime is less able to eliminate agency costs associated with investment activity.

4. EMPIRICAL METHODOLOGY

My main tests follow the methodology used in the TWX study. I implement the Daniel, Grinblatt, Titman and Wermers (1997) methodology by first computing benchmark-adjusted excess returns for all firms and then regressing annual mean excess returns to portfolios of interest (sorted on investment activity) on the market and risk factors (Fama and French (1993), Carhart (1997)). I then study the risk-adjusted intercept terms (FF Alpha) associated with these regressions to determine whether risk-adjusted returns exist based on the particular sorting strategy employed.

Figure 1 illustrates how each of the constructs is computed and used in this study. As I am interested in future excess returns associated with known financial statement and governance information, I skip at least six months from the firm's fiscal year end to a standardized July 1_t to June 30_{t+1} returns accumulation period. I obtain my measures of investment activity, governance regime and book-to-market from annual financial statements or governance assessments made in the calendar year ended six months prior to my test return accumulation period. For example, firms whose fiscal year-ends fall in March, September or December are all assigned to the same formation year in my study. Following prior studies that implement similar trading strategies, I match the

market value as of the last trading day of the calendar year to the book value reported in the financial statements and compute the book-to-market ratio.[3]

4.1 Excess returns

Daniel, et. al. (1997) use a two-step process to control for firm-specific and market-wide pricing of risk. In the first stage, they calculate excess returns for each firm by subtracting the respective mean return from one of 125 portfolios based on a sequential quintile sort on size, book-to-market and prior-year returns. The second stage removes market-wide pricing of risk and is described more fully in section 4.4 below.

To perform the first stage of the Daniel et. al. (1997) procedure, I first calculate the quintile size breakpoints of all NYSE stocks on the last trading day of June of each year. I then sort all sample firms into one of each of the five portfolios based on its market value of equity on that last trading day of June for each year. Next, I sort each firm in each of the size portfolios into quintiles based on its calculated book-to-market value, resulting in a total of 25 portfolios. Finally, I sort each firm in each size/book-to-market portfolio into one of five portfolios based on prior-year returns, resulting in a total of 125 portfolios for each year.

[3] While this may induce bias in the measure depending on the overall market conditions for each year (e.g. lower book-to-market ratio when the market value increases), it is a standard feature of finance literature. There are two options – obtain market value on the date of the fiscal year end or change the returns holding period to reflect annual returns beginning six months after fiscal year-end. The efficiency of the benchmark portfolio tests below is reduced when the return period is not the same. Results are substantially unchanged when I exclude non-12/31 fiscal year-end firms. In the limit, there may be seventeen months between fiscal year end (say for a January 31 year-end) and the beginning of the returns accumulation period. The larger gap weakens the significance of my test.

This sorting routine is performed anew for each year of study. I compute prior-year returns (umd_{t-1}) beginning with the June monthly return of year *t-1* and compound the monthly returns through May of year *t* as shown in Figure 1.

As I am implementing an annual trading strategy, I compute returns on an annual basis. The test returns are calculated by compounding monthly returns from $July_t$ to $June_{t+1}$. I again follow TWX's convention and skip the $June_t$ monthly return to reduce exposure to the short-term return reversal phenomena documented by Jegadeesh and Titman (1993)[4].

Having computed the test period returns, I turn to computing the annual excess return for each firm. First, I compute the benchmark return for each of the 125 portfolios as the mean value-weighted return for each portfolio for each year. Then I subtract the benchmark returns from each annual return for all firms in the respective portfolio. The excess return can be shown in the following equation:

$$AR_{i,t} = R_{i,t} - R_t^{P_i}$$

where $R_{i,t}$ is the firm's test period return and $R_t^{P_i}$ is the respective annual benchmark return.

4.2 Investment activity

[4] I also perform the Shumway and Warther (1999) transformation for delisting returns in order to adjust for survival bias. Specifically, I combine the delisting return dataset in CRSP with the returns information for each firm. For firms whose delisting codes = 500 or 523 < delisting code < 581, I replace the delisting return with -0.30 which is an approximate estimate of the delisting bias for these codes found in the Shumway and Warther study.

In this study, I measure the yearly investment activity as follows: First, I compute a measure of investment activity (*CE*) by dividing total capital expenditures from the statement of cash flows (data128) [5] by total sales (data12) where $CE_{t-1} = \frac{CapitalExpenditures_{t-1}}{Sales_{t-1}}$. By itself, the CE_{t-1} measure calculates a rate of expenditure rather than acceleration/deceleration of the investment activity of the firm. As such, I compare the sample expenditure rate to its past three-year average to obtain a measure of investment activity growth or decline as such: $CI_{t-1} = \frac{CE_{t-1}}{(CE_{t-2} + CE_{t-3} + CE_{t-4})/3} - 1$. As the notation suggests, the *CI* variable used in this study is measured in year *t-1* and is matched to the future returns beginning in July of year *t* as depicted in Figure 1.

4.3 Corporate governance

4.3.1 Institutional ownership

I use institutional holdings (*INST*) to proxy for external equity market monitoring. This measure is calculated as the % of outstanding shares owned by companies classified as institutions and is obtained from the quarterly F13 filings as reported in the Spectrum database. As the data is reported by investment

[5] Data128 represents the capital expenditure amount recorded on the Statement of Cash Flows (or equivalent statement). To test whether the method of payment changes the association, I alternatively replace data128 with data30 which represents fixed asset additions included on the fixed asset roll-forward schedule. These additions may have been paid for with firm resources other than cash, internally constructed, or paid for with direct debt or equity financing. The test results in Section 5 are similar in sign, general magnitude and significance when using data30 and therefore are not separately reported.

manager, I sum share holdings by CUSIP by quarter for all fund managers and divide that amount by the shares outstanding as reported in the CRSP database. As discussed in section 3.2, larger values of *INST* should be associated with better monitoring, greater investor sophistication and a better information environment. This measure should capture the ability of the institutional investors to ask and obtain information from management regarding investment activity. Additionally, managers are more likely to have to respond to and conform to the investment activity preferences of institutions as those holdings increase.

4.3.2 Shareholder rights

In addition to institutional ownership, the actual rights of shareholders are associated with investment activity and future excess returns. This governance measure is a representation of management's ability to isolate itself from discipline imposed by current and future shareholders. Where management is able to isolate itself from the censure of the owners, it is more likely that agency costs associated with adverse project selection will exist. To capture shareholder rights, I use the *g-score* computed by Gompers et. al. (2003). They generate this variable as an increasing function of anti-shareholder actions taken by firm management. Examples of these anti-shareholder actions include classified boards, golden parachutes, unequal voting rights, poison pills and incorporation in management-friendly states. As the g-score increases, managers are more

insulated from the ramifications of selecting value destroying projects as shareholders or other capital market participants are restricted in their ability to remove them. To make this measure conform to a study of increasing governance, I invert the g-score so that the largest (smallest) values of the raw g-score corresponding to a dictator (democracy) regime are converted into the smallest (largest) values in my study.[6]

4.4 Empirical model

My test design studies whether firms with different levels of governance and investment activity are associated with different future excess returns. In order to test this interaction, I sequentially sort firms first into low/high governance groups and then I sort each of the two groups into quintiles of investment activity. As discussed previously, Daniel, et. al. (1997) show that returns are associated with both firm-specific risk factors (size, book-to-market and momentum) and market-wide pricing of those same risk factors. Therefore, I follow Carhart's (1997) modification of the Fama-French (1993) three factor model to take into account the momentum factor as follows:

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[6] The g-score was derived by Gompers et. al. (2003) on a periodic basis. The score was generated based on shareholder rights in 1990 and then updated based on reported shareholder rights in 1993, 1995, 1998, 2000, 2002 and 2004. To preserve the time-series, I performed three interpolation routines for this variable: 1) I treated the year of update as a surprise year, 2) I assigned each missing year a fraction of the change between updated years (i.e. for 1991, I added 1/3 of the change from 1990 to 1993 to the 1990 value), and 3) I performed a routine where $year_{t+1}$ received the value from the assigned $year_t$ but where two years were unassigned (i.e. 1991-1992 and 1996-1997), $year_{t+2}$ received the value of $year_{t+3}$, an assigned year. I report the test results based on method 1) as the results are not substantially different when using any of the three interpolation methods.

$$ER_{p,t} = \alpha_p + \beta_{Mkt,p}(R_{Mkt,t} - R_{ft}) + \beta_{SMB,p}R_{SMB,t} + \beta_{HML,p}R_{HML,t} + \beta_{UMD,p}R_{UMD,t} + \varepsilon_{p,t}$$

where $ER_{p,t}$ is the average annual excess return for each of the ten characteristic portfolios[7]. The $R_{Mkt}, R_f, R_{SMB}, R_{HML,}$ and R_{UMD} factors are the standard market, risk-free, size, market-to-book and momentum factors which are available on Ken French's website. Since I regress annual mean excess returns, I compute and use annual compounded values for these market and risk premium measures as well. Computing annual compounded returns and factors allows the study to simulate an annual buy and hold strategy rather than abstracting to an annual return value using an average monthly mean.

The coefficient of interest is α, otherwise known as the four-factor alpha (FF Alpha). This coefficient represents the excess return not due to market-wide pricing of the risk premiums. Assuming the market's ability to efficiently price information, the intercept term should not be significantly different from zero after removing returns associated with firm-specific and market-wide risk factors.

If investors optimally price investment activity when revealed, i.e. 10-k filing or earnings release, future returns should not be associated with current investment activity. However, if investors do not anticipate the agency costs inherent in overinvestment, stock prices for overinvestment firms will be biased.

[7] Firm excess returns are value-weighted prior to computing the average annual excess return for each of the ten portfolios.

As more information relating to the returns distribution to the project is revealed to the market, prices will change to reflect the additional information.

If effective governance controls are in place, the ability of management to select value-destroying projects will be limited. For high-governance firms then, I predict that contemporaneous pricing activity will be more accurate due to the decreased likelihood that value-destroying projects were selected but not yet revealed. As such, high governance firms should be associated with no excess future returns and the intercept term should not be significantly different from zero.

However, for low governance firms, I expect to see negative (positive) future returns to high (low) investment activity. Given TWX's finding that investors may not be adequately sensitive to agency costs associated with overinvestment, it follows that in the low governance environment TWX's result should hold. That is, investors discount investment activity at time *t* for low governance firms. However, the discount may not be adequate for the over-investors but may be too large for the under-investor firms.

In addition, I test whether a trading strategy where the investor buys low investment activity firms and shorts high investment activity firms results in a significant risk-adjusted return.[8] Given my directional predictions for low and

[8] I do this by subtracting the annual excess returns for the lowest two quintiles from the returns of the highest two quintiles. I divide the total by two since the trading strategy encompasses four

high investment activity, I predict that the spread portfolio, that which holds low investment activity firms and shorts high investment activity firms, will have a positive intercept term. For low governance firms, I would expect that the intercept term will not only be positive, but will be significantly different from zero. I predict, however, that for high governance firms, the intercept term will not be significantly different from zero.

quintiles rather than just the highest and lowest. Note that TWX used monthly excess returns while I use compounded annual excess returns.

5. EMPIRICAL RESULTS

5.1 Data and sample

I compiled financial statement information from the Compustat Industrial database. I obtained stock market data from the CRSP monthly database for the same time period. The sample period for the financial data begins four years before the returns test period to allow for the computation of the historical investment activity average (three years), as well as for the computation of the formation period governance variables, investment activity and momentum returns[9].

I follow the TWX selection criteria for inclusion in the sample. Namely, a firm must have been included in the Compustat database prior to selection, it cannot be missing a monthly return during the test year, there must be sufficient Compustat data to compute the three-year past investment activity measure, net book value of equity must be positive and annual sales must be greater than $10 million. To be included in my tests, the security must be a domestic, primary stock (CRSP *SHRCD* = 10 or 11) listed on the NYSE, Nasdaq or Amex. Trusts, closed-end funds and REIT's are excluded from the sample as well as ADR's, Shares of Beneficial Interest and Depository Receipts. I additionally require that

[9] This data requirement induces a form of survivorship bias. The effect, though, works against finding mis-pricing as the younger firms with a reduced information environment are more likely to be excluded from the sample.

total assets must be greater than zero. Finally, I exclude companies included in the 6000-6999 SIC code series ("Financials").

5.2 Investment activity and future excess returns

Table 1 shows the distribution of excess annual risk-adjusted returns sorted into quintiles of investment activity for the returns accumulation period beginning in July of 1991 and ending in June of 2005. This table updates the pattern shown in the TWX study which ends with investment activity in 1994. Of note is the pattern of decreasing excess returns between low investment firms (lowest two quintiles) and high investment firms (highest two quintiles). The hedge trading strategy results in a positive and significant 3.26% mean annual excess return. This result is consistent with TWX in that future excess returns are associated with past levels of investment activity, suggesting that investors may have been incapable of determining the proper pricing of the investment activity when first known.

Panel B of Table 1 presents both the annual mean excess returns and the risk-adjusted returns for the five investment activity portfolios and separately for the spread portfolio. The positive (negative) excess returns pattern for low (high) investment activity remains after controlling for market-wide risk premiums as represented by the FF Alpha. The hedge strategy described above results in a significant and positive 5.22% excess return *per year* for the fiscal years between July 1, 1991 and June 30, 2005. In the TWX study, they show that the risk-

adjusted returns to the spread portfolio average 0.19% *per month* during the period from July 1973 to June 1996.

Figure 2 shows the time series of the spread portfolio for each year from 1973 to 2004. Of note is the predictable pattern observed over the early years and the volatility of the spread portfolio during the last ten years of study. In all but two (1980, 1981) of the non active takeover years during the TWX period of study, the annual excess returns to the spread portfolio were positive. Beginning in the year after the TWX study, four of the subsequent nine years result in negative excess returns to the spread portfolio – three of them from the period commonly referred to as the internet bubble (1996-1999). This volatility in the pattern may not be surprising given the anecdotal literature which suggests that during that period returns were associated with sales or the promise of sales rather than being associated with fundamentals. For example, David Raymond (2000), writing about market valuation in 1999 for a Forbes Magazine article, states that "Searching for some kind of rationality in the Internet era, you are led to revenues as the driving force for market values." Since my period of study begins with governance data from 1990 and extends through 2005, this volatility in the underlying association between investment activity and future excess returns may make it more difficult to discern any predictable pattern.

5.3 Governance regime, investment activity and future excess returns

5.3.1 Institutional holdings

Table 2 presents distributional characteristics and test results for the sub-sample of firms for which institutional holdings were available in the Spectrum database. Panel A presents the distributional characteristics of test variables for all observations included in the sample. On average, the investment activity is a slightly positive 0.10 meaning that the investment rate (cash capital expenditures to sales) is 10% greater than the past three-year average.

Panel B shows the distributional characteristics of test variables across the investment activity quintiles. Of note is the inverted "U" shape in the size pattern and the general decrease in B/M and in the prior year return (PY) and current year return (CY) variables across the quintiles of investment activity.

Panel C shows the distributional characteristics of test variables when first sorted by low/high institutional ownership and then by investment activity quintiles. The inverted "U" shape found in the size variable in Panel B persists across the institutional ownership groups with the low institutional ownership group exhibiting much smaller average sizes. The general decline in B/M and PY and CY returns exhibited in Panel B persists among both categories of institutional ownership. Recall that stock returns associated with these patterns are removed when firm-specific excess returns are computed in section 4.1 above.

Table 3 presents the mean excess returns and regression results for firms with institutional ownership data. Panel A shows the mean annual excess returns and

FF Alphas for each of the investment quintiles. The mean return pattern in Panel A differs from the unrestricted sample shown in panel B of Table 1 as the signs in the first and fourth quintiles are reversed though they remain insignificant. After removing the market pricing associated with the four risk factors and computing the FF Alpha for each quintile, the pattern of positive (negative) mean risk-adjusted excess returns associated with under (over) investment activity reappears. Though positive, the risk-adjusted excess return to the spread portfolio is not significant. This result suggests that even with the volatility exhibited during the late 1990's, excess future returns were associated with past investment activity in certain of the investment activity quintiles.

Panel B of Table 3 shows that the returns pattern in Panel A is not consistent across institutional ownership levels. That is, the negative association between investment activity and future excess returns exists for lower institutional ownership firms only. The excess returns series suggests that the stock price for low (high) investment firms appears to have been too low (high) at time *t*. The trading strategy which buys low institutional holding/low investment firms and shorts low institutional holding/high investment firms results in a significant and positive annual excess return of 7.1%.

For firms with high institutional ownership, the mean and risk-adjusted future excess returns for the spread portfolio are positive but not significantly different from zero. Additionally, the pattern of decreasing excess returns across

the quintiles of investment activity is not present. These results suggests that institutional investors may be better able to prevent managers from selecting value-destroying projects and therefore the anticipated returns to investment are more accurately priced. It could also be the case that those institutional owners are better able to extract information about investment activity at time *t*, resulting in smaller future excess returns. The lack of significant returns to the high institutional holdings group is similar to the lack of results found in TWX's study during the active takeover period. In both cases, interested capital market participants appear to have been effective in reducing agency costs and/or initial market mis-pricing associated with investment activity.

5.3.2 Shareholder rights

Table 4 presents distributional characteristics and test results for the sub-sample of firms for which shareholder rights were computed by Andrew Metrick as noted in section 4.3.2 above. Panel A presents the distributional characteristics of test variables for all observations included in the sample. On average, the investment activity for these firms is 0.01 which is substantially smaller than the pooled average for the institutional ownership sample. Most likely, this is a result of the size difference in the samples as well (2,401 for the pooled institutional ownership sample versus 5,597 for the shareholder rights sample).

In Panels B and C we again see the inverted "U" shape associated with firm size as well as the general pattern of decreasing B/M and PY and CY returns.

Recall that stock returns associated with these patterns are removed in the computation of the firm-specific excess return as described in section 4.1 above.

Table 5 presents the mean excess returns and regression results when I examine the association between investment activity and future excess returns conditioned upon shareholder rights.[10] My predictions in Hypotheses *H3a* and *H3b* rely on the market's ability to price the effectiveness of shareholder rights to reduce agency costs at the time of the investment activity. Where investors understand the relationship between shareholder rights and agency costs associated with overinvestment, they will properly price investment activity at time *t*. If investors are not sensitive to the increased agency costs inherent in overinvestment when shareholder rights are low (management is insulated from censure by shareholders), then the returns to a spread portfolio which holds (shorts) low (high) investment firms will be significant and positive.

In Panel A, I present the mean and risk-adjusted annual excess returns for investment activity levels for firms with shareholder rights data. Though the CI-spread portfolio shows a 3.11% annual risk-adjusted excess return, the negative association between investment activity and future excess returns is not consistent.

[10] I do not require firms to have both a g-score and data on institutional holdings in order to be included in my tests due to data requirements imposed by the form of the benchmark portfolio tests.

Hypothesis *H3a* predicts that for low shareholder rights firms, a negative association exists between investment activity and future excess returns. However, the results displayed in Panel B do not show a consistent or significant association between investment activity and future excess returns. Hypothesis *H3b* predicts no association between investment activity and future excess returns. Panel B shows a significant negative association between underinvestment and future excess returns. Additionally, for the fifteen year period between July 1991 and June 2006, a hedge portfolio that held underinvestment firms and shorted overinvestment firms earned 3.50% and 5.62% in mean and risk-adjusted excess returns when conditioned on high shareholder rights. The results for low and for high shareholder rights firms contradict the stated hypotheses. In their study, Gompers et. al. (2003) note that high shareholder rights firms have higher excess future returns than low shareholder rights firms. While this test is not designed to provide support for TWX's finding that high shareholder rights firms have higher excess future returns, it does show that future excess returns are more sensitive to investment activity for high shareholder rights firms.

5.4 Additional tests

5.4.1 Interaction effects of governance proxies on the investment activity and future excess returns association

The previous analyses studied the association between investment activity and future excess returns at the quintile level. To test whether an overall effect exists for my proxies of corporate governance, I estimate the following regression:

$$ER_{it} = \alpha_0 + \beta_1 CG_{it} + \beta_2 CI_{i,t-1} + \beta_3 CG_{it} \bullet CI_{i,t-1} + \sum_{i=1}^{n} \delta_t Control\,Variables + \varepsilon_{it}$$

where ER_{it} is the value-weighted excess return as computed in section 4.4 above, CG_{it} is a dumy variable equal to 1 if the firm-specific governance value is less than the median at time *t* (low governance) and $CI_{i,t-1}$ is the capital investment activity variable described in section 4.2 above. Depending on the iteration of the test, the control variables may include the four market factors or year dummies. Industry dummies are not used as the first-stage benchmark adjustment of the firm-specific excess returns should capture industry effects. The coefficient of interest is β_3 which represents the incremental effect that the low governance proxy has on the investment activity and future excess returns association. Table 6 presents the results of the tests.

Panel A of Table 6 shows the regression results for the institutional holdings sample and confirms the result from Panel B of Table 3. Specifically, the coefficient on the interaction term is negative and significant. This result suggests that for low institutional holding firms, the future excess returns to

investment activity are more negative than for high institutional holding firms. The result is robust to market risk factors and is time invariant.

Panel B of Table 6 shows the regression results for the shareholder rights samples and confirms the surprise result from Panel B of Table 5. Recall that hypotheses *H3a* and *H3b* called for a negative (no) slope in the investment activity and future excess return relationship for low (high) shareholder rights firms. However, the portfolio approach in Table 5 showed that the expected pattern did not hold. There was no discernible association for low shareholder rights firms while high shareholder rights firms had significant positive excess returns for slight underinvestment firms as well as for the overall hedge portfolio. The coefficient on the interaction term in Panel B of Table 6 effectively serves to reduce the sensitivity between investment activity and future excess returns for the low shareholder rights firms. This result provides corroborating evidence that high shareholder rights are more sensitive to the negative association between investment activity and future excess returns.

5.4.2 Shareholder rights enforcement through aggregate and activist ownership

As discussed previously, Shleifer and Vishny (1997) note that aggregated ownership is a fundamental component of the monitoring framework. In my previous tests, my measure of shareholder rights (*1/g*) is calculated at the individual shareholder level. That is, the measure is an index of anti-shareholder actions that affect the individual stockholder. Enforcement of the shareholder

rights is costly for the individual shareholder. As such, it is possible that the mixed results in section 5.3.2 and 5.4.1 relating to shareholder rights may be due to a mis-application of shareholder rights as a proxy for governance. A test that simply measures the index but does not take into consideration the enforcement of the rights by concentrated and/or activist owners may result in misleading conclusions.

To test whether the concentrated ownership affects the enforceability of shareholder rights and thereby reduces agency costs associated with investment activity, I focus on three types of owners: institutional holders, outside blockholders and activist owners. I obtain each from the F13 filings in the Spectrum database. This database lists firm ownership by CUSIP for each quarter for each SEC-registered fund manager. To proxy for institutional ownership, I use the same variable (*INST*) used in my main tests above. That is, I divide each manager's ownership of each stock by the shares outstanding listed in the CRSP database and determine the ownership percentage. For each CUSIP, I sum the ownership percentage for all managers at each reporting quarter. My proxy for blockholder ownership is computed by coding the manager as a blockholder if its ownership percentage is greater than 5%. I then sum up the ownership percentage for all blockholder managers for each CUSIP for each quarter. My proxy for activist ownership is computed by coding the manager as an activist if it is classified as such in Cremers and Nair (2005) and in Larcker

et.al. (2005)[11]. I then sum up the ownership percentage for all activist managers for each CUSIP for each quarter.

In addition to ownership percentages, I compute a measure of the percentage of institutional ownership held by blockholders and separately by activist fund managers. If institutional ownership is made up of many fund managers who exhibit herding behavior or are simply diversifying fund assets (i.e. index funds), it may not be the case that they are performing a monitoring function. As such, the density measure that I compute here proxies for the percentage of institutional ownership held by concentrated or activist owners. Since investment activity may occur at any time during the year *t-1*, I compute my measures as the average annual ownership percentage and average annual density by summing the four quarter values through December of each year and dividing by four. If quarterly data is missing, I replace the missing value with a zero.

To test whether this aggregated ownership interacts with the shareholder rights measure, I first separate all observations in the shareholder rights sample

[11] The following public pension funds were classified as activist managers (with Spectrum manager number in brackets): California Public Employees Retirement System (12000), California State Teachers Retirement (12100 and 12120), Colorado Public Employees Retirement Association (18740), Florida State Board of Administration (38330), Illinois State Universities Retirement System (81590), Kentucky Teachers Retirement System (49050), Maryland State Retirement and Pension System (54360), Michigan State Treasury (57500), Montana Board of Investment (58650), Education Retirement Board New Mexico (63600), New York State Common Retirement Fund (63850), New York State Teachers Retirement System (63895), Ohio School Employees Retirement System (66635), Texas Teachers Retirement System (82895 and 83360), Virginia Retirement System (90803) and the State of Wisconsin Investment Board (93405).

each year by the shareholder rights measure (*1/g*). The separation is simply a high/low categorization based on the annual median shareholder rights value. For the high shareholder rights sample, I run the interaction regression used in section 5.4.1 above, replacing the corporate governance variable with my annual blockholder and activist measures (ownership % and density of institutional ownership). As in the earlier interaction tests, the dummy variable in the interaction term equals one if the observation ranks below the median for that governance proxy. The coefficient of interest, β_3, can be interpreted as the sensitivity of future excess returns to investment activity when shareholder rights are less likely to be enforced by institutional owners, blockholders or activists, depending on the test iteration. I find that the coefficients for the interaction term, β_3, are negative and significant for institutional ownership, annual blockholder percent ownership, annual blockholder density and annual activist density. The coefficient for annual activist ownership percentage is positive but not significant. These results suggest that the association between investment activity and future excess returns is dependent on the degree to which the shareholder rights are enforced or are enforceable by aggregated ownership.

5.4.3 Institutional ownership characteristics

The results in Panel B of Table 3 suggest that lower institutional ownership is associated with more negative future excess returns to investment activity. The natural question to ask is whether institutional ownership is a proxy for the information environment, firm monitoring or both. From the results presented in Table 3, it is difficult to ascertain whether lack of an association between investment activity and future returns for the high institutional ownership sample is due to effective monitoring or a better information environment at time *t*. Relatedly, the finding that the negative association between investment activity and future excess returns is a function of low institutional holdings could be a function of lack of monitoring and/or a poor information environment at time *t*.

As such, I follow the methodology employed in Section 5.4.2 above in order to test whether aggregated and/or activist ownership affects the relationship between investment activity and future excess returns for both the low and high institutional holdings samples. Again, I separate all firms each year into two groups based on the median institutional holdings level. For each of my annual governance proxies (blockholder ownership percentage, blockholder ownership density, activist ownership percentage and activist ownership density as described above in Section 5.4.2), I assign a dummy equal to one for each firm below the annual median for that governance proxy each year. I then run the

interaction regression from section 5.4.1 for high/low institutional holdings and each governance proxy (for a total of eight separate interaction regressions).

Recall that the dummy variable in the interaction regression relates to a lower level of aggregated ownership or activist ownership. As such, the interaction term can be interpreted as the sensitivity of future excess returns to investment activity when institutional ownership is not made up of groups considered to be monitors (external blockholders and activists). When I study the high institutional ownership sample, the interaction coefficients for annual blockholder ownership density, activist percentage ownership and activist ownership density are negative and significant. The interaction coefficient for annual blockholder ownership percentage is positive but not significant. These results suggest that when institutional ownership is held by groups not considered to be monitors, the future excess returns to investment activity are more negative. This lends support to TWX's assertion that investors may not fully appreciate the agency costs associated with investment activity, even among sophisticated investors.

Turning to the low institutional holdings sample, I find that the interaction coefficients for annual blockholder ownersip percentage, blockholder ownership density, activist ownership percentage and activist ownership density are negative, but only those associated with blockholders are significant. These results suggest that even when institutional ownership is small, outside

blockholders perform an effective monitoring function as it relates to firm investment activity.

5.4.4 Multi-segment firms, investment activity and future excess returns

Lang and Stulz (1994) and Berger and Ofek (1995) study market valuation of multi- as opposed to single-segment firms and find the existence of a "diversification discount." That is, firms with multiple segments are valued lower than benchmark firms made up of only a single segment. Meyer, Milgrom and Roberts (1992) argue that management of multi-segment firms use cash flow from positive NPV segments to subsidize investment in negative NPV projects. Given that these managers are not required to return to the capital markets for cash, their empire-building activities are more likely to be insulated from external censure. However, if investors at time *t* are sensitive to agency costs associated with overinvestment by multi-segment firms, they will discount that investment activity at time *t*.

To test investors' ability to properly price overinvestment by multi-segment firms, I initially select all firms in the Compustat Segment dataset for the period from 1990 – 2004 that have at least one segment identified as a Business Segment[12]. I then follow Bens and Monahan (2004) by eliminating firms where the sum of total segment sales is greater or less than total sales from the

[12] Compustat has recently assigned up to four segment classification types: Operating, Business, Geographic, or State.

Compustat Industrial dataset by 1%. Firms with a single segment are coded as a "1" and multi-segment firms are coded as a "0."

Table 7 presents the results of my tests on these multi-segment firms. Panel A shows the distributional characteristics for test variables for this sample of firms. The patterns associated with size (inverted "U") and with B/M and PY and CY returns (decreasing) found in the institutional holdings and shareholder rights samples hold in this sample as well.

In the pooled tests in Panel B, overinvestment (underinvestment) activity is associated with negative (positive) future excess returns. The annual risk-adjusted return to the spread portfolio for the pooled test is a positive and significant 5.94%. However, when I separate the sample based on multi- (Low) and single- (High) segments, I find an interesting result. The returns to four of the five quintiles of investment activity are negative (though not all significant) for multi-segment firms. Conversely, the returns to four of the five investment activity quintiles are positive (though not all significant) for single-segment firms. I interpret this combined result to mean that while the multi-segment firms may be associated with a contemporaneous diversification discount, investment activity at most levels is associated with additional future negative returns. The diversification discount originally assigned at time *t* does not appear to be sufficient for multi-segment firms.

5.4.5 Acquisition activity and future excess returns

My measure of abnormal investment is susceptible to measurement error when firms are engaged in significant acquisition activity. Measurement errors may occur when the denominator for the *CE* variable includes combined sales from the acquirer and acquired, or when the past three years' activity may reflect only the acquirer's activity but may not be standardized for the activity of the newly combined firm. To determine whether my main results in Tables 2 and 3 are driven by acquisition firms in my sample, I drop all firms with significant acquisition activity and repeat my previous tests in Tables 3 and 5[13]. Tables 8 and 9 show the results when acquisition firms are dropped for the institutional holding and shareholder rights samples, respectively. Generally, the results are unaffected by the exclusion of acquisition firms other than that the returns to the spread portfolios increase slightly in most cases. This result suggests that neither measurement error nor overvalued acquisitions are driving the negative association between overinvestment and future excess returns.

5.4.6 Creditor monitoring, investment activity and future excess returns

TWX perform a sensitivity test whereby they condition investment activity on high (low) leverage and find that low leverage interacted with high (low) investment activity is significantly associated with negative (positive) future excess returns. Their motivation for using the leverage is to proxy for agency

[13] The variable AFTNT1 in the COMPUSTAT Industrial dataset has a set of codes (AA, AB, AR, AS) that denotes significant acquisition activity in the reporting year.

costs associated with excess free cash. Less leverage is associated with less committed cash for debt repayment and therefore is treated the same as an alternative proxy for free cash flow.

An alternative explanation of the same phenomenon is that low (high) leverage could be interpreted as low (high) monitoring by external creditors. In other words, when leverage is increased it is more likely that external creditors, with increased stakes in firm outcomes, monitor management activities. The result, namely that low leverage (and therefore less-monitored) firms have more agency costs and therefore exhibit the negative association between investment activity and future excess returns, would still hold.

6. CONCLUSIONS

This study examines how a firm's governance regime affects the negative association between overinvestment and future excess returns. Using a portfolio approach to examine differences in excess returns associated with investment activity, I find preliminary evidence that the governance regime does interact with the investment and returns association documented by TWX. Conditioning on low institutional ownership, I find that hedge strategies which hold (short) low (high) investment activity firms obtain 7.1% future annual risk-adjusted returns. For high institutional ownership I do not find a significant return to the hedge portfolio. Surprisingly, however, I find that the association between investment activity and excess returns is sensitive to high but not low shareholder rights. The annual risk-adjusted return to the spread portfolio for high shareholder rights firms is a positive and significant 5.62%.

The insignificant positive return to the hedge portfolio for high institutional ownership may be the result of at least two effects. First, if institutional ownership is associated with reducing management's ability to select value-destroying projects, I would interpret the insignificance to mean that the ratio of value-destroying projects was consistent across investment activity quintiles. If institutional ownership is associated with the information environment, I would interpret the insignificance to mean that at time *t* investors were able to adequately detect and discount negative NPV projects selected by management.

The increased information environment allowed all investors to better price the distributions of the value-creating and value-destroying projects across the quintiles of investment activity at time *t*.

When I study how blockholder and activist ownership interacts with institutional holdings, I find preliminary evidence that blockholders and activists perform monitoring functions as it relates to investment activity. Additionally, when I study the ability of concentrated and activist owners to enforce shareholder rights, I find that given high shareholder rights, outside blockholders and activist owners are able to reduce the negative association between investment activity and future excess returns.

When I examine excess returns to investment activity for multi- versus single-segment firms, I find corroborating evidence for the diversification discount. That is, the coefficients are generally negative for all investment activity levels for multi-segment firms. Conversely, the coefficients are generally positive for all investment activity levels for single-segment firms. Multi-segment firms continue to underperform single-segment firms, regardless of their investment activity.

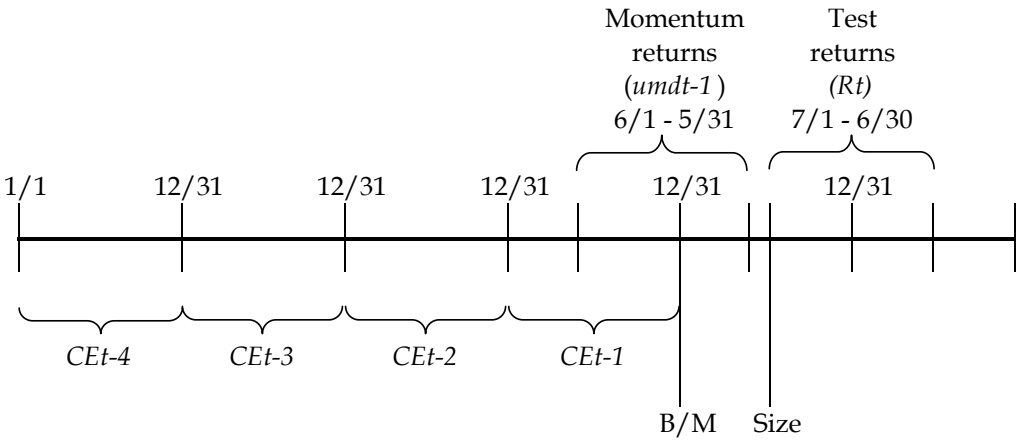
This study could be expanded to include alternative measures of capital market monitoring (credit providers) and measures of power sharing between management and directors. Additionally, it may be fruitful to expand the study and examine acquisition activity in the presence of the governance proxies to

determine whether the monitoring/governance function is effective in mitigating agency costs inherent in that type of investment activity.

APPENDIX A

FIGURES

Figure 1
Timeline for computing investment activity (*CIt-1*), returns (*Rt*) and other study variables

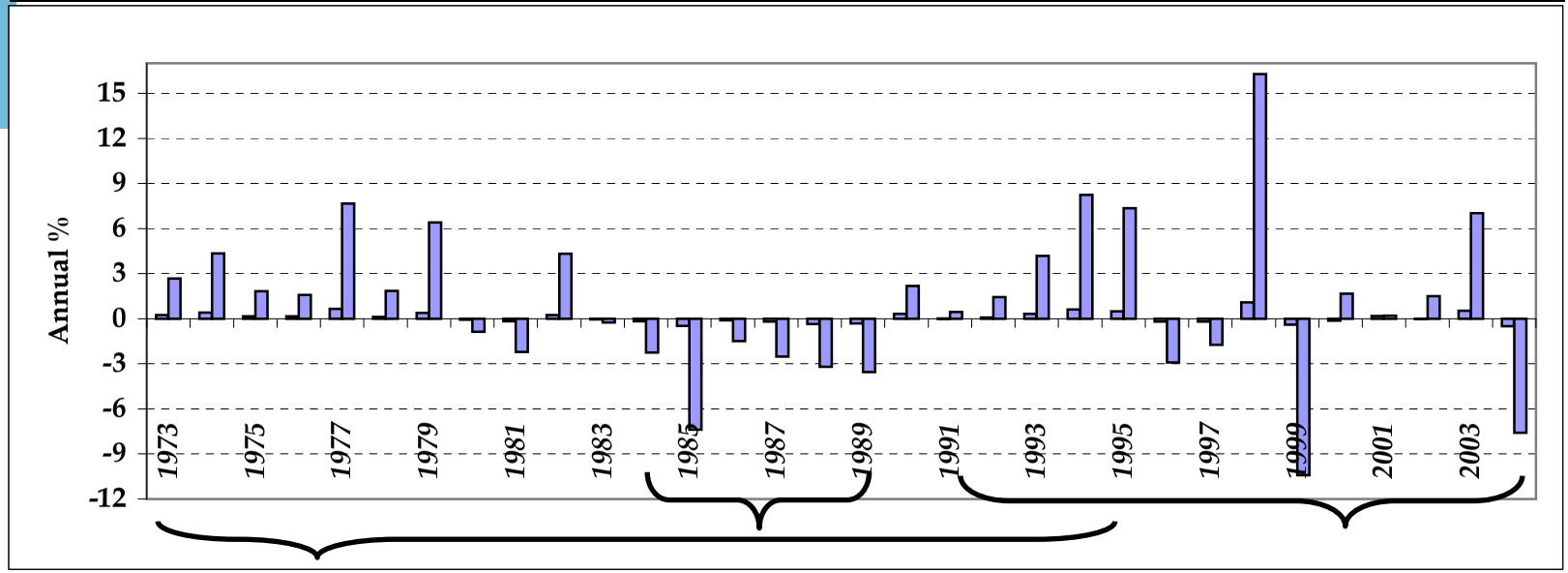


$$CE_{t-1} = \frac{Capital\ Expenditur\ es_{t-1}}{Sales_{t-1}}$$

$$CI_{t-1} = \frac{CE_{t-1}}{(CE_{t-2} + CE_{t-3} + CE_{t-4})/3} - 1$$

This figure represents the timeline for which data is gathered assuming the firm is a December 31 fiscal year-end firm. Where the firm has a fiscal year-end other than December 31, the measurement period (for capital expenditures (*CE*) and *Sales*) and the measurement date (for book value of equity) change to coincide with the fiscal year-end date. For market variables obtained and/or computed from the CRSP data set (market value of equity and returns), the measurement date and periods remain the same. Where a firm has a January 31 fiscal year-end, this method will produce a seventeen month lag between fiscal year-end (1/31) and the beginning of the test return accumulation

Figure 2
Time series of monthly and annual average excess returns to the hedge portfolio which holds low investment activity firms and shorts high activity firms
1973 - 2004



Note: For each year, the left (right) column represents the mean excess returns when measured on a monthly (annual) basis.

Value-weighted annual excess returns on a portfolio are calculated from July of year t to June of year $t+1$, where excess returns on an individual stock at time t are calculated by subtracting the characteristic-based benchmark

portfolio's return from the stock's return at time t. The characteristic-based benchmark portfolio is formed by sequentially sorting each firm into quintile portfolios based on *Size, B/M* and *Prior Return*, forming 125 125 portfolios in all. Firms are then sorted into five portfolios based on their current investment activity as compared to their past investment activity. The *CI*-spread denotes a zero-investment portfolio that has a long position in the lowest two *CI* portfolios and a short position in the highest two *CI* portfolios. The return series for this portfolio is calculated by subtracting the sum of the returns on the highest two *CI* portfolios from that on the lowest two *CI* portfolios, and then divide by 2. All portfolios are rebalanced each year. Returns shown above are in monthly and annual percentage form.

APPENDIX B

TABLES

TABLE 1
Annual Excess Return Distribution of Investment Activity *(CI)* Portfolios and Regression Results for the Characteristic-Adjusted Capital Investment Portfolio Returns on the Carhart Four Factors: July 1991 to June 2005

Panel A. Distributional Characteristics of the Annual Excess Returns for Investment Activity (CI) Portfolios

CI Portfolio	Mean		Max	Q3	Median	Q1	Min
Lowest	3.50		40.94	6.22	2.70	-2.29	-15.42
2	0.65		26.28	3.94	2.25	-5.34	-11.20
3	-1.44	*	3.56	0.82	-0.27	-3.16	-10.63
4	-1.13		3.01	1.09	-0.41	-2.58	-10.01
Highest	-1.24	*	5.57	0.31	-1.25	-2.65	-8.80
CI-Spread	3.26	*	20.75	7.36	1.99	-1.36	-10.35

Panel B. Regression Results for the Characteristic Adjusted Investment Activity (CI) Portfolio Returns on the Carhart Four Factors

Investment Activity *(CI)*	Mean Return		FF Alpha	
Lowest	3.50		2.70	
2	0.65		4.97	*
3	-1.44	*	-0.43	
4	-1.13		-0.70	
Highest	-1.24	*	-2.07	
CI-Spread	3.26	*	5.22	**

Panel A presents the distribution of value-weighted excess returns on all five *CI* portfolios and the *CI*-spread portfolio and include the annual mean (Mean), the maximum (Max), the 75th percentile (Q3), the median (Median), the 25th percentile (Q1) and the minimum (Min) of the annual excess returns. All stocks are sorted into quintiles based on their *CI* values in ascending order for to form five *CI* portfolios each year. The value-weighted annual excess return for each portfolio is computed. Additionally, the

CI-spread portfolio is computed by generating a hedge portfolio which purchases and holds stocks in the lowest two CI portfolios and sells (shorts) the stocks in the highest two CI portfolios. The returns for the CI-spread portfolio are computed by subtracting the returns from the highest two CI-portfolios from the returns of from the lowest two CI-portfolios and dividing the result by two. The measurement period used to calculate value-weighted annual excess returns on a portfolio begin with the July monthly return of year *t* and end with the June monthly return of year *t+1*. The excess return for the individual stock is computed by subtracting the characteristic-based benchmark portfolio's return from the stock's return at time *t*. I compute the characteristic-based benchmark portfolios by sequentially sorting each firm into quintile portfolios based on *size*, *B/M* and *Prior Return*, for a total of 125 unique portfolios. All portfolios are rebalanced each year. Returns are in annual percentage form.

Panel B presents mean excess returns (Mean Return) and intercept estimates (FF Alpha) from the following regression model:

$$ER_{p,t} = \alpha_p + \beta_{Mkt,p}\left(R_{Mkt,t} - R_{Rf,t}\right) + \beta_{SMB,p}R_{SMB,t} + \beta_{HML,p}R_{HML,t} + \beta_{UMD,p}R_{UMD,t} + \varepsilon_{p,t}$$

The dependent variable, $ER_{p,t}$, is the excess return on a given portfolio *p* in year *t*. $R_{Mkt,t}$ is the return on the *Mkt* (Market) factor portfolio for the year. $R_{Rf,t}$ is the risk-free rate in year *t*. $R_{SMB,t}$ is the return on the *SMB* (Small Minus Big) size factor portfolio. $R_{HML,t}$ is the return on the *HML* (High Minus Low) market-to-book factor portfolio. $R_{UMD,t}$ is the return on the momentum (Prior Year Return) portfolio. Returns are in annual percentage form. All years refer to the whole sample period (July 1991 to June 2005). * and ** represent significance at the 0.10 and 0.05 levels, respectively.

TABLE 2
Distributional Characteristics of CI Portfolios for firms with Institutional Owners: 1990 to 2005

CI Portfolio	*n*	*CI*	*INST*	*Size*	*B/M*	*Return* PY	CY	ER
Panel A. All Firms								
Pooled	37,094	0.10	0.42	2,401	0.77	18.30	17.87	0.14
Panel B. All Firms Sorted by Investment Activity (CI)								
Lowest	7,413	-0.67	0.33	805	0.88	24.55	21.19	-0.52
2	7,421	-0.33	0.43	2,307	0.79	21.04	19.50	2.49
3	7,423	-0.10	0.47	4,169	0.72	17.52	17.84	-1.66
4	7,421	0.17	0.46	3,311	0.73	14.30	15.84	0.45
Highest	7,416	1.42	0.40	1,411	0.75	14.04	14.96	-0.06
Panel C. All Firms Sorted first by Institutional Ownership (INST) and then by Investment Activity (CI)								
Low Institutional Ownership (INST)								
Lowest	3,702	-0.75	0.18	251	0.99	25.72	24.33	2.31
2	3,713	-0.42	0.21	1,089	0.95	23.97	22.69	-0.16
3	3,711	-0.15	0.22	2,276	0.91	16.72	21.93	-2.57
4	3,713	0.17	0.22	1,470	0.91	16.86	19.22	-1.71
Highest	3,705	1.75	0.20	595	0.86	14.34	16.82	-2.65
High Institutional Ownership (INST)								
Lowest	3,703	-0.56	0.62	2,011	0.67	22.35	17.44	1.55
2	3,713	-0.26	0.63	4,002	0.62	19.20	14.65	1.02
3	3,713	-0.06	0.64	5,474	0.60	16.45	14.92	-0.21
4	3,713	0.17	0.64	4,458	0.61	13.53	13.81	0.99
Highest	3,708	1.09	0.63	2,376	0.62	13.79	12.84	0.68

The *CI* variable is measured as *t-1* cash investment activity (data128) deflated by sales (data12) divided by the prior three-year average of that same measure. *Size* is measured as the market value of equity on the last trading day in June of year *t*. *B/M* is the fiscal year-end book value of equity in year *t-1*divided by the market value of equity on the

last trading day in year *t-1*. *Prior return* (*PY*) is the annual return measured from June 1 of *t-1* to May 31 of *t*. *Current return* (*CY*)is the annual return measured from July 1 of *t* to June 30 of *t+1*. *Abnormal return* is computed by subtracting the characteristic-based benchmark portfolio's return from the stock's return at time *t*. The characteristic-based benchmark portfolio is formed by sequentially sorting each firm into quintile portfolios based on S*ize*, *B/M* and *Prior Return*, forming 125 portfolios in all. The *Excess Return* (*ER*) is the value-weighted *Abnormal Return*. On June 30 of year *t*, all stocks are sorted into quintiles based on their *CI* measures in ascending order to form five *CI* portfolios. *Institutional Holdings (INST)* is the percentage of common stock held by fund managers in as reported in the F13 filing document. All portfolios are rebalanced each year. Returns are in annual percentage form.

TABLE 3
Mean Excess Returns and Regression Results for Portfolios Formed on Institutional Ownership (*INST*) and Investment Activity (*CI*): July 1990 to June 2006

Panel A. Mean Excess Returns and Regression Results for Portfolios formed on Investment Activity (CI) for firms with Institutional Ownership data (INST)

Investment Activity (CI)	Mean Return		FF Alpha	
Lowest	-0.14		1.96	
2	2.28	**	2.33	*
3	-1.55	**	-1.31	**
4	0.42		-0.22	
Highest	-0.40		-0.17	
CI-Spread	1.06		2.34	

Panel B. Mean Excess Returns and Regression Results for Portfolios formed first on Institutional Ownership (INST) and then on Investment Activity (CI)

Investment Activity (CI)	*Institutional Ownership (INST)*					
	Low			High		
	Mean Return		FF Alpha	Mean Return		FF Alpha
Lowest	2.17		7.57 **	1.72		2.12
2	0.22		2.95	0.72		0.38
3	-2.54	*	-2.00	-0.11		-0.38
4	-1.53		-3.07 **	0.88		0.33
Highest	-3.08	*	-0.58	0.36		0.03
CI-Spread	3.50		7.08 ***	0.60		1.07

Panels A and B present mean excess returns (Mean Return) and intercept estimates (FF Alpha) from the following regression model:

$$ER_{p,t} = \alpha_p + \beta_{Mkt,p}\left(R_{Mkt,t} - R_{Rf,t}\right) + \beta_{SMB,p}R_{SMB,t} + \beta_{HML,p}R_{HML,t} + \beta_{UMD,p}R_{UMD,t} + \varepsilon_{p,t}$$

The dependent variable, $ER_{p,t}$, is the mean annual excess return on a given portfolio p in year t. $R_{Mkt,t}$ is the return on the *Mkt* (Market) factor portfolio for the year. $R_{Rf,t}$ is the

risk-free rate in year *t*. $R_{SMB,t}$ is the return on the *SMB* (Small Minus Big) size factor portfolio. $R_{HML,t}$ is the return on the *HML* (High Minus Low) market-to-book factor portfolio. $R_{UMD,t}$ is the return on the momentum (Prior Year Return) portfolio. The *CI*-spread portfolio is computed by generating a hedge portfolio which purchases and holds stocks in the lowest two *CI* portfolios and sells (shorts) the stocks in the highest two *CI* portfolios. The returns for the *CI*-spread portfolio are computed by subtracting the returns from the highest two *CI*-portfolios from the returns of from the lowest two *CI*-portfolios and dividing the result by two. Returns are in annual percentage form. *Institutional Holdings (INST)* is the percentage of common stock held by fund managers in as reported in the F13 filing document. *, ** and *** represent significance at the 0.10, 0.05 and 0.01 levels, respectively.

TABLE 4
Distributional Characteristics of CI Portfolios for firms with Shareholder Rights Scores: 1991 to 2005

CI Portfolio	*n*	*CI*	*1/g*	*Size*	*B/M*	*Return* PY	CY	ER
Panel A. All Firms								
Pooled	16,698	0.01	0.12	5,597	0.65	15.15	15.90	0.45
Panel B. All Firms Sorted by Investment Activity (CI)								
Lowest	3,336	-0.56	0.13	2,943	0.75	20.30	19.00	1.73
2	3,342	-0.26	0.12	5,734	0.67	16.48	16.45	1.26
3	3,341	-0.08	0.12	8,369	0.61	15.47	15.75	-0.98
4	3,342	0.12	0.12	6,998	0.61	11.56	13.76	-0.67
Highest	3,337	0.84	0.13	3,933	0.63	11.95	14.53	0.92
Panel C. All Firms Sorted first by Shareholder Rights (1/g) and then by Investment Activity (CI)								
Low Shareholder Rights (1/g)								
Lowest	1,569	-0.51	0.09	3,303	0.74	17.99	18.07	-2.16
2	1,579	-0.24	0.09	6,112	0.62	16.29	16.18	1.10
3	1,583	-0.07	0.09	7,597	0.56	14.32	14.58	-0.14
4	1,579	0.12	0.09	7,012	0.57	11.29	12.05	-0.95
Highest	1,574	0.73	0.09	3,620	0.64	9.31	13.48	0.30
High Shareholder Rights (1/g)								
Lowest	1,756	-0.60	0.16	2,756	0.76	21.65	19.25	4.22
2	1,765	-0.29	0.15	4,878	0.71	17.89	17.44	2.89
3	1,767	-0.10	0.15	9,322	0.64	16.19	17.07	-1.33
4	1,765	0.12	0.15	7,009	0.66	11.45	14.90	-1.23
Highest	1,761	0.94	0.16	4,277	0.62	14.45	15.46	2.26

The *CI* variable is measured as *t-1* cash investment activity (data128) deflated by sales (data12) divided by the prior three-year average of that same measure. *Size* is measured as the market value of equity on the last trading day in June of year *t*. *B/M* is the fiscal year-end book value of equity in year *t-1*divided by the market value of equity on the

last trading day in year *t-1*. *Prior return* (*PY*) is the annual return measured from June 1 of *t-1* to May 31 of *t*. *Current return* (*CY*)is the annual return measured from July 1 of *t* to June 30 of *t+1*. *Abnormal return* is computed by subtracting the characteristic-based benchmark portfolio's return from the stock's return at time *t*. The characteristic-based benchmark portfolio is formed by sequentially sorting each firm into quintile portfolios based on S*ize*, *B/M* and *Prior Return*, forming 125 portfolios in all. The *Excess Return* (*ER*) is the value-weighted *Abnormal Return*. On June 30 of year *t*, all stocks are sorted into quintiles based on their *CI* measures in ascending order to form five *CI* portfolios. All portfolios are rebalanced each year. Returns are in annual percentage form.

TABLE 5
Mean Excess Returns and Regression Results for Portfolios Formed on Shareholder Rights (1/g) and Investment Activity (*CI*): July 1991 to June 2006

Panel A. Mean Excess Returns and Regression Results for Portfolios formed on Investment Activity (CI) for firms with Shareholder Rights data (1/g)

Investment Activity (CI)	Mean Return		FF Alpha	
Lowest	1.69		2.35	
2	1.21	*	2.45	**
3	-0.84		-0.77	
4	-0.74		-2.06	
Highest	0.67		0.65	
CI-Spread	1.48		3.11	*

Panel B. Mean Excess Returns and Regression Results for Portfolios Formed first on Shareholder Rights (1/g) and then on Investment Activity (CI)

Investment Activity (CI)	*Shareholder Rights (1/g)*			
	Low		High	
	Mean Return	FF Alpha	Mean Return	FF Alpha
Lowest	-2.57	-0.71	4.69 **	3.53
2	1.21	0.66	2.98	7.83 ***
3	0.05	-0.51	-1.22	-1.13
4	-1.07	-2.71	-1.40	-1.53
Highest	0.01	-0.89	2.09	1.66
Spread	-0.15	1.77	3.50 *	5.62 *

Panels A and B present mean excess returns (Mean Return) and intercept estimates (FF Alpha) from the following regression model:

$$ER_{p,t} = \alpha_p + \beta_{Mkt,p}\left(R_{Mkt,t} - R_{Rf,t}\right) + \beta_{SMB,p}R_{SMB,t} + \beta_{HML,p}R_{HML,t} + \beta_{UMD,p}R_{UMD,t} + \varepsilon_{p,t}$$

The dependent variable, $ER_{p,t}$, is the mean annual excess return on a given portfolio p in year t. $R_{Mkt,t}$ is the return on the *Mkt* (Market) factor portfolio for the year. $R_{Rf,t}$ is the

risk-free rate in year *t*. $R_{SMB,t}$ is the return on the *SMB* (Small Minus Big) size factor portfolio. $R_{HML,t}$ is the return on the *HML* (High Minus Low) market-to-book factor portfolio. $R_{UMD,t}$ is the return on the momentum (Prior Year Return) portfolio. The *CI*-spread portfolio is computed by generating a hedge portfolio which purchases and holds stocks in the lowest two *CI* portfolios and sells (shorts) the stocks in the highest two *CI* portfolios. The returns for the *CI*-spread portfolio are computed by subtracting the returns from the highest two *CI*-portfolios from the returns of from the lowest two *CI*-portfolios and dividing the result by two. Returns are in annual percentage form. The variable *Shareholder rights (1/g)* is computed as the inverse of the Gompers, et. al. (2003) *g-score* which is an increasing function of anti-shareholder actions taken by firm management. *, ** and *** represent significance at the 0.10, 0.05 and 0.01 levels, respectively.

TABLE 6
Regression Results for Interaction Regressions for Institutional Holdings (*INST*) and Shareholder Rights (*1/g*) samples

$$ER_{it} = \alpha_0 + \beta_1 CG_{it} + \beta_2 CI_{i,t-1} + \beta_3 CG_{it} \bullet CI_{i,t-1} + \sum_{i=1}^{n} \delta_t Control\,Variables + \varepsilon_{it}$$

Panel A. Institutional Holdings (CG=INST)

	(1)		***(2)***		***(3)***	
Intercept	-0.0118	***	-0.0016	***	-0.0202	***
CG (Low = 1)	0.0003	***	0.0003	***	0.0003	***
CI	-0.0008	*	-0.0008	**	-0.0009	**
CG X CI	-0.0014	***	-0.0013	***	-0.0013	***
Mkt			-0.0251	***		
Smb			-0.0025			
Hml			-0.0559	***		
Umd			-0.0523	***		
Year Dummies					X	

Panel B. Shareholder Rights (CG=1/g)

	(1)		***(2)***		***(3)***	
Intercept	-0.0147	***	-0.0139	***	-0.0223	***
CG (Low = 1)	0.1635	***	0.1614	****	0.1555	***
CI	-0.0034	***	-0.0035	***	-0.0035	***
CG X CI	0.0073	***	0.0070	***	0.0066	***
Mkt			-0.0124	**		
Smb			0.0415	***		
Hml			-0.0342	***		
Umd			0.0100	***		
Year Dummies					X	

Panels A and B present the coefficient estimates from the following regression model:

$$ER_{it} = \alpha_0 + \beta_1 CG_{it} + \beta_2 CI_{i,t-1} + \beta_3 CG_{it} \bullet CI_{i,t-1} + \sum_{i=1}^{n} \delta_t Control\,Variables + \varepsilon_{it}$$

The dependent variable, $ER_{p,t}$, is the mean annual excess return on a given portfolio *p* in year *t*. CG_{it} is the dummy variable for each corporate governance proxy which equals one if the value of the proxy is less than the median value for each year and is equal to zero otherwise. The corporate governance proxies include (*INST*), computed as the percentage of shares outstanding held by fund managers on December 31 of t-1, and (*1/g*), computed as the inverse of the firm's anti-shareholder rights measure. The *CI* variable is measured as *t-1* cash investment activity (data128) deflated by sales (data12) divided by the prior three-year average of that same measure. The control variables may include the standard market risk factors Mkt, Smb, Hml and Umd or separately, year dummies. *, ** and *** represent significance at the 0.10, 0.05 and 0.01levels, respectively.

TABLE 7
Mean Excess Returns and Regression Results for Portfolios Formed on Firm Diversification (*numseg*) and Capital Investment (*CI*): 1991 to 2004

Panel A. Distributional Characteristics of CI Portfolios for firms with Firm Diversification (numseg) data

CI Portfolio	***n***	***CI***	***Size***	***B/M***	***Return*** ***PY***	***CY***	***ER***
Pooled	21,418	0.08	2,607	0.76	21.24	20.68	1.27
Lowest	4,277	-0.67	848	0.86	30.79	25.33	0.67
2	4,287	-0.33	2,710	0.77	23.72	21.62	5.49
3	4,287	-0.11	4,431	0.72	20.14	20.97	-0.27
4	4,287	0.15	3,447	0.72	15.83	18.68	-2.14
Highest	4,280	1.35	1,590	0.74	15.75	16.80	-0.59

Panel B. Mean Excess Returns and Regression Results for Portfolios formed on Firm Diversification (numseg) and Abnormal Capital Investment (CI)

Abnormal Capital Investment (CI)	*Firm Diversification (numseg)* Pooled Mean Return		Pooled FF Alpha		Low Mean Return		Low FF Alpha		High Mean Return		High FF Alpha	
Lowest	0.67		0.41		-2.94		-7.63	*	2.90		6.77	*
2	5.49	**	8.77	**	3.41		0.86		6.27		11.28	**
3	-0.27		-0.39		-2.29		-3.33		0.23		-1.71	
4	-2.14		-2.39		-1.78		-2.61		1.04		4.55	**
Highest	-0.59		-0.31		-4.01		-7.84	*	0.26		1.91	
Spread	4.44	**	5.94	**	3.13		1.82		3.93		5.79	

Panel A presents the distribution of the sample conditioned on having the necessary shareholder power information. The *CI* variable is measured as *t-1* cash investment activity (data128) deflated by sales (data12) divided by the prior three-year average of that same measure. *Size* is measured as the market value of equity on the last trading

day in June of year *t*. *B/M* is the fiscal year-end book value of equity in year *t-1*divided by the market value of equity on the last trading day in year *t-1*. *Prior return* is the annual return measured from June 1 of *t-1* to May 31 of *t*. *Current return* is the annual return measured from July 1 of *t* to June 30 of *t+1*. *Abnormal return* is computed by subtracting the characteristic-based benchmark portfolio's return from the stock's return at time *t*. The characteristic-based benchmark portfolio is formed by sequentially sorting each firm into quintile portfolios based on S*ize*, *B/M* and *Prior Return*, forming 125 portfolios in all. The *Excess Return* is the value-weighted *Abnormal Return*. On June 30 of year *t*, all stocks are sorted into quintiles based on their *CI* measures in ascending order to form five *CI* portfolios. All portfolios are rebalanced each year. Returns are in annual percentage form.

Panel B presents mean excess returns (Mean Return) and intercept estimates (FF Alpha) from the following regression model:

$$ER_{p,t} = \alpha_p + \beta_{Mkt,p}\left(R_{Mkt,t} - R_{Rf,t}\right) + \beta_{SMB,p}R_{SMB,t} + \beta_{HML,p}R_{HML,t} + \beta_{UMD,p}R_{UMD,t} + \varepsilon_{p,t}$$

The dependent variable, $ER_{p,t}$, is the mean annual excess return on a given portfolio *p* in year *t*. $R_{Mkt,t}$ is the return on the *Mkt* (Market) factor portfolio for the year. $R_{Rf,t}$ is the risk-free rate in year *t*. $R_{SMB,t}$ is the return on the *SMB* (Small Minus Big) size factor portfolio. $R_{HML,t}$ is the return on the *HML* (High Minus Low) market-to-book factor portfolio. $R_{UMD,t}$ is the return on the momentum (Prior Year Return) portfolio. The *CI*-spread portfolio is computed by generating a hedge portfolio which purchases and holds stocks in the lowest two *CI* portfolios and sells (shorts) the stocks in the highest two *CI* portfolios. The returns for the *CI*-spread portfolio are computed by subtracting the returns from the highest two *CI*-portfolios from the returns of from the lowest two *CI*-portfolios and dividing the result by two. Returns are in annual percentage form. *Firm Diversification (numseg)* is a dummy variable equal to 1 if there is no more than one business segment in the COMPUSTAT Segment database; equals 0 otherwise. * and ** represent significance at the 0.10 and 0.05 levels, respectively.

TABLE 8 - WITHOUT MAJOR ACQUISITION FIRMS
Mean Excess Returns and Regression Results for Portfolios Formed on Institutional Ownership (*INST*) and Investment Activity (*CI*): July 1990 to June 2006

Panel A. Mean Excess Returns and Regression Results for Portfolios formed on Investment Activity (CI) for firms with Institutional Ownership data (INST)

Investment Activity (CI)	Mean Return		FF Alpha	
Lowest	0.42		1.40	
2	2.36	*	3.12	*
3	-0.66		-0.20	
4	-0.28		-1.57	
Highest	-1.37		-0.06	
CI-Spread	2.22	*	3.07	

Panel B. Mean Excess Returns and Regression Results for Portfolios Formed first on Institutional Ownership (INST) and then on Investment Activity (CI)

Investment Activity (CI)	*Institutional Ownership (INST)*			
	Low		High	
	Mean Return	FF Alpha	Mean Return	FF Alpha
Lowest	-0.11	5.67 *	2.05	1.73
2	2.02	3.19	0.53	1.90
3	-0.90	-0.08	0.16	0.08
4	-0.78	-0.12	-0.18	-1.73
Highest	-3.72 *	-3.92	-0.77	0.06
Spread	3.21	6.45 **	1.76 *	2.65 *

Panels A and B present mean excess returns (Mean Return) and intercept estimates (FF Alpha) from the following regression model,

$$ER_{p,t} = \alpha_p + \beta_{Mkt,p}\left(R_{Mkt,t} - R_{Rf,t}\right) + \beta_{SMB,p}R_{SMB,t} + \beta_{HML,p}R_{HML,t} + \beta_{UMD,p}R_{UMD,t} + \varepsilon_{p,t}$$

The dependent variable, $ER_{p,t}$, is the mean annual excess return on a given portfolio p in year t. $R_{Mkt,t}$ is the return on the *Mkt* (Market) factor portfolio for the year. $R_{Rf,t}$ is the

risk-free rate in year *t*. $R_{SMB,t}$ is the return on the *SMB* (Small Minus Big) size factor portfolio. $R_{HML,t}$ is the return on the *HML* (High Minus Low) market-to-book factor portfolio. $R_{UMD,t}$ is the return on the momentum (Prior Year Return) portfolio. The *CI*-spread portfolio is computed by generating a hedge portfolio which purchases and holds stocks in the lowest two *CI* portfolios and sells (shorts) the stocks in the highest two *CI* portfolios. The returns for the *CI*-spread portfolio are computed by subtracting the returns from the highest two *CI*-portfolios from the returns of from the lowest two *CI*-portfolios and dividing the result by two. Returns are in annual percentage form. *Institutional Holdings (INST)* is the percentage of common stock held by investors classified as institutional owners by IRRC. * and ** represent significance at the 0.10 and 0.05 levels, respectively.

TABLE 9 – WITHOUT MAJOR ACQUISITION FIRMS
Mean Excess Returns and Regression Results for Portfolios Formed on Shareholder Rights (1/g) and Investment Activity (*CI*): July 1991 to June 2006

Panel A. Mean Excess Returns and Regression Results for Portfolios formed on Investment Activity (CI) for firms with Shareholder Rights data (1/g)

Investment Activity (CI)	Mean Return	FF Alpha	
Lowest	0.51	1.25	
2	0.91	1.97	*
3	0.02	-0.38	
4	-0.10	-0.69	
Highest	-1.30	-1.24	
CI-Spread	1.41	2.57	

Panel B. Mean Excess Returns and Regression Results for Portfolios Formed first on Shareholder Rights (1/g) and then on Investment Activity (CI)

Investment Activity (CI)	*Shareholder Rights (1/g)*					
	Low			High		
	Mean Return		FF Alpha	Mean Return		FF Alpha
Lowest	-3.71	*	-1.25	6.47	**	5.15
2	1.66	*	1.48	1.74		5.65 **
3	-0.18		-1.10	0.16		-0.10
4	-0.62		-1.73	0.04		0.36
Highest	-2.10		-2.48	-0.46		-1.40
Spread	0.34		2.22	4.31	**	5.92 **

Panels A and B present mean excess returns (Mean Return) and intercept estimates (FF Alpha) from the following regression model:

$$ER_{p,t} = \alpha_p + \beta_{Mkt,p}\left(R_{Mkt,t} - R_{Rf,t}\right) + \beta_{SMB,p}R_{SMB,t} + \beta_{HML,p}R_{HML,t} + \beta_{UMD,p}R_{UMD,t} + \varepsilon_{p,t}$$

The dependent variable, $ER_{p,t}$, is the mean annual excess return on a given portfolio p in year t. $R_{Mkt,t}$ is the return on the *Mkt* (Market) factor portfolio for the year. $R_{Rf,t}$ is the

risk-free rate in year *t*. $R_{SMB,t}$ is the return on the *SMB* (Small Minus Big) size factor portfolio. $R_{HML,t}$ is the return on the *HML* (High Minus Low) market-to-book factor portfolio. $R_{UMD,t}$ is the return on the momentum (Prior Year Return) portfolio. The *CI*-spread portfolio is computed by generating a hedge portfolio which purchases and holds stocks in the lowest two *CI* portfolios and sells (shorts) the stocks in the highest two *CI* portfolios. The returns for the *CI*-spread portfolio are computed by subtracting the returns from the highest two *CI*-portfolios from the returns of from the lowest two *CI*-portfolios and dividing the result by two. Returns are in annual percentage form. The variable *Shareholder rights (1/g)* is computed as the inverse of the Gompers, et. al. (2003) *g-score* which is an increasing function of anti-shareholder actions taken by firm management. * and ** represent significance at the 0.10 and 0.05 levels, respectively.

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