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Corporate Governance and Equity Prices

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ABSTRACT

Corporate-governance provisions related to takeover defenses and shareholder rights vary substantially across firms. In this paper, we use the incidence of 24 different provisions to build a "Governance Index" for about 1,500 firms per year, and then we study the relationship between this index and several forward-looking performance measures during the 1990s. We find a striking relationship between corporate governance and stock returns. An investment strategy that bought the firms in the lowest decile of the index (strongest shareholder rights) and sold the firms in the highest decile of the index (weakest shareholder rights) would have earned abnormal returns of 8.5 percent per year during the sample period. Furthermore, the Governance Index is highly correlated with firm value. In 1990, a one-point increase in the index is associated with a 2.4 percentage-point lower value for Tobin's *Q*. By 1999, this difference had increased significantly, with a one-point increase in the index associated with an 8.9 percentage-point lower value for Tobin's *Q*. Finally, we find that weaker shareholder rights are associated with lower profits, lower sales growth, higher capital expenditures, and a higher amount of corporate acquisitions. We conclude with a discussion of several causal interpretations.

Keywords: *Corporate governance, shareholder rights, investor protection, agency problems, entrenched management, hostile takeovers, poison pills, golden parachutes, greenmail.*

1. Introduction

In reaction to the takeover wave of the 1980s, many firms adopted takeover defenses and other corporate provisions designed to reduce shareholder rights. At the same time, many states passed laws giving firms further protection against takeovers. The end result was wide variation in governance structures across U.S. firms. The relative stability of these structures since 1990 allows for a long-term study of the relationship of corporate governance with stock prices, returns, and corporate performance. Our results demonstrate that firms with weaker shareholder rights earned significantly lower returns, were valued lower, had poorer operating performance, and engaged in greater capital expenditure and takeover activity.

Corporate governance addresses the agency problems that are induced by the separation of ownership and control in the modern corporation. Even in developed countries, these agency problems continue to be sources of large costs to shareholders.[1] In the United States, the primary methods of solving these agency problems are the legal protection of minority investors (including voting rights), the use of boards of directors as monitors of senior management, and an active market for corporate control ("takeovers"). The strength of these methods is determined by securities regulation (at the federal level), corporate law (at the state level), and corporate bylaws, charter provisions, and other rules (at the firm level).

Taken together, these regulations, laws, and provisions define the power-sharing relationship between investors and managers. For example, firms can implement defenses like "poison pills" or classified ("staggered") boards to try to prevent hostile takeovers. Such takeover defenses can either benefit shareholders, if managers use their increased bargaining

[1] Studies of agency problems due to the separation of ownership and control date back to Berle and Means (1932), with its modern development by Jensen and Meckling (1976), Fama and Jensen (1983a, 1983b), and Jensen (1986). Empirical evidence of agency costs is surveyed by Shleifer and Vishny (1997).

power to increase the purchase price, or hurt shareholders, if managers use the defenses to entrench themselves and extract private benefits.[2] Similarly, firms have wide latitude in setting the rules for shareholder voting and the election of the board of directors. If they choose, managers can use this latitude to make it more difficult for shareholders to exercise any influence or control.

Most of the firm-specific variation in corporate governance is a result of provisions adopted and laws passed in the second half of the 1980s. The impact of these changes on shareholder wealth has been analyzed through numerous event studies. Studies of firm-specific provisions face the difficulty that many changes are driven by contemporaneous conditions, and thus the adoption of a provision can both change the governance structure and provide a signal of managers' private information. Event studies of changes in state law are mostly immune from this problem, but are complicated by difficulties in identifying a single date for an event that is preceded by legislative negotiation and followed by judicial uncertainty. Notwithstanding these caveats, the overall evidence suggests small or zero wealth effects for provision adoption and new laws.[3]

In contrast to the direct study of wealth effects, several studies find significant evidence of increased agency costs following the adoption of takeover defenses and the passage of state takeover laws. Borokhovich, Brunarski and Parrino (1997) show that compensation rises for CEOs of firms adopting takeover defenses. Bertrand and Mullainathan (1999a, 1999b, and 2000) find a similar result for CEOs and other employees in firms newly covered by state takeover laws. They also find that these laws cause a decrease in plant-level efficiency,

[2] Researchers have proposed several reasons why takeover defenses might increase shareholder wealth, despite the possible presence of additional agency costs. See DeAngelo and Rice (1983), Shleifer and Vishny (1990), Stein (1988 and 1989), and Stulz (1988).

[3] Comment and Schwert (1995), Karpoff and Malatesta (1989), and Jarrell and Poulsen (1988) are thorough reviews of this evidence.

measured either by total factor productivity or return on capital. Garvey and Hanka (1999) show that state takeover laws led to changes in leverage consistent with increased corporate slack. It is difficult to reconcile this agency-cost evidence with the small announcement effects and with Comment and Schwert's (1995) finding that these laws do not deter takeovers.

A related line of research examines the valuation and long-run performance implications of board membership and structure. This literature finds strong evidence that board membership is related to the degree of agency problems at firms. [Byrd and Hickman (1992), Weisbach (1988), Borokhovich, Parrino, and Trapani (1996)]. Nevertheless, as with the studies on takeover defenses, the evidence for the direct relationship with performance is mixed or goes in an opposite direction from the agency problems. [Bhagat and Black (1999), Core, Larcker, and Holthausen (1999), Hermalin and Weisbach (1991), Yermack (1996)].

For both board membership and takeover defenses, there is a clear relationship with agency costs, but only a weak or nonexistent link with firm value or performance. In an attempt to make more sense of these patterns, our analysis takes a different and complementary approach from the prior literature. Rather than examining performance implications of board structure or looking for wealth effects around announcements of new laws and provisions, we focus on the relationship between a large set of corporate-governance provisions and a firm's long-term performance. We view these provisions as being like a slow-moving "constitution" for the firm that sets the rules for faster-adjusting forms of governance such as board membership, CEO compensation, and shareholder activism. In this respect, our analysis builds on the law and

finance literature that examines the impact of national and state law on firm value and performance.[4]

Like most examples of legal origin and change, the governance structures of a firm are not exogenous, so it is difficult in most cases to draw causal inferences. For this reason, *we make no claims about the direction of causality between governance and performance.* Instead, we analyze whether governance is a useful variable for explaining cross-sectional variation in performance that is not already incorporated into market prices or other firm characteristics. We find economically significant explanatory power along many dimensions, and in the conclusion to the paper we discuss several causal interpretations of these findings and the corresponding policy conclusions for each case.

The data on corporate governance at the firm level are drawn from publications of the Investor Responsibility Research Center (IRRC), an organization that has tracked the provisions for about 1,500 firms per year since 1990. We supplement the IRRC data with information about state takeover laws. These combined resources yield 24 distinct corporate-governance provisions.[5] In Section I, we describe these provisions and data sources in more detail. In Section II, we construct a "Governance Index" from these data to proxy for the balance of power between shareholders and managers. Our index construction is straightforward: for every firm, we add one point for every provision that reduces shareholder rights. This reduction of rights is straightforward in most cases, and the more ambiguous cases are discussed. We then use this index as the central unit of analysis for the rest of the paper. Firms in the highest decile of the index are placed in the "Management Portfolio" and are referred to as having the "highest

[4] For a survey of this literature, see LaPorta et al. (2000). The most closely related analyses to our own are LaPorta et al. (2001), which analyzes the international relationship between shareholder protection and firm value, and Daines (2001), which analyzes the impact of Delaware law on firm value.

[5] For the remainder of the paper, we refer interchangeably to corporate governance "laws", "rules", and "provisions". We also refer interchangeably to "shareholders" and "investors".

management power" or the "weakest shareholder rights"; firms in the lowest decile of the index are placed in the "Shareholder Portfolio" and are referred to as having the "lowest management power" or the "strongest shareholder rights". Section III gives descriptive statistics on takeover probabilities, industry composition, and correlations between the index and other firm characteristics, with special attention paid to these Shareholder and Management Portfolios.

In Section IV, we analyze the relationship between governance and future stock returns. In performance-attribution time-series regressions from September 1990 to December 1999, the Shareholder Portfolio outperforms the Management Portfolio by a statistically significant 8.5 percent per year. Economically large differences, which are present in both the first and second halves of the sample period, are robust to industry adjustments, equal weighting, and alternative sample-selection procedures. In cross-sectional regressions for firms in the Shareholder and Management Portfolios, we control for industry differences and ten other firm-level characteristics and find abnormal returns nearly identical to those in the performance-attribution regressions.

In Section V, we analyze Tobin's *Q* as a function of the Governance Index and other control variables. We find a statistically significant cross-sectional relationship between the Governance Index and *Q* at the beginning of the sample period, with a one-point (= one-provision) increase in the Governance Index associated with a 2.4 percentage point lower value for *Q*. By 1999, the large return differences during the decade make this relationship much stronger, with a one-point increase in the Index associated with an 8.9 percentage point lower value for *Q*.

In Section VI, we investigate the cross-sectional relationship between the Governance Index and proxies for agency costs as found in operating measures, capital expenditure, and

acquisition activity. Partially controlling for differences in market expectations by using the book-to-market ratio, we find evidence that firms with weak shareholder rights are less profitable and have lower sales growth than other firms in their industry. Furthermore, firms with weak shareholder rights have higher capital expenditure and make more acquisitions than firms with strong shareholder rights.

The correlation of the Governance Index with returns, firm value, and proxies for agency costs could be explained several different ways. One explanation, suggested by the results of other studies, is that governance provisions that decrease shareholder rights directly *cause* additional agency costs. If the market underestimates these additional costs, then stock returns would be worse than expected and firm value at the beginning of the period would be too high. The greater agency costs would also show up in lower operating performance. An alternative explanation is that managers understand that future firm performance will be poor, but investors do not foresee this future decline. In this case, prescient managers could put governance provisions in place so as to protect themselves from blame, and while the provisions might have real protective power, they would not necessarily induce additional agency costs. A third explanation is that governance provisions do not themselves have any power, but rather are a signal or symptom of higher agency costs – a signal not properly incorporated in market prices. Each of these explanations has different economic implications for the source of agency problems and different policy implications for the regulation of governance. Section VII concludes the paper with a discussion of these issues.

I. Data

The dataset includes comprehensive information on 24 different corporate-governance provisions for an average of 1,500 firms per year from September 1990 to December 1999. Most of these provisions are directly related to management's options to resist a hostile takeover. Such provisions include famous devices with fanciful names – "poison pills'', "golden parachutes", "antigreenmail" – as well as prosaic methods such as supermajority rules to approve mergers, classified (or "staggered") boards, and limitations of shareholders' ability to call special meetings or to act by written consent. There are also other provisions that do not pertain directly to takeover situations, but rather provide additional liability or severance protection to managers or directors. Appendix A lists and defines all 24 provisions. Table 1 summarizes the frequency of each provision for our sample firms.

The main data source is the Investor Responsibility Research Center (IRRC), which publishes detailed listings of these provisions for each firm. The IRRC data are available only in hardcopy form in the publication *Corporate Takeover Defenses* (Rosenbaum 1990, 1993, 1995, and 1998). These data are drawn from a variety of public sources including corporate bylaws and charters, proxy statements, annual reports, as well as 10-K and 10-Q documents filed with the SEC. The IRRC's universe is drawn from the Standard & Poor's (S&P) 500 as well as the annual lists of the largest corporations in the publications of *Fortune*, *Forbes,* and *Businessweek*. Their data expanded by several hundred firms in 1998 through additions of some smaller stocks and stocks with high institutional-ownership levels. Our analysis uses all stocks in the IRRC universe except those with dual-class common stock (less than 10 percent of the total).[6] The IRRC universe covers most of the value-weighted market: even in 1990, the IRRC tracked more

[6] We omit firms with dual-class common stock because the wide variety of voting and ownership differences across these firms makes it difficult to compare their governance structures with those of single-class firms.

than 93 percent of the total capitalization of the combined New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and Nasdaq markets.

For most of the analysis of this paper, we match the IRRC data to the Center for Research in Security Prices (CRSP) and, where necessary, to Standard and Poor's Compustat database. CSRP matching is done by ticker symbol and is supplemented by handchecking names, exchanges, and states of incorporation. These procedures enable us to match 100 percent of the IRRC sample to CRSP, with about 90 percent of these matches having complete annual data in Compustat.

It is important to note that the IRRC dataset is not intended to be an exhaustive and real-time listing of all provisions. Although firms are given the opportunity to review their listing and point out mistakes before publication, the IRRC does not update every company in each new edition of the book, so some changes may be missed. Also, for some companies, the charter and bylaws are not available and most provisions must be inferred from proxy statements and other filings. Overall, the IRRC intends their listings as a starting point for institutional investors to review governance provisions, and not the final word. Thus, these listings should be viewed as a noisy measure for the existence of governance provisions, but there is no reason to suspect any systematic bias in this measure. Also, all of our analysis uses data available at time t to forecast performance at time $t+1$ and beyond, so there is no possibility of look-ahead bias induced by our statistical procedures.

To build the dataset, we hand-coded the data from the individual firm profiles in the IRRC books. As an example of the primary source material, the 1990 and 1998 profiles for GTE Corporation are included as Appendix B. For each firm, we recorded the identifying information (ticker symbol, state of incorporation) along with the presence of each provision. Although

many of the provisions can apply to varying degrees – e.g., supermajority voting can require different percentage thresholds across firms – we make no strength distinctions within provisions and code all of them as simply "present" or "not present". This methodology sacrifices precision for the simplicity necessary to build an index.

The IRRC firm-level data do not include provisions that apply automatically under state law. Thus, we supplement the IRRC firm-level data with state-level variation in takeover laws as given by Pinnell (2000), another IRRC publication. From this publication, we code the presence of six types of so-called "second-generation" state takeover laws: "antigreenmail", "fair-price", "directors' duties", "control-share acquisition", "business combination", and "control-share cash out".[7]

Antigreenmail, fair-price, and directors'-duties laws work similarly to firm-level provisions of the same name (see Appendix A) and as of September 1990 were in place in seven, 25, and two states, respectively.[8] We code all firms incorporated in these states as though they had the respective firm-level provisions in their charter or bylaws. Control-share acquisition laws give "non-interested" shareholders the right to decide on the voting power of a large shareholder. These laws, in place in 25 states by September 1990 and one additional state in 1991, work much like supermajority-voting provisions (see Appendix A) and are coded equivalently. Business-combination laws provide a moratorium on certain kinds of transactions,

[7] These laws are classified as "second-generation" in the literature to distinguish them from the "first-generation" laws passed by many states in the 60s and 70s and held to be unconstitutional in 1982. See Comment and Schwert (1995) and Bittlingmayer (2000) for a discussion of the evolution and legal status of state takeover laws and firm-specific takeover defenses. The constitutionality of almost all of the second-generation laws and the firm-specific takeover defenses was clearly established by 1990. All of the state takeover laws cover firms incorporated in their home state. A few states have laws that also cover firms incorporated outside of the state that have significant business within the state. The rules for "significant" vary from case to case but usually cover only a few very large firms. We do not attempt to code for out-of-state coverage.

[8] Two states added a fair-price law in 1991, otherwise there were no additions or deletions to these three laws during the 1990s. Pinnell (2000) lists 31 states with directors'-duties laws, but explains that only two states (Indiana and Pennsylvania) have laws that explicitly expand the duties beyond an "affirmation of the corporate common law" (page A-7).

such as asset sales or mergers, between firms and large shareholders. These are the most stringent of the state takeover laws and were in place in 25 states by September 1990 and two additional states by 1998.[9] Since there is no analogue for these laws in the list of IRRC provisions, we code business-combination laws as a separate item. Control-share cash-out laws provide a mechanism for existing shareholders to "cash out" at the expense of a large shareholder. Like business-combination laws, control-share cash-out laws have no analogue among the firm-level provisions, and so are given their own item in our index. Three states had a control-share cash-out law in September 1990, and no new laws were passed during the decade.

In total, there are six different state takeover laws covered by our analysis, but only one state (Pennsylvania) is covered by all of them, with most states (44) covered by three or fewer.[10] Almost all states allow firms to "opt out" of these laws through bylaw or charter amendments; Rosenbaum (1990, 1993, 1995, and 1998) includes this information along with other firm-level data, and we code it from this source. If a firm opts out of a law, then we treat the firm as if the law did not exist in its state.[11] The decision to opt out of laws often results from shareholder pressure, and is most common in Pennsylvania, which has both the highest number and most stringent of these laws.[12]

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[9] About half of the IRRC sample firms are incorporated in Delaware, which has a Business Combination law (but does not have any of the other five laws).

[10] There is also some state-level variation in laws pertaining to other provisions on classified boards, cumulative voting, and shareholder limitations to amend bylaws, charter etc. For a summary of these laws, see Gartman and Issacs (1998). These laws are subject to numerous opt-ins and opt-outs and are often (but not always) evident in other documents reviewed by the IRRC; e.g., cumulative voting or classified boards will be clear from proxy statements. Thus, for these provisions we rely on the firm-level data and do not attempt to code these laws separately.

[11] A few state laws require that a firm "opt in" in order to be covered. If a firm elects to opt in, we code it as though it has the provision. In the absence of an opt-in, we code the provision as absent. There are only a few examples of firms with an opt-in.

[12] In the September 1990 sample, 38 out of the total 50 Pennsylvania firms had opted out of at least one state law.

II. The Governance Index

Provisions tend to cluster within firms. Out of (24 * 23)/2 = 276 total pairwise correlations between the provisions, 199 are positive, and 120 of these positive correlations are significant. (Unless otherwise noted, all statements about statistical significance refer to significance at the five-percent level.) In contrast, only 20 of the 77 negative correlations are significant. This same pattern holds if we exclude state laws and focus only on firm-level provisions. This clustering suggests that firms may differ significantly in the balance of power between investors and management, and motivates the construction of an index to proxy for this difference.

Our index construction is straightforward: for every firm, we add one point for every provision that restricts shareholder rights. Such restrictions can also be interpreted as increases in managerial power. This power distinction is straightforward in most cases, as will be discussed below. While such a simple weighting scheme for these provisions makes no attempt to accurately reflect the relative impacts of different provisions, it has the advantage of being transparent and easily reproducible. In constructing this index, we are not making any judgments as to the efficacy or wealth effects of any of these provisions. Rather, we care only about what a given provision does to the balance of power.

For example, there is a long debate, summarized in Comment and Schwert (1995), about the wealth effects and efficacy of poison pills. Notwithstanding this debate, it is clear that poison pills give current management some additional power to resist the control actions of large shareholders. If management uses this power judiciously, then it could possibly lead to an increase in overall shareholder wealth. If management uses this power to maintain private benefits of control, then poison pills would decrease shareholder wealth. In either case, it is clear

that poison pills increase the power of managers and weaken the control rights of large shareholders. Most of the provisions can be viewed in a similar way; in almost every case, these provisions give management some tool to resist different types of shareholder activism, be it calling special meetings, changing the firm's charter or bylaws, suing the directors, or just replacing them in one fell swoop.

In most cases, the existence of a provision indicates an active move by management and an attempt to restrict shareholder rights. There are two exceptions to this rule – "secret ballots" and "cumulative voting" – in which the provisions tend to come from shareholder pressure. A secret ballot, also called "confidential voting" by some firms, designates a third-party to count proxy votes and does not allow management to know how specific shareholders vote. Cumulative voting allows shareholders to concentrate their directors' votes so that a large minority holder can ensure some board representation. (See Appendix A for longer descriptions). Both of these provisions tend to be proposed by shareholders and opposed by management after they have been proposed.[13] In contrast, none of the other 22 provisions enjoy consistent shareholder support or management opposition; in fact, many of these provisions receive significant numbers of shareholder proposals for their repeal [Ishii (2000)]. Thus, we consider the presence of secret ballots and cumulative voting to be *increases* in shareholder rights. For the Governance Index, we add one point for all firms that do *not* have these provisions.

Out of the 24 provisions listed in Table 1 and Appendix A, there are only two – antigreenmail and golden parachutes – whose classification seems ambiguous. Greenmail – the payment of above-market prices to corporate raiders in order to reduce their threat of takeover –

[13] In the case of secret ballots, shareholder fiduciaries argue that it enables voting without threat of retribution. The most common concern here is the loss of investment-banking business by brokerage-house fiduciaries. See Gillan and Bethel (2001) and McGurn (1989).

is certainly a discretionary tool that adds to managerial power once a raider has accumulated a large stake. In this respect, an antigreenmail provision reduces managerial power, and, by extension, increases shareholder rights. It is also true, however, that greenmail is a profitable exit route for raiders, and the prohibition of greenmail payments will make the accumulation of large "raider" stakes less profitable, *ex ante*. In this respect, prohibitions on greenmail payments are like prohibitions on paying ransom to kidnappers. By restricting their later options, managers reduce the probability of ever receiving hostile attention in the first place. The net impact on both managerial entrenchment and shareholder wealth of these two different effects – discretion and deterrence – is unclear [Shleifer and Vishny (1986)]. To gain some clarification, we turn to the correlation evidence. The presence of antigreenmail restrictions is positively correlated with 20 out of the other 23 provisions, is significantly positive in eight of these cases, and is not significantly negative for any of them.[14] Furthermore, states with antigreenmail laws tend to pass them in conjunction with laws designed, less ambiguously, to prevent takeovers [Pinnell (2000)]. Since it seems likely that most firms and states perceive antigreenmail as a takeover "defense", we are persuaded to treat antigreenmail provisions like the other defenses and code it as a decrease in shareholder rights.

Golden parachutes – large payments to senior executives in the event of job separation following a change in control – are another case with some ambiguity. While such payments would appear to deter takeovers by increasing their costs, one could argue that these parachutes also ease the passage of mergers through contractual compensation to the managers of the target company [Lambert and Larcker (1985)]. While the net impact on managerial entrenchment and shareholder wealth is ambiguous, the more important effect is the clear decrease in shareholder

[14] These correlations are based on the firm-level antigreenmail provisions, and do not include firms that have antigreenmail restrictions only through state law.

rights. In this case, the "right" is the ability of a controlling shareholder to fire management without incurring an additional cost. If the takeover discipline for managers is sweetened by a golden parachute, managerial power would go up in all states: like children who are "punished" with extra ice cream, managers would feel free to misbehave. Furthermore, golden parachutes, like antigreenmail provisions, are highly correlated with all the other takeover defenses. Out of 23 pairwise correlations with the other provisions, 19 are positive, 11 of these positive correlations are significant, and only one of the negative correlations is significant. Thus, we treat golden parachutes as a restriction of shareholder rights. [15]

Constructed in this manner, the Governance Index, which we refer to as "*G*", is just the sum of one point for the existence (or absence) of each provision, with an Index range from 0 to 24. Table 2 gives summary statistics for *G* in 1990, 1993, 1995, and 1998. Table 2 also shows the frequency of *G* by year, broken up into groups beginning with $G \leq 5$, then each value for *G* from $G = 6$ through $G = 13$, and finishing with $G \geq 14$. These ten "deciles" are similar but not identical in size, with relative sizes that are fairly stable from 1990 to 1995. Most of the changes in the distribution of *G* come from changes in the sample due to mergers, bankruptcies, and additions of new firms by the IRRC. In 1998, the sample size increases by about 25 percent, with the distribution of these new firms tilted towards lower values of *G*. At the firm level, *G* is relatively stable; for individual firms, the mean (absolute) change in *G* between publication dates (90, 93, 95, 98) is 0.60, and the median (absolute) change between publication dates is zero.

[15] A related provision is "silver parachutes", which offers payments to a larger number of employees. Since silver parachutes have additional costs to a merger but offer much lower merger incentives to senior management, their classification as a reduction of shareholder rights is less ambiguous. Similarly, "severance" agreements are like golden parachutes but do not require a change in control. Thus, they serve to entrench managers without the offsetting effect for takeovers. Note that such severance agreements may be *ex ante* efficient, but what matters for index construction is that they affect the *ex post* division of power between (harder-to-fire) managers and shareholders.

In the remainder of the paper, we pay special attention to the two extreme portfolios. The "Management Portfolio" is comprised of the firms with the weakest shareholder rights (highest management power): $G \geq 14$. The "Shareholder Portfolio" is comprised of the firms with the strongest shareholder rights (lowest management power): $G \leq 5$. These portfolios are updated at the same frequency as G. Table 3 lists the ten largest firms (by market capitalization) in both of these portfolios in 1990 and gives the value of G for these firms in 1990 and 1998. Of the ten largest firms in the Shareholder Portfolio in 1990, six of them are still in the Shareholder Portfolio in 1998, three have dropped out of the portfolio and have $G = 6$, and one (Berkshire Hathaway) has disappeared from the sample.[16] The Management Portfolio has a bit more activity, with only two of the top ten firms remaining in the portfolio, four firms dropping out with $G = 13$, and three firms leaving the sample though mergers or the addition of another class of stock.[17] Thus, 40 percent (eight out of 20) of the largest firms in the extreme portfolios in 1990 were also in these portfolios in 1998. This is roughly comparable to the full set of firms: among all firms in the Shareholder and Management Portfolios in 1990, 31 percent were still in the same portfolios in 1998.

III. Governance: Descriptive Statistics

Table 4 gives summary statistics and correlations for G in September 1990 with Tobin's Q, firm size, dividend yield, past five-year stock return, and past five-year sales growth. (The construction for each of these variables is given in the table note.) No causal relationships can be inferred from this table – the results are meant to be descriptive and to provide some background

[16] Berkshire Hathaway disappears because they added a second class of stock before 1998. Firms with multiple classes of common stock are not included in our analysis.

[17] NCR disappears after a merger. It reappears in the sample in 1998 after an earlier spin-out, but since it receives a new permanent number from CRSP we treat the new NCR as a different company.

for the analyses in the following sections. The only significant correlation with *G* is for past five-year sales growth, suggesting that high-*G* firms had relatively lower sales growth over the second half of the 1980s, the same period when many of the provisions of *G* were first being adopted. If we restrict the comparison to just the means of the Shareholder and Management Portfolios, the only significant difference is for *Q*, with firms in the Shareholder Portfolio having values of *Q* that are 30 percentage points higher, on average, than firms in the Management Portfolio. We explore the relationship between *G* and *Q* in greater detail in Section V.

We next analyze the relationship between *G* and the probability of being taken over during the 1990s. Many authors have studied the impact of takeover defenses on merger-target probabilities and premia, with mixed results [Ambrose and Megginson (1992), Bhagat and Jefferis (1993), Comment and Schwert (1995), Pound (1987)]. Since takeover defenses are more likely to be adopted by firms facing greater takeover risk, we cannot easily measure deterrent effects using our available data. Instead, we seek only to descriptively analyze the empirical relationship between *G* and takeovers, while leaving aside any issue of causality. [18]

To analyze this empirical relationship, we use the Mergers & Acquisitions database of the Securities Data Corporation (SDC) to compile a comprehensive list of all merger transactions during our sample period. Then, for each year in the sample, we code whether or not each firm was the "target" company of a completed transaction. Out of the 12,511 firm-years that appear during the 1991 to 1999 period, 466 firm-years fall into this target group. We then estimate a

[18] Comment and Schwert (1995) find that the adoption of a poison pill signals a higher probability of a future takeover. In their empirical work, they handle the endogeneity of poison pill adoption through a two-step estimation procedure. As our data on timing of provision adoption are not as fine as theirs, such procedures are not feasible here.

pooled logit regression of "target in year *t*?" (1 if yes, 0 if no) on *G*, the log book-to-market ratio and log of size at the beginning of year *t*.[19]

The results are summarized in Table 5. This table gives the coefficient estimates where *G* is an explanatory variable. The results show a positive but insignificant coefficient on *G*. Thus, takeover rate is not significantly correlated with *G* during the 1990s. Again, this does not mean anything for the deterrence effect of *G*, but rather represents the joint effect of any deterrence along with differential likelihoods for adopting provisions.

Takeover activity tends to be concentrated within specific industries during each takeover wave [Gort (1969), Mitchell and Mulhurin (1996), Andrade, Mitchell, and Stafford (2001)]. If takeover defenses and other provisions are indeed adopted as a function of perceived takeover threat, then one might expect *G* to vary across industries as well. While there is not enough takeover activity in the 1990s to allow a meaningful identification of industry effects in the pooled regression of Table 5, it is possible to examine the industry composition of the Shareholder Portfolio and Management Portfolio and then adjust other analyses for industry differences. Table 6 lists the top five industries for both portfolios in 1990 and 1998. We define 48 industries from four-digit SIC codes as in Fama and French (1997).[20] Panel A ranks industries by the fraction of firms in each portfolio, and Panel B ranks by the fraction of market value. The portfolios appear to be broadly similar to each other in both years, with a mix of "old-economy" and "new-economy" industries. Each portfolio has an important new-economy component: "Computers" comprise the largest industry by market value in the Shareholder

[19] Previous studies have found size to be the best predictor of takeover probabilities, with the book-to-market ratio sometimes significant as well. (Comment and Schwert (1995), Hasbrouck (1985), Morck, Shleifer and Vishny (1988a), and Palepu (1986)).

[20] The industry names are from Fama and French (1997), but use a slightly updated version of the SIC classification into these industries that is given on Ken French's website (June 2001). In Sections IV, V, and VI, we use both this updated classification and the corresponding industry returns, also from the French website.

Portfolio in 1990, with 22.4 percent of the portfolio, but this industry falls to third place with 12.3 percent of the value in 1998; "Communications" does not make the top five in market value for the Management Portfolio in 1990, but shoots up to first place with 25.3 percent of the portfolio in 1998.

IV. Governance and Returns

If corporate governance matters for firm performance *and* this relationship is fully incorporated by the market, then a stock price should quickly adjust to any relevant change in the firm's governance. This is the logic behind the use of event studies to analyze the impact of takeover defenses. If such a reaction occurs, then expected returns on the stock would be unaffected beyond the event window. If, however, governance matters but is not incorporated immediately into stock prices, then realized returns on the stock would differ systematically from equivalent securities. In this section, we analyze whether such a systematic difference exists.

In Section I, we defined the Management Portfolio as containing all firms with $G \geq 14$, and the Shareholder Portfolio as containing all firms with $G \leq 5$. An investment of $1 in the (value-weighted) Management Portfolio on September 1, 1990, when our data begin, would have grown to $3.39 by December 31, 1999. In contrast, a similar $1 investment in the Shareholder Portfolio would have grown to $7.07 over the same period. This is equivalent to annualized returns of 14.0 percent for the Management Portfolio and 23.3 percent for the Shareholder Portfolio, a difference of more than nine percent per year. What can explain this disparity in performance?

One possible explanation is that the performance differences are driven by differences in the riskiness or "style" of the two portfolios. Researchers have identified several equity

characteristics that explain differences in realized returns. In addition to differences in exposure to the market factor ("beta"), a firm's market capitalization (or "size"), book-to-market ratio (or other "value" characteristics), and immediate past returns ("momentum") have all been shown to significantly forecast future returns.[21] If the Management Portfolio differs significantly from the Shareholder Portfolio in these characteristics, then these differences may explain at least part of the difference in annualized raw returns.

Several methods have been developed to account for these style differences in a system of performance attribution. We employ two of them here. First, the four-factor model of Carhart (1997) is estimated by:

$$R_t = \alpha + \beta_1 * RMRF_t + \beta_2 * SMB_t + \beta_3 * HML_t + \beta_4 * Momentum_t + \varepsilon_t \qquad (1)$$

where R_t is the excess return to some asset in month t, $RMRF_t$ is the month t value-weighted market return minus the risk-free rate, and the terms SMB_t (small minus big), HML_t (high minus low), and $Momentum_t$ are the month t returns to zero-investment factor-mimicking portfolios designed to capture size, book-to-market, and momentum effects, respectively.[22] Although there is an ongoing debate about whether these factors are proxies for risk, we take no position on this issue and simply view the four-factor model as a method of performance attribution. Thus, we interpret the estimated intercept coefficient, "alpha", as the abnormal return in excess of what could have been achieved by passive investments in the factors.

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[21] See Basu (1977) (Price-to-Earnings ratio), Banz (1981) (size), Fama and French (1993) (size and book-to-market), Lakonishok, Shleifer and Vishny (1994) (several value measures), and Jegadeesh and Titman (1993) (momentum).

[22] This model extends the Fama-French (1993) three-factor model with the addition of a momentum factor. For details on the construction of the factors, see Fama and French (1993) and Carhart (1997). We are grateful to Ken French for providing the factor returns for *SMB* and *HML*. *Momentum* returns were calculated by the authors using the procedures of Carhart (1997).

The first row of Table 7 shows the results of estimating (1) where the dependent variable, $R_{t,}$ is the monthly return difference between the Shareholder and Management Portfolios. Thus, the alpha in this estimation should be interpreted as the abnormal return on a zero-investment strategy that buys the Shareholder Portfolio and sells short the Management Portfolio. For this specification, the alpha is 71 basis points (bp) per month, or about 8.5 percent per year. This point estimate is statistically significant at the one-percent level. Thus, very little of the difference in raw returns can be attributed to style differences in the two portfolios.

The remaining rows of Table 7 summarize the results of estimating (1) for all ten "deciles" of *G*, including the extreme deciles comprising the Shareholder ($G \leq 5$) and Management ($G \geq 14$) Portfolios. As the table shows, the significant performance difference between the Shareholder and Management Portfolios is driven both by overperformance (for the Shareholder Portfolio) and underperformance (by the Management Portfolio). The Shareholder Portfolio earns a positive and significant alpha of 29 bp per month, while the Management Portfolio earns a negative and significant alpha of –42 bp per month.

The results also demonstrate a strong pattern of decreasing alpha as *G* increases. The Shareholder Portfolio earns the highest alpha of all the deciles, and the next two highest alphas, 24 and 22 bp, are earned by the third ($G = 7$) and second ($G = 6$) deciles, respectively. The Management Portfolio earns the lowest alpha, and the second lowest alpha is earned by the eighth ($G = 12$) decile. Furthermore, the four lowest *G* deciles earn positive alphas, while the three highest *G* deciles earn negative alphas. More formally, a Spearman rank-correlation test of the null hypothesis of no correlation between *G*-decile rankings and alpha rankings yields a test statistic of 0.842, and is rejected at the one-percent level.

What else might be driving the return difference between the Shareholder and Management Portfolios? The bull market in the second half of the 1990s was both long and narrow: five consecutive years of large positive returns on the S&P 500 were driven by a relatively small number of large corporations, particularly those in the technology sector. Table 8 explores whether these known phenomena from the 1990s can explain the return differential between the Shareholder and Management Portfolios. In each case, we estimate (1) on the return difference between the Shareholder and Management Portfolios, while changing some aspect of the portfolio construction or return calculation. The first row of Table 8 is a replication of the first row of Table 7: the dependent variable in (1) is the value-weighted return difference between the portfolios. The remaining rows of the table summarize robustness checks using equal-weighted returns, industry-adjusted returns, fixed 1990 levels of *G*, a subsample that includes only Delaware firms, and subsamples split between the first half and the second half of the time period.

First, to check whether the result is driven solely by a few of the largest stocks, we estimate (1) using equal-weighted returns, with results summarized in the second row of Table 8. The estimated alpha of 45 bp per month is reduced by about one-third from the benchmark, but is still significant. The remaining regressions in the table use value-weighted returns.

Next, we test whether industry differences drive the result. Table 6 in Section II showed that the Shareholder and Management Portfolios differed somewhat in their industry compositions. While factor models such as equation (1) should price industry differences on average, small-sample results from a special decade like the 1990s could lead us to misinterpret industry effects as firm-specific effects. To study this possibility, we use the four-digit SIC code to match each firm to one of 48 industry portfolios as in Table 6. We then subtract the industry

return from each firm in each month and compute an industry-adjusted return for both the Shareholder and Management Portfolios. Finally, we use the difference between these industry-adjusted returns as the dependent variable in equation (1). The results, summarized in the third row of Table 8, show a statistically significant alpha of 47 bp per month. Thus, industry adjustments explain about one-third of the overall return difference between the Shareholder and Management Portfolios.

Although *G* is relatively stable for most firms over the sample period, there is still substantial turnover in the Shareholder and Management Portfolios: about 31 percent of the firms in these portfolios in 1990 are still in the same portfolios in 1998. In addition to "natural" attrition from delistings[23], this turnover is caused by changes in *G* and from additions and deletions of firms by the IRRC. We next analyze how much of the benchmark return differential is driven by these changes in the sample, and how much is driven by the level of *G* at the beginning of the sample. To investigate this issue, we fix the Shareholder and Management Portfolios in September 1990 and continue to hold the same firms in these portfolios as long as they are listed in CRSP, even if their *G* changes or if the IRRC deletes them from later editions of their books. Also, we do not add any new firms that were first listed in later editions of the IRRC book. We then compute value-weighted returns to the portfolios and use the difference as the dependent variable in (1). The results of this regression are summarized in the fourth row of Table 8. The significant alpha of 53 bp per month reflects a return differential driven entirely by cross-sectional variation in *G* for 1990. Thus, the time-series variation in *G* and in sample

[23] If a stock is delisted from CRSP, we include the delisting return from the CRSP files, where available. We do not include any approximations for missing delisting returns. Since few stocks in our sample disappear for performance-related reasons, and those performance delists tend to have relatively small market capitalizations, there should be no bias induced in our value-weighted analysis due to missing delisting returns. See CSRP (2001) and Shumway (1997).

construction adds only 18 bp of the total 71 bp benchmark alpha given in the first row of the table.

The index *G* includes both firm-specific provisions and state-specific laws. It would be interesting to know how much of the benchmark alpha is driven by each component. To the extent that state of incorporation is correlated with regional economic shocks, the attribution of state-level variation would also be useful as a robustness check on the benchmark results. To answer this question, one cannot just separate the provisions from the laws, because provision adoption may depend on whether an equivalent law exists in the state. As an alternative, we eliminate state-level variation by restricting the analysis to include only the firms incorporated in Delaware, which represents 47.0 percent of sample firms and 47.5 percent of sample market value (in 1990). We then calculate the value-weighted returns to the Shareholder and Management Portfolios and use their difference as the dependent variable in (1). The results of this regression are summarized in the fifth row of Table 8. The alpha of 63 bp per month has a *t*-statistic of 1.88 (*p*-value = 0.07). With a point estimate only 8 bp less than the benchmark result, it is clear that state-level variation is *not* the main driver of the overall return differential.

As a final robustness check, we divide the sample into "early" and "late" halves, 56 months for each. The early half of the sample begins in September 1990 and runs through April 1995; the late half runs from May 1995 to December 1999. Since the most anomalous period for technology stocks occurred in the second half of the decade, this sample split should provide a further check on unmeasured industry differences as the driver for the results. The results, summarized in the last two rows of Table 8, are alphas of 45 bp per month for the first half and 75 bp per month for the second half. While the second half of the sample shows abnormal returns 30 bp per month higher than the first half, the point estimate from the first half is

economically large and even has a slightly larger *t*-statistic than the point estimate from the second half (1.91 vs. 1.85). Thus, we conclude that the benchmark result is not driven solely by the second half of the sample.

The results in Tables 7 and 8 rely on a factor-model representation for expected returns. In this context, our finding of nonzero alphas can reflect either abnormal returns to the underlying strategy (Shareholder minus Management) or misspecification of the model. Furthermore, the necessity of forming portfolios for time-series regressions renders it difficult to separately analyze different components of *G*. To solve these problems, we employ a second method of performance analysis: cross-sectional regressions of returns on stock characteristics. In addition to providing another robustness check for the benchmark result, this method also allows for a separate regressor for each component of *G*.

For each month in the sample period, September 1990 to December 1999, we estimate

$$r_{it} = a_t + b_t X_{it} + c_t Z_{it} + e_{it}, \qquad (2)$$

where, for firm i in month t, r_{it} are the returns (either raw or industry-adjusted), X_{it} is a vector of governance variables (either G or its components), and Z_{it} is a vector of firm characteristics. As elements of Z, we include the full set of regressors used by Brennan, Chordia, and Subrahmanyam (1998), plus the addition of five-year sales growth, which is included because of its significant correlation with G (see Table 4) and the finding by Lakonishok, Shleifer, and Vishny (1994) that five-year sales growth explains some cross-sectional variation in stock returns. Variable definitions are given in the note to Table 9, and in greater detail in Appendix C.

Following the method of Fama and Macbeth (1973), we estimate (2) separately for each month and then calculate the mean and time-series standard deviation of the 112 monthly estimates of the coefficients. Table 9 summarizes the results. The first two columns of Panel A give the results when the sample is restricted to stocks in either the Shareholder ($G \leq 5$) or Management ($G \geq 14$) Portfolios. In the first column, the dependent variable is the "raw" monthly return for each stock. In the second column, the dependent variable is the industry-adjusted return for each stock, where industry adjustments are relative to the Fama and French (1997) 48 industries. The key independent variable in these regressions is the shareholder-portfolio dummy, set equal to one if the stock is in the Shareholder Portfolio and zero if the stock is in the Management Portfolio. For both the raw and industry-adjusted returns, the coefficient on this dummy variable is positive and significant at the one-percent level. The average point estimate can be interpreted as a monthly abnormal return; these point estimates, 88 bp per month raw and 72 bp per month industry-adjusted, are similar to those found in the factor models, and provide a further robustness check to the benchmark result.

Columns 3 (raw) and 4 (industry-adjusted) of Panel A give the results for the full sample of firms in each month with G as the key independent variable. In both regressions, the average coefficient on G is negative but is not significant. The point estimates are not small: for example, the point estimate for the coefficient on G in column 3 implies a lower return of approximately 4 bp per month (= 48 bp per year) for each additional point of G, but it would require estimates nearly twice as large before statistical significance would be reached. When combined with the evidence from Table 7 and from the first two columns of Table 9, this result suggests that the 1990s relationship between G and returns may follow a threshold pattern, with most of the return difference driven by the top and bottom quartiles on each end.

Panel B of Table 9 summarizes the results of 112 cross-sectional regressions when all components are included separately on the right-hand-side of (2). The dependent variable is the industry-adjusted return for each stock; results for raw returns are qualitatively similar and are not given in the table. In Panel B, 16 of the 24 provision coefficients are negative, but for only one of these – "silver parachutes" – is the coefficient significant. (With this many regressors, we would expect one to be "significant" just by chance.) These results illustrate the difficulty of measuring return differences for individual provisions. One problem is the multicollinearity due to correlations in the adoption of these provisions. Indeed, many of the point estimates imply return effects above 10 bp per month (= 1.2 percent per year), but are still far from being statistically significant. This result also suggests that the Shareholder-minus-Management return differences are not driven by the presence or absence of any one provision.

V. Governance and the Value of the Firm

It is well established that the state and national laws of corporate governance affect firm value. La Porta et al. (2001) show that firm value depends on international variation in laws protecting the rights of minority shareholders. Daines (2001) finds that, other things equal, firms incorporated in Delaware have higher valuations than other U.S. firms. In this section, we study whether variation in firm-specific governance, as proxied by *G*, is also related to cross-sectional differences in firm value. More importantly, we analyze whether there are any differences in the governance/value relationship between the beginning and end of the decade. Since there is evidence of differential stock returns as a function of *G*, we would expect to find relative "mispricing" between 1990 and 1999 as a function of *G*.

Our valuation measure is Tobin's *Q*, which has been used for this purpose in corporate-governance studies since the work of Demsetz and Lehn (1985) and Morck, Shleifer, and Vishny (1988b). We follow Kaplan and Zingales (1997) and compute *Q* as the market value of assets divided by the book value of assets (Compustat data item 6), where the market value of assets is computed as book value of assets plus the market value of common stock less the sum of the book value of common stock (Compustat data item 60) and balance sheet deferred taxes (Compustat item 74). All book values for fiscal year *t* (from Compustat) are combined with the market value of common equity at the calendar end of year *t*. We then estimate

$$Q_{it} = a_t + b_t G_{it} + c_t W_{it} + e_{it}, \qquad (3)$$

where W_{it} is a vector of firm characteristics. As elements of *W*, we follow Shin and Stulz (2000) and use the log of the book value of assets, the log of firm age as of December of year *t*, and dummy variables for each of the 48 Fama and French (1997) industries.[24] Since Daines (2001) found that *Q* is different for Delaware and non-Delaware firms, we also include a Delaware dummy as an element of *W*. As a further robustness check on the results, we also estimate (3) using only Delaware firms.

We estimate annual cross-sections of (3) with statistical significance assessed within each year (by cross-sectional standard errors) and across all years (with the time-series standard error of the mean coefficient). We also use this procedure when studying operating measures, capital expenditure, and acquisition activity in Section VI. This method of assessing statistical significance deserves some explanation. In particular, one may wonder why a pooled setup with

[24] Unlike Shin and Stulz (2000), we do not trim the sample of observations that have extreme independent variables; results with a trimmed sample are nearly identical and are available from the authors.

firm fixed effects and time-varying coefficients is not used. We avoid fixed effects mainly because there are relatively few changes over time in the Governance Index, and the inclusion of fixed effects would force identification of *G* from only these changes. In effect, we are imposing a structure on the fixed effects that they must be a linear function of *G* or its components.

Table 10 summarizes the results. The first two columns give the results when all firms are included in the sample. Each row of these columns gives the coefficients and *t*-statistics for a different year of the sample; the last row gives the average coefficient and time-series *t*-statistic of these coefficients. The coefficients on *G* are negative in every year and significantly negative in eight of the ten years. The largest absolute value point estimate occurs in 1999, and the second largest is in 1998. The point estimate in 1999 is economically large: a one-point increase in *G* – equivalent to adding a single governance provision – is associated with an 8.9 percentage point lower value for *Q*. Under the assumption that the point estimates in 1990 and 1999 are independent from each other, then the difference between these two estimates (0.089 – 0.024 = 0.065) is statistically significant. We also report the coefficients and *t*-statistics on the Delaware dummy, which tend to be positive at the beginning of the sample and negative towards the end, with an average coefficient that is negative and significant. This is the opposite of Daines' (2001) finding, which may be due to differences in the samples, time periods, or control variables.

The third column of Table 10 shows the annual and mean coefficients on *G* when the sample includes only Delaware firms. If anything, the difference between 1990 and 1999 is even larger, with point estimates of -0.034 in 1990 and -0.109 in 1999. All ten point estimates are negative, seven of them are significant, and the mean coefficient is significant at the one-percent level. Combined with the results from the full sample with the Delaware dummy, this

demonstrates that the level and change in the governance/value relationship is not driven by state-level variation.

Overall, the results for returns and prices tell a consistent story. Firms with the weakest shareholder rights (high values of *G*) significantly underperformed firms with the strongest shareholder rights (low values of *G*) during the 1990s. Over the course of the 1990s, these differences have been at least partially reflected in prices. While high-*G* firms already sold at a significant discount in 1990, this discount became much larger by 1999.

VI. Governance and Agency Costs

There are many ways that agency costs at high-*G* firms can directly affect firm performance. In the specific case of state takeover laws – where causality is easier to establish – researchers have found that the passage of such laws led firms to increase CEO pay, decrease leverage, and have lower productivity at the plant level. [Garvey and Hanka (1999), Bertrand and Mullainathan (1999a, 1999b, and 2000)]. Given these results, one might expect high-*G* firms to have worse operating performance than low-*G* firms. To the extent that these differences were anticipated in 1990, they should have no impact on stock prices or returns over the subsequent decade. While our sample does not include a natural experiment to identify *G* as the cause of operational differences, we attempt to control for "expected" cross-sectional differences by using the log book-to-market ratio as an explanatory variable.

Table 11 shows the results of annual regressions for three different operational measures on *G* and the log book-to-market ratio. The three operational measures are the net profit margin (income divided by sales), the return on equity (income divided by book equity), and (one-year) sales growth. All of these measures are industry-adjusted by subtracting out the median for this

measure in the corresponding Fama-French (1998) industry. This adjustment uses all available Compustat firms. To reduce the influence of large outliers – a common occurrence for all of these measures -- we estimate median (least-absolute-deviation) regressions in each case. The log book-to-market ratio (BM) is included as a control, albeit an imperfect one, for the market's valuation of the firm's equity. The coefficients on BM are negative and highly significant for every measure in every year, indicating that the market is indeed discounting some of the differences in performance: firms with higher book-to-market ratios in year *t-1* have, other things equal, worse performance in year *t*. The main variable of interest is *G*. We find that the average coefficient on *G* is negative and significant for both the net-profit-margin and sales-growth regressions, and is negative but not significant for the return-on-equity regressions. Thus, we conclude that high-*G* firms had worse performance than low-*G* firms, even after controlling for expectations through the book-to-market ratio.

Capital expenditure is another channel where governance can affect performance. Some papers argue that takeover defenses can offset myopia and allow managers to make the "long-term" decision to increase R&D and other capital expenditures. [Stein (1988 and 1989)]. Under this view, takeover defenses would increase capital expenditure, and this increase could be a net positive for firm value. On the other hand, a long literature, dating back at least to Baumol (1959), Marris (1964) and Williamson (1964), discusses the motivation for managers to undertake inefficient projects in order to extract private benefits. These problems are particularly severe when managers are entrenched and can resist hostile takeovers [Jensen and Ruback (1983), Shleifer and Vishny (1989)]. Under this view, if capital expenditure does rise following takeover defenses, this increase would be a net negative for firm value.

The empirical evidence on the impact of takeover defenses on R&D and capital expenditures is mixed, with one study finding an increase [Pugh, Page and Jahera (1992)], but most studies finding a *decrease* [Meulbroek et al (1990), Johnson and Rao (1997), Daines and Klausner (2001)]. The evidence on firm performance following capital expenditure, however, is clearer. Titman, Wei and Xie (2001) find that firms with the highest capital expenditures subsequently earn negative abnormal returns. This relationship is economically large and is stronger for firms with more financial slack and weaker during periods of hostile takeovers. While we cannot settle the causality argument with our evidence, we can see whether *G* is correlated with higher expenditure; in light of the findings of Titman, Wei, and Xie (2001), such a correlation could help explain some of the relationship between *G* and returns in the 1990s.

To examine the empirical relationship between capital expenditure and governance, we estimate annual least-absolute-deviation regressions for capital expenditure (CAPEX), scaled by either sales or assets, on *G* and the log book-to-market ratio (BM). Industry adjustments are done as in the previous analysis for operating measures. Table 12 summarizes the results. The coefficients on BM are negative and significant every year; not surprisingly, high-BM ("value") firms invest less than low-BM ("growth") firms. Even with this control, and industry dummies (suppressed from the table), the average coefficient on *G* is positive and significant in both specifications. Other things being equal, high-*G* firms have higher CAPEX than do low-*G* firms.

Another outlet for capital expenditure is for firms to acquire other firms – the other side of the takeover market. Some of the strongest evidence about the importance of agency costs comes from the negative returns to acquirer stocks when a bid is announced. Considerable evidence shows that these negative returns are correlated with other agency problems, including

low managerial ownership [Lewellen, Loderer and Rosenfeld (1985)], high free-cash flow [Lang, Stulz, and Walkling (1991)], and diversifying transactions [Morck, Shleifer, and Vishny (1990]. In addition to negative announcement returns, there is also long-run evidence of negative abnormal performance by acquirer firms [Loughran and Vijh (1997), Rao and Vermaelen (1998)].[25] Taken together, these studies suggest acquisitions as another pathway for governance to affect performance.

To analyze the relationship between acquisition activity and *G*, we use the SDC database to identify all transactions in which a sample firm acted as either the acquirer or the seller during the sample period. From January 1991 through December 1999, there are 12,694 acquisitions made by sample firms, of which SDC has an acquisition price for just under half. For each firm, we calculate the sum of the price of all acquisitions in each calendar year, and we divide this sum by the firm's average market capitalization for the first day and last day of the year. We define this ratio as the "Acquisition Ratio" for the firm in that year.

Table 13 gives summary statistics for the average number of acquisitions and the average Acquisition Ratio for the Shareholder Portfolio, Management Portfolio, and all sample firms in each year from 1991 to 1999. The average number of acquisitions by firms in the Management Portfolio is higher than the corresponding average in the Shareholder Portfolio in every year, and significantly higher in 1995, 1996, and 1997. Over all nine years, the average of these annual averages is 1.04 in the Management Portfolio. This is significantly higher than the overall average of 0.64 for the Shareholder Portfolio. For the average Acquisition Ratio, the

[25] Mitchell and Stafford (2000) have challenged the magnitude of this long-run evidence, but still allow for some underperformance for acquisitions financed by stock. A related debate on whether diversifying acquisitions destroy value has now grown too large to survey here. The seminal works are Lang and Stulz (1994) and Berger and Ofek (1995). Recent work is summarized in Holmstrom and Kaplan (2001) and Stein (2001).

Management Portfolio is higher in six of the nine years, and the average Acquisition Ratio is 4.93 percent for the Management Portfolio and 2.78 percent for the Shareholder Portfolio.

Table 14 summarizes the results of annual regressions of Acquisition Ratios in year *t* on *G*, the log of size, the log of the book-to-market ratio, and 48 industry dummies, all measured at year-end *t-1*. Since many firms make no acquisitions in a year, the dependent variable is effectively left-censored at zero. We estimate Tobit regressions to account for this censoring. The results show a consistent positive relationship between the Acquisition Ratio and *G*. The coefficient on *G* is positive in every year, and the time-series average coefficient on *G* is positive and significant. Thus, even after adjustments for relative market valuations (as proxied by BM) and firm size, high-*G* firms are more likely to make acquisitions.

In summary, we find that *G* is correlated with poorer levels of operating performance, as well as greater capital expenditure and acquisition activity. One interpretation of these results is that agency costs were larger (smaller) at high-*G* (low-*G*) firms during the 1990s, which would partially explain the relative stock returns and changes in value for these firms if these agency costs were unexpected.

VII. Conclusion

The power-sharing relationship between investors and managers is defined by the rules of corporate governance. In the United States, these rules are given in corporate legal documents and in state and federal laws. There is significant variation in these rules across different firms, resulting in large differences in the balance of power between investors and managers. Using a sample of about 1,500 firms per year and 24 corporate-governance provisions during the 1990s, we build a Governance Index, denoted as "*G*", to proxy for the balance of power between

managers and shareholders in each firm. We then analyze the empirical relationship of this index to stock returns, firm value, operating measures, capital expenditure, and acquisition activity.

We find that corporate governance is strongly correlated with stock returns during the 1990s: an investment strategy that purchased shares in the firms with the lowest *G* (strongest shareholder rights), and sold short firms with the highest *G* (weakest shareholder rights), earned abnormal returns of 8.5 percent per year. At the beginning of the sample, there is already a significant relationship between valuation and governance: each one-point increase in *G* is associated with a 2.4 percentage point lower value for Tobin's *Q*. By the end of the decade, this difference has increased significantly, with a one-point increase in *G* associated with an 8.9 percentage point lower value for Tobin's *Q*.

The results for both stock returns and firm value are economically large and are robust to controls for industry effects, sample composition changes, or sample subperiods. Taken together, this evidence indicates that stock market investors were surprised by the relative performance of high-*G* and low-*G* firms in the 1990s. What might have caused this surprise? One possibility is that governance was cross-sectionally correlated with "unexpected" agency costs as proxied by operating performance, capital expenditure, or acquisition activity in the 1990s. The evidence shows significant relationships with all of these measures: while controlling for market valuations and industry differences, we find that relative to low-*G* firms, high-*G* firms have lower net profit margins and sales growth while also making more capital expenditures and corporate acquisitions.

One explanation for these results is that differences in managerial power directly caused differences in agency costs and these differences were not properly incorporated into market

prices by 1990. If this causal explanation is correct, then the policy implication is clear: a reduction of provisions and decrease in managerial power would decrease agency costs and increase shareholder wealth. This causal interpretation also has implications for takeover laws at the state level and for the ongoing debate about takeover regulation in Europe. While this causal chain has some support from studies of state takeover laws by other researchers, there are still two missing links before such a strong conclusion can be drawn here.

First, we present no evidence in this paper that a high level of *G* actually entrenches managers. It could be that high *G* is merely a signal or symptom, and not the source, of managerial power. In this case, governance provisions could be like a "beware of dog" sign; if such signs were banned then dog owners could probably find another way to signal their resistance to burglars. In this case, the removal of governance provisions would have no effect on agency costs or firm performance, except that firms might need to find a more costly signal. Changes in state laws would also have no effect.

Second, it could be that prescient managers in the 1980s foresaw the problems their firms would have in the 1990s and put governance provisions in place to protect their jobs. In this case, the stock in these companies would be relatively overvalued in 1990, even though objective measures (e.g., *Q* regressions) would suggest that it was undervalued relative to observable characteristics. When the poor performance occurs, the market is surprised, but the managers are not. Furthermore, the high capital expenditures can be explained by a flight to new business lines. Acquisitions can be explained as an attempt to use overvalued stock as currency before the market realizes its true long-run value. Shleifer and Vishny (2001) develop a model to show how such acquisitions can be in the best interests of shareholders even if the stock subsequently underperforms. In this case, performance may have been just as bad without the additional

governance provisions, and the only difference is the relative ease of blaming and firing management. A policy change that removed all provisions would then do nothing but allow for more managerial turnover, with no reduction of agency costs or increase in firm value.

The multiple causal explanations stand as a challenge for future research. The empirical evidence of this paper establishes the high stakes of this challenge. If an 8.9 percentage point difference in firm value were even partially "caused" by each additional governance provision, then the long-run benefits of eliminating multiple provisions would be enormous.

Appendix A – Corporate-Governance Provisions

This appendix describes the provisions listed in Table 1 and used as components of the Governance Index. The shorthand title of each provision, as used in the text of the paper, is given in bold. These descriptions are similar to Rosenbaum (1998).

Antigreenmail – Greenmail refers to the agreement between a large shareholder and a company in which the shareholder agrees to sell his stock back to the company, usually at a premium, in exchange for the promise not to seek control of the company for a specified period of time. Antigreenmail provisions prevent such arrangements unless the same repurchase offer is made to all shareholders or the transaction is approved by shareholders through a vote. They are thought to discourage accumulation of large blocks of stock because one source of exit for the stake is closed, but the net effect on shareholder wealth is unclear (Shleifer and Vishny (1986a)). Five states have specific antigreenmail laws, and two other states have "recapture of profits" laws, which enable firms to recapture raiders' profits earned in the secondary market. We consider recapture of profits laws to be a version of antigreenmail laws (albeit a stronger one). The antigreenmail category includes both firms with the provision and those incorporated in states with either antigreenmail or recapture of profits laws.

Blank check preferred stock – This is preferred stock over which the board of directors has broad authority to determine voting, dividend, conversion, and other rights. While it can be used to enable a company to meet changing financial needs, it can also be used to implement poison pills or to prevent takeover by placement of this stock with friendly investors. Companies who have this type of preferred stock but who have required shareholder approval before it can be used as a takeover defense are *not* coded as having this provision in our data.

Business Combination laws – These laws impose a moratorium on certain kinds of transactions (e.g., asset sales, mergers) between a large shareholder and the firm for a period usually ranging between three and five years after the shareholder's stake passes a pre-specified (minority) threshold.

Bylaw and **Charter** amendment limitations – These provisions limit shareholders' ability to amend the governing documents of the corporation. This might take the form of a supermajority vote requirement for charter or bylaw amendments, total elimination of the ability of shareholders to amend the bylaws, or the ability of directors beyond the provisions of state law to amend the bylaws without shareholder approval.

Classified board – A classified board is one in which the directors are placed into different classes and serve overlapping terms. Since only part of the board can be replaced each year, an outsider who gains control of a corporation may have to wait a few years before being able to gain control of the board. This provision may also deter proxy contests, since fewer seats on the board are open each year.

Compensation plans with changes in control provisions – These plans allow participants in incentive bonus plans to cash out options or accelerate the payout of bonuses should there be a change in control. The details may be a written part of the compensation agreement, or discretion may be given to the compensation committee.

Director indemnification **contracts** – These are contracts between the company and particular officers and directors indemnifying them from certain legal expenses and judgments resulting from lawsuits pertaining to their conduct. Some firms have both "indemnification" in their bylaw/charter and these additional indemnification "contracts".

Control-share cash-out laws enable shareholders to sell their stakes to a "controlling" shareholder at a price based on the highest price of recently acquired shares. This works something like fair-price provisions (see below) extended to non-takeover situations.

Cumulative voting – Cumulative voting allows a shareholder to allocate his total votes in any manner desired, where the total number of votes is the product of the number of shares owned and the number of directors to be elected. By enabling them to concentrate their votes, this practice helps enable minority shareholders to elect favored directors. Cumulative voting and secret ballot (see below), are the only two provisions whose presence is coded as an *increase* in shareholder rights, with an additional point to *G* if the provision is absent.

Directors' duties allow directors to consider constituencies other than shareholders when considering a merger. These constituencies may include, for example, employees, host communities, or suppliers. This provision provides boards of directors with a legal basis for rejecting a takeover that would have been beneficial to shareholders. 31 states also have laws with language allowing an expansion of directors' duties, but in only two of these states (Indiana and Pennsylvania) are the laws explicit that the claims of shareholders should not be held above those of other stakeholders [Pinnell (2000)]. We treat firms in these two states as though they had an expanded directors' duty provision unless the firm has explicitly opted out of coverage under the law.

Fair-Price Requirements – These provisions limit the range of prices a bidder can pay in two-tier offers. They typically require a bidder to pay to all shareholders the highest price paid to any during a specified period of time before the commencement of a tender offer and do not apply if the deal is approved by the board of directors or a supermajority of the target's shareholders. The goal of this provision is to prevent pressure on the target's shareholders to tender their shares

in the front end of a two-tiered tender offer, and they have the result of making such an acquisition more expensive. This category includes both the firms with this provision and the firms incorporated in states with a fair price law.

Golden parachutes – These are severance agreements which provide cash and non-cash compensation to senior executives upon a triggering event such as termination, demotion, or resignation following a change in control. They do not require shareholder approval.

Director **indemnification** – This provision uses the bylaws and/or charter to indemnify officers and directors from certain legal expenses and judgments resulting from lawsuits pertaining to their conduct. Some firms have both this "indemnification" in their bylaws/charter and additional indemnification "contracts". The cost of such protection can be used as a market measure of the quality of corporate governance [Core (2000)].

Limitations on director **liability** – These charter amendments limit directors' personal liability to the extent allowed by state law. They often eliminate personal liability for breaches of the duty of care, but not for breaches of the duty of loyalty or for acts of intentional misconduct or knowing violation of the law.

Pension parachute – This provision prevents an acquirer from using surplus cash in the pension fund of the target in order to finance an acquisition. Surplus funds are required to remain the property of the pension fund and to be used for plan participants' benefits.

Poison pills – These securities provide their holders with special rights in the case of a triggering event such as a hostile takeover bid. If a deal is approved by the board of directors, the poison pill can be revoked, but if the deal is not approved and the bidder proceeds, the pill is triggered. In this case, typical poison pills give the holders of the target's stock other than the bidder the right to purchase stock in the target or the bidder's company at a steep discount, making the

target unattractive or diluting the acquirer's voting power. The early adopters of poison pills also called them "shareholder rights" plans, ostensibly since they give current shareholders the "rights" to buy additional shares, but more likely as an attempt to influence public perceptions. A raider-shareholder might disagree with this nomenclature.

Secret ballot – Under secret ballot (also called confidential voting), either an independent third party or employees sworn to secrecy are used to count proxy votes, and the management usually agrees not to look at individual proxy cards. This can help eliminate potential conflicts of interest for fiduciaries voting shares on behalf of others, or can reduce pressure by management on shareholder-employees or shareholder-partners. Cumulative voting (see above) and secret ballot, are the only two provisions whose presence is coded as an *increase* in shareholder rights, with an additional point to *G* if the provision is absent.

Executive **severance** agreements – These agreements assure high-level executives of their positions or some compensation and are not contingent upon a change in control (unlike Golden or Silver parachutes).

Silver parachutes – These are similar to golden parachutes in that they provide severance payments upon a change in corporate control, but unlike golden parachutes, a large number of a firm's employees are eligible for these benefits.

Special meeting requirements – These provisions either increase the level of shareholder support required to call a special meeting beyond that specified by state law or eliminate the ability to call one entirely.

Supermajority requirements for approval of mergers – These charter provisions establish voting requirements for mergers or other business combinations that are higher than the threshold requirements of state law. They are typically 66.7, 75, or 85 percent, and often exceed

attendance at the annual meeting. This category includes both the firms with this provision and the firms incorporated in states with a "control-share acquisition" law. These laws require a majority of disinterested shareholders to vote on whether a newly qualifying large shareholder has voting rights. In practice, such laws work much like supermajority requirements.

Unequal voting rights – These provisions limit the voting rights of some shareholders and expand those of others. Under time-phased voting, shareholders who have held the stock for a given period of time are given more votes per share than recent purchasers. Another variety is the substantial-shareholder provision, which limits the voting power of shareholders who have exceeded a certain threshold of ownership.

Limitations on action by **written consent** – These limitations can take the form of the establishment of majority thresholds beyond the level of state law, the requirement of unanimous consent, or the elimination of the right to take action by written consent.

Appendix B

GTE Corp.
NYSE : GTE

Incorporated: New York

Takeover Defenses

Charter provisions

Classified board (1986)
Fair price (1986)
Antigreenmail (1986)
Consider nonfinancial effects of merger (1986)
Limited ability (80%) to amend bylaws (1986)
Blank check preferred stock

Bylaw provisions

Other

Poison pill (1986)

Other Corporate Governance Features

Golden parachute(s)
Pension parachute
Compensation plans with change in control provisions

Limited director liability (1988)

Shareholder Proposals

1988: Shareholder proposal to report attendance of directors at meetings. Sponsored by Jeanne C. Smith. For: 14.8%; Against: 85.2%.

1990: Shareholder proposal to provide for confidential voting. Sponsored by the College Retirement Equities Fund. For: 26.3%; Against: 73.7%. 1989--For: 21.8%; Against: 78.2%.

Failed/Withdrawn Management Proposals

1990: A proposal to eliminate shareholder action by written consent was withdrawn.

GTE Corp.
NYSE : GTE
Incorporated: New York

Corporate Governance Provisions

Charter Provisions
Blank check preferred stock
Classified board (1986)
Fair price (1986)
Antigreenmail (1986)
Consider nonfinancial effects of merger (1986)
Limited ability (80%) to amend bylaws (1986)

Bylaw Provisions
Limited ability to call special meeting
-Shareholders may not call special meeting.

Other
Poison pill shareholder rights plan (1989)
Action on poison pill shareholder rights plan
-Original poison pill adopted in 1986.

Other Features
Director liability (1988)
Advance notice for shareholder nomination and/or other business (1986)
-Bylaws--between 30 and 60 days before the annual meeting for nominations and other business.
Confidential voting (1995)
Executive severance agreement(s) with change in control provisions (1986)
Compensation plans with change in control provisions

Shareholder Proposals
1997: Shareholder proposal to repeal classified board. Sponsored by John Gilbert. For: 42.9%; Against: 57.1%. 1996--For: 38.5%; Against: 61.5%. 1995--For: 38.1%; Against: 61.9%. 1994--For: 28.9%; Against: 71.1%. Sponsored by Lewis and John Gilbert. 1993--For: 27.5%; Against: 72.5%. 1992--For: 27.4%; Against: 72.6%. 1991--For: 26.2%; Against: 73.8%.

1997: Shareholder proposal to cap executive pay. Sponsored by the International Brotherhood of Electrical Workers--Langlais. For: 18.1%; Against: 81.9%. 1996--For: 22.4%; Against: 77.6%. 1995--For: 22.2%; Against: 77.8%. 1994--For: 22.4%; Against: 77.6%. 1993--Sponsored by the International Brotherhood of Electrical Workers. For: 23.9%; Against: 76.1%.

1997: Shareholder proposal to redeem or vote on poison pill. Sponsored by the International Brotherhood of Electrical Workers Telephone Coordinating Counsel No. 2. For: 49.7%; Against: 50.3%.

1996: Shareholder proposal to cap executive pay. Sponsored by the International Brotherhood of Electrical Workers--Davis. For: 22.1%; Against: 77.9%. 1995--For: 22.4%; Against: 77.6%. 1994--For: 22.4%; Against: 77.6%. 1993--Sponsored by the International Brotherhood of Electrical Workers Telephone Coordinating Council No. 2. For: 23.8%; Against: 76.2%.

1996: Shareholder proposal to restrict non-employee director pensions. Sponsored by William Steiner--Investors' Rights Association of America. For: 42.3%; Against: 57.7%. 1995--For: 33.2%; Against: 66.8%.

1994: Shareholder proposal to provide for confidential voting. Sponsored by the College Retirement Equities Fund. For: 41.8%; Against: 58.2%. 1993--For: 37.8%; Against: 62.2%. 1992--For: 35.5%; Against: 64.5%.

Appendix C – Regression Variable Definitions

The following variables are used on the right-hand-side of (2) in Section IV. Results of the regression are given in Table 9. This list includes all variables used by Brennan, Chordia, and Subrahmanyam (1998) plus the addition of SGROWTH. All variables are in natural logs unless explicitly noted otherwise.

NASDUM - A dummy variable equal to 1 if the firm traded on the Nasdaq Stock Market at the beginning of month t and 0 otherwise.

BM - The ratio of book value of common equity (previous fiscal year) to market value of common equity measured at previous calendar year end. Book value of common equity is the sum of book common equity (Compustat item 60) and deferred taxes (Compustat item 74). This variable, and all other variables that use Compustat data, are recalculated each July and held constant through the following June.

SIZE - Market capitalization in millions of dollars at the end of month t-2.

PRICE - Price at the end of month t-2.

NYDVOL - The dollar volume of trading in month t-2 for stocks that trade on the New York Stock Exchange (NYSE) or American Stock Exchange (AMEX). Approximated as stock price at the end of month t-2 multiplied by share volume in month t-2. For Nasdaq stocks, NYDVOL equals zero.

NADVOL - The dollar volume of trading in month t-2 for stocks that trade on the Nasdaq. Approximated as stock price at the end of month t-2 multiplied by share volume in month t-2. For NYSE and AMEX stocks, NYDVOL equals zero.

YLD - The ratio of dividends in the previous fiscal year (Compustat item 21) to market capitalization measured at calendar year end (Not in logs).

RET2-3 - Compounded gross returns for months t-3 and t-2.

RET4-6 - Compounded gross returns for months t-6 through t-4.

RET7-12 - Compounded gross returns for months t-12 through t-7.

SGROWTH - The growth in sales (Compustat item 12) over the previous five fiscal years (not in logs).

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Table 1
Governance Provisions

This table presents the percentage of firms with each provision between 1990 and 1998. The data are drawn from the IRRC Corporate Takeover Defenses publications (Rosenbaum 1990, 1993, 1995, and 1998) and are supplemented by data on state takeover legislation coded from Pinnell (2000). See Appendix A for detailed information on each of these provisions. The sample consists of all firms in the IRRC research universe except those with dual class stock.

	Percentage of firms with governance provisions in			
	1990	1993	1995	1998
Antigreenmail	19.5	20.6	20.0	17.2
Blank Check	76.4	80.0	85.7	87.9
Business Combination	83.9	87.4	87.5	88.3
Bylaws	14.4	16.1	16.0	18.1
Charter	3.2	3.4	3.1	3.0
Classified Board	59.0	60.4	61.7	59.4
Compensation Plans	44.7	65.8	72.5	62.4
Contracts	16.4	15.2	12.7	11.7
Control-Share Cash-Out	4.1	3.7	3.6	3.2
Cumulative Voting	18.5	16.5	14.9	12.2
Directors' Duties	10.3	11.0	10.9	10.1
Fair Price	57.8	59.0	57.6	49.2
Golden Parachutes	53.1	55.5	55.1	56.6
Indemnification	40.9	39.6	38.7	24.4
Liability	72.3	69.1	65.6	46.8
Pension Parachutes	3.9	5.2	3.9	2.2
Poison Pill	53.9	57.4	56.6	55.3
Secret Ballot	2.9	9.5	12.2	9.4
Severance	13.4	5.5	10.3	11.7
Silver Parachutes	4.1	4.8	3.5	2.3
Special Meeting	24.5	29.9	31.9	34.5
Supermajority	38.8	39.6	38.5	34.1
Unequal Voting	2.4	2.0	1.9	1.9
Written Consent	24.4	29.2	32.0	33.1
Number of Firms	1357	1343	1373	1708

Table 2
Distribution and Composition of the Governance Index

This table provides sample statistics on the distribution of *G*, the Governance Index, over time. *G* is calculated from the 24 provisions listed in Table 1 as described in Section II. Appendix A gives detailed information on each provision. We divide the sample into ten portfolios based on the level of *G* and list the number of firms in each portfolio. The Shareholder Portfolio is composed of all firms where *G* is 5 or smaller, and the Management Portfolio contains all firms where *G* is 14 or greater.

	1990	1993	1995	1998
Governance Index				
Minimum	2	2	2	2
Mean	9.0	9.3	9.4	8.9
Median	9	9	9	9
Mode	10	9	9	10
Maximum	17	17	17	18
Standard Deviation	2.9	2.8	2.8	2.8
Number of Firms				
$G \leq 5$ (Shareholder Portfolio)	158	139	120	215
$G=6$	119	88	108	169
$G=7$	158	140	127	186
$G=8$	165	139	152	201
$G=9$	160	183	183	197
$G=10$	175	170	178	221
$G=11$	149	168	166	194
$G=12$	104	123	142	136
$G=13$	84	100	110	106
$G \geq 14$ (Management Portfolio)	85	93	87	83
Total	1357	1343	1373	1708

Table 3
The Largest Firms in the Shareholder and Management Portfolios in 1990

This table presents the firms having the largest market capitalizations at the end of 1990 of all companies within the Shareholder Portfolio and the Management Portfolio. The Shareholder Portfolio is composed of all firms where the Governance Index, *G*, is 5 or smaller, and the Management Portfolio contains all firms where *G* is 14 or greater. The calculation of *G* is described in Section II. The companies are listed in descending order of market capitalization.

1990 Shareholder Portfolio

	State of Incorporation	1990 Governance Index	1998 Governance Index
IBM	New York	5	6
Wal-Mart	Delaware	5	5
Du Pont de Nemours	Delaware	5	5
Pepsico	North Carolina	4	3
American International Group	Delaware	5	5
Southern Company	Delaware	5	5
Hewlett Packard	California	5	6
Berkshire Hathaway	Delaware	3	–
Commonwealth Edison	Illinois	4	6
Texas Utilities	Texas	2	4

1990 Management Portfolio

	State of Incorporation	1990 Governance Index	1998 Governance Index
GTE	New York	14	13
Waste Management	Delaware	15	13
General Re	Delaware	14	16
Limited Inc	Delaware	14	14
NCR	Maryland	14	–
K Mart	Michigan	14	10
United Telecommunications	Kansas	14	–
Time Warner	Delaware	14	13
Rorer	Pennsylvania	16	–
Woolworth	New York	14	13

Table 4
1990 Financial Characteristics

This table gives descriptive statistics for the relationship of *G* with several financial and accounting measures. *Size* is market capitalization in millions of dollars at the end of July 1990. *YLD* equals the ratio of dividends (Compustat item 21) in fiscal year 1989 to market capitalization on December 31, 1989. *Q* is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of assets (item 6) and the market value of common stock less the book value of common stock (item 60) and deferred taxes (item 74). The market value of equity is measured on December 31, 1989, and the accounting variables are measured in fiscal year 1989. *5-Year Return* is the return from August 1, 1985 through July 31, 1990. *SGROWTH* is the five-year sales growth (item 12) from fiscal year 1984 through fiscal year 1989. The first column gives the correlations for each of these variables with the Governance Index, *G*, in September 1990. The calculation of *G* is described in Section II. The second and third columns give means for these same variables within the original (1990) Shareholder and Management Portfolios. The Shareholder Portfolio is composed of all firms where *G* is 5 or smaller, and the Management Portfolio contains all firms where *G* is 14 or greater. The final column gives the difference of the two means with the *t*-statistic for the test of equal means in parentheses. Significance at the five-percent and one-percent levels is indicated by * and **, respectively.

	Correlation with *G*	Mean, Shareholder Portfolio	Mean, Management Portfolio	Difference
Q	-0.04	1.77	1.47	0.30* (2.10)
Size	0.01	$1,978.7	$1,784.7	194.0 (0.30)
YLD	0.03	4.20%	7.20%	-3.00% (-0.69)
5-Year Return	-0.01	90.53%	85.41%	5.12% (0.25)
SGROWTH	-0.08**	62.74%	44.78%	17.96% (1.83)

Table 5
Pooled Logit Regressions for Target Probability

This table presents the results of binary logit regressions where the dependent variable, *Target*, equals 1 if a company was the target in a completed merger during the calendar year and 0 otherwise. The explanatory variables are *G*, the Governance Index, *SIZE*, and *BM*. The calculation of *G* is described in Section II. *G* is lagged by one year, *SIZE* is market capitalization in millions of dollars at the end of the previous calendar year, and *BM* is the log of the ratio of book value (the sum of book common equity and deferred taxes) in the previous fiscal year to size at the end of the previous calendar year. Asymptotic *z*-statistics are reported in parentheses below the coefficients, and significance at the one-percent level is indicated by **.

	Target
G	0.01
	(0.55)
SIZE	-0.27**
	(-6.43)
BM	-0.34**
	(-4.11)
Constant	-1.98**
	(-7.07)

Table 6
1990 and 1998 Industry Characteristics

This table summarizes the most prominent industries in the Shareholder and Management Portfolios in September 1990 and December 1998, first by percentage of firms (Panel A) and then by market capitalization as a percentage of the total portfolio size (Panel B). The Shareholder Portfolio is composed of all firms where the Governance Index, *G*, is 5 or smaller, and the Management Portfolio contains all firms where *G* is 14 or greater. The calculation of *G* is described in Section II. We match four-digit SIC codes to the 48 industries designated by Fama and French (1997).

Panel A

Shareholder Portfolio				Management Portfolio			
1990		1998		1990		1998	
Trading:	11.1%	Business Services:	10.7%	Trading:	14.6%	Utilities:	9.0%
Utilities:	10.5%	Electronic Equipment:	7.6%	Retail:	11.0%	Trading:	7.7%
Business Services:	6.5%	Retail:	7.1%	Machinery:	7.3%	Retail:	6.4%
Insurance:	5.9%	Transportation:	6.6%	Consumer Goods:	4.9%	Consumer Goods:	5.1%
Retail:	5.9%	Trading:	5.6%	Petroleum & Natural Gas:	4.9%	Insurance:	5.1%
				Restaurants, Hotels & Motels:	4.9%	Machinery:	5.1%

Panel B

Shareholder Portfolio				Management Portfolio			
1990		1998		1990		1998	
Computers:	22.4%	Retail:	18.6%	Trading:	23.3%	Communications:	25.3%
Retail:	14.2%	Banking:	13.9%	Retail:	14.5%	Chemicals:	8.3%
Utilities:	12.8%	Computers:	12.3%	Other:	13.5%	Trading:	7.6%
Chemicals:	9.9%	Trading:	11.6%	Petroleum & Natural Gas:	10.0%	Banking:	6.5%
Candy & Soda:	9.9%	Chemicals:	7.4%	Insurance:	5.2%	Insurance:	6.3%

Table 7
Performance-Evaluation Regressions for Governance Index Portfolio Returns

We estimate four-factor regressions (equation 1 from the text) of value-weighted monthly returns for portfolios of firms sorted by *G*. The calculation of *G* is described in Section II. The first row contains the results when we use the portfolio that buys the Shareholder Portfolio (*G*≤5) and sells short the Management Portfolio (*G*≥14). The portfolios are reset in September 1990, July 1993, July 1995, and February 1998, which are the months after new data on *G* become available. The explanatory variables are *RMRF*, *SMB*, *HML*, and *Momentum*. These variables are the returns to zero-investment portfolios designed to capture market, size, book-to-market, and momentum effects, respectively. (Consult Fama and French (1993) and Carhart (1997) on the construction of these factors.) The sample period is from September 1990 through December 1999. *t*-statistics are reported in parentheses and significance at the five-percent and one-percent levels is indicated by * and **, respectively.

	a	*RMRF*	*SMB*	*HML*	*Momentum*
Shareholder-Management	**0.71****	**-0.04**	**-0.22***	**-0.55****	**-0.01**
	(2.77)	**(-0.57)**	**(-2.47)**	**(-5.35)**	**(-0.13)**
G≤5 (Shareholder)	0.29*	0.99**	-0.24**	-0.21**	-0.05
	(2.16)	(25.44)	(-5.09)	(-3.83)	(-1.59)
G=6	0.22	0.99**	-0.18**	0.05	-0.08
	(1.23)	(19.41)	(-2.96)	(0.69)	(-1.83)
G=7	0.24	1.05**	-0.10	-0.14	0.15**
	(1.29)	(19.45)	(-1.59)	(-1.90)	(3.07)
G=8	0.08	1.02**	-0.04	-0.08	0.01
	(0.56)	(25.15)	(-0.76)	(-1.48)	(0.18)
G=9	-0.02	0.97**	-0.20**	0.14**	-0.01
	(-0.15)	(28.21)	(-4.90)	(2.93)	(-0.39)
G=10	0.03	0.95**	-0.17**	-0.00	-0.08**
	(0.28)	(29.46)	(-4.35)	(-0.02)	(-2.85)
G=11	0.18	0.99**	-0.14*	-0.06	-0.01
	(1.11)	(21.69)	(-2.52)	(-0.95)	(-0.23)
G=12	-0.25	1.00**	-0.11*	0.16**	0.02
	(-1.69)	(24.06)	(-2.20)	(2.69)	(0.63)
G=13	-0.01	1.03**	-0.21**	0.14*	-0.08*
	(-0.08)	(24.77)	(-4.15)	(2.40)	(-2.13)
G≥14 (Management)	-0.42*	1.03**	-0.02	0.34**	-0.05
	(-2.24)	(19.30)	(-0.30)	(4.58)	(-0.98)

Table 8
Performance-Evaluation Regressions under Alternative Portfolio Construction

This table presents the results of four-factor regressions for variations on the Shareholder minus Management Portfolio. The Shareholder Portfolio is composed of all firms where the Governance Index, *G*, is 5 or smaller, and the Management Portfolio contains all firms where *G* is 14 or greater. The calculation of *G* is described in Section II. The portfolios are reset in September 1990, July 1993, July 1995, and February 1998, which are the months after new data on *G* become available. The sample period is September 1990 to December 1999. The first row duplicates the results contained in the first row of Table 7, where the dependent variable is the difference of the value-weighted monthly returns to the Shareholder and Management Portfolios. In the second row, the monthly portfolio returns are equal-weighted. The remaining rows are value-weighted. The third row contains the results using industry-adjusted returns, with industry adjustments done using the 48 industries of Fama and French (1997). In the fourth row, portfolio returns are calculated maintaining the 1990 portfolios for the entire sample period. The fifth row shows the results of restricting the sample to firms incorporated in Delaware. In the sixth and seventh rows, the sample period is divided in half at April 30, 1995 and separate regressions are estimated for the first half and second half of the period (56 months each). The explanatory variables are *RMRF*, *SMB*, *HML*, and *Momentum*. These variables are the returns to zero-investment portfolios designed to capture market, size, book-to-market, and momentum effects, respectively. (Consult Fama and French (1993) and Carhart (1997) on the construction of these factors.) *t*-statistics are reported in parentheses and significance at the five-percent and one-percent levels is indicated by * and **, respectively.

	α	*RMRF*	*SMB*	*HML*	*Momentum*
Shareholder-Management, Value-Weighted	0.71**	-0.04	-0.22*	-0.55**	-0.01
	(2.77)	(-0.57)	(-2.47)	(-5.35)	(-0.13)
Equal-Weighted	0.45*	-0.00	0.23**	-0.38**	-0.16**
	(2.06)	(-0.01)	(3.02)	(-4.30)	(-2.79)
Industry-Adjusted	0.47*	-0.00	-0.20**	-0.46**	-0.02
	(2.16)	(-0.04)	(-2.63)	(-5.28)	(-0.42)
1990 Portfolio	0.53*	-0.09	-0.05	-0.36**	-0.03
	(2.18)	(-1.35)	(-0.55)	(-3.65)	(-0.42)
Delaware Portfolio	0.63	-0.06	-0.26*	-0.46**	0.07
	(1.88)	(-0.66)	(-2.24)	(-3.41)	(0.78)
Early Half	0.45	-0.19*	-0.37**	-0.21*	-0.19**
	(1.91)	(-2.54)	(-3.45)	(-2.15)	(-2.76)
Late Half	0.75	-0.02	-0.22	-0.77**	0.12
	(1.85)	(-0.21)	(-1.87)	(-4.87)	(1.31)

Table 9
Fama-MacBeth Regressions of Returns on the Governance Index and its Components

Panel A of this table presents the average coefficients and time-series *t*-statistics for 112 cross-sectional regressions for each month from September 1990 to December 1999. The dependent variable is the stock return for month *t*. The results are presented using both raw and industry-adjusted returns, with industry adjustments done using the 48 industries of Fama and French (1997). In the first two columns, the sample is restricted to firms in either the Shareholder or Management Portfolios and we use the independent variable, *Shareholder Portfolio*, a dummy variable that equals 1 when the firm is in the Shareholder Portfolio and 0 otherwise. The Shareholder Portfolio is composed of all firms where the Governance Index, *G*, is 5 or smaller, and the Management Portfolio contains all firms where *G* is 14 or greater. The calculation of *G* is described in Section II. The third and fourth columns include all firms with data for all right-hand side variables and use *G* as an independent variable. *NASDUM* is a dummy variable equal to 1 if the firm trades on the Nasdaq Stock Market and 0 otherwise. *BM* is the log of the ratio of book value (the sum of book common equity and deferred taxes) in the previous fiscal year to size at the end of the previous calendar year. *SIZE* is the log of market capitalization in millions of dollars and *PRICE* is the log of the price, where both *SIZE* and *PRICE* are measured at the end of the second to last month. *NYDVOL* equals the log of the dollar volume of trading in a NYSE or AMEX security during the second to last month, and equals zero for all other securities. *NADVOL* is defined analogously for Nasdaq securities. *YLD* equals the ratio of dividends in the previous fiscal year to size at the end of the previous calendar year. *RET2-3* is the log of the compounded gross returns from months *t-3* to *t-2*, and *RET4-6* and *RET7-12* are defined analogously for months *t-4* to *t-6* and months *t-7* to *t-12*, respectively. *SGROWTH* is the five-year sales growth ending in the previous fiscal year. Appendix C lists the Compustat data items used for each of these variables. In Panel B, we regress monthly industry-adjusted returns on each governance provision (see Appendix A for detailed information about each provision) and the same controls. All regressions are estimated with weighted least squares where all variables are weighted by market value at the end of month *t-1*. Significance at the five-percent and one-percent levels is indicated by * and **, respectively.

Panel A:
Governance Index

	Raw	Industry-Adjusted	Raw	Industry-Adjusted
Shareholder Portfolio	0.88** (2.75)	0.72** (2.76)		
G			-0.04 (-1.12)	-0.02 (-0.95)
NASDUM	-9.24 (-1.41)	-10.83 (-1.76)	-0.88 (-0.13)	-0.18 (-0.03)
BM	0.12 (0.32)	0.18 (0.60)	0.00 (0.01)	0.15 (1.25)
SIZE	0.44 (1.18)	0.14 (0.46)	0.08 (0.31)	0.24 (1.50)
PRICE	0.26 (0.81)	0.40 (1.30)	0.28 (1.16)	0.19 (0.98)
NYDVOL	-0.49 (-1.42)	-0.16 (-0.55)	-0.06 (-0.23)	-0.26 (-1.40)
NADVOL	-0.01 (-0.02)	0.38 (1.03)	0.06 (0.13)	-0.19 (-0.67)
YLD	7.33 (0.50)	4.46 (0.38)	8.00 (0.77)	8.88 (1.29)
RET2-3	-1.55 (-0.65)	-2.10 (-1.19)	-0.46 (-0.32)	-0.91 (-0.86)
RET4-6	-2.06 (-1.01)	-1.46 (-1.01)	-0.47 (-0.35)	-0.54 (-0.57)
RET7-12	0.17 (0.13)	-1.69 (-1.66)	2.36* (2.36)	0.74 (1.13)
SGROWTH	0.62 (1.30)	0.30 (0.69)	-0.00 (-0.00)	0.04 (0.23)
Constant	1.92 (0.59)	-1.11 (-0.40)	0.09 (0.04)	0.50 (0.28)

Panel B
Individual Provisions

	Industry-Adjusted Monthly Return		
Antigreenmail	-0.07 (-0.40)	*Severance*	-0.03 (-0.14)
Business Combination	0.12 (0.47)	*Silver Parachutes*	-0.52* (2.08)
Bylaws	-0.19 (-0.95)	*Special Meeting*	-0.10 (-0.66)
Blank Check	0.10 (0.37)	*Supermajority*	-0.12 (-0.66)
Charter	-0.13 (-0.44)	*Unequal Voting*	-0.36 (-0.70)
Classified Board	0.01 (0.06)	*Written Consent*	0.15 (1.19)
Compensation Plans	0.12 (0.73)	*NASDUM*	-2.08 (-0.50)
Contracts	-0.07 (-0.35)	*BM*	0.15 (1.22)
Control Share Cashout	0.15 (0.58)	*SIZE*	0.18 (1.04)
Cumulative Voting	-0.14 (-0.62)	*PRICE*	-0.03 (-0.30)
Directors' Duties	-0.10 (-0.34)	*NYDVOL*	-0.12 (-0.73)
Fair Price	0.07 (0.50)	*NADVOL*	0.02 (0.09)
Golden Parchutes	-0.11 (-0.69)	*YLD*	2.70 (0.55)
Indemnification	0.16 (1.43)	*RET2-3*	-0.07 (-0.07)
Liability	-0.03 (-0.14)	*RET4-6*	0.46 (0.52)
Pension Parachutes	-0.40 (-1.26)	*RET7-12*	1.38* (2.29)
Poison Pill	-0.16 (-0.96)	*SGROWTH*	0.12 (0.79)
Secret Ballot	-0.09 (-0.63)	Constant	-0.97 (-0.64)

Table 10
Fama-MacBeth Regressions of *Q* on the Governance Index

This table presents regressions of Tobin's *Q* on the Governance Index, *G*, and control variables. The calculation of *G* is described in Section II. *Q* is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes. The market value of equity is measured at the end of the current calendar year and the accounting variables are measured in the current fiscal year. In the first two columns, the explanatory variables are *G*, a dummy variable for incorporation in Delaware, and control variables. The third column restricts the sample to Delaware firms and includes G and the controls as explanatory variables. We include as controls the log of assets in the current fiscal year, the log of firm age measured in months as of December of each year, and industry dummy variables. We create industry dummies by matching the four-digit SIC codes from December of each year to the 48 industries designated by Fama and French (1997). The coefficients on the controls and the constant are suppressed from the table. The coefficients and *t*-statistics from each annual cross-sectional regression are reported in each row, and the time-series averages and time-series *t*-statistics are given in the last row. * and ** indicate significance at the five-percent and one-percent levels, respectively.

	All Firms		Delaware Firms
	G	*Delaware*	*G*
1990	-0.024**	0.057	-0.034**
	(-3.071)	(1.253)	(-2.732)
1991	-0.036**	0.005	-0.044*
	(-2.910)	(0.065)	(-2.235)
1992	-0.033**	0.002	-0.041*
	(-3.275)	(0.037)	(-2.470)
1993	-0.035**	-0.087	-0.031*
	(-3.222)	(-1.368)	(-2.152)
1994	-0.025**	-0.067	-0.024*
	(-2.828)	(-1.310)	(-1.981)
1995	-0.032**	-0.062	-0.021
	(-2.670)	(-0.941)	(-1.376)
1996	-0.021	-0.091	-0.015
	(-1.751)	(-1.360)	(-0.975)
1997	-0.012	-0.113	-0.010
	(-0.867)	(-1.467)	(-0.525)
1998	-0.052*	-0.078	-0.060*
	(-2.545)	(-0.693)	(-1.980)
1999	-0.089**	-0.033	-0.109**
	(-3.124)	(-0.207)	(-2.538)
Mean	-0.036**	-0.047*	-0.039**
	(-5.243)	(-2.774)	(-4.285)

Table 11
Fama-MacBeth Regressions of Operating Measures on the Governance Index

This table gives the results of annual median (least absolute deviation) regressions for net profit margin, return on equity, and sales growth on the Governance Index, *G*, measured in the previous year, and *BM*. The calculation of *G* is described in Section II. Net profit margin is the ratio of income before extraordinary items available for common equity to sales; return on equity is the ratio of income before extraordinary items available for common equity to the sum of the book value of common equity and deferred taxes; *BM* is the log of the ratio of book value (the sum of book common equity and deferred taxes) in the previous fiscal year to size at the close of the previous calendar year. Each dependent variable is net of the industry median, which is calculated by matching the four-digit SIC codes of all firms in the CRSP-Compustat merged database in December of each year to the 48 industries designated by Fama and French (1997). The coefficients and *t*-statistics from each annual cross-sectional regression are reported in each row, and the time-series averages and time-series *t*-statistics are given in the last row. Constants are suppressed from the table. Significance at the five-percent and one-percent levels is indicated by * and **, respectively. All coefficients are multiplied by 1000.

	Net Profit Margin		Return on Equity		Sales Growth	
	G	*BM*	*G*	*BM*	*G*	*BM*
1991	-0.70	-40.7**	-1.19*	-84.8**	-2.30	-31.4**
	(-1.79)	(-26.6)	(-1.99)	(-36.3)	(-1.67)	(-5.8)
1992	-0.52	-42.0**	0.42	-89.5**	-1.43	-28.7**
	(-0.89)	(-17.8)	(0.69)	(-36.3)	(-1.35)	(-6.7)
1993	-0.76	-36.9**	-0.34	-86.3**	-3.35**	-17.8**
	(-1.57)	(-17.7)	(-0.43)	(-25.1)	(-2.87)	(-3.6)
1994	-0.83	-32.7**	-1.07	-89.6**	-2.71*	-17.2**
	(-1.71)	(-15.3)	(-1.75)	(-33.1)	(-2.45)	(-3.5)
1995	-0.72	-29.7**	-1.39	-87.4**	-0.89	-14.3*
	(-1.07)	(-10.4)	(-1.86)	(-27.3)	(-0.52)	(-2.0)
1996	-0.43	-32.3**	0.90	-95.2**	-2.44	-22.5**
	(-1.07)	(-19.6)	(1.38)	(-35.7)	(-1.76)	(-4.0)
1997	0.21	-33.3**	0.66	-95.6**	0.01	-21.7**
	(0.38)	(-14.5)	(0.82)	(-28.5)	(0.00)	(-3.2)
1998	-0.73	-35.9**	-1.28	-101.8**	-1.45	-12.5*
	(-1.16)	(-13.9)	(-1.27)	(-24.3)	(-0.97)	(-2.0)
1999	-1.27*	-36.5**	0.93	-91.8**	-0.52	-40.7**
	(-2.18)	(-18.7)	(1.11)	(-32.0)	(-0.27)	(-6.3)
Mean	-0.64**	-35.5**	-0.26	-91.3**	-1.68**	-23.0**
	(-4.86)	(-26.5)	(-0.79)	(-50.8)	(-4.56)	(-7.5)

Table 12
Fama-MacBeth Regressions of Investment Measures on the Governance Index

This table presents the results of annual median (least absolute deviation) regressions of CAPEX/assets and CAPEX/sales on the Governance Index, *G*, measured in the previous year, and *BM*. CAPEX is capital expenditures, and *BM* is the log of the ratio of book value (the sum of book common equity and deferred taxes) in the previous fiscal year to size at the close of the previous calendar year. Both dependent variables are net of the industry median, which is calculated by matching the four-digit SIC codes of all firms in the CRSP-Compustat merged database in December of each year to the 48 industries designated by Fama and French (1997). The coefficients and *t*-statistics from each annual cross-sectional regression are reported in each row, and the time-series averages and time-series *t*-statistics are given in the last row. Constants are suppressed from the table. Significance at the five-percent and one-percent levels is indicated by * and **, respectively. All coefficients are multiplied by 1000.

	CAPEX/Assets		CAPEX/Sales	
	G	*BM*	*G*	*BM*
1991	1.32**	-13.10**	0.70*	-8.24**
	(4.92)	(-12.59)	(2.23)	(-6.75)
1992	0.42	-10.63**	0.54	-4.56**
	(1.21)	(-7.68)	(1.53)	(-3.24)
1993	0.81*	-9.41**	0.09	-4.93**
	(2.19)	(-5.92)	(0.27)	(-3.38)
1994	0.51	-9.48**	-0.07	-3.72*
	(1.58)	(-6.64)	(-0.18)	(-2.26)
1995	0.35	-11.29**	0.32	-6.06**
	(0.91)	(-6.91)	(0.82)	(-3.64)
1996	0.75	-8.64**	0.31	-6.51**
	(1.95)	(-5.50)	(0.94)	(-4.81)
1997	0.74*	-13.63**	0.70	-5.61**
	(2.21)	(-9.77)	(1.77)	(-3.41)
1998	0.80*	-8.58**	0.37	-5.17**
	(2.14)	(-5.62)	(1.07)	(-3.62)
1999	-0.15	-6.66**	-0.32	-2.29
	(-0.40)	(-5.03)	(-0.85)	(-1.80)
Mean	0.62**	-10.16**	0.30*	-5.23**
	(4.57)	(-13.58)	(2.57)	(-9.26)

Table 13
Acquisitions Summary Statistics

This table presents summary statistics on acquisitions in the Shareholder and Management portfolios and in the entire sample. The data on acquisitions are from the SDC database. The Shareholder Portfolio is composed of all firms where the Governance Index, *G*, is 5 or smaller, and the Management Portfolio contains all firms where *G* is 14 or greater. The calculation of *G* is described in Section II. Acquisition Ratio is defined as the sum of the value of all corporate acquisitions during a calendar year scaled by the average of market value at the beginning and end of the year. The figures are in bold when the means from the Shareholder and Management Portfolios are significantly different from each other at the five-percent level.

	Average Number of Acquisitions			Average Acquisition Ratio		
	Shareholder Portfolio	Management Portfolio	All firms	Shareholder Portfolio	Management Portfolio	All firms
1991	0.37	0.55	0.64	0.82%	1.34%	1.96%
1992	0.41	0.69	0.65	1.22%	0.91%	2.65%
1993	0.55	0.72	0.81	1.65%	3.84%	2.56%
1994	0.57	0.98	0.93	2.03%	1.37%	2.94%
1995	**0.61**	**1.22**	1.14	3.62%	3.53%	4.42%
1996	**0.57**	**1.17**	1.07	**1.03%**	**8.14%**	4.76%
1997	**0.68**	**1.13**	1.10	4.06%	8.10%	5.10%
1998	1.13	1.59	1.36	4.09%	10.01%	6.93%
1999	0.90	1.33	1.10	6.49%	7.10%	6.46%
Mean	**0.64**	**1.04**	0.98	2.78%	4.93%	4.20%

Table 14
Fama-MacBeth Regressions of Acquisition Ratio on the Governance Index

This table presents annual Tobit regressions of the *Acquisition Ratio* on the Governance Index, *G*, measured in the previous year, *SIZE*, *BM*, and industry dummy variables. The calculation of *G* is described in Section II. *Acquisition Ratio* is defined as the sum of the value of all corporate acquisitions during a calendar year scaled by the average of market value at the beginning and end of the year. The data on acquisitions are from the SDC database. *SIZE* is the log of market capitalization at the end of the previous calendar year and *BM* is the log of the ratio of book value (the sum of book common equity and deferred taxes) in the previous fiscal year to size at the end of the previous calendar year. Industry dummy variables are created by matching the four-digit SIC codes of all firms in the CRSP-Compustat merged database in December of each year to the 48 industries designated by Fama and French (1997). The coefficients and asymptotic *z*-statistics from each annual cross-sectional regression are reported in each row, and the time-series averages and time-series *t*-statistics are given in the last row. The coefficients on the industry dummies are suppressed. Significance at the five-percent and one-percent levels is indicated by * and **, respectively. All coefficients are multiplied by 100.

	G	*SIZE*	*BM*
1991	0.51	4.20**	1.46
	(1.08)	(4.35)	(0.652)
1992	0.10	1.58	-1.86
	(0.20)	(1.49)	(-0.73)
1993	0.70	1.25	-0.87
	(1.26)	(1.10)	(-0.31)
1994	0.75	2.95**	-0.48
	(1.56)	(2.96)	(-0.19)
1995	0.41	3.17**	1.89
	(0.94)	(3.38)	(0.80)
1996	1.33*	5.83**	0.37
	(2.23)	(4.80)	(0.12)
1997	0.99*	6.00**	4.65
	(1.96)	(5.58)	(1.68)
1998	1.47	3.01*	-2.59
	(1.95)	(2.01)	(-0.69)
1999	0.84	9.01**	0.45
	(1.14)	(5.64)	(0.13)
Mean	0.79**	4.11**	0.34
	(5.45)	(5.01)	(0.46)