

Which Theories do Markets Perform?

Market Response to Shareholder Value Innovations^{*}

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Abstract

Since the 1980s, America's largest firms have embraced innovations advocated by agency theorists in economics. These were expected to improve financial performance and attract investors. Yet studies show that investors have responded unevenly. This episode gives us the opportunity to test a theory of why certain economic theories become self-fulfilling, causing market participants to perform them by rendering their predictions true. We look at which agency-theory innovations increased institutional investor holdings and share price among 736 large firms between 1980 and 2005. We argue that market participants will favor innovations that the economic theory constructs as most directly and effectively producing the ends that the theory constructs for them. The strategic and compensation innovations that agency theory linked closely to share value, which it constructed as investors' prime goal, were indeed more attractive to professional investors than highly touted governance reforms, which the theory linked less directly to share value. Yet investor relations innovations theorized to function like governance reforms, by improving monitoring, also drew great interest. Many agency theory prescriptions spread regardless of their capacity to attract investor interest, suggesting that managers may perform a compelling theory even if investors do not.

In the 1970s, agency theorists challenged management in America's leading firms, arguing that corporate practices were not designed to serve shareholders and had contributed to the stagflation that became the moniker for the decade. To better serve the interests of shareholders, agency theorists proposed, companies should reform business strategy, compensation, governance, and investor relations. These changes, many suggested, would attract investment and drive up share price. In the managerial age of the 1950s and 1960s, executives had diversified to create huge fiefdoms. They had been paid based on the size of the firms they built. They kept tight reins on boards and rebuffed market intermediaries seeking to monitor them. Agency theorists proposed that firms should focus on their core businesses, compensate executives for increasing share value rather than firm size, support independent boards to oversee management, and encourage external monitoring by providing more information to investors and analysts. Institutional investors became champions of the reforms, encouraging firms to adopt them through direct appeals and shareholder proposals.

Companies that made these changes should have generated interest from professional fund managers and experienced improvements in stock price, for even net of current earnings, a company that had embraced agency theory prescriptions could expect to see improved earnings and share price growth in the future. However, studies provide mixed evidence on the reactions of markets to these innovations. There is some evidence that investors favor stock options, long term incentives, share buy-backs, and dediversification (Certo et al. 2003; Westphal and Zajac 1998; Zajac and Westphal 2004; Zuckerman and Merton 2004) but some evidence that they are indifferent to stock options, executive equity holding, share buy-backs, and corporate governance reforms (Anderson and Reeb 2004; Dalton et al. 2003; Grullon and Ikenberry 2000; Pfeffer and Sutton, p. 219). The studies to date look at one or two innovations at a time and so they do not

necessarily offer the last word on what investors favored. We look at a range of innovations inspired by agency theory to test predictions about how fund managers and market participants respond to different sorts of innovations.

We ask how economic theories affect markets. Robert Merton (1948) argued that theories can become self-fulfilling when agents believe in them and act as if they are true. If investors believe the theory that diversification lowers market valuation they can render the theory true. Meyer and Rowan (1977) argue, along these lines, that widely accepted management innovations can become self-reinforcing as they draw capital, talent, and customers to firms. Callon (1998) and MacKenzie (2004; 2003) have argued that economic theories are “performative” when they induce actors to behave as if they are true. In the case of corporate innovations backed by economic theory, all three of these approaches suggest that innovations can improve corporate performance irrespective of their technical capacity to improve operations or increase profits. Innovations may make firms succeed because market participants believe they will. To the extent that these ideas have been tested, they have mostly been explored through positive cases. We outline a constructionist theory of how market actors will respond to innovations, sketching predictions for which types they will “perform,” and test the theory looking at effects of different prescriptions offered by agency theory.

Our theory concerns the social construction of group interest. We argue that market participants will be attentive to the construction of their own interests by theory, and to the construction of mechanisms to achieve their interests. In the case at hand, agency theory succeeded in reconstructing the interest of investors, bringing share value back to the fore and suppressing other interests (in expansion, stability). The theory, further, depicted multiple mechanisms by which firms could improve share value, some more proximate to that outcome

than others. We suggest that the innovations that agency theory itself posited as providing the most direct mechanisms for increasing share value will be most attractive to investors, namely compensation and strategic innovations. By contrast, much discussed corporate governance and investor relations innovations were to improve monitoring of executives, and thus the theory suggested they would less directly and effectively to share value. We predict that institutional investors, and the market in general, will perform their expected reactions to corporate innovations by showing more support for compensation and strategic innovations.

Executives and corporate boards performed the roles agency assigned to them, in that they adopted most of agency theory's prescriptions. But for which of the theory's prescriptions did professional investors perform their roles, of buying more shares and increasing share price? We compare the effects of new strategic, compensation, corporate governance, and investor relations practices on institutional shareholding and stock price (Tobin's q) among 736 publicly traded firms between 1980 and 2005. We examine institutional shareholding because fund managers are well informed about corporate practice and because they encouraged firms to adopt these innovations. We use pooled cross sectional time series models to analyze annual data, with fixed firm and year effects, rather than modeling stock price fluctuations in the wake of corporate press releases. This allows us to explore a range of innovations at once, including those not subject to press releases, and to assess which innovations sustain effects on institutional holdings and stock price over the course of a year. Institutional holdings capture the enthusiasm of professional fund managers for a stock, and stock price captures the enthusiasm of the market overall, which came to be dominated by those fund managers. They controlled 70% of shares in the average firm in our sample by 2005, and thus their preferences were quite consequential for firms. What the experts favored drove stock price.

HOW ECONOMIC THEORIES SHAPE MARKET BEHAVIOR

Sociologists have been increasingly interested in the role of economics in shaping markets. In psychology, sociology, political science, and anthropology, researchers search for predictive theories and worry about effects of the experimenter, interviewer, pollster, or ethnographer on subjects (Mayo 1949). Economists can be moral philosophers as well as social scientists (Smith 1970 [1776]) and they theorize not only why people behave as they do, but how people should behave. Many leading economists aspire to cause people to perform their theories.

While Merton's theory of self-fulfilling prophesy, institutional theory, and performativity theory have all described how economic theories can create market realities, most studies have selected successful cases. They have, thus, not spelled out what it is about a theory that causes people to perform their roles, apart from suggesting that people follow the lead of others. As Mark Zbaracki (1998) discovered for the theory of total quality management, firms put certain aspects of the theory into effect and neglected others. We test a theory of which aspects of economic theories market participants will perform.

As noted, several sociological camps have explored how theories of the market make markets. In Robert K. Merton's (1948; 1968) terms, prophecies (ranging from rumors to formal theories) become self-fulfilling when individuals behave as if they are true. Merton offers the example of a depression-era bank run, on "Black Wednesday," when the rumor of bank insolvency became self-fulfilling. A solvent bank never has enough cash on hand to survive a bank run, and fulfills the rumor of insolvency the moment it runs out. Institutionalists have brought a version of this argument to the study of the organization, suggesting that firms that adopt the latest prescriptions from management theorists draw resources from investors, customers, and the labor force, and that this can make new theories of management appear to be

true (DiMaggio and Powell 1983; Meyer and Rowan 1977). A firm that embraces institutionalized practices prospers not necessarily because those practices increase profits, for instance, but because customers, workers, and investors believe that they will do so and respond by buying the firm's products, going to work for the firm, and providing capital to the firm. Meyer and Rowan (1977, p.350) argue that with "the rise of professional economics," managers have turned to economists, economic theories, and econometric models for "rational accountings" of corporate strategies to present to "investors, stockholders, and superiors" in the hope of winning legitimacy and the resources they need to flourish. Strang and Meyer (1993) describe theory as the key to the success of an innovation, suggesting that managerial innovations that best take hold are those that have a compelling theory explaining their utility that convinces both managers and market participants. In Ferraro, Pfeffer, and Sutton's (2005, p. 32) words, "theories can 'win' in the marketplace for ideas, independent of their empirical validity, to the extent their assumptions and language become taken for granted and normatively valued, therefore creating conditions that make them come 'true.'"

Michel Callon's theory of "performativity (1998) suggests that market actors of all sorts perform their roles as set out by theories they believe in. In Callon's (1998, p. 30) terms, the economy "is embedded not in society but in economics" – in economic theory. Building on Callon, Donald MacKenzie and Yuval Millo (2003) studied the effect of the theory of option pricing developed by Fischer Black, Myron Scholes, and Robert C. Merton (son of Robert K.) in 1973. (Merton and Scholes won the Nobel in economics for the theory in 1997.) After the theory was published, traders began to value options as if the theory were valid, making it valid in practice. A theory had outlined how option pricing should work, and options traders now put the theory into practice. Callon, MacKenzie, and colleagues argue that markets may conform to

economic theories because actors perform them (see MacKenzie, Muneisa, and Siu 2007). Other studies have found that knowledge of economic theories changes behavior in other realms. Thus, for instance, economics courses lead undergraduates to behave less cooperatively, and more in line with precepts of economic theory (see Frank, Gilovich, and Regan 1993).

Institutional theory posits that firms that follow the prescriptions of economic theories will attract resources from the environment, but institutionalists have rarely studied this (for reviews see Deephouse and Suchman 2008; Galaskiewicz 1985; Suchman 1995). A number of recent studies have shown that firms that conform to management norms attract investors. Ezra Zuckerman (1999, p. 1399; 2000) suggests that organizations that don't meet "institutionalized expectations ... are viewed as illegitimate" and that this "induces organizations to adopt accepted procedures." When a firm is not followed by securities analysts who specialize in the industry, due to confusion about its profile, its stock price is depressed. Others have found that stock options and executive equity draw capital in initial public offerings (IPOs) (Dalton et al. 2003). Biotechs draw more capital in IPOs when they follow conventions of downstream connections to pharmaceutical companies and experienced Chief Scientific Officers (Higgins and Gulati 2006), and IPOs generally draw more capital when their top managers conform to norms of age, education, and industry and management experience (Cohen and Dean 2005). Westphal and Zajac (1998; 2004) find that two agency theory prescriptions attract investors; long-term executive incentive plans draw investment, and share buy-backs draw increasing investment as the practice spreads. These studies suggest that certain management practices can draw resources from capital markets, but they have not developed and tested a theory of why market participants perform theories. We develop a theory of which sorts of innovations will draw the interest of market participants, and then examine the effects of a set of related innovations.

Performing Economic Theory: The Construction of Ends and Means

We argue that economic theories define both the interests of market participants and the mechanisms by which those interests can be achieved. When a theory takes hold, the ends and means it defines will influence which parts of the theory market participants perform. They may also influence which theories take hold, but that is a question for another day. There is little question that agency theory did take hold.

Theories construct the interests of different market participants by identifying their goals. Thus portfolio theory in finance, as it was applied to the firm, defined the goals of the investor as including long-term corporate expansion and stability, and one mechanism for achieving that goal as diversification (Fligstein 1990). Agency theory (Jensen and Meckling 1976) very explicitly redefined the interests of the investor as centering on share value, challenging other goals that investors held high in the 1970s, some under the banner of portfolio theory. Goals such as corporate expansion and even stability should be immaterial to investors according to agency theorists. Agency theory constructed the interests of executives as revolving around expansion and stability, and as at odds with investor interests. Investors should endeavor to ensure that executives pursue the goal of shareholder value single-mindedly.

Economic theories also describe means to the ends they establish for actors, or mechanisms by which certain practices lead to certain goals. They define mechanisms as more or less direct and effective. We suggest that market participants are most likely to perform theories, in this case by investing in firms, that describe direct and effective mechanisms for achieving the goals they define for those participants. Agency theory itself suggested which of its innovations would most directly affect share value. According to the theory, strategic innovations such as dediversification are designed to increase profits directly, and compensation

innovations such as stock options are designed to increase the incentive to executives to raise share value. Both mechanisms are quite direct. By contrast, investor relations and governance innovations will improve monitoring of executives, and thus affect share price indirectly by sanctioning self-dealing. If institutional investors pay attention to the theory, or even to the Cliff Notes version that appeared in Harvard Business Review, we expect that they are particularly drawn by strategic and compensation innovations.

Our theory can be extended to other market participants, from labor to customers to the local community, based on the interests (promotion opportunities for labor), and mechanisms for achieving those interests (internal labor markets), that other economic theories set out (human capital theory). We would expect that, when they are cognizant of relevant theories, workers, customers, and politicians perform the means theorized to favor the goals they set out.

Next we turn to agency theory's four broad prescriptions for corporations. We review research suggesting that institutional investors actively promoted the changes agency theorists advocated, and that firms embraced innovations from each of the four broad areas. In the case of the Black-Scholes-Merton theory, option traders were attracted to it because it gave them a way to price options, whether as buyers or sellers. Agency theory should have similar effects on buyers and sellers of stock, in that it suggests a rubric by which they can evaluate the future prospects of a firm. Before turning to the data, we revisit predictions about which of these innovations will draw resources from capital markets.

THE RISE OF AGENCY THEORY

The economic stagnation of the 1970s stimulated the business community to search for a remedy. Agency theorists offered a pithy diagnosis and set of remedies. Jensen and Meckling's (1976) seminal article suggested that the interests of principals (shareholders) and their agents

(executives) were out of synch. Executives acted to serve their own interests, building large diversified firms to minimize the risk of failure and to raise their own salaries, rather than focused firms that would maximize profits, and turning away from efforts by boards and investors to monitor them (Fama 1980; Fama and Jensen 1983; 1985; Jensen and Meckling 1976).

To bring corporate behavior into line with shareholder interests, agency theorists proposed changes to corporate strategy; dediversification to make use of the management team's industry expertise, and debt financing of expansion to discipline executives inclined to use profits for acquisitions of questionable value. They proposed changes in remuneration, tying executive fortunes to investor interests through stock options, in place of salary, and executive stock-holding. They proposed governance reforms to expand board independence and monitoring, through outside directors, smaller and more agile boards, and separation of the CEO and chairman roles. They proposed investor relations reforms to expand external monitoring by analysts and investors; greater financial transparency, and increased attention to the information requirements of securities analysts. Michael Jensen made these prescriptions known not only to the rarified audience of financial economists, but to the wider world through his pieces in the Harvard Business Review (1984; 1989). Fund managers actively promoted all of these innovations.

Institutional Investor Support for Agency Theory Prescriptions

That institutional investors championed agency theory is well known. We review the evidence briefly in anticipation of the argument that investors reward firms for some innovations but not others. Public pension funds led the charge. CalPERS (California Public Employees' Retirement System) became active in the early 1980s (Blair 1995; Schwab and Thomas 1998),

sponsoring shareholder resolutions and in 1995 spearheading the Council of Institutional Investors, assembling public, private, and union fund managers. CII's "shareholder bill of rights" called for greater shareholder input to reduce agency costs (Jacoby 2006). Public pension funds sponsored an array of shareholder proposals, specifically aimed at improving board governance, expanding external monitoring, and rewarding executives for raising share price (Carleton, Nelson, and Weisbach 1998, p. 1339; Davis and Stout 1992; Gourevitch and Shinn 2005; Jacoby 2006; Proffitt 2001; Useem 1996a).

Mutual fund managers often worked behind the scenes to promote strategic changes, pay-for-performance, governance reforms, and external monitoring, in part because they hesitated to challenge firms they marketed pension instruments to (Davis and Kim 2007; Gourevitch and Shinn 2005) and in part because managers that held large positions could ill afford to dump stock for fear that share value would tank before they could get out (Davis and Kim 2007). More and more funds held large positions as the baby boom generation's pension investments accumulated (Gourevitch and Shinn 2005).

The influence of institutional investors in capital markets grew, as well, as they came to control most shares. In Figure 1 we report holdings of institutional investors in the 736 sampled firms between 1980 and 2005, broken down by investor category. By 2005 institutional investors held 70 percent of the shares of the average firm. In the models we use fixed year effects to control for this trend and other broad changes in the market that are unmeasured.

[Figure 1 About Here]

Next we turn to agency theory's prescriptions for corporate strategy, compensation, governance, and monitoring. We discuss how these innovations were expected to influence

share price, and show their growing popularity, before outlining hypotheses about investor reactions to firms that swallowed these prescriptions.

Industrial Strategy: Focus and Discipline

Agency theorists argued that American corporations had been expanding into new industries to serve managers, who saw conglomerates as a hedge against corporate collapse and whose salaries tracked the size of their empires (Fligstein 1990; Jensen and Meckling 1976). They created ponderous conglomerates comprising business units little understood by top managers (Shleifer and Vishny 1989; 1997). For financial economists, the investor, not the firm, should diversify her portfolio to manage risk (Amihud and Lev 1981; Bettis 1983; Teece 1982). Management consultants soured on conglomerates as well, advising executives to “stick to their knitting” and focus on their industry of expertise (Peters and Waterman 1982). Downsizing gurus preached the gospel of “core competence” (Prahalad and Hamel 1990). The idea was that diversified firms earned lower profits than firms that focused on a single business, and low earnings would translate into poor share performance. Reducing diversification should improve shareholder value in short order.

This idea was broadly accepted, but evidence for it is mixed. Studies do not consistently find that diversification depresses profits (LeBaron and Speidell 1987; Wernerfelt and Montgomery 1988). As for stock price, some studies show no adverse effects of diversification in the early 1970s, before agency theory tarnished the idea (Matsusaka 1993; Servaes 1996) and others find no negative effects at all (Campa and Kedia 2002; Villalonga 2004). Yet investors bought the theory, and where they held sway, through concentrated ownership, firms were more likely to spin off unrelated businesses (Useem 1996b, p. 153).

Jensen and Meckling (1976) also offered a prescription for preventing ill-advised acquisitions, building on ideas from financial economics (Miller and Modigliani 1961; Modigliani and Miller 1958). Agency costs stem from managers' propensity to favor stability over profits, over-reward themselves, and focus on the short term. One way to reduce agency costs is to use debt to finance expansion. This moderates the principal-agent conflict by reducing equity financing, forcing managers to recognize the cost of capital. Debt also leverages equity by multiplying returns, and frees up profits to be used for share buy-backs that increase stock price (Westphal and Zajac 1998; Zajac and Westphal 2004). The main function of debt financing is to discipline executives prone to use cash for acquisitions that would dilute future profits. Like dediversification, debt was expected to influence stock price in the short term by increasing profits.

After 1980, America's biggest firms took both pieces of advice, dediversifying and increasing reliance on debt (Useem 1996b, p. 153). For a spell in the 1980s, hostile takeover firms amplified the core competence trend by taking over conglomerates, breaking them up, and leaving their executives on the street, which encouraged other executives to sell unrelated businesses to inoculate themselves against takeover (Davis, Diekmann, and Tinsley 1994; Fligstein and Markowitz 1993). In Figure 2, we chart the level of diversification and the debt/equity ratio in our sample of large American firms. The average firm's score on the entropy index of diversification declines consistently between 1980 and 1998; the decline extends well beyond the hostile takeover wave of the early 1980s. The debt-equity ratio, which had hovered around .4 between the early 1960s and the early 1980s, suddenly jumps to nearly .6 by the late 1980s and stays in that range into the new millennium.

[Figure 2 About Here]

Agency theory suggested that the mechanisms by which dediversification and debt financing would increase profits and boost share price were direct, and that the effects would appear quickly (Jensen and Meckling 1976). In both cases, return on equity, and share price, were expected to begin to improve right away. Dediversification would rid the firm of poorly performing business units and increase its return on equity. An acquisition financed by debt should begin to leverage corporate equity as soon as the acquisition was complete. As the theory outlined such a direct mechanism between these two innovations and change in share value, we expect investors to respond with alacrity.

Compensation and Share-Holding: Aligning Executive Interests

Compensation via salary created the wrong incentives for executives. Agency theorists (Jensen and Meckling 1976; Jensen and Murphy 1990) proposed that firms use stock options instead, rewarding executives for stock performance. A stock option grant might give the CEO the right to buy 100,000 shares at today's price, three years from today. The details varied, but executives reaped rewards for increasing share price (Karmel 2004).

Firms could also reduce agency costs by making executives owners, and Jensen and Meckling (1976) advised firms to require executives to hold equity so that their long-term interests would be joined with shareholders' interests. Boards designed long-term incentive plans to insure executive equity positions, and investors responded positively to corporate announcements of such plans. Firms benefitted even when they did not carry out the plans (Westphal and Zajac 1998). Compensation practices have been shown to affect both corporate strategy (Lie 2005; Sanders and Hambrick 2007; Yermack 1997), and capital market interest in firms (Certo et al. 2003).

In Figure 3 we report compensation and equity holdings from 1992 forward, the year in which Compustat's Execucomp series begins. Stock options and bonuses caused median CEO earnings in sampled firms to rise sharply, and salary as a proportion of income to decline. Compustat does not report compensation for the period before 1991, but Yermack's (1997) data suggests that for leading firms such as those examined here, median compensation roughly doubled to \$1,000,000 between 1980 and 1991. In our sample, CEO compensation rose from about \$1,000,000 in 1992 to \$3,500,000 by 2005. Meanwhile, executive compensation became much more closely aligned with share performance (Hall and Liebman 1998).

The average board, however, did not require executives to increase equity holdings. CEO equity holdings rise only slightly on average between 1992 and 2005, despite the fact that executives had considerably more cash to invest due to the increase in total compensation, and despite the fact that many firms announced long term incentive plans (Westphal and Zajac 1998). While average equity holdings do not rise, there is substantial variation over time at the firm level, so we may well find that equity attracts investors.

According to agency theory, incentive compensation through stock options and equity holding should alter executive behavior directly by creating an incentive to improve profits and raise share price (Jensen and Meckling 1976, p. 317). Executive behavior should change the moment an appropriate set of incentives is put into place. Thus we expect that compensation reforms will draw great investor interest.

[Figure 3 About Here]

Corporate Governance: Board Autonomy

By the early 1980s, financial economists argued that firms could address agency costs with outside directors, small and agile boards, and independent chairmen to monitor executives

(Fama 1980). Inside directors from the management team are in no position to challenge executives; large boards rarely act decisively (Byrd and Hickman 1992; Carleton, Nelson, and Weisbach 1998; Hermalin and Weisbach 1988) ; and CEO-chaired boards seldom question management decisions (Beatty and Zajac 1994; Daily, Dalton, and Cannella 2003). Moreover, inside directors favor poison pills and golden parachutes that protect executives against losses in takeovers, undermining the role of takeover threat in disciplining wayward executives (Jensen 1984). Independent boards can discipline executives who do not pursue shareholder interests, leading eventually to behavior that promotes shareholder value. Firms followed the dictates of agency theorists when it came to outside directors and board size. In Figure 4, we see that in the average firm, outside directors rose from 67% in 1980 to 83% in 2005. The standard deviation declined from over 16 in the early 1990s to 11 in 2005. The average number of directors declined from 12.5 to 10.4, and the standard deviation declined from over 3.5 in the 1980s to 2.5. These changes are particularly striking given the convention of lifetime director appointments without retirement, which sometimes slowed change efforts (Demb and Neubauer 1992, p. 18).

On the other hand, boards did not take up the advice to appoint independent chairmen, (see Daily et al. 2003). The incidence of CEO/chairmen actually rose from 57% to 75% between 1980 and 2000, dropping back to 67% by 2005. Perhaps the rise came about because boards favored “celebrity CEOs” who could boost stock price, but who demanded both titles (Khurana 2002), and thus boards chose the higher goal of promoting share price (Zorn 2004). While aggregate change was modest, there were a total of 767 transitions from combined to separate positions, and 674 transitions in the other direction. The average firm made two changes during the 18 years it was in the sample.

Whereas agency theory suggested that strategic and compensation reforms could lead directly and effectively to improvements in share value, it suggested that the road from governance reforms to share performance was more tortuous. Independent boards had the ultimate threat of sanction against CEOs, removal, but removal would occur only after the executive had a proven record of poor performance. Independent chairmen, outside directors, and small boards could impose other sanctions on executives, but those typically came in the aftermath of a failure. Independent boards might play a role in promoting the other agency theory reforms, but we don't expect market participants to show strong support for governance reforms themselves.

[Figure 4 About Here]

External Monitoring: Financial Transparency

Agency theorists suggested that external monitoring can serve some of the same purposes as governance reforms. Monitors, such as securities analysts, can reduce agency costs, discouraging executives from over-rewarding themselves and from sacrificing value to stability: “to the extent that security analysis activities reduce the agency costs associated with the separation of ownership and control they are indeed socially productive ... we expect the major benefits of the security analysis activity to be reflected in the higher capitalized value of the ownership claims to corporations” (Jensen and Meckling 1976, p. 355). For Jensen and Meckling (1976, p. 354), securities analysts were among those best suited to the role of monitoring: “We would expect monitoring activities to become specialized to those institutions and individuals who possess comparative advantages in these activities ... security analysts employed by institutional investors, brokers and investment advisory services.”

Agency theorists advised firms to open their books to analysts, providing both financial and strategic information that would allow analysts to assess firm prospects and encourage changes to improve performance. Management consultants suggested that new Chief Financial Officers could take charge of increasing transparency, by issuing regular reports, holding conference calls, and issuing earnings preannouncements (Dobbin and Zorn 2005, p. 193; Zorn 2004). Transparency might reduce analyst discord over earnings projections and increase the odds of meeting analyst profit projections, which had been published since the early 1970s (Fox 1997). Executives at leading firms reported significant pressure from investors and analysts to meet these estimates, and responded by providing more information to investors and analysts and by managing earnings to match forecasts (Useem and Gager 1996, p. 625).

We explore four measures of increases in external monitoring. These vary in the extent to which they are under the direct control of the firm. First, the appointment of a CFO, who was usually given a mandate by the CEO to provide information to securities analysts and investors (Zorn 2004). Second, securities analyst coverage of the firm, which Jensen and Meckling (1976) championed as the best means to external monitoring. Firms did not fully control analyst coverage, but according to the theory, coverage increases external monitoring of the firm and should improve performance. Third, success in meeting analyst forecasts captures financial performance itself, the firm's efforts to manage analyst expectations through transparency, and its efforts to manage earnings (usually through accounting gimmicks) to meet expectations. Fourth, deviation in analyst forecasts captures both analyst uncertainty about the firm and the firm's success at communicating its strategy and results to analysts.

In Figure 5 we show the proportion of firms with CFOs and average analyst coverage. In 1980, one in ten firms had a CFO. By 2005, one in ten lacked a CFO. The average firm was

covered by 11 analysts in 1980, 17.8 in 1990, and 14 in 2005. In Figure 6, we track the average standard deviation in analyst forecasts and the percent of firms meeting analyst forecasts.

Average standard deviation declines significantly, and the standard deviation of the variable drops from .23 for 1980s to .12 for the 1990s. About half of firms met analyst forecasts in the 1980s and 1990s, but by 2004, 77% met forecasts.

[Figures 5 and 6 About Here]

According to agency theory, investor relations reforms should improve external monitoring of executives much as governance reforms improve internal monitoring. These reforms can be expected to have less direct effects on share value than the strategic and compensation innovations. We expect the effects of investor relations reforms to be similar to those of governance reforms.

The Theoretical Construction of Ends and Means

Economic theories identify the interests of market participants. Agency theory pointed to share value as the singular, true concern of shareholders. Theories identify mechanisms for achieving goals, and our prediction is that, controlling for actual performance, investors will be attracted to firms that adopt innovations that agency theory predicts will most directly affect share value. Institutional investors should be most attentive to strategic innovations theorized to boost profits and to compensation innovations theorized to motivate executives to increase share price, and least attentive to governance and investor relations reforms theorized to improve internal and external monitoring of executives.

Our first outcome measure, institutional holdings, taps changes in the enthusiasm of professional fund managers for a stock. Our second outcome, Tobin's q , taps overall market enthusiasm for a stock.

Hypothesis 1: Institutional investor holdings, and share price, will increase in firms that adopt strategic and compensation innovations.

Hypothesis 2: Institutional investor holdings, and share price, will increase to a lesser degree in firms that increase monitoring through changes in governance and investor relations.

DATA AND METHODS

We present pooled cross-sectional time-series models of institutional investor holdings and stock performance (Tobin's q) for the period 1980-2005, with fixed effects for firm and year. The fixed effects specification allows us to see where changes in independent variables are followed by changes in dependent variables. The fixed firm effects permit us to isolate the effects of changes within firms, in board size or diversification, from the effects of different levels of these things across firms. The year fixed effects permit us to rule out the possibility that the results are driven by environmental shifts that affect all firms alike, such as economic downturns or the spread of institutional shareholding. A significant coefficient can be read to suggest that a change in the independent variable is followed by a change in the dependent variable.

Some analysts use event analyses to explore the effects of strategic changes on stock price in subsequent days or months. Because we cannot measure the exact date of many key innovations, or daily levels of institutional holdings, we measure innovations and responses annually. This has the advantage of allowing us to look at a wide range of innovations and to establish their sustained effects on institutional holdings and share value. Event studies have found that the effects of key innovations on stock price are sustained for at least a year (Westphal and Zajac 1998, p. 143), and our fixed effects specification captures effects at the subsequent

annual observation. The disadvantage is that we cannot see effects on stock price that endure for less than a year.

Sample

We sampled firms across the period 1965-2005 in odd years to include both rising and declining firms and industries. We stratify the sample by a representative set of industries; aerospace, apparel, building materials, chemicals, communications, computers, electrical machinery, entertainment, food, health care, machinery, metals, oil, paper, pharmaceuticals, publishing, retail, textiles, transportation, transportation equipment, utilities, and wholesale. We treat conglomerates as belonging to the industry that accounts for the lion's share of their business. We sampled fifteen of the 22 industries exclusively from Fortune 500 lists. Utilities, health care, and entertainment are not included on the list, and some sectors are not included for the full period. We used specialized Fortune lists of the 50 largest firms in particular service industries. For entertainment and health care, we used Dun & Bradstreet's Million Dollar Directory for years before 1983, when Fortune began to cover these industries. We sampled systematically within industries, selecting an equal number of cases for each industry. In a few cases we could not fill a cell and so left it empty.

Financial Control Variables

We include the financial control variables that have previously been shown to affect shareholding and stock price. They are measured in the year before the dependent variables. For models of institutional shareholding, we include two measures of market valuation, the market-to-book ratio and cumulative stock returns over 12 months (the change in share price). We use market-to-book ratio to capture firm valuation, rather than Tobin's q (market value over the replacement value of tangible assets) because the former is simpler to calculate and is thus

readily observed by investors. Tobin's q performed similarly to market-to-book value in the institutional shareholding models and did not alter the effects of other variables. If stock price accurately captures publicly available knowledge about a firm, as the efficient market hypothesis suggests (Fama 1965; 1970), then net of stock price, the agency theory prescriptions we add to the models might be expected to have no effect on institutional shareholding. For both outcomes, we include profits (return on assets) and cash flow to capture the firm's current position. We include systematic risk (beta) to capture risk common to traded firms and unsystematic risk to capture risk to the focal firm. We include dividend yield, firm age, and firm size.

Measurement

We use multiple imputation to fill in missing data, but models are robust to the exclusion of organization-years for which there are missing data. We replaced Compustat values with estimated values, as well, in several cases when entropy, market-to-book, or debt-to-equity showed negative values. Univariate statistics, variable definitions, and sources are listed in Table 1. In Figure 1 we break down institutional investment by investor group. Investment companies include the leading mutual funds managing investments and pension holdings for individuals, such as Fidelity, Vanguard, and Putnam. Investment advisors include investment services counseling investors and performing trades for them, such as Barkley's Bank PLC, Goldman Sachs, and Morgan Stanley (Binay 2005, p. 128). Banks, insurance companies, and public pension funds (such as CalPERS) fill out the roster of the top five groups of institutional investors, followed by an assortment of smaller groups of institutions, included in the "other" category, such as foundation and university endowments.

Tobin's q is the ratio of the market value of the firm to the replacement value of its tangible assets (Berger and Ofek 1995; Binay 2005; Wernerfelt and Montgomery 1988). We omit market-to-book value in the Tobin's q models because it is related to the dependent variable. Entropy, or industry diversification, is measured using the Compustat segment data series, which is calculated as $\sum p_i \ln(1/p_i)$, where p_i is the proportion of the firm's sales made by segment i . Firms have discretion in the way they define segments, which can cause inconsistency. To address this problem, we aggregate segment sales at the 3-digit SIC level. For the years 1980-1983, segment industry codes are unavailable. For those years, we use the original Compustat segment data but peg the 1984 value of that measure to the value of the measure using the aggregated data, then adjust the previous years accordingly. Most adjustments are modest. The SEC expanded industry composition reporting requirements in 1997, leading many firms to report more detailed segment data, and so we also adjust the data after 1997 to continue from the 1997 value.

Because Compustat began to report stock option values, calculated using the Black-Scholes-Merton method, in 1992, we explore the effects of compensation in separate models, with a one-year lag, for 1993-2005. We have data on 736 corporations for the period 1980-2005, and on 603 for the period 1993-2005. We analyze over 13,500 spells, or corporation-years, of data for the full period, and over 6,400 spells for the truncated period. For the 26 year period, we have 18 years of data for the average firm due to late entry of firms (firms that are founded, or taken public, after 1980) or early exit (firms that fail or are acquired).

Method

We conduct pooled cross-sectional time series analyses of longitudinal data on the percent of shares controlled by institutional investors and on Tobin's q . The firm fixed effects

account for unobserved characteristics that do not vary over time, such as industry and region. The year fixed effects account for unobserved environmental factors that change from year to year, affecting all firms. The fixed effects specification employs a large number of parameters, rendering models less efficient, however it provides the most stringent tests of hypotheses about how changes in corporate characteristics affect markets. The specification also offers an efficient means of dealing with non-constant variance of the errors (heteroskedasticity) which derives from our use of multiple observations of each firm.

FINDINGS

We present models exploring how corporate adherence to the precepts of agency theory affects the proportion of shares held by institutional investors and the price of shares. The nested models begin with financial controls commonly used to predict shareholding and stock price. We then add groups of variables representing, respectively, agency theorists' strategy, governance, and investor relations recommendations. Because we do not have compensation data for the full period, in models 5 and 11 we replicate the final model for the full period, using data for the truncated period for which we have compensation data, and then in models 6 and 12 we show the effects of adding CEO compensation and equity.

The results suggest, as we predicted, that institutional investors were more attentive to strategy and compensation innovations than to governance innovations, but that they were also quite attentive to investor relations innovations. Diversification shows the expected negative effects on Tobin's q for the entire period, though not on institutional holdings. Debt shows a negative effect from 1993 forward in the institutional investor models, contrary to theory, but the expected positive effect for that period on Tobin's q . Compensation shows effects in the expected direction. Stock options as a proportion of total compensation attracts institutional

investors, and total compensation affects Tobin's q , though executive equity does not show the expected effects. Governance reforms, however, show none of the expected effects. Firms that reduce board size, those that appoint outside directors, and those that appoint autonomous board chairs do not see increases in institutional holdings or Tobin's q . On the contrary, appointing the CEO as chair increases institutional shareholding, and firms that add outside directors suffer declines in Tobin's q in the latter period.

The findings for investor relations reforms, by contrast, do not conform to theory. . We predicted that investors would not be drawn to firms for pursuing outside monitoring, any more than for pursuing inside monitoring through governance reforms, but investors appeared to favor investor relations reforms. Increased analyst coverage, reduced deviation in forecasts, and meeting analysts forecasts were followed by increases in institutional holdings and stock price. Firms that appointed CFOs saw increases in institutional holdings but decreases in Tobin's q . For both outcomes, the investor relations reforms increase r-square more than the strategy or compensation innovations.

The control variables performed as expected, and explained a significant proportion of the variance for each outcome, which gives us confidence that the models are well specified. Cumulative stock returns show consistent positive effects. Return on assets shows positive effects. Systematic (market) risk shows little effect, which is not uncommon in models with fixed year effects, but unsystematic (firm) risk shows negative effects. Cash flow, in these fixed effects models, shows negative effects on institutional investors but positive effects on Tobin's q . Firm size shows the opposite pattern. Dividend yield shows consistent negative effects. This is not likely because investors dislike profits, but because the investment community came to prefer to see profits deployed in share-buybacks to boost stock price (Westphal and Zajac 2001).

Next we take findings on the variables of interest in turn. In the full models for the full period (models 4 and 10) we assess the effects of strategy, compensation, and investor relations innovations together. We assess the effects of compensation innovations by comparing models 6 and 12 to models 5 and 11.

We begin with the strategy prescriptions, dediversification and debt financing. In models 8-10, we see that the market in general responded favorably to dediversification; entropy shows a significant negative effect on Tobin's q for the whole period. In 11 and 12 we do not see this effect for the later period, and indeed, in exploratory analyses we found that the diversification stock price discount was stronger in the 1980s. Because the fixed effects models highlight within-firm change rather than across-firm variation, the negative coefficient for entropy suggests that firms increase (reduce) stock value by dediversifying (diversifying). In models 2 and 3, diversification also shows negative effects on institutional shareholding but those effects do not hold up when we enter the investor relations variables. One reading is that dediversification promotes institutional shareholding, but only when it leads to such changes as increases in analyst coverage. The pattern that Zuckerman (1999; 2000) found for stock price (dediversification attracts analysts, which increases stock price) appears to hold for institutional shareholding as well.

Investors had mixed reactions to the increased use of debt. For the entire period, we do not see significant effects in 2-4 or 8-10. For 1993-2005, institutional investors disfavored increases in debt to equity (models 5 and 6) and the market as a whole favored increases (model 12). Perhaps institutional investors disfavored debt because firms also increase debt when they are troubled, although one might expect the slate of financial factors in the models to pick up company troubles.

Perhaps our most striking finding is that the much heralded corporate governance revolution didn't interest investors. In accordance with agency theory, firms appointed more outside directors and downsized their boards, as we saw in Figure 4. Outside directors show only significant negative effects, in models 11 and 12, on Tobin's q . Firms reduced average board size, but board size shows no significant effects. Firms became slightly more likely to give the CEO the title of chairman over time, in defiance of agency theory precepts. Contrary to agency theory principles, CEO=Chair shows a positive effect on institutional shareholding for the entire period, in models 3 and 4. Perhaps fund managers favored firms that combined the two roles because they saw this as a move to woo celebrity CEOs who could boost stock price (Khurana 2002).

The pattern of results for changes in investor relations is striking, and positive. First, companies that appointed CFOs drew significantly more interest from institutional investors for the whole period (model 4), despite the fact that they saw decreases in share prices (model 8). Perhaps the mixed effects are due to the fact that institutional investors believed that CFOs could boost share price, and thus bought firms that appointed them to take advantage of future increases in value, meanwhile discounting their present value. Second, reductions in the standard deviation in analyst estimates were followed by increases in both institutional investor holdings and share price. This effect is sustained for institutional investors in the truncated period, but in model 12 for Tobin's q 1993-2005 the coefficient does not achieve significance. Third, firms drew resources by meeting analyst forecasts, which they achieved through some combination of actual accounting performance, communication with analysts to influence projections, and earnings management (Zorn 2004). While fund managers did not significantly increase holdings in firms that met analyst forecasts in models for the entire period (model 4),

they did increase holdings in firms that hit analyst forecasts for 1993-2005, in models 5 and 6. The market reaction was the opposite, Tobin's q rises for firms that meet analyst forecasts in the whole period (model 10), but not in the truncated period (models 11 and 12). Fourth, increases in analyst coverage, which should improve monitoring, led to improvements in both institutional holdings (models 4-6) and Tobin's q (models 10-12). As noted, these variables did most to improve the r-square over the baseline model (though each model represents an improvement in fit at $p < .05$ over its predecessor, but for model 9).

Finally, in models 5 and 11 we replicate models 4 and 10, for the period for which we have data on executive compensation and equity holdings (1993-2005), to explore the effects of the inclusion of CEO bonus and option compensation, salary, and equity holding. In these models, with fewer firms and fewer years of data, the ratio of CEO options and bonus to total compensation shows a significant positive effect on institutional investor holdings, and total CEO compensation shows a significant effect on Tobin's q . As can be seen from Figure 3, these variables are correlated over time, with the expansion of options raising total CEO compensation, so we can take the pattern to suggest support from institutional investors and the market at large for stock option compensation. Equity holding, on the other hand, does not show positive effects in these models. As noted, some other effects from models 4 and 10 are rendered non-significant in the truncated analyses, with fewer spells of data. But investor relations changes continue to show strong effects, particularly in the institutional holdings models.

CONCLUSION

Both institutional theorists (Meyer and Rowan 1977; Strang and Meyer 1993) and performativity theorists (Callon 1998; MacKenzie and Millo 2003) describe a world in which economic theories may be translated into management innovations and then rendered true by

market participants familiar with the theories. The economy is, in Callon's terms, embedded in economic theory. For institutionalists, management innovations theorized to improve firm performance draw resources from all kinds of market participants, ranging from customers to employees to investors. For performativity theorists, compelling theories cause people to behave as if they are true, and so investors move money to firms that embrace innovations theorized to draw investment. We seek to refine these approaches, exploring what kinds of theories investors act out in the stock market.

Since the late 1970s, leading corporations have taken a number of steps to improve shareholder value following the dictates of agency theory. Previous studies have provided evidence of the steps they have taken, and the data we present on 736 leading American corporations reinforce their findings (Davis, Diekmann, and Tinsley 1994; Fligstein and Markowitz 1993; Westphal and Zajac 1997). Firms dediversified to take advantage of the management team's industry expertise; increased debt financing to discipline executives and leverage equity; reformed governance by cutting boards and appointing outsiders; and facilitated external monitoring by appointing CFOs, wooing securities analysts, and opening the books to analysts. In effect, executives and boards have played their roles in performing these elements of agency theory.

Institutional investors actively promoted most of these reforms, but which of them did investors invest in? Which did they perform? We specify the prediction that institutionalized practices draw resources to firms (Meyer and Rowan 1977), arguing that market participants are not equally attracted to all innovations promoted by influential economic theories. We argue that the social construction of the interests of market participants, and the theorization of the mechanisms that tie new innovations to those interests, will mediate the performance of theory.

Market participants will be most attracted to innovations that are theorized to provide direct mechanisms for achieving their socially constructed interests. In the case at hand, agency theory itself constructed the interest of institutional investors as singular: increasing share value. The theory denied the importance of other investor interests, including dividends, blue chip status, conglomeration and stability. The theory sketched relatively direct mechanisms linking strategic and compensation innovations to share value, and less direct mechanisms linking governance and investor relations reforms to share value. Thus we predict that investors will be drawn to firms that embrace strategic and compensation reforms.

The findings broadly support our theory. Strategy and compensation innovations proved effective at drawing investor interest, as expected. Agency theorists drew bold arrows between dediversification and debt financing, on the one hand, and share value, arguing that dediversification could rid the firm of poorly performing subunits and that debt financing could leverage equity for high-return acquisitions. They drew similarly bold arrows between stock options and executive equity, on the one hand, and share value, arguing that these would give executives an incentive to prioritize increasing share value. Even net of any effects on profitability and recent share performance, we find that investors were drawn to these innovations.

In line with our predictions, governance reforms that agency theorists expected to improve monitoring of executives, but to influence stock price only indirectly, had no discernable effects on professional institutional investors, who had championed them, or on investors generally. Fund managers talked the talk of governance innovations and used shareholder proposals and private bidding to convince firms to embrace governance reforms, but they did not walk the walk. They did not buy the stock.

We had expected investor relations reforms to affect investors much like governance reforms, because they too were theorized to improve monitoring of executives and thus to affect share price less directly than strategic and compensation innovations. Instead they proved quite attractive to investors. When firms appointed CFOs, expanded analyst coverage, reduced deviance in forecasts, and met analyst projections (whether by hook or by crook, with transparency or with performance), investors were drawn to them. Given that governance reforms did not move markets, we suspect that investor relations reforms moved markets not because they promised improved monitoring, but because they appealed directly to investors. This finding suggests that our theory is missing an important element. If our hunch is correct, investor relations innovations were successful because they marketed the firm directly to investors and securities analysts. Thus market participants may perform theories for reasons having little to do with the substance of the theories. In this case, it would appear that securities analysts and investors were attracted by direct appeals rather than by the promise of increased monitoring. Other market participants, from labor to customers, might likewise be more attracted by direct appeals than by innovations theorized to promote their interests.

Institutional theory's main contribution has been to demonstrate how social consensus on organizational form and practice follows fads in management theory. Innovations are socially constructed as effective. Our theory concerns the social construction by economic and management theories of interests and mechanisms for their pursuit. We might have told the story as one of simple self-interest, in that investment managers, who are themselves compensated on the basis of stock performance, advocate firm strategies to promote stock performance. But investors in general, and institutional investors in particular, did not see their interests so narrowly before the advent of agency theory, and did not envision the mechanisms agency

theorists pointed to. Agency theory produced those changes in perceived interests and mechanisms. It defined interest narrowly, and it offered a new set of recipes for enhancing stock performance that have been at best modestly effective. For now agency theory rules, despite mixed evidence that its prescriptions actually improve profitability and firm value (Anderson and Reeb 2004; Dalton et al. 2003; Pfeffer and Sutton 2006, p. 219). Michael Jensen (2001) argues that the compensation prescriptions agency theory offered have been bastardized, and so perhaps the theory would have been more effective had executives and boards performed their roles verbatim. Our own findings suggest that corporate governance reforms do not improve firm value, that dediversification and debt financing have modest effects, and that CEO stock options promote share value but that equity holding does not. The failure of managers, boards, and investors to register previous evidence that some of these reforms have not paid off is suggestive of the power of theorization, and further grist for the evidence-based management movement, which seeks to specify the practices that do influence performance (Pfeffer and Sutton 2006).

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Table 1
Univariate Statistics, Variable Definitions, Data Sources

Variable	Description	Obs.	Mean	S.D.	Min.	Max.	% Missing	Source
Institutional Ownership	Percent shares owned by institutional investors	12,691	48.646	22.042	0.000	99.924	6.6%	Thompson Financial
Tobin's q	Ratio of market value to replacement cost of tangible assets	12,341	1.040	0.895	-0.517	9.881	9.2%	Compustat
CEO Options & Bonus/Comp.	Ratio to total compensation 1993-2005	4,785	0.527	0.252	0	1	25.7%	Execomp
CEO Compensation	CEO's salary (\$1,000, natural logarithm) 1993-2005	4,785	8.069	1.020	3.227	13.305	25.7%	Execomp
CEO Stock Ownership	Percent Shares owned by the CEO 1993-2005	4,589	1.793	5.390	0	48.213	28.7%	Execomp
Analyst Coverage	Natural log of analysts producing estimates	11,908	2.282	0.871	0	3.890	12.3%	I/B/E/S
Meet Analyst Forecasts	Met or exceeded average analyst profit forecasts	11,747	0.569	0.495	0	1	13.5%	I/B/E/S
Deviation in Analyst Forecasts	Standard deviation analyst profit estimates (natural log)	11,355	0.124	0.251	0	4.513	16.4%	I/B/E/S
Chief Financial Officer (CFO)	Presence of CFO	13,403	0.547	0.498	0	1	1.3%	Standard & Poor's
Outside Directors	Proportion of outside directors	13,089	0.729	0.166	0	1	3.6%	S&P Register
Board Size	Number of directors on the board	13,105	12.030	3.589	1	36	3.5%	S&P Register
CEO=Chair	The CEO also serves as the chairman of the board	13,412	0.699	0.459	0	1	1.3%	S&P Register
Diversification	Entropy index of diversification	13,218	0.459	0.492	0	2.240	2.7%	Compustat
Debt-to-Equity Ratio	Ratio of the firm's long-term debt to common equity	12,823	0.014	0.169	0	15.829	5.6%	Compustat
Cumulative Stock Returns	Pct. change in value of shares over the last 12-month period	12,430	0.198	0.540	-0.974	26.194	8.5%	CRSP
Return on Assets (ROA)	Income over assets	13,302	3.406	6.711	-92.010	82.011	2.1%	Compustat
Systematic Risk (Beta)	Firm's daily returns regressed on the returns of the market	11,595	1.026	0.485	-1.806	3.982	14.6%	CRSP
Unsystematic Risk	Residual standard error from the beta estimation	11,595	0.867	0.402	0.250	5.779	14.6%	CRSP
Cash Flow	Income (\$billions)	13,178	0.545	1.622	-14.240	36.400	3.0%	Compustat
Market-to-Book Ratio	Ratio of market value to book value of assets	12,277	0.029	0.211	0	16.373	9.6%	Compustat
Dividend Yield	Dividends per share divided by calendar-year closing price	12,720	1.007	0.757	0	7.086	6.4%	Compustat
Firm Size	Total assets (\$millions, natural logarithm)	13,392	7.421	1.605	0.356	13.081	1.4%	Compustat
Firm Age	Years since the firm's founding (natural logarithm)	13,558	3.950	0.767	0	5.323	0.2%	Moody's Co. Histories

Table 2
Institutional Shareholding and Tobin's Q with Fixed Year and Firm Effects

Model	1	2	3	4	5	6	7	8	9	10	11	12
	Institutional Ownership 1980-2005				1993-2005		Tobin's <i>q</i> 1980-2005				1993-2005	
CEO Options & Bonus/Comp.						3.265** (1.098)						-0.083 (0.059)
CEO Compensation						0.197 (0.387)						0.135*** (0.036)
CEO Stock Ownership						-0.006 (0.055)						-0.001 (0.003)
Analyst Coverage				5.806*** (0.346)	3.065*** (0.622)	2.881*** (0.622)				0.187*** (0.016)	0.195*** (0.034)	0.178*** (0.033)
Meet Analyst Forecasts				0.523 (0.281)	1.128* (0.454)	1.034* (0.448)				0.042** (0.015)	0.024 (0.020)	0.019 (0.020)
Deviation in Analyst Forecasts				-1.539*** (0.109)	-11.156*** (1.385)	-10.684*** (1.419)				-0.033*** (0.006)	-0.191* (0.080)	-0.150 (0.081)
CFO				1.305*** (0.344)	0.671 (0.642)	0.656 (0.647)				-0.052** (0.017)	-0.016 (0.030)	-0.010 (0.030)
Outside Directors			1.268 (1.093)	0.410 (1.138)	0.012 (0.025)	0.008 (0.026)			-0.011 (0.063)	-0.023 (0.060)	-0.003* (0.001)	-0.004** (0.001)
Board Size			0.007 (0.067)	-0.052 (0.064)	-0.131 (0.134)	-0.124 (0.136)			0.006 (0.003)	0.005 (0.003)	0.004 (0.007)	0.002 (0.007)
CEO=Chair			1.278*** (0.339)	0.807* (0.324)	0.525 (0.553)	0.539 (0.552)			-0.006 (0.016)	-0.016 (0.016)	-0.033 (0.034)	-0.042 (0.034)
Diversification		-1.630** (0.503)	-1.588** (0.502)	-0.873 (0.488)	0.864 (0.688)	0.883 (0.687)		-0.085*** (0.024)	-0.089*** (0.024)	-0.067** (0.024)	-0.035 (0.032)	-0.033 (0.032)
Debt-to-Equity		-0.001 (0.006)	-0.001 (0.006)	-0.001 (0.005)	-9.222*** (2.716)	-9.007** (2.758)		0.0002 (0.0005)	0.0002 (0.0005)	0.0002 (0.0005)	0.230 (0.128)	0.258* (0.115)
Cumulative Stock Returns	2.160*** (0.245)	2.185*** (0.244)	2.177*** (0.244)	2.198*** (0.240)	2.023*** (0.333)	1.970*** (0.323)	0.230*** (0.012)	0.230*** (0.013)	0.230*** (0.013)	0.231*** (0.013)	0.258*** (0.028)	0.251*** (0.027)
Return on Assets	0.239*** (0.038)	0.243*** (0.032)	0.242*** (0.033)	0.130*** (0.029)	0.160*** (0.032)	0.145*** (0.033)	0.012*** (0.002)	0.012*** (0.002)	0.012*** (0.002)	0.009*** (0.002)	0.003 (0.005)	0.002 (0.005)
Systematic Risk	-0.195 (0.435)	-0.180 (0.434)	-0.227 (0.437)	-0.662 (0.405)	1.447* (0.649)	1.360* (0.655)	0.003 (0.020)	0.005 (0.019)	0.004 (0.019)	-0.013 (0.019)	-0.051 (0.059)	-0.042 (0.058)
Unsystematic Risk	-7.189*** (0.479)	-7.210*** (0.471)	-7.054*** (0.487)	-4.184*** (0.438)	-3.444* (1.449)	-3.507* (1.461)	-0.146*** (0.023)	-0.147*** (0.022)	-0.142*** (0.022)	-0.060** (0.022)	-0.076 (0.072)	-0.092 (0.073)
Cash Flow	-1.419*** (0.131)	-1.417*** (0.131)	-1.394*** (0.132)	-1.286*** (0.128)	-0.444* (0.182)	-0.440* (0.183)	0.045*** (0.007)	0.045*** (0.007)	0.046*** (0.007)	0.048*** (0.007)	0.022 (0.013)	0.019 (0.012)
Market-to-Book	-0.002 (0.004)	-0.007 (0.009)	-0.007 (0.009)	-0.008 (0.009)	-2.212 (5.363)	-3.064 (4.966)						
Dividend Yield	-1.951*** (0.298)	-1.850*** (0.293)	-1.824*** (0.293)	-1.742*** (0.288)	-2.535*** (0.551)	-2.346*** (0.562)	-0.114*** (0.015)	-0.108*** (0.015)	-0.110*** (0.015)	-0.112*** (0.015)	-0.195*** (0.033)	-0.170*** (0.033)
Firm Size	3.274*** (0.228)	3.374*** (0.233)	3.292*** (0.237)	1.263*** (0.242)	2.124*** (0.518)	1.990*** (0.551)	-0.171*** (0.011)	-0.165*** (0.011)	-0.169*** (0.011)	-0.227*** (0.013)	-0.345*** (0.032)	-0.383*** (0.037)
Firm Age	3.105** (0.968)	2.623** (0.971)	2.413* (0.977)	1.605 (0.933)	-5.104 (3.845)	-5.074 (3.839)	-0.182*** (0.044)	-0.208*** (0.044)	-0.216*** (0.044)	-0.234*** (0.043)	-0.024 (0.122)	-0.032 (0.119)
Year Fixed Effects						Included						
Intercept	-5.384 (5.269)	-3.433 (5.112)	-3.977 (5.081)	-8.532 (4.754)	35.881 (19.225)	34.505 (18.969)	4.811*** (0.249)	4.905*** (0.241)	4.887*** (0.242)	4.754*** (0.236)	6.471*** (0.603)	5.891*** (0.651)
R ²	0.697	0.698	0.698	0.717	0.699	0.701	0.595	0.596	0.596	0.605	0.675	0.681
Number of Firm Years		13,584				6,437			13,584			6,437
Number of Firms		736				603			736			603

* p<.05; ** p<.01; *** p<.001. Standard errors are in parentheses.

Figure 1
Institutional Holdings and Tobin's q

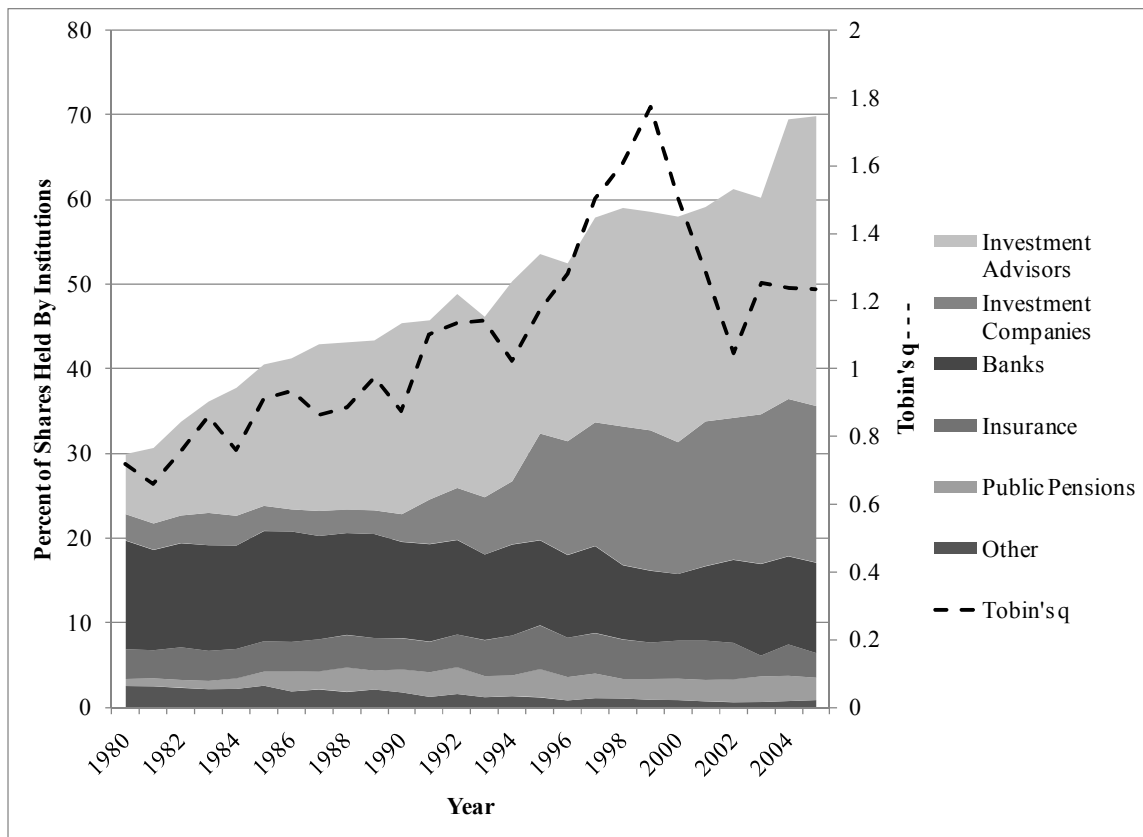


Figure 2
Industrial Diversification & Debt/Equity Ratio

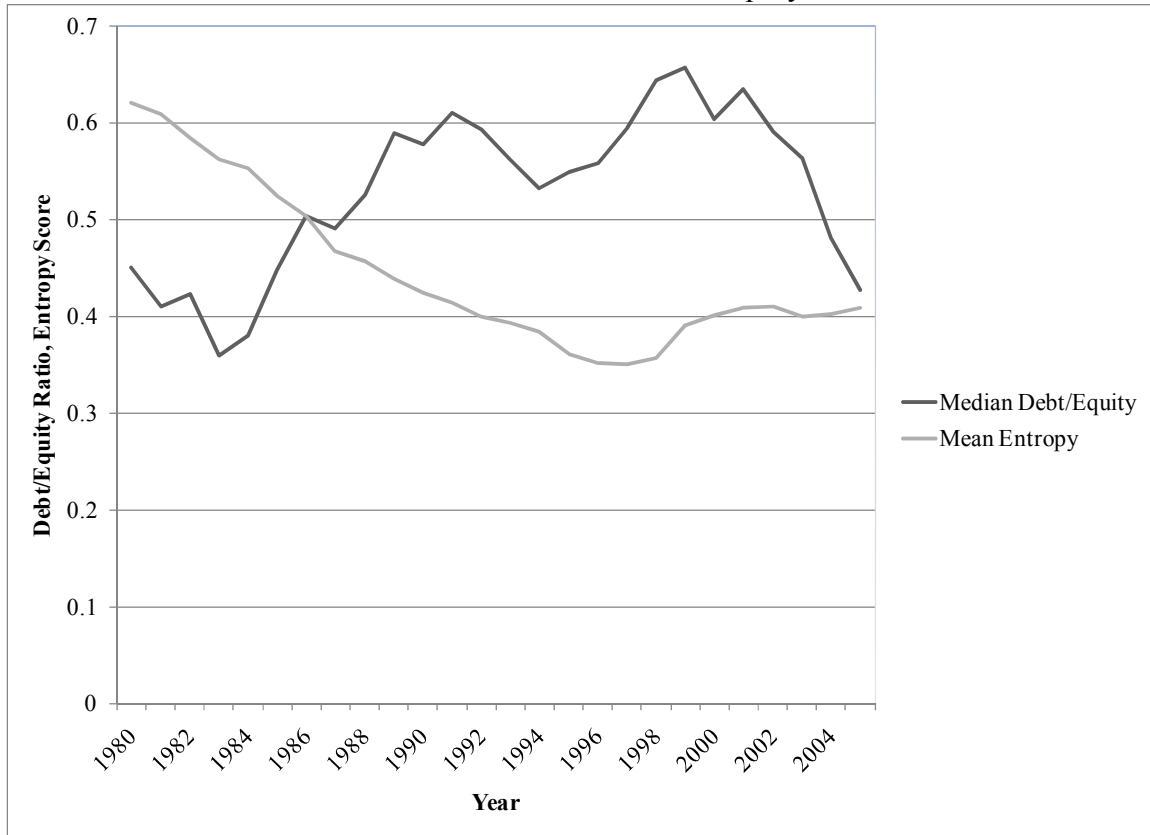


Figure 3
Median CEO Compensation, Average Equity Holding

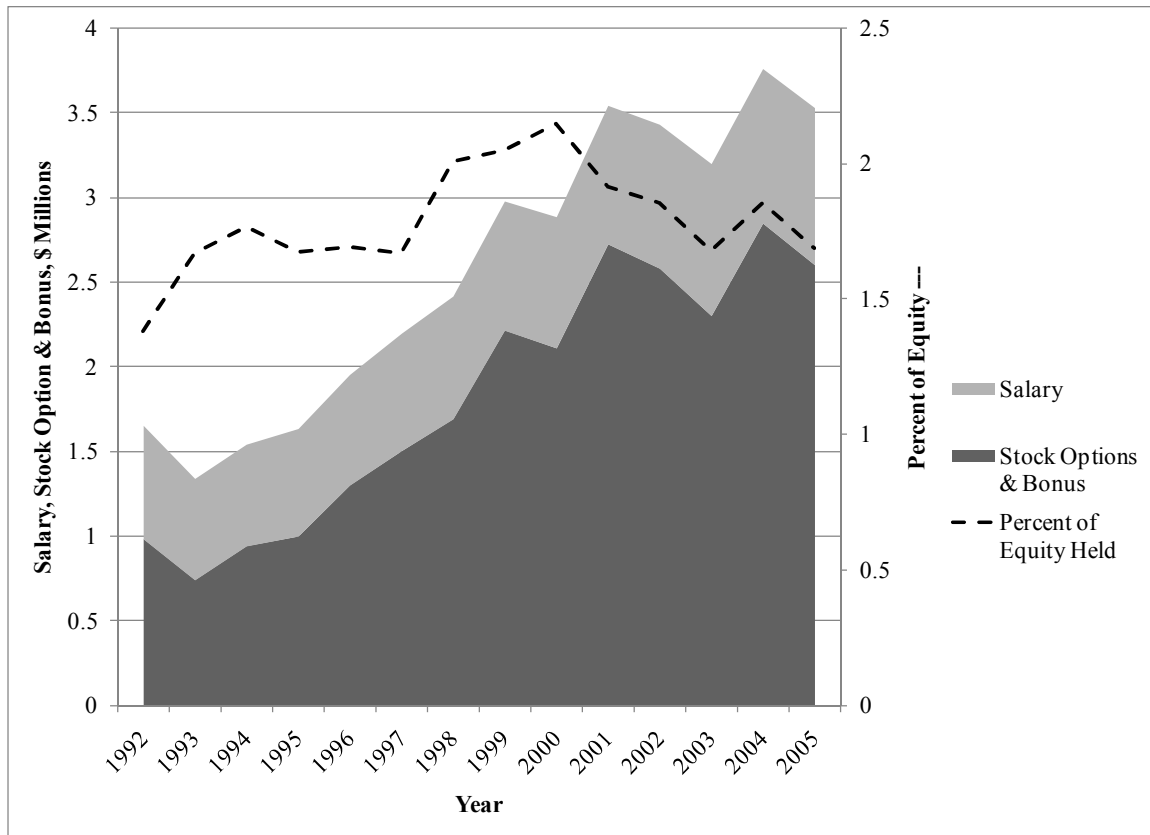


Figure 4
Governance: Directors, Outside Directors, CEO=Chair



Figure 5
CFO Prevalence, Analyst Coverage

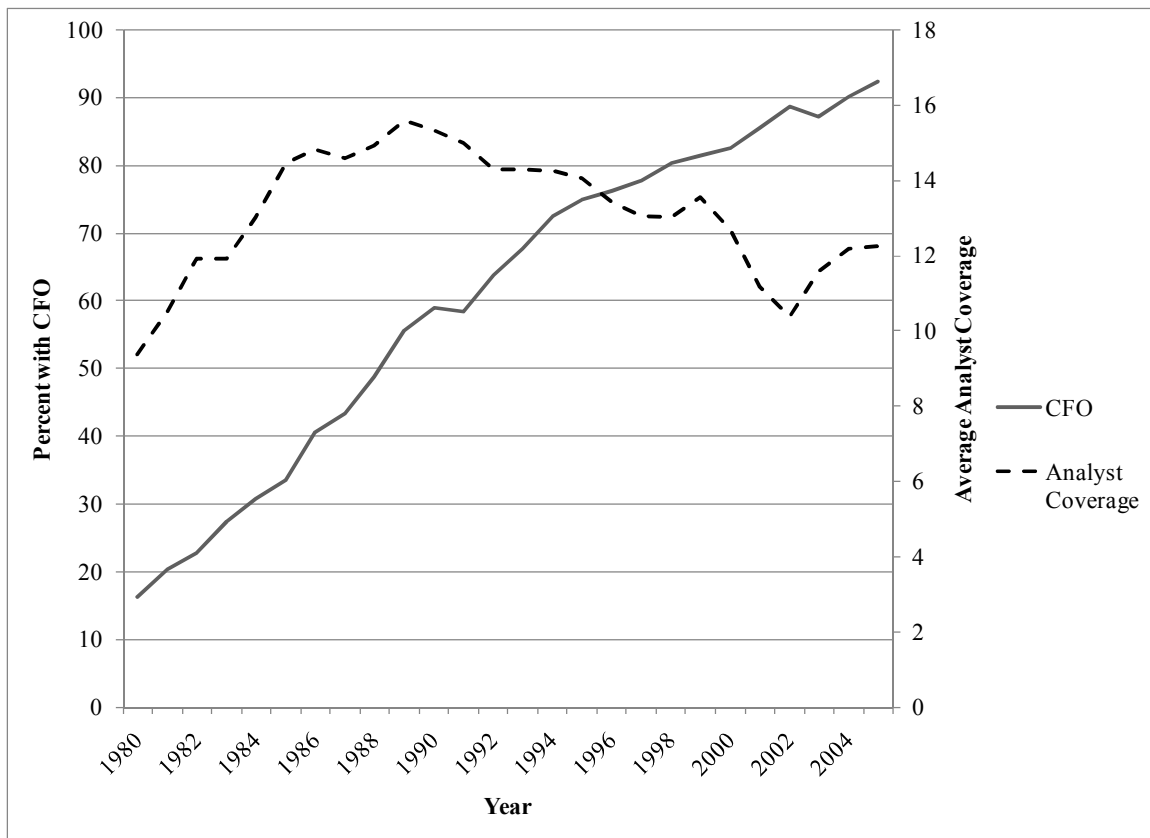


Figure 6
Financial Transparency: Standard Deviation in Forecasts, Firms Meeting Forecasts

