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Do Institutional Investors Exacerbate Managerial Myopia?

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Abstract

This study analyzes corporate expenditures for property, plant and equipment (PP&E) and research and development (R&D) for over 2,500 firms from 1987 to 1994. We document a positive relation between expenditures for PP&E and R&D and institutional share ownership. This relation is robust to a variety of specifications. We examine the link between firm-level expenditures and institutional ownership by using lead-lag structures and changes in institutional ownership. The data do not support the contention that institutional investors cause corporate managers to behave myopically. Indeed, the data indicate that the presence of institutional shareholders allows managers to invest more in PP&E and R&D than would individual shareholders.

Do Institutional Investors Exacerbate Managerial Myopia?

1. Introduction

This study is an empirical investigation of the relation between the shareholdings and trading activity of institutional investors, and expenditures for property, plant and equipment (PP&E) and research and development (R&D) by U.S. corporations. The motivation for this study derives from a large body of (mostly theoretical) literature that addresses the causes and consequences of "myopia" on the part of managers. A recurrent theme in this literature is that U.S. stock market investors are impatient and that this impatience is communicated to corporate managers through pressure on stock prices; the consequence of this pressure is that managers are discouraged from investing for the long-term and instead focus on projects with short-term payoffs. Furthermore, the natural impatience of individual shareholders is exacerbated by institutional investors who are judged on the basis of short-term performance. The net result is that publicly traded U.S. corporations "underinvest" relative to a value maximizing strategy and that the degree of underinvestment is increased by the trading activities of institutional investors. The term myopia has been widely adopted to describe this alleged short-term orientation. Though he does not endorse such a perspective, Friedman (1996, p.62) nicely summarizes this view.

> *One frequently expressed fear is that institutional investors, which compete among one another for the business of ultimate savers, systematically adopt a time horizon that is too short ... to reflect the underlying preferences that individuals would exhibit on their own.*

The implication of this perspective is that, in a cross-section of firms, there will be a negative correlation between expenditures with long-term payoffs and the level of institutional ownership.

One alternative, though less widely recognized, perspective is that institutions act as a wedge between impatient individual shareholders and corporate managers, thereby allowing corporate managers to focus on projects with longer investment horizons. A basis for such a view is that institutional investors have an information advantage relative to individual shareholders. As a consequence, they are more likely to withstand the temptation of rashly judging corporate managers on the basis of one quarter's earnings. This alternative perspective implies a positive correlation between the fraction of shares owned by institutional investors and corporate expenditures for projects with long-term payoffs.

We examine the relationship between expenditures for PP&E and R&D and institutional holdings for over 2,500 firms from 1987 to 1994. We employ PP&E and R&D expenditures in our tests because these are discretionary expenditures with uncertain payoffs several years in the future. Our primary tests involve time-series cross-sectional regressions of PP&E or R&D expenditures on various measures of institutional shareholdings and trading activity. We document a positive relation between PP&E and R&D expenditures and institutional ownership. This positive relationship persists after controlling for growth, leverage, profitability, industry effects, and calendar year effects and is robust to a variety of empirical specifications.

The positive relation between expenditures with long-term payoffs and institutional ownership could arise because institutional investors allow managers to

invest more or because institutional investors hold disproportionately larger stakes in firms with higher PP&E and R&D expenditures (i.e., there is a clientele effect). We investigate the direction of causality by regressing current period expenditures on lagged institutional ownership and lagged changes in institutional ownership. The positive relation persists.

Myopia-based arguments typically focus on the deleterious effects (i.e., underinvestment) of "excessive" trading by institutions. We address this issue in our tests by computing the portfolio turnover of *each institution* in each year. We form portfolio turnover quintiles based on this turnover measure and examine the relationship between firm-level expenditures and the level of share ownership (and the change in share ownership) of high turnover institutions. We detect a positive relation between both PP&E and R&D expenditures and the lagged level of share ownership of high turnover institutions and between PP&E and R&D expenditures and the lagged change in share ownership of high turnover institutions.

At a minimum, our results do not support the contention that the concentration of shares in the hands of institutional investors causes managers to restrict PP&E and R&D expenditures relative to the levels that would occur if shares were held directly by individual investors. A more generous interpretation of our results is that they support the view that delegated money management through institutional investors encourages corporate managers to adopt longer investment horizons.

In the next section, we briefly review the literature on the causes and consequences of corporate myopia. In section 3, we describe the data and our sample

3

construction. Empirical results follow in section 4. In section 5, we provide a discussion of our results and conclude.

2. Background

The origins of the concern that U.S. stock market investors are myopic can probably be traced to corporate managers who argue that stock market pressure for quarterly earnings improvement forces them to sacrifice the long-term welfare of the firms they manage [Dobrznyski (1986), Frey (1986) and Smale (1987)]. Their concerns on this matter cannot necessarily be dismissed. After all, corporate managers are the ultimate empiricists on this topic. Unfortunately, such assertions by corporate managers also can be (and have been) interpreted as self serving. That is, managers of poorly performing companies may argue that the poor short-term performance of their companies should be overlooked because they are managing for the "long-term" (Jensen (1986a)).

Economists have responded to this debate by developing models in which rational value-maximizing managers are induced to follow myopic corporate investment policies even though these policies result in positive net present value being sacrificed so as to boost current earnings. The authors of these models typically do not argue that shareholders are myopic, rather they show that under certain assumptions myopic investment policies can persist even in an economy with rational investors and rational managers [Stein (1988, 1989), Narayanan (1985, 1996), Thakor (1990), Bizjak, Brickley and Coles (1993), Bebchuk and Stole (1993), and Shleifer and Vishny (1990), among others].

4

Much of the public debate regarding the short-term pressures faced by corporate managers compares the U.S. stock market environment unfavorably with that of Japan and Germany [Porter (1992), Blinder (1992), Jacobs (1991) and Thurow (1993)]. In all three countries, financial institutions hold a large fraction of the equity of publicly traded companies. In Japan and Germany, institutional investors are largely commercial banks who appear to trade relatively infrequently. In contrast, in the U.S., institutional investors are predominately fund managers whose trading accounts for a large portion of trading volume [Schwartz and Shapiro (1992)].

One line of reasoning holds that fund mangers are judged on the basis of short-term performance. Fund managers, in turn, communicate this short-term horizon to corporate managers by means of their trading activity. Fund managers are portrayed as being ever ready to "dump" a stock, thereby beating down its price at the first hint of an earnings decline. Theory and empirical evidence can be marshaled to support such a scenario. For example, Trueman (1988) has developed a theoretical model in which he shows that if fund managers' compensation is related to investors' perception of his/her ability, the manager will trade more than is justified on the basis of his/her private information; Dow and Gorton (1997) have developed a model in which portfolio managers trade even though they have no reason to prefer one asset relative to another; and Shleifer and Vishny (1990) present a model in which the short horizons of investors can lead to short horizons of corporate managers. On the empirical front, Lakonishok, Shleifer, Thaler and Vishny (1991) find that pension fund managers "dump losers" at the end of the year.

Froot, Perold and Stein (1992) thoughtfully review the logic and data that underlie this line of reasoning and pinpoint conditions under which institutional investors can influence managerial investment behavior. Specifically, they show that three preconditions are required for managerial underinvestment: (a) managers care about current stock prices, (b) there is information asymmetry with respect to investment expenditures, and (c) stock prices are sensitive to current measures of profitability. They argue that performance evaluation horizons can result in institutional investors having shorter holding periods (or equivalently, higher turnover rates) than individual investors. Thus, the presence of institutional shareholders forces managers to maximize the current stock price by forgoing profitable investment projects.

An aspect of the connection between corporate managers and fund managers that is often overlooked (indeed, we have found no reference to this possibility at all) is that institutional investors may provide a wedge between the myopic tendencies of individual investors and the value maximizing strategies that corporate managers might wish to pursue. Most of the theoretical models that seek to explain the existence of under-investment begin with the assumption that investors are less well informed than are managers. In that circumstance, managers find it optimal to signal the value of the firm by cutting capital expenditures to pump up short-term earnings. Professional money managers are likely to be better informed than individuals (perhaps because of economies of scale in gathering information, unique information gathering abilities, or for other reasons). If we assume that money managers are better informed than are individual shareholders, they may be less likely to dump a stock in the face of poor short-term

earnings. This reduced pressure on stock prices translates, in turn, into reduced pressure on corporate managers to cut expenditures with long-term payoffs.

In the sections that follow, we empirically investigate whether expenditures for PP&E and R&D are negatively correlated with share ownership by institutional investors (as suggested by the "myopia" view) or positively correlated (as suggested by the "wedge" view).

3.   Data and sample construction

3.1   Data

Institutional investors are required to report their portfolio holdings to the SEC under section 13F of the Securities and Exchange Act of 1934 (Rule 13F-1). The institutional disclosure program under this section of the act requires all money managers with investment discretion over $100 million in equity securities to report their holdings. In the case of shared investment discretion, only one manager includes information regarding the securities held, thereby avoiding double counting (see Lemke and Lins (1987) for a description of the disclosure rules). Furthermore, the data are aggregated to the level of the money manager. So, for example, the holdings of all the funds under the Fidelity family umbrella are aggregated and reported under the parent (Fidelity Management and Research). These data are compiled by CDA/Spectrum and made available through Compact Disclosure.

We obtain quarterly institutional ownership data for all NYSE, Amex and Nasdaq firms from the third quarter of 1987 through the fourth quarter of 1994. The data contain a security identifier and information on the number of shares of each firm owned by *each*

institution. For each firm-year, we obtain from Compustat, total assets (Compustat data item 6), sales (Compustat data item 12), R&D expenditures (Compustat data item 46), PP&E expenditures (Compustat data item 128, also referred to as "capital expenditures"), total property, plant and equipment (Compustat data item 8), operating income (Compustat data item 13) and debt (Compustat data item 9).

3.2   Sample Construction

We impose two restrictions on the sample. First, we eliminate financial firms (firms with SIC codes from 6000 to 6999) because Compustat does not report PP&E and R&D expenditures by financial firms. Second, if a firm has missing R&D data for a year, we drop that firm-year observation from our sample.[1] Our final sample consists of approximately 2,500 firms from 1987 to 1994. Firms enter and exit our sample due to IPOs, mergers, takeovers and voluntary liquidations; consequently, our sample does not suffer from survivorship bias that may otherwise be systematically related to PP&E and R&D expenditures.

4.   Empirical Results

4.1   Descriptive Statistics

We begin by providing descriptive statistics on our dependent and independent variables. Following Fazzari, Hubbard and Peterson (1988) and Kaplan and Zingales (1997), we scale PP&E expenditures by lagged PP&E. We scale R&D expenditures by contemporaneous sales. Table 1 gives the distribution of expenditures for PP&E and

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[1] Many studies use the median R&D ratio for the industry when firm-level data are missing. Since we are interested in the cross-sectional variation, this is not a feasible alternative in our investigation.

R&D, institutional ownership, and the number of institutional shareholders. Since there is likely to be variation in both the cross-section and the time-series, we report the 25th percentile, the mean, and the 75th percentile separately for each year in the time-series.

Panels A and B show substantial cross-sectional variation in PP&E and R&D expenditures. For example, in 1994, the 25th percentile of the ratio of annual PP&E expenditures to the lagged total PP&E for the firms in our sample was 0.121, while the mean was 0.26 and the 75th percentile was 0.360. We do not detect a secular pattern in the time-series expenditures for PP&E; however, there does appear to be a small increase in the ratio of R&D to sales over time. The data in panels A and B indicate that expenditures for PP&E and R&D are economically quite large. For example, in 1994, the average book value of total PP&E for the firms in our sample was $473 million. Since the PP&E expenditure ratio was 0.267, the implied average PP&E expenditure for 1994 was $126 million. Similarly, the average sales for the firms in the sample in 1994 was $1,013 million, implying that the average R&D expenditure in the same year was $72.9 million.

Panel C gives the distribution of institutional ownership over time. There is substantial cross-sectional variation in institutional ownership. Perhaps more importantly, the data show a strong monotonic increasing trend in the time-series – –institutional ownership increases from an average of 27.6% in 1987 to 39.5% in 1994. This time-series trend is also evident in the number of institutional investors per firm (panel D) – – the average number of institutional shareholders per firm increases from 46.9 in 1987 to 70.7 in 1994. Because of this time-series trend, we employ calendar-year indicator variables in the regressions that follow.

4.2   Regression estimates

To investigate the relationship between corporate expenditures with long-term payoffs and institutional ownership, we estimate a number of time-series cross-sectional regressions with our measures of PP&E and R&D expenditures as dependent variables.

Our primary independent variables are institutional ownership and changes in institutional ownership. If we estimate a regression of expenditures for PP&E and R&D on the current year's institutional ownership, a negative coefficient on institutional ownership establishes a contemporaneous (negative) correlation between these variables. For example, a negative relationship between capital expenditures and institutional ownership could result from institutions causing managers to invest less in PP&E. Alternatively, such a relationship could also result from a clientele effect (i.e., because institutions weight their portfolios more heavily towards firms that invest less in PP&E). Inferences regarding causality cannot be drawn from such contemporaneous correlations.

To extract information on the causal relationships between expenditures with long-term payoffs and institutional ownership, we specify the regressions with a lagged time series structure. Specifically, we regress the measures of PP&E and R&D expenditures (in a given year) on institutional ownership and various control variables from the prior year (t-1). In specifications that use changes in institutional ownership, we measure changes in ownership from year t-2 to t-1. This time-series structure permits us to make stronger statements regarding causation for several reasons. First, the dependent variables are always "changes" because expenditures for both PP&E and R&D are flow items. Second, the independent variables are always specified with a lag, implying time-

series causality. Third, in addition to the level of institutional ownership, we also employ changes in institutional ownership as an independent variable. If lagged changes in institutional ownership are related to current period PP&E (R&D) expenditures, such a relationship is likely to be consistent with a causal relationship from institutional ownership to PP&E (R&D) expenditures rather than the other way around.

Various other independent variables are included to control for factors that might influence PP&E and R&D expenditures. We include the market-to-book ratio of the firm in the prior year as an independent variable to control for growth opportunities. We include the lagged leverage ratio (debt-to-assets) as an independent variable. Debt can be either negatively related to corporate expenditures if it causes underinvestment (see Myers (1977)) or positively related to corporate expenditures if it curtails overinvestment due to agency problems between managers and shareholders (see Jensen (1986b). Another possibility is that debt reduces overinvestment, but exacerbates underinvestment (Stulz (1990) and McConnell and Servaes (1995)). We control for lagged operating income (scaled by lagged assets) to proxy for the availability of internal capital resources. Following Morck, Shleifer and Vishny (1988), we control for industry variation in our dependent variables by including an indicator variable for each two-digit SIC code. Because there is also time-series variation in the data, we include indicator variables for each calendar year and estimate the regressions without an intercept. We do not explicitly control for firm size on the right hand side of the regression because our dependent variables are scaled by sales and total PP&E (not annual expenditures for PP&E).

11

The results of our basic regressions are reported in table 2. Columns 2 and 3 (4 and 5) report regressions with PP&E expenditures (R&D expenditures) as the dependent variable. The explanatory power of the regressions is fairly high; the adjusted-R^2's range from 0.70 to 0.54 and the coefficient estimates are reasonably stable across specifications. Each control variable is statistically significant with a p-value less than 0.01. The market to book ratio is positive in all four regression specifications, implying that firms with better investment opportunities spend more on both PP&E and R&D. This result is consistent with Lang, Ofek and Stulz (1996), who document a positive relationship between capital expenditures and Tobin's Q. Debt is negatively related to expenditures for PP&E and R&D, suggesting that, at the aggregate level, the negative effects of debt overhang dominate the positive effects due to the curtailment of overinvestment. Consistent with Fazzari, Hubbard and Peterson (1988), Whited (1992) and Lang, Ofek and Stulz (1996), lagged operating income is positively related to current period PP&E expenditures. Somewhat surprisingly, however, lagged operating income is negatively related to the current period's R&D expenditures. Bhagat and Welch (1995) detect a similar relationship and are unable to offer a satisfactory explanation for this relationship (and neither can we). In general, the sign and magnitude of the control variables are consistent with the existing empirical literature.

Lagged institutional ownership is positively related to both PP&E and R&D expenditures. The coefficient estimate for institutional ownership in the PP&E expenditure regression is 0.006. Since the average investment in PPE in 1994 was $473 million, this coefficient implies that a one percentage point increase in institutional ownership results in an increase in expenditure for PP&E of $2.8 million. Similarly, the

coefficient estimate for institutional ownership in the R&D regression is 0.01 which implies that a one percentage point increase in institutional ownership results in an incremental R&D expenditure of $10.1 million. The coefficient estimates are statistically significant (p-values<0.01). Of course, economic significance lies in the eye of the beholder. From our perspective at least, the relationship is economically consequential as well. The results are inconsistent with the argument that institutional investors constrain managements' ability to invest in projects with deferred payoffs.

Despite the lag-structure employed in the regressions, it is still possible that institutions (disproportionately) tilt their portfolios towards firms that subsequently invest more in PP&E and R&D. In other words, a clientele effect with a one period lag could produce empirical results like those in columns 2 and 4 of table 2. To further investigate the relationship between institutional ownership and expenditures for PP&E and R&D, we estimate models with the change in institutional ownership from t-2 to t-1 as an independent variable. As before, we use control variables for investment opportunities, leverage, operating income, industry effects and calendar-year effects. The results of these regressions are reported in columns 3 (for PP&E) and 5 (for R&D) of table 2.

The sign and significance of the control variables are unaffected. The coefficient of change in institutional ownership from t-2 to t-1 is positively and significantly related to current PP&E expenditures, suggesting that the causal relation in our regressions runs from institutional ownership to PP&E expenditures. The change in institutional ownership is also positively related to R&D expenditures but the p-value is only 0.10.

The regressions suggest a causal relationship between institutional ownership and PP&E and R&D expenditures. Because our computation of institutional ownership (and

changes in institutional ownership) combines heterogeneous institutions, it is possible that this pooling masks some of the relationship. In fact, our discussion in section 2 implies that managerial-myopia is more likely to result from high turnover institutions. Thus, we now estimate the regressions conditional on the portfolio turnover of the institutions.

4.3   Institutional portfolio turnover

We provide evidence on the cross-sectional variation in the trading of institutions by describing their portfolio turnover. Recall that the novelty of our data is that we possess information on the ownership of *each institution* in every quarter. With these data, we calculate the portfolio turnover of each institution j, during the fourth quarter of each year as

$$PortTurn_j = \frac{1}{N} \sum_{i=1}^{N} \left(\frac{|Shr_t P_t - Shr_{t-1} P_{t-1}|}{Shr_{t-1} P_{t-1}} \right)$$

where Shr_t is the number of shares owned by institution j in firm i at time t, P_t is the price of the stock at time t, and N is the number of firms in the institution's portfolio.[2]

We rank institutions from highest to lowest turnover each year based on their turnover in the fourth quarter. We then classify them into quintiles. Because we form quintiles each year, institutions can change quintiles each year. For example, an institution can fall into quintile 1 in 1987 and quintile 3 in 1988. This rebalancing in quintile formation is important because new institutions enter the sample over time.

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[2] We multiply the number of shares by prices to avoid problems associated with stock splits. Notice that the turnover measure can be positive even when the institution did not buy or sell any shares because of price movements from t-1 to t. To mitigate this problem, we employ the average of the beginning- and end-of-quarter prices. We further address the robustness of the turnover measure in section 4.5.

In table 3, we report the average portfolio turnover and the average fraction of shares owned by institutions in each turnover quintile for each year. The first number in each cell is the average portfolio turnover of the institutions in that quintile. The average quarterly portfolio turnover of the highest turnover quintile in 1987 was 0.05, implying a holding period of approximately 5 years. In general, the average turnover statistics in table 3 appear to be quite low. However, since institutional ownership data reported under the aegis of Rule 13F are aggregated at the fund family level, institution-specific turnover figures are uniformly dampened. Therefore, the average turnover of each quintile is also biased downward. It is unlikely that this bias affects the results, however, because we are concerned with the distribution of the turnover measure across all institutions, rather than its numerical value. This distribution suggests that there is considerable heterogeneity in institutional turnover across quintiles.

The second number in each cell (in square brackets) represents the average ownership by institutions in that quintile. This figure is calculated by summing the fraction of shares owned by institutions in that quintile and then averaging across firms. The average ownership of institutions in a quintile decreases monotonically from low to high turnover quintiles. In other words, low turnover institutions own proportionately more of the firms in our sample than high turnover institutions. This relationship is present in every year.

The third number in each cell (in parentheses) is the average number of institutions in a quintile that own equity in the firms in the sample. This number is calculated by counting the number of institutions (in that quintile) that own shares in each company and then averaging the count across all companies. The number of institutions

owning stock in a quintile also decreases monotonically across quintiles. For example, in 1987 approximately 20 institutions were in the lowest quintile and owned a total of 14% of the firms in the sample. Thus, the average stake of each institution in quintile 1 was 0.7%. In contrast, almost two institutions were in the highest quintile and owned a total of 1.1% of the stocks in the sample, implying an average stake of 0.55%.

4.4   Institutional portfolio turnover and long-term expenditures

We now use the portfolio turnover data to assess whether high turnover institutions "cause" managers to invest less in PP&E and R&D than they would otherwise. To do so, we regress the current year's PP&E and R&D expenditures on the lagged institutional ownership and lagged changes in institutional ownership for each quintile. If institutions cause managers to behave myopically (i.e., invest less in PP&E and R&D), we expect negative coefficients on ownership and changes in ownership of the high turnover quintiles (i.e., quintiles 4 and 5).

As before, we control for industry effects, calendar year effects, investment opportunities, leverage, and operating income. For each quintile, the coefficients on our control variables are identical in sign and significance and similar in magnitude to those reported in table 2.

The coefficients of the fraction of shares owned by the low turnover quintiles (quintiles 1 and 2) are not significant in any of the four regressions. In contrast, the coefficients for the high turnover quintiles (4 and 5) are positive and significant in all four regressions. These results suggest that, if anything, high turnover institutions allow

firms to invest greater amounts in PP&E and R&D than would direct ownership by individuals.

As before, we attempt to further address the question of causality by estimating regressions with the change in institutional ownership for each quintile (measured from t-2 to t-1) as an independent variable. The results are given in columns 3 and 5. The change in ownership of each quintile is positively related to expenditures for PP&E, suggesting a causal relationship between expenditures for PP&E and institutional ownership. The evidence from the R&D regressions is weaker; the change in ownership of quintile 1 is positively related to R&D expenditures (p-value = 0.00), but the change in ownership in the other four quintiles is not statistically significant (p-values > 0.10).

The evidence does not support the contention that the presence of institutional shareholders causes managers to curtail investment in PP&E and R&D. A more generous interpretation is that institutional investors allow managers to adopt longer investment horizons than would individual shareholders.

4.5   Specification issues

We perform a battery of checks to assess the robustness of our results. Our purpose is to determine whether the results are sensitive to the manner in which we construct the dependent and independent variables. We discuss the results below but do not report them in separate tables.

First, we re-estimate each regression by scaling expenditures for PP&E by total assets and by total sales. The sign and significance of the coefficients are unchanged.

Second, we scale R&D expenditures by total assets. Our results with this regression are stronger in that the p-value for the change in total institutional ownership in our table 2 regression declines from 0.10 to 0.01. Other results are qualitatively unchanged.

Third, we control for industry effects using the industry median rather than SIC code indicator variables. Specifically, we compute the median value of the R&D to sales ratio and the PP&E expenditure ratio for all firms with the same 3-digit SIC code. This median value is then subtracted from each firm's ratio. The explanatory power of regressions with this industry adjustment is lower than regressions in which SIC code indicator variables are used to account for industry effects; the adjusted-R^2 declines to approximately 0.20 for the capital expenditure regressions and 0.14 for the R&D regressions. However, the sign and statistical significance of our institutional ownership variables are unchanged.

Fourth, we explicitly control for firm size in the regressions by including the logarithm of total assets as a dependent variable. The inclusion does not affect the sign or significance of the institutional ownership coefficients.[3]

Finally, we also estimate (but do not report) the table 4 regressions based on a turnover measure which normalizes the share ownership of an institution with the number of shares outstanding (rather than average prices). The sign and magnitude of our institutional ownership coefficients remain unchanged.

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[3] Note that our dependent variables are scaled by sales and total PP&E and therefore implicitly control for size.

18

5. Commentary

With a sample of approximately 2,500 firms from 1987 to 1994, we show that firm-level expenditures for PP&E and R&D are positively related to the share holdings and trading activity of institutional investors in those firms. Our results cast doubt on the view that institutions cause corporate managers to behave myopically. They are consistent with the perspective that institutional investors act as a wedge between firms and impatient investors. One of the consequences of this wedge is that it allows managers to have longer investment horizons than they would otherwise.

This investigation was undertaken in large part in response to pundits and authors who lament that the structure of share ownership places U.S. firms at a competitive disadvantage relative to certain other countries, especially Japan and Germany. According to these lamentations, Japanese and German firms are endowed with patient investors who allow corporate managers to take a long-term view. In contrast, U.S. stock market investors are alleged to be impatient. The patience of Japanese and German investors is alleged to derive from the structure of share ownership in those countries. In both cases, stock ownership is concentrated in commercial banks who are also permitted to play a major role in the governance of the companies in which they hold stakes. Not only is the aggregate ownership of these banks large, but their individual stakes are also large. By virtue of these large "insider" positions, banks are able to participate in the management process and, thereby, share in the value created by sharing management's long-term investment horizon. In contrast, in the U.S., institutional investors are largely fund managers who individually typically own less than 1% of the firms stock. The fund

managers are alleged to be judged on the basis of quarterly performance which causes them, in turn, to churn their portfolios in a constant search for next quarter's winners. The consequence, so the lamentation goes, is that in the U.S., institutional investors exacerbate the natural impatience of individual investors; the end result would be that corporate managers are forced to adopt a short-term horizon in which projects with long-term payoffs are sacrificed for the sake of next quarter's earnings. The implication is that companies in which institutional investors own a substantial fraction of shares are induced to invest less in projects with long-term payoffs than companies that are not burdened with a concentration of institutional investors among their share holders. This view is summarized by Thurow (1992, p.136).

> *Today they (pension funds and mutual funds) own 60 to 70 percent of the shares of most publicly listed companies. As a result, the United States has organized a system that is the exact opposite of that of Germany and Japan. Those countries have organized a system (business groups) to minimize the influence and power of impatient shareholders, while the United States has organized a system (fund dominance) to maximize the influence of impatient shareholders.*

The results of our empirical analysis do not support this contention. Rather, we find that expenditures for PP&E and R&D are higher in firms with a larger fraction of shares held by institutional investors.

Several caveats are in order when interpreting our results. First, we do not address the question of whether firms systematically "underinvest" relative to a value maximizing strategy. Indeed, Bebchuk and Stole (1993) show that myopia can result in both under and overinvestment. It could be that all U.S. firms underinvest, but firms which have a larger fraction of shares held by institutional investors underinvest to a lesser degree. Or, it could be that all firms overinvest and firms which have a larger

fraction of shares held by institutional investors overinvest more. Our tests do not make that distinction. We can only conclude that firms which have a larger fraction of shares held by institutional investors invest more than do firms with a smaller fraction of shares held by institutional investors.[4]

Second, we do not address the question of whether U.S. firms systematically underinvest relative to firms in other parts of the world. That question is, however, examined carefully by Hall and Weinstein (1996) and Lee (1997). These authors find no evidence that managers of U.S. firms are myopic, relative to managers of Japanese and German firms. An integral component to the argument that the structure of financial markets and corporate governance in the U.S. induces myopia is the existence of an active takeover market that is alleged to threaten management's tenure. Indeed, much of the theoretical literature exploring the causes and consequences of myopia is motivated by the practitioner inspired notion that hostile takeovers cause managers to be myopic. It is true that unfriendly takeovers occur less frequently in Japan and Germany, but the near absence of these events does not mean that corporate managers are unfettered by the need to demonstrate good earnings performance. Indeed, Kaplan (1994), Kaplan and Minton (1994), and Kang and Shivdasani (1995) report that alternative mechanisms of control, such as management turnover and board appointments, are as sensitive to firm performance in Japan as they are in the U.S.

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[4] The notion of under or overinvestment requires a benchmark of "optimal" investment. Some authors compare firm-level expenditures to industry means and medians as a way of assessing the optimality of expenditures. For example, Servaes (1994), uses these industry benchmarks to determine if takeover targets over or underinvest prior to a takeover. To the extent that our regressions also adjust for industry effects, some readers may choose to interpret our results as departures from optimal investment.

Third, we can be accused of examining the "easiest" investment categories to analyze - - PP&E and R&D - - while ignoring those in which the problem of underinvestment is likely to be most severe. Froot et al (1992) argue that the type of underinvestment that can be engendered by myopic investors is more likely to manifest itself in difficult to observe investments such as development of human resources and the costs incurred in the development of customer loyalty. To the extent that that argument is true, we are missing the target. We can, therefore, only claim that we can find no evidence that institutional investors exacerbate underinvestment in PP&E and R&D which may very well be different from the conclusion that institutional investors do not exacerbate underinvestment in projects with long term payoffs.

With these caveats in mind, the data do not indicate that institutional investors cause managers to underinvest. Rather, to the contrary, institutional shareholders appear to allow corporate managers to invest more in projects with long-term payoffs.

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Table 1

Sample Descriptive Statistics

The table presents descriptive statistics of the sample by year. Panel A presents the distribution of PP&E expenditures (Compustat item 128) divided by the prior end-of-year total PP&E (Compustat item 8). Panel B presents the distribution of research and development (R&D) expenditures (Compustat item 46) divided by current year sales (Compustat item 12). Panels C and D present data on the equity ownership by institutions. N is the number of firms.

	1987	1988	1989	1990	1991	1992	1993	1994
Panel A: PP&E Expenditures ($Capx_t/PPE_{t-1}$)								
25%	0.117	0.119	0.126	0.121	0.099	0.106	0.111	0.121
Mean	0.252	0.246	0.253	0.248	0.221	0.241	0.252	0.267
75%	0.331	0.321	0.328	0.315	0.285	0.309	0.336	0.360
N	2351	2251	2228	2306	2411	2623	2580	2537
Panel B: R&D Expenditures ($R\&D_t/Sales_t$)								
25%	0.013	0.013	0.012	0.013	0.013	0.015	0.015	0.015
Mean	0.060	0.059	0.063	0.065	0.068	0.076	0.075	0.072
75%	0.078	0.076	0.080	0.085	0.090	0.098	0.093	0.091
N	1111	1071	1060	1093	1149	1268	1238	1182
Panel C: Institutional Ownership (%)								
25%	11.0	11.3	12.5	12.6	14.6	13.8	16.0	17.6
Mean	27.6	29.1	30.3	31.1	33.4	32.2	36.1	39.5
75%	42.2	44.6	45.7	48.1	50.4	48.4	54.4	60.1
N	2546	2410	2378	2468	2583	2847	2773	2699
Panel D: Number of Institutional Shareholders								
25%	9	10	11	11	12	11	15	15
Mean	46.9	51.6	55	54	56.4	53.3	63.6	70.7
75%	51	58	66	65	70	65	86	100
N	2558	2423	2393	2477	2600	2866	2798	2721

Table 2

Regression Estimates of Expenditures for PP&E and R&D on Institutional Ownership

This table presents estimates of regressions of PP&E and R&D expenditures on control variables, the level of institutional ownership and changes in institutional ownership. All regressions are estimated without an intercept, and with indicator variables for two digit SIC codes and calendar years. The coefficients of the industry and calendar-year indicator variables are not reported. P-values are in parentheses below the parameter estimates.

	PP&E Expenditures $(Capx_t/PPE_{t-1})$		R&D Expenditures $(R\&D_t/Sales_t)$	
Market to Book Ratio$_{t-1}$	0.020 (0.00)	0.023 (0.00)	0.014 (0.00)	0.015 (0.00)
Debt$_{t-1}$/Assets$_{t-1}$	-0.174 (0.00)	-0.166 (0.00)	-0.094 (0.00)	-0.090 (0.00)
Operating Income$_{t-1}$ / Assets$_{t-1}$	0.233 (0.00)	0.210 (0.00)	-0.282 (0.00)	-0.268 (0.00)
Total Institutional Ownership$_{t-1}$	0.006 (0.00)	-	0.010 (0.01)	-
Δ Total Institutional Ownership$_{t-1,t-2}$	-	0.185 (0.00)	-	0.012 (0.10)
N	15866	12850	7491	6057
Adjusted R^2	0.70	0.70	0.54	0.55

Table 3

Institutional Turnover and Ownership

This table presents statistics on the portfolio turnover and the equity ownership of institutional investors. Portfolio turnover quintiles are formed at the end of each year by calculating the portfolio turnover of each institution during the fourth quarter. The first number in each cell is the average turnover of the institutions in the quintile. The number in square brackets is the average ownership of institutions in that quintile. This number is calculated by summing the equity ownership by institutions in that quintile and then averaging across firms. The numbers in parentheses are the average number of institutions in a quintile that own equity in the sample firms. This number is calculated by counting the number of institutions (in that portfolio turnover quintile) that own shares in each company and then averaging the count across all companies.

	Turnover Quintile 1 (Lowest)	Turnover Quintile 2	Turnover Quintile 3	Turnover Quintile 4	Turnover Quintile 5 (Highest)
1987	0.0001	0.0006	0.0014	0.0034	0.0548
	[14.04]	[6.51]	[3.83]	[2.43]	[1.10]
	(20.39)	(13.59)	(6.53)	(4.43)	(1.94)
1988	0.0001	0.0006	0.0014	0.0029	0.2042
	[15.37]	[6.82]	[3.79]	[2.27]	[1.10]
	(23.37)	(14.33)	(7.50)	(4.32)	(2.06)
1989	0.0001	0.0006	0.0013	0.0031	0.0686
	[14.78]	[7.65]	[4.11]	[2.65]	[1.45]
	(23.06)	(15.59)	(9.09)	(4.73)	(2.51)
1990	0.0001	0.0005	0.0014	0.0030	0.0266
	[16.70]	[7.10]	[3.68]	[2.30]	[1.46]
	(26.29)	(14.05)	(6.92)	(4.36)	(2.35)
1991	0.0001	0.0006	0.0014	0.0032	0.0286
	[16.66]	[8.58]	[4.12]	[2.60]	[1.73]
	(25.54)	(15.61)	(8.30)	(4.42)	(2.56)
1992	0.0001	0.0006	0.0014	0.0031	0.0242
	[16.95]	[7.46]	[6.64]	[2.67]	[1.78]
	(26.00)	(14.05)	(6.57)	(4.25)	(2.43)
1993	0.0001	0.0006	0.0015	0.0033	0.0297
	[20.56]	[7.79]	[3.98]	[2.54]	[1.58]
	(33.18)	(14.52)	(8.43)	(4.80)	(2.68)
1994	0.0001	0.0007	0.0017	0.0037	0.0337
	[23.16]	[8.93]	[3.70]	[2.71]	[1.33]
	(39.22)	(15.70)	(8.43)	(4.79)	(2.63)

Table 4

Regression Estimates of Expenditures for PP&E and R&D on Ownership of Turnover Quintiles

This table presents estimates of R&D and PP&E expenditures on control variables, the ownership of turnover quintiles and changes in ownership of turnover quintiles. Turnover quintiles are formed at the end of each year by calculating the turnover of each institution relative to the previous quarter. All regressions are estimated without an intercept, and with indicator variables for two digit SIC codes and calendar years. The coefficients of the industry and calendar-year indicator variables are not reported. P-values are in parentheses below the regression coefficients.

	PP&E Expenditures ($Capx_t/PPE_{t-1}$)		R&D Expenditures ($R\&D_t/Sales_t$)	
Market to Book Ratio$_{t-1}$	0.019	0.023	0.013	0.015
	(0.00)	(0.00)	(0.00)	(0.00)
Debt$_{t-1}$/Assets$_{t-1}$	-0.177	-0.166	-0.094	-0.090
	(0.00)	(0.00)	(0.00)	(0.00)
Operating Income$_{t-1}$/Assets$_{t-1}$	0.235	0.211	-0.282	-0.269
	(0.00)	(0.00)	(0.00)	(0.00)
Ownership of Quintile 1$_{t-1}$	-0.105	-	-0.006	-
	(0.80)		(0.47)	
Ownership of Quintile 2$_{t-1}$	-0.020	-	0.003	-
	(0.27)		(0.80)	
Ownership of Quintile 3$_{t-1}$	0.046	-	-0.015	-
	(0.05)		(0.45)	
Ownership of Quintile 4$_{t-1}$	0.317	-	0.106	-
	(0.00)		(0.00)	
Ownership of Quintile 5$_{t-1}$	0.307	-	0.099	-
	(0.00)		(0.00)	
Δ Ownership of Quintile 1$_{t-1,t-2}$	-	0.158	-	0.043
		(0.00)		(0.00)
Δ Ownership of Quintile 2$_{t-1,t-2}$	-	0.163	-	0.004
		(0.00)		(0.10)
Δ Ownership of Quintile 3$_{t-1,t-2}$	-	0.167	-	-0.001
		(0.00)		(0.96)
Δ Ownership of Quintile 4$_{t-1,t-2}$	-	0.207	-	-0.015
		(0.00)		(0.54)
Δ Ownership of Quintile 5$_{t-1,t-2}$	-	0.128	-	-0.033
		(0.00)		(0.30)
N	15901	12830	7514	6083
Adjusted R^2	0.70	0.70	0.54	0.55

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