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## WHAT MATTERS IN CORPORATE GOVERNANCE?

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# What Matters in Corporate Governance?

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## Abstract

We investigate which provisions, among a set of twenty-four governance provisions followed by the Investor Responsibility Research Center (IRRC), are correlated with firm value and stockholder returns. Based on this analysis, we put forward an entrenchment index based on six provisions – four “constitutional” provisions that prevent a majority of shareholders from having their way (staggered boards, limits to shareholder bylaw amendments, supermajority requirements for mergers, and supermajority requirements for charter amendments), and two “takeover readiness” provisions that boards put in place to be ready for a hostile takeover (poison pills and golden parachutes). We find that increases in the level of this index are monotonically associated with economically significant reductions in firm valuation, as measured by Tobin’s Q. We present suggestive evidence that the entrenching provisions cause lower firm valuation. We also find that firms with higher levels of the entrenchment index were associated with large negative abnormal returns during the 1990-2003 period. Moreover, examining all sub-periods of two or more years within this period, we find that a strategy of buying low entrenchment firms and selling short high entrenchment firms out-performs the market in most such periods and does not under-perform the market even in a single sub-period. Finally, we find that the provisions in our entrenchment index fully drive the correlation, identified by prior work, that the IRRC provisions in the aggregate have with reduced firm value and lower stock returns during the 1990s; we do not find any evidence that the other eighteen IRRC provisions are negatively correlated with either firm value or stock returns during the 1990-2003 period.

Data on the entrenchment index for 1991-2004 is available for downloading at [www.law.harvard.edu/faculty/bebchuk/data](http://www.law.harvard.edu/faculty/bebchuk/data).

Key words: Corporate governance, agency costs, boards, directors, takeovers, tender offers, mergers and acquisitions, proxy fights, defensive tactics, entrenchment, anti-takeover provisions, staggered boards, corporate charters, corporate bylaws, golden parachutes, poison pills.

JEL Classification: G30, G34, K22

## I. INTRODUCTION

There is now widespread recognition – as well as growing empirical evidence – that corporate governance arrangements can substantially affect shareholders. But which provisions, among the many provisions firms have and outside observers follow, are the ones that play a key role in the link between corporate governance and shareholder value? This is the question we investigate in this paper.

An analysis that seeks to identify which provisions matter should not look at provisions in isolation without controlling for other corporate governance provisions that might influence shareholder value. Thus, it is desirable to look at a universe of provisions together. We focus in this paper on the universe of provisions that the Investor Responsibility Research Center (IRRC) monitors for institutional investors and researchers interested in corporate governance. The IRRC follows 24 governance provisions (the IRRC provisions) that appear beneficial to management – and which may or may not be harmful to shareholders. Prior research has identified a relationship between the IRRC provisions in the aggregate and shareholder value. In an important and influential article, Gompers, Ishii, and Metrick (2003) found that a broad index based on these 24 provisions, giving each IRRC provision equal weight, was negatively correlated with firm value, as measured by Tobin’s Q, as well as stockholder returns during the decade of the 1990s. Not surprisingly, a substantial amount of subsequent research has utilized this index as a measure of the quality of firms’ governance provisions.<sup>1</sup>

There is no a priori reason, of course, to expect that all the 24 IRRC contribute to the documented correlation between the IRRC provisions in the aggregate and Tobin’s Q as well as stock returns in the 1990s.<sup>2</sup> Some provisions might have little relevance, and some provisions might be even positively correlated with shareholder value. And among those provisions that are negatively correlated with firm value or stock returns, some might be more so than others. Furthermore, some provisions might be at least in part the endogenous product of the allocation

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<sup>1</sup> See, e.g., Amit and Villalonga (2004), Ashbaugh, Hollins and Lufand (2004), Cremers, Nair, and Wei (2004); Fahlenbrach (2003), Kau, Linck and Rubin (2004), Klock, Mansi and Maxwell (2003), Litov (2005), and Yermack (2004).

<sup>2</sup> This was well recognized by Gompers, Ishii, and Metrick (2003). To focus on examining the general question whether there is connection between corporate governance provisions in the aggregate and

of power between shareholders and managers set by other provisions. In this paper, we look inside the box of the IRRC provisions to identify which of them are responsible for the correlation between these provisions in the aggregate and shareholder value.

Identifying which IRRC provisions matter in this way can enhance our understanding of the relationship between corporate governance provisions and firm value. To begin, identifying the provisions that do and do not contribute to the negative correlation with Tobin's Q would provide a useful focus for subsequent corporate governance research and practice. These provisions are the ones that have potential relevance for policy-making. Furthermore, knowing which provisions play a key role would likely be useful in identifying the source of the negative correlation between the IRRC provisions in the aggregate and firm performance. Finally, identifying which provisions do and do not matter can assist developing a measure of corporate governance quality that would not be affected by the "noise" created by counting provisions that do not matter.

We start our investigation by hypothesizing which provisions can be expected to play a significant role in driving the documented correlation between IRRC provisions and firm valuation. We develop our list of important corporate governance provisions based on our own analysis of the IRRC provisions, discussions with senior corporate partners in several prominent law firms, as well as the evidence regarding the provisions drawing the greatest opposition from institutional investors voting on precatory shareholder resolutions.

This analysis leads us to identify six provisions that are likely to play a substantial role in the documented correlation between IRRC provisions, in the aggregate, and shareholder value. Four of these provisions set the constitutional limits on shareholder voting power. Shareholders' voting power is ultimately the source of their power, and these four arrangements – staggered boards, limits to shareholder amendments of the bylaws, supermajority requirements for mergers, and supermajority requirements for charter amendments – limit the extent to which a majority of shareholders can impose its will on management. Two other provisions are the most well-known and salient measures taken in preparation for a hostile offer – poison pills and golden parachute arrangements. We construct an index, which we label the "entrenchment index" based on these six provisions. Each company in our database is given a score, from zero to six, based on the

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shareholder value, they chose to abstract from assessing the relative significance of provisions by assigning an equal weight to all the IRRC provisions.

number of these provisions that the company has in the given year or month. Our hypothesis is that the six provisions in the entrenchment index substantially drive the correlation between the IRRC provisions, in the aggregate, and shareholder value.

We first explore whether these entrenching provisions are correlated with lower shareholder value as measured by Tobin's Q. We find that, controlling for the rest of the IRRC provisions, the entrenching provisions – both individually and in the aggregate – are negatively correlated with Tobin's Q. Increases in our entrenchment index are correlated, in a monotonic and economically significant way, with lower Tobin's Q values.

Moreover, the provisions in the entrenchment index appear to be largely driving the correlation that the IRRC provisions in the aggregate have with Tobin's Q. We find no evidence that the 18 provisions not in the entrenchment index are, either in the aggregate or individually, negatively correlated with Tobin's Q. (Indeed, we find that they have a positive correlation with Tobin's Q, though the magnitude of this correlation is very small.)

Of course, documenting that entrenching provisions are negatively correlated with lower firm valuation, like the earlier finding that the IRRC provisions in the aggregate are correlated with lower firm valuation, does not establish that the entrenching provisions, or that the IRRC provisions in general, cause lower firm valuation. The identified correlation might be the product of the tendency of managers of low value firms to adopt entrenching provisions. As a first step in exploring the issue of simultaneity, we examine how firm valuation during the last five years of our sample period, 1998-2002, is correlated with firms' entrenchment scores as of 1990. We find that, even after controlling for firm valuation in 1990, high entrenchment scores in 1990 are negatively correlated with firm valuation in 1998-2002. This finding is consistent with the possibility – even though it does not definitively establish -- that high entrenchment levels at least partly bring about, and not merely reflect, lower firm valuation.

We then turn to explore the extent to which these six entrenching provisions are responsible for the documented correlation between the IRRC provisions and reduced stockholder returns during the 1990s. We find that the entrenching provisions were correlated with a reduction in firms' stock returns both (i) during the 1990-1999 period that Gompers, Ishii and Metrick (2003) studied, and (ii) during the longer 1990-2003 period that we were able to study using the data we had. A strategy of buying firms with low entrenchment index scores and, simultaneously, selling short firms with high entrenchment index scores would have yielded substantial abnormal

returns. To illustrate, during the 1990-2003 period, buying an equally-weighted portfolio of firms with a 0 entrenchment index score and selling short an equally-weighted portfolio of firms with entrenchment index scores of 5 and 6 would have yielded an average annual abnormal return of approximately 7%. The abnormal returns associated with low entrenchment index levels are robust to controlling for firms' industry classification as well as controlling for the number of other IRRC provisions firms had not included in our entrenchment index. In contrast, we do not find evidence that these eighteen other IRRC provisions, those not in our entrenchment index, are correlated with reduced stock returns during the time periods (1990-1999; 1990-2003) we study.

Interestingly, our results concerning the correlation between entrenchment and lower returns during 1990-2003 are not driven by a limited sub-period within this long period. We investigate the returns on a strategy of buying low-entrenchment firms and shorting high-entrenchment firms during all 78 sub-periods of 2 years or more (i.e., all 2-year periods, all 3-year periods, and so forth) during the period 1990-2003. We find that this strategy would have produced positive and statistically significant returns in the overwhelming majority of sub-periods of three or more years, and that it would not have produced a negative and statistically significant return in any of the examined 78 sub-periods.

A finding of a correlation between governance and returns during a given period is subject to different possible interpretations (Gompers, Ishii & Metrick (2003); Cremers & Nair (2004); Core, Guay & Rusticus (2003)). Our results on returns should not be taken to imply that the identified correlation between the entrenchment index and returns should be expected to continue in the future. But our return results do highlight the significance that the entrenchment index provisions have among the larger universe of IRRC provisions.

We conclude that the six entrenching provisions we identify largely drive the negative correlation that the IRRC provisions in the aggregate have with firm valuation and stockholder returns since 1990. These are the provisions on which future research should focus in investigating whether, to what extent, and through which channels, governance provisions affect (rather than reflect) value. These are also the provisions on which public and private decision-makers should focus when seeking to reach policy conclusions.

While we believe that our work identifies some key governance provisions that matter, and some that do not, our work cannot be relied on to have identified *all* the governance

arrangements that matter. Our investigation is limited to the universe of provisions followed by the IRRC, provisions that are a subset – albeit an important one – of the provisions that could matter.

While our investigation is limited to a subset of all governance provisions, our findings might have implications for those investigating sets of governance provisions other than the ones we analyze. In particular, our findings cast some doubt on the wisdom of an approach recently followed by shareholder advisory firms. Responding to the demand for measures of the quality of corporate governance, some shareholder advisory firms have developed and marketed indexes based on a massive number of governance attributes. Institutional Shareholder Services (ISS), the most influential shareholder advisory firm, has developed a governance metric based on 61 elements (see Brown and Caylor (2004)). Governance Metric International has been even more ambitious, including more than 600 provisions in its index. The development and use of these indexes has put pressure on firms to change their governance arrangements in ways that will improve their rankings.

Our results indicate that this “kitchen sink” approach of shareholder advisory firms might not be best. Among a large set of governance provisions, the provisions of real significance are likely to constitute only a limited and possibly small subset. Pressuring firms to improve their index rankings could be counter-productive when the index gives weight to many innocuous or even beneficial provisions and correspondingly under-weight provisions that are in fact quite harmful to shareholders. And governance quality could well be measured more accurately by using a smaller index based on the provisions that do matter than by using a broader index that counts many provisions that do not in fact matter and only serve to introduce noise. Thus, investment decisions and governance improvements could be better served by an approach that seeks to identify and focus on key harmful provisions rather than attempt to count all the trees in the governance forest.

The rest of our analysis is organized as follows. Section II provides the needed background in terms of theory, institutional detail, and prior work. Section III describes the data. Section IV studies the correlation between the entrenchment index and firm value. Section V studies the correlation between this index and stock returns during the 1990-1999 and 1990-2003 periods. Section VI offers some concluding remarks.

## II. ENTRENCHMENT: IMPORTANCE, DETERMINANTS, AND PRIOR WORK

### *A. Importance*

We take the view – which is shared by many but certainly not all researchers – that arrangements that protect incumbents from removal or its consequences are harmful to shareholders. We refer to such protection as “entrenchment.” A large body of theoretical literature has analyzed the possible consequences of entrenchment, which can affect shareholder interests through many channels (see Bebchuk (2002) for a survey).

Those concerned about insulation from intervention or removal by shareholders have been most concerned about the adverse effects that entrenchment can have on management behavior and incentives. Such insulation might harm shareholders by weakening the disciplinary threat of removal and thereby increasing shirking, empire-building, and extraction of private benefits by incumbents (Manne (1965)). In addition, such insulation might have adverse effects on the incidence and consequences of control transactions (see, e.g., Easterbrook and Fischel (1981))

Concerns about insulation are by no means universal, however, and some strongly believe that insulating incumbents from intervention and removal by shareholders in fact benefits the latter. Such protection might benefit shareholders by inducing management to invest optimally in long-term projects (Stein (1988), Bebchuk and Stole (1993)) and avoid deadweight losses and inefficient actions that might otherwise be undertaken to reduce the likelihood of a takeover bid (Arlen and Talley (2003)). Such protection might also help shareholders by strengthening incumbents’ bargaining power and enabling them to extract higher acquisition premia in negotiated transactions (Stulz (1988)).

The disagreements about this basic question of governance are difficult to resolve at the level of theory. Empirical work seems necessary for determining whether the overall effect of entrenching provisions is positive or negative. By examining the correlation between entrenching provisions and shareholder value, we seek to contribute to this inquiry by testing the prediction that higher levels of entrenchments are associated with lower shareholder value.

## *B. Determinants*

What are the provisions in the IRRC universe that are most responsible for, or reflective of, managerial entrenchment? We begin by forming a list of entrenching provisions based on the following:

- (i) Our own analysis of the potential consequences of each of the IRRC provisions,<sup>3</sup>
- (ii) Discussions of the subject we held with six prominent merger & acquisitions lawyers in leading corporate law firms,<sup>4</sup>
- (iii) Existing evidence about the effects of some IRRC provisions, and
- (iv) Evidence about the provisions attracting the most widespread opposition from institutional investors voting on precatory shareholder resolutions. While most precatory shareholders' resolutions fail to obtain majority support, a few types of resolutions have commonly obtained majority support during the period of our study. As will be discussed, five of the six provisions in our entrenchment index, but none of the other IRRC provisions, have been the target of opposing shareholder resolutions that commonly obtain majority support.

Based on all the above, we identified six provisions as ones that could well have a meaningful effect on the extent to which incumbents are protected from replacement or its consequences.

### *1. The Entrenching Provisions*

The entrenching provisions that we discuss below belong to two categories. Four of them involve constitutional limitations on shareholders' voting power. At bottom, shareholders' most important source of power is their voting power (Clark 1986). But shareholders' voting power can be constrained by constitutional arrangements that constrain the ability of a majority of the

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<sup>3</sup> Two of us teach corporate law and securities law for a living.

<sup>4</sup> These lawyers were: Richard Climan, head of the mergers & acquisitions group at Cooley, Godward; David Katz, a prominent corporate lawyer at Wachtell, Lipton, Rosen & Katz; Elieen Nugent, a co-author of a leading treatise on acquisitions and corporate partner at Skadden, Arps, Sale, Meagher & Flom; Victor Lewkow, a leading mergers & acquisitions lawyer at Cleary Gottlieb; James Morphy, managing partner of the mergers and acquisitions group at Sullivan & Cromwell; and Charles Nathan, global co-chair of the mergers and acquisitions department of Latham & Watkins. We are grateful to them for their time and insights.

shareholders to have their way. The other two provisions can be regarded as “takeover readiness” provisions that boards sometimes put in place. The six provisions and the reasons for including them in our entrenchment index are as follows.

(i) *Staggered Boards*: When the board is staggered, directors are divided into classes, typically three, with only one class of directors coming up for reelection each year. As a result, shareholders cannot replace a majority of the directors in any given year, no matter how widespread the support among shareholders for such a change in control. Staggered boards are a powerful defense against removal in either a proxy fight or proxy contests. There is evidence that staggered boards are a key determinant for whether a target receiving a hostile bid will remain independent (Bebchuk, Coates, and Subramanian (2002, 2003)). There is also evidence that, controlling for all the other IRRC provisions, staggered boards are negatively correlated with Tobin’s Q (Bebchuk and Cohen (2004)).<sup>5</sup>

The lawyers with whom we discussed the subject were all of the view that staggered boards are a key defense against control challenges. Precatory resolutions to de-stagger the board are one of the most common types of shareholder resolutions, and they have obtained large shareholder support throughout the period of our study, reaching an average support of 62% of the shares voted in 2003, the highest level of support given to any type of precatory resolution (Georgeson Shareholder, 2003).

(ii) *Limits to Amend By-Laws*: In addition to the power to vote to remove directors, shareholders have the power to vote to amend the company bylaws, which contain various governance arrangements. In some companies, shareholders’ power to amend the bylaws is constrained by limits included in the corporate charter or the bylaws themselves. Such limits usually take the form of supermajority requirements that can make it difficult for shareholders to pass a bylaw amendment opposed by management because not all non-management shareholders are likely to participate in a vote and management commonly commands or influences at least some votes.

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<sup>5</sup> After finding that staggered boards are correlated with higher likelihood of remaining independent in the face of a hostile bid and with lower firm valuation, these studies also distinguish between charter-based staggered boards and bylaw-based staggered boards, and find that the effect of staggered board is largely due to the former type. Because bylaw-based staggered boards comprise only 10% of all staggered boards, however, we felt it was unnecessary to use this refinement in the current project in which staggered boards are only one of set of provisions under investigation. Using charter-based staggered boards instead of staggered boards in our index does not change the results in any meaningful way.

The lawyers with whom we discussed the subject were all in consensus that limits on by-law amendments can significantly enhance the effectiveness of a target's defenses. In the Delaware case reflecting this view, *Chesapeake Corp. v Marc P. Shore*, the court ruled that a supermajority requirement of two-thirds of all outstanding shares for a bylaw amendment had draconian antitakeover consequences by making it practically impossible for non-management shareholders to remove certain defensive provisions that management earlier placed in the bylaws.

(iii) & (iv) *Supermajority Requirements for Mergers and Charter Amendments*: In addition to the power to vote out directors and amend bylaws, shareholders have the power to vote to approve charter amendments and mergers. Some companies, however, have limitations on the ability of shareholders to pass charter amendments (typically in the form of supermajority requirements) and supermajority requirements for approving a merger. When such provisions are present, management might be in a position to defeat or impede charter amendments or mergers even if they lose control of the board. Thus, to the extent that such provisions could enable management and shareholders affiliated with them to block changes, this might discourage outsiders from seeking to gain control of the board through a hostile bid or a proxy contest.

The lawyers with whom we discussed the subject regarded supermajority provisions as ones that can be helpful in providing "a second line of defense," though ones that are likely to be less important than staggered boards and limits on bylaw amendment. Precatory resolutions calling for eliminating supermajority provisions are less common than precatory resolutions to eliminate staggered boards (which might be partly due to the fact that staggered boards are less common than supermajority provisions), but such resolutions do obtain significant shareholder support when brought. For example, in 2003, such resolutions attracted on average 60% of the shares voted, the second-highest level of support awarded to any type of precatory resolution (Georgeson Shareholder, 2003).

(v) *Poison pills*: Pills (less colorfully known as shareholder rights plans) are rights that, once issued by the company, preclude a hostile bidder as a practical matter from buying shares as long as the incumbents remain in office and refuse to redeem the pill. The legal developments that allowed boards to put in place pills are thus widely regarded to have considerably strengthened the protections against replacement that incumbents have.

It should be noted that boards may adopt poison pills, with no need for a shareholder vote of approval, not only before but also after the emergence of a hostile bid. For this reason, even a

company that does not have a poison pill in place can be regarded as one having “a shadow pill” that would likely be rolled out in the event of a hostile bid (Coates, 2000). Nonetheless, during the period under examination, a substantial fraction of companies (ranging from 54% to 59% during the period) do have pills in place. Having a poison pill in place is not costless for the board, because institutional investors look unfavorably on poison pills. During the 1990-2003 period, shareholder resolutions seeking to limit poison pills constituted more than 20% of all shareholder resolutions (Georgeson Shareholder, 2000, 2003), and these resolutions attracted substantial shareholder support. In 2003, for example, resolutions calling for poison pill rescission obtained support from an average of 59% of the voting shareholders, the third-highest level of support enjoyed by any type of shareholder resolution. Boards that refrained from or eliminated poison pills have won some favorable reactions from institutional investors, as well as eliminated the risk of facing one of the precatory shareholder resolutions targeting pills.

Lawyers with whom we discussed the subject noted several reasons why they and other lawyers often advised clients concerned about a hostile bid to put a pill in place. To begin, having the pill in place saves the need to install it in “the heat of battle.” This removes one issue from those that the board and its independent directors will have to deal with should a hostile bid be made. Furthermore, according to these lawyers, there was a widespread perception that adopting a pill or keeping one in place sends a message to hostile bidders that the board will “not go easy” if an unsolicited offer is made, and that, conversely, not adopting a pill or (even worse) dropping an existing pill could be interpreted as a message that incumbents are “soft” and “lack resolve.” Finally, having a pill in place provides an absolute barrier to any attempts by outsiders to obtain through market purchases a block larger than the one specified by the terms of the pill (usually 10%-15%).<sup>6</sup> For all these reasons, incumbents worried about a hostile bid could have slept somewhat better had they circled the wagons and put a pill in place.

(vi) *Golden parachutes*: Golden parachutes are terms in executive compensation agreements that provide executives with substantial monetary benefits in the event of a change in control. Golden parachutes protect incumbents from the prospect of replacement by providing management with a soft and sweet landing in the event of ouster. Thus, a golden parachute

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<sup>6</sup> Incumbents have some protection from attempts to obtain quickly a significant block by the notice requirements of the Hart-Scott-Rodino Act and the Williams Act. But as John Malone’s recent surprise move to increase his stake at News Corp illustrates, a poison pill (which News Corporation’s management hastily adopted) is sometimes necessary to block such moves.

provides incumbents with substantial insulation from the economic costs that they would otherwise bear as a result of losing their control.

To be sure, even when executives do not have a golden parachute in their ex ante compensation contracts, boards can and often do grant executives “golden goodbye” payments when an acquisition offer is already on the table (Bebchuk and Fried (2004, Ch. 7), Hartzell, Ofek and Yermack (2004)). But such ex post grants require much more explaining to outsiders. Therefore, according to the lawyers with whom we discussed the subject, they recommend golden parachutes to any incumbents who attach a significant likelihood of their company being acquired.

There is a view that sees golden parachutes as ones that serve the interests of shareholders by making incumbents more willing to accept an acquisition (Kahan and Rock (2002), Lambert and Larker (1985)). However, while this effect might be beneficial, golden parachutes might also have an adverse effect by increasing slack on the part of managers as a result of being less subject to discipline by the market for corporate control. Whatever the reason, resolutions targeting golden parachutes obtained substantial shareholder support in recent years. For example, in 2003, resolutions targeting golden parachutes received on average 53% of the votes, the fourth-highest level of support for any type of precatory resolution. In any event, whatever the overall effect of golden parachutes, we view them as likely to be negatively correlated with firm value because managers of low-value firms who face a higher likelihood of being acquired are especially likely to seek them.

## *2. Other Provisions*

We have thus far explained the reasons that have led us to identify six provisions as ones that are likely to matter for measuring the level of entrenchment. These six provisions represent a quarter of the twenty-four IRRC provisions. We now turn to explain why we have opted not to add any one of the remaining 18 provisions.

In our discussions on the subject with lawyers, none of these provisions was suggested to be ones that are likely to be an important aspect of firms’ entrenchment level. Furthermore, none of these provisions was the target of precatory resolutions enjoying substantial support among shareholders. Most of these provisions did not attract precatory resolutions, and those that did

(such as the absence of confidential voting) generally failed to attract majority support from shareholders (see, e.g., Georgeson Shareholder (2003)).

Our own analysis also did not identify any of these eighteen provisions as ones that can be expected to have a material effect on the level of entrenchment. For example, fair price provisions and business combination statutes are takeover protections that were deemed important in the late 1980s but have become largely irrelevant by subsequent legal developments that provide incumbents with the power to use more powerful takeover defenses.<sup>7</sup>

Another example of a takeover-related provision that we believe to be largely inconsequential is blank check preferred stock. This provision was included by the IRRC and prior research in the set of studied provisions because blank check preferred is the currency most often used for the creation of poison pills. As confirmed in the discussions on the subject we had with lawyers, however, lawyers are able to, and do, create poison pills without blank check preferred. Indeed, in the IRRC data, of the companies that did not have a blank check preferred stock in 2002, about 45% nevertheless had a poison pill in place.

We did not include limits on shareholder power to call a special meeting and to act by written consent because there is evidence that, while staggered boards substantially reduce the likelihood of a hostile bidder's success, limits on special meeting and written consent do not have a statistically significant effect on the outcome of hostile bids (Bebchuk, Coates, and Subramanian (2003)). Such limits prevent shareholders from voting between annual meetings and require them to wait until the annual meeting to conduct any vote, but the practical significance of the required delay is quite limited. Even when shareholders can act by written consent or call a special meeting, the rules governing proxy solicitations are likely to impose some delay before a vote can be conducted. And waiting until the next annual meeting commonly does not involve substantial delay. Assuming that issues that making a vote desirable arrive uniformly over time, the next annual meeting would take place an average of six month after an issue arose.

Some of the IRRC provisions are related not to issues of control changes but rather to issues of liability and indemnification in the event of shareholder suits. As Black, Cheffins and

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<sup>7</sup> As long as incumbents are in office, they can now use a poison pill to prevent a bid, and thus have little need for whatever impediments are provided by fair share and business combination arrangements. And if the bidder were to succeed in replacing incumbents with a team that would redeem the pill, fair price and business combination arrangements would remain irrelevant because they apply only to acquisitions not approved by the board.

Klausner (2003) powerfully argue and document, directors are protected from personal liability by a myriad of factors. The risk of liability is negligible even in companies that do not have any of the IRRC provisions. Personal liability might arise in some rare cases of egregious bad faith behavior, but in such cases the three liability and indemnification provisions in the IRRC set would provide no protection.

Although our own analysis, discussions with lawyers, and examination of the provisions attracting opposition from institutional investors did not provide us with any good reasons for viewing the provisions not in our entrenchment index as significant for entrenchment. We of course cannot rule out the possibility that one or more of these provisions are in fact important for shareholder value. Our strategy, however, is to include in the entrenchment index only those provisions for which we had a good basis for viewing as ones likely to matter for measuring entrenchment, relegating all others provisions to what we label the “other provisions” index. The “other provisions” index is based on the other eighteen corporate governance provisions not included in the entrenchment index. This index, like the entrenchment index, counts all provisions included in it equally, giving one point for each one of these provisions a firm has. Our prediction is that the provisions in the entrenchment index drive to a substantial degree the correlation earlier research has identified between the IRRC provisions, in the aggregate, and firm valuation.

### *C. Prior Empirical Work*

Our work builds on the large body of prior work on the relationship between corporate governance provisions (and the IRRC provisions in particular) and shareholder value. To begin, there is a substantial amount of research that seeks to examine the effects of one or more of the IRRC governance provisions without controlling for a large universe of other governance provisions. One set of studies has examined the effects of the passage of antitakeover statutes on shareholder interests (see, e.g., Karpoff and Malatesta (1989), and Swartz (1998), and see Gartman (2000) for a survey of this body of work).<sup>8</sup> This work did not control for governance

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<sup>8</sup> In addition to the above event studies, there is also work that finds that the passage of state antitakeover statutes increased management’s tendency to take actions favorable to it such as making executive compensation schemes less performance-sensitive (e.g., Bertrand and Mullainathan (1999, 2003)).

provisions other than those provided by antitakeover statutes. Furthermore, for the reason briefly described earlier, state anti-takeover statutes should not be expected to be a key determinant of the level of protection from removal that management enjoys in any given company.

Another set of studies examines how the adoption of a poison pill (see, e.g., Ryngaert (1988)) or a golden parachute (see Lambert and Larcker (1985)) affected stock prices. When a firm adopts a poison pill or a golden parachute, however, its stock price might be influenced not only by the expected effect of the poison pill or the golden parachute but also by inferences that investors make as to management's private information about the likelihood of a bid (Coates, 2000). Furthermore, these studies did not control for whatever governance provisions the firms adopting the poison pill or golden parachute had.

Garvey and Hanka (1999), Johnson and Rao (1997), and Borokhovich, Brunarski, and Parrino (1997) study the effects of antitakeover charter provisions. However, they lump together some antitakeover provisions that can be expected to have significant effects with those that cannot, and they do not include the full set of provisions that are likely to be significant. The above studies also rely in part on data from the 1980's, i.e., prior to the legal developments that permitted incumbents to maintain poison pills indefinitely and thereby substantially expanded management's power to resist hostile bids.

In addition to the large literature that focused on the effects of an isolated subset of the IRRC provisions, there is also recent work that looks at the effects of the IRRC provisions in the aggregate. As already noted, Gompers, Ishii, and Metrick (2003) study the correlation between the IRRC provisions in the aggregate and firm value as well as stock returns. Their work started a line of substantial research using their governance index (herein, the GIM index) based on the 24 IRRC provisions (e.g., Amit and Villalonga (2004); Core, Guay and Rusticus (2003); Cremers, Nair, and Wei (2004); Cremers and Nair (2003); Fahlenbrach (2003); Klock, Mansi and Maxwell (2003)). Our work complements this line of work in that we focus on what, inside the box of the IRRC provisions, matters.

The prior work closest to ours is Bebchuk and Cohen (2004), which started investigating which of the IRRC provisions matter controlling for the others. This study shows that, controlling for all other IRRC provisions, staggered boards are negatively correlated with Tobin's Q, and that their contribution to the negative correlation between the IRRC provisions in the aggregate and Tobin's Q is substantially larger than the contribution of an average provision

in the IRRC set. But this study did not attempt to identify which provisions other than staggered boards matter, and it did not investigate the correlation between IRRC provisions and stock returns. Thus, this study completed only the first step in the inquiry we seek to pursue more fully in this paper.

### III. DATA

#### *A. Sources*

Our data set includes all the companies for which there was information in one of the volumes published by the Investor Responsibility Research Center (IRRC). The IRRC volumes include detailed information on the corporate governance arrangements of firms. The IRRC has published six such volumes: September, 1990; July, 1993; July, 1995; February, 1998; November, 1999; and February, 2002.

Each volume includes information on between 1,400 and 1,800 firms, with some variation in the list of included firms from volume to volume. All the firms in the S&P 500 are covered in each of the IRRC volumes. In addition, a number of firms not included in the S&P 500 but considered important by the IRRC are also covered. In any given year of publication, the firms in the IRRC volume accounted for more than 90% of the total U.S. stock market capitalization.

Because IRRC did not publish volumes in each year, we assumed, following Gompers, Ishii and Metrick (2003), that firms' governance provisions as reported in a given IRRC volume were in place during the period immediately following the publication of the volume until the publication of the subsequent IRRC volume. Using a different "filling" method, however, does not change our results.

In addition to the IRRC volumes, we also relied upon Compustat, CRSP, and ExecuComp. Firm financials were taken from Compustat. Stock return data was taken from the CRSP monthly datafiles. Insider Ownership data was taken from ExecuComp. The age of firms, following Gompers, Ishii and Metric (2003), was estimated based on the date on which pricing information about a firm first appeared in CRSP.

In calculating abnormal returns we used the three Fama-French benchmark factors, which were obtained from Kenneth French's website. The Carhart momentum factor was calculated by us using the procedures described in Carhart (1997) using information obtained from CRSP.

We excluded firms with a dual class structure. In these companies the holding of superior voting rights might be sufficient to provide incumbents with a powerful entrenching mechanism that renders other entrenching provisions relatively unimportant. We also excluded real estate investment trusts (REITs), i.e. firms with a SIC code of 6798, as REITs have their own special governance structure and entrenching devices. While we kept both financial and nonfinancial firms in our data, running our regressions on a subset consisting only of nonfinancial firms (as done by Daines (2001)) yields similar results throughout.

## *B. Summary Statistics*

Table I provides summary statistics about the incidence of the 24 IRRC governance provisions, including the six provisions we have chosen to include in our entrenchment index, during the period covered by our study.<sup>9</sup>

Of the six provisions in the entrenchment index, staggered boards, golden parachutes and poison pills are the most common, with each present in a majority of companies. The incidence of golden parachutes has been increasing steadily, starting at 53% as of 1990 and reaching approximately 70% in 2002. The incidence of staggered boards has been stable at around 60%, and the incidence of poison pills has been relatively stable as well - in the 55% - 60% range.

The incidence of supermajority provisions has been declining slightly over time, starting at 39% in 1990 and ending at approximately 32% in 2002. The incidence of limits to bylaws has been increasing, starting at 14.5% in 1990 and reaching approximately 23% by 2002. Of the six

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<sup>9</sup> We use throughout the definitions of the IRRC provisions used by Gompers-Ishii-Metrick (2003). For example, because the IRRC used in some years the term secret ballot and in some years the term confidential voting to describe essentially the same arrangement, GIM defined a company as having no secret ballot in a given year when it did not have in that year in the IRRC dataset either the secret ballot variable or the confidential voting variable. To give another example, GIM defined a company as having a fair price arrangement in a given year when in that year it (i) had the variable for a fair price charter provision, or (ii) had the variable indicating incorporation in a state with a fair price provision and (iii) did not have the variable indicating a charter provision opting out of the state's statute. We are grateful to Andrew Metrick for providing us with the GIM set of definitions of the 24 IRRC provisions.

provisions, the only one that does not have a substantial presence are provisions that limit charter amendments, which has throughout the 1990-2002 period a very low incidence hovering around 3%.

The entrenchment index assigns each company one point for each of the six provisions in the index that the firm has. Accordingly, each firm in each year will have an entrenchment index score between 0 and 6. Table II provides summary statistics about the incidence of the index levels during the period of our study. On the whole, there has been a moderate upward trend in the levels of the entrenchment index during this period. While 55% of the firms had an index level below 3 in 1990, only 49% of the firms were in this range in 2002. Especially significant has been the decline in the incidence of firms with 0 entrenchment level – from 13% in 1990 to approximately 7% in 2002.

As for the cross-sectional distribution of firms across entrenchment levels, roughly half of the companies have an entrenchment level of 3 or more, while roughly half have an entrenchment level below 3. Of the half of the firms with entrenchment levels below 3, a substantial fraction are at 2, with firms at the 0 and 1 levels constituting 23% - 31% of all firms. For the roughly half of the firms with entrenchment levels of 3 or more, a substantial fraction are at 3, with firms in the 4-6 range constituting 19% - 23% of all firms.

A relatively small fraction of firms are at the extremes. Given that one of the provisions is present in only about 3% of firms, it is not surprising that only a few firms reach the maximum level of 6, with its incidence never exceeding 0.7% of the sample. Given the small number of observations with entrenchment index scores of 6, firms in index level 6 are grouped together with firms in index group 5 in the course of conducting the statistical analysis. This group of companies with index scores of 5 and 6 – the very worst companies in terms of their entrenchment scores – constitute approximately 3.5% - 5% of all firms throughout the period. At the other end of the spectrum, the group of companies that are the “best” in terms of entrenchment are those firms with a 0 entrenchment level. These firms constitute roughly 7% - 13% of all firms during the 1990-2002 period.

Table III presents the correlation matrix of the entrenchment index, the other provisions index, and the GIM index for the entire sample period. The correlation between the entrenchment index and the GIM index is 0.89. The entrenchment index and the other provisions index have a correlation of only 0.36 with each other. Because the entrenching index and the other provisions

index are both significant elements of the GIM index, and because the other provisions index contributes three times more provisions to the GIM index than the entrenchment index, it is not surprising that both sub-indexes are substantially correlated with the GIM index, and that the other provisions index has a higher correlation. Note that, because the other provisions index contributes many provisions to the GIM index and has a correlation of only 0.36 with the entrenchment index, the entrenchment index and the GIM index fall significantly short of being perfectly correlated. If the provisions in the entrenchment index are indeed the ones that matter for correlation with firm value, then the addition of the other provision index to the entrenchment index to form the GIM index is adding a significant amount of “noise.”

Table IV presents the correlation matrix of the six entrenching provisions for the entire sample period. The correlation matrix of the entrenching provisions in individual years is essentially the same. The correlation between many of the entrenching provisions is relatively low. Nine out of the fifteen correlations is less than .1. The highest correlation is that between poison pills and golden parachutes, our two "takeover readiness" provisions. The second highest correlation, at .24, is that between limits on ability of shareholders to amend the corporate bylaws and limits on shareholders' ability to amend the corporate charter.

Table V displays the mean and standard deviation of entrenchment levels for companies of different sizes and cohorts. There are no significant differences between firms in and out of the S&P 500, and there are likewise no noteworthy differences between young and old firms. It is worth noting, however, that entrenchment levels are different in firms that are very large in size. In 2002, out of the 15 companies with a market cap exceeding 100 billion dollars, only one had an entrenchment level index exceeding 3. This is not surprising. With no hostile bid or proxy fight ever directed at a company of this size, the management of these very large firms have no need for entrenching provisions in order to be secure.

Table VI provides the distribution of the other provisions index for the IRRC publication years. As Table VI indicates, the highest level of the O index actually reached by firms is 13; and the lowest level of the O index that firms actually have is 1. Approximately 40% - 45% of firms have an O index score of 6 or less with the remaining firms having an O index score of 7 or more. There are very few firms at the extremes, with only roughly 1% of firms having an O index score of 1 or 2 and another 1% of firms having an O index score of 12 or 13. The

correlation between the O index and the entrenchment index ranges from 0.3 to 0.35 throughout the 1990-2002 period.

#### IV. ENTRENCHMENT AND FIRM VALUE

In studying the association between the entrenchment index and firm value, we use Tobin's Q as the measure of firm value. In doing so we follow earlier work on the association between corporate arrangements and firm value (see, e.g., Demsetz and Lehn (1985), Morck, Shleifer and Vishny (1988), McConnell and Servaes (1990), Lang and Stulz (1994), Yermack (1996), Daines (2001), LaPorta et al. (2002), and Gompers, Ishii, and Metrick (2003)).

We use the definition of Tobin's Q that was used by Kaplan and Zingales (1997) and subsequently also by Gompers, Ishii, and Metrick (2003). According to this specification, Q is equal to the market value of assets divided by the book value of assets, where the market value of assets is computed as the book value of assets plus the market value of common stock less the sum of book value of common stock and balance sheet deferred taxes. This measure (and simpler ones that drop deferred taxes) have been increasingly used in light of the complexities involved in the more sophisticated measures of Q and the evidence of very high correlation between this proxy and more sophisticated measures (see, e.g., Chung and Pruitt (1994)).

Our dependent variable in most regressions is log of industry-adjusted Tobin's Q, where industry-adjusted Tobin's Q is a firm's Q minus the median Q in the firm's industry in the observation year. We defined a firm's industry by the firm's 2-digit primary SIC code. Using the Fama-French (1997) classification of forty-eight industry groups, rather than SIC two-digit codes, yields similar results. Using industry-adjusted Tobin's Q as the dependent variable also produces similar results.

As independent variables, we use throughout standard financial controls. These controls include the assets of the firm (in logs), the age of the firm (in logs) (Shin and Stulz (2000)), and whether the firm is incorporated in Delaware -- all variables use by Gompers, Ishii, and Metrick (2003). We also use additional controls that the literature has used in Q regressions -- the level of insider ownership, return on assets, capital expenditures on assets, research and development expenditures, and leverage. (Using only the controls used by Gompers, Ishii, and Metrick produces similar results throughout.) Moreover, we use dummies for firms' 2-digit SIC codes. In

all of the regressions, in addition to the standard financial and ownership controls, we controlled for firms' other provisions index scores in order to control for the IRRC provisions not included in the entrenchment index. In our Q-regressions, we focus on the period 1992-2002, because our inside ownership data (from ExecuComp) did not cover 1990, 1991, 2003.

#### *A. The Entrenchment Index and the Other Provisions Index*

Table VII presents the results of pooled OLS regressions for the 1992-2002. The pooled OLS regressions in Table VII were run using White (1980) robust standard errors to account for potential heteroskedasticity. In the first column of Table VII, we used as an independent variable, in addition to the financial variables and other provisions index discussed above, firms' entrenchment index scores. As column 1 indicates, the coefficient on the entrenchment index is negative (with a value of  $-.044$ ) and statistically significant at the 1% level. The coefficient of the other provisions index is also significant at the 1% level, but it is positive (with a value of  $.01$ ).

In the second column, in order to avoid the imposition of linearity on the entrenchment index, we used dummy variables to stand for the different levels that the index can take. As the results indicate, the coefficient for any level of the index above 0 is negative and significant at the 1% level. Moreover, the magnitude of the coefficient is monotonically increasing in the level of the entrenchment index.

To avoid imposition of linearity on the other provision index, we also ran unreported regressions using the log of the other provisions index as a control, and obtained similar results to those reported in Table VII. In unreported regressions, we also ran regressions using industry-adjusted Q as the dependent variable instead of its log, and obtained similar results. Finally, we ran median regressions and, again, obtained similar results.

We next ran regressions using firm fixed effects in order to control for unobserved firm heterogeneity that remains constant over the time period we study. The fixed effects regressions, reported in columns 3 and 4 of Table VII, examine the effect on firm value of changes that firms made, during the 1990-2003 period, in the number of entrenching provisions (whether to increase or decrease the number of entrenching provisions). As Table I indicates, there was meaningful variation in the incidence of some entrenching provisions over the 1990-2003 period,

such as golden parachutes and limits on shareholders' ability to amend bylaws, that would result in changes in firms' entrenchment scores. Other entrenching provisions, and in particular staggered boards, were rarely changed by firms during the period of study, and are therefore unlikely to constitute a significant source for changes in firms' entrenchment scores.

As columns 3 and 4 indicate, in the firm fixed effects regressions, the coefficient values for the entrenchment index (column 3) and the coefficient values for the dummy variables for the different levels of the entrenchment index above 0 (column 4) remain negative, economically meaningfully, and statistically significant at the 1% level (except for the coefficient value on having an entrenchment level of 1 where the statistical significance is 5%). The magnitudes of the coefficient values also continue to increase monotonically in the level of the entrenchment index. The coefficient value on the other provisions index remains positive, but is no longer statistically significant.

For a final robustness check, we also ran annual regressions. In all regressions, we used the entrenchment index and the other provisions index as the independent governance variables. We first ran a set of annual regressions similar to the baseline regressions in column 1 of Table VII – that is, OLS regressions with log of industry-adjusted Q as the dependent variable. We then also ran a set of median regressions with log of industry-adjusted Q as the dependent variable, as well as a set of OLS regressions with industry-adjusted Q as the dependent variable. We calculated the Fama-McBeth coefficients for each set of annual regressions.

Table VIII displays the results of these three sets of annual regressions, displaying only the coefficients of the entrenchment index and of the other provisions index. The coefficient of the entrenchment index is negative in all of the individual annual regressions. Of the 33 estimated negative annual coefficient values on the entrenchment index (three sets of annual regressions per year times eleven years), 27 were statistically significant. Of the six negative coefficient values without significance, three occurred in one year (1992). The Fama-McBeth coefficient value on the entrenchment index is negative at the 1% level for each one of the three sets of annual regressions.

As for the other provisions index, the coefficient on the other provisions index in the annual regressions is positive in a substantial majority of the annual regressions, and occasionally positive with statistical significance. It is never negative and statistically significant in any of the annual regressions. The Fama-McBeth coefficient value on the entrenchment index is positive at

the 1% level in each one of the three sets of annual regressions, albeit with a coefficient with a small magnitude.

### *B. Individual Provisions: Looking Inside the Two Indexes*

The analysis in section A indicates that the six entrenching provisions we have identified are, in the aggregate, highly correlated with lower firm valuation. There is still the possibility, however, that one or more of the individual entrenching provisions are not contributing to this negative effect on firm valuation. To explore this possibility, we ran several sets of regressions whose results are displayed in Table IX.

In the first set of six regressions, we ran a regression for each of the six provisions in the entrenchment index in which the independent corporate governance variables were (i) one of the six entrenching provisions, and (ii) the GIM index minus the entrenching provision in (i). That is, each of the regressions has one of the entrenching provisions as an independent variable while controlling for all the other IRRC provisions. The financial controls used earlier (see Table VII regressions) are also used as independent variables.<sup>10</sup>

The results of these six regressions, one for each of the entrenching provisions, are displayed in Row (1) of Table VIII. In each of the regressions, the coefficient of the entrenching provision under investigation is negative and statistically significant. Five entrenching provisions have statistically significant negative coefficient values at the 1% level, while the other one has statistical significance at the 5% significance.

It is worth cautioning that not too much should be read into the differences in the levels of statistical significance and coefficient estimates of the various entrenching provisions due to the problem of co-linearity. Each entrenching provision is positively correlated with the GIM index minus that entrenching provision. Accordingly, it might well be that any particular entrenching provision's coefficient is under estimated. The one conclusion that can be comfortably drawn from the results displayed in Row (1) of Table VIII is that each of the entrenching provisions

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<sup>10</sup> We display only the coefficients of the entrenching provision being investigated in each regression. In all the regressions, the coefficient of the GIM index minus the provision under investigation is negative and significant, and the coefficients of the financial controls are similar to those obtained in earlier regressions.

contributes to the negative correlation between Tobin's Q and the IRRC provisions in the aggregate.

For a robustness check, we then proceeded to run three additional sets of regressions. In particular, we ran for each entrenching provision *i* the following types of regressions:

(a) A regression in which the independent corporate governance variables in addition to entrenching provision *i* are (1) a variable equal to the entrenchment index minus provision *i*, and (2) the other provisions index.

(b) A regression in which the independent corporate governance variables in addition to entrenching provision *i* are (1) dummy variables for each of the five other entrenching provisions, and (2) the other provisions index.

(c) A regression in which the independent corporate governance variables in addition to entrenching provision *i* are dummy variables for each of the other twenty-three IRRC provisions.

Rows 2, 3, and 4 of Table IX display the results of the regressions of type (a), (b), and (c) respectively. For each one of the six entrenching provisions, the coefficient in each of the three types of regressions was negative and statistically significant at 1% or 5%. Thus, none of our robustness tests provide any evidence that is inconsistent with the view that each of the six entrenching provisions contributes to the negative correlation that the IRRC provisions in the aggregate have with Tobin's Q.

We now turn to the eighteen provisions in the Other Provisions Index. The results reported earlier indicate that, in the aggregate, these eighteen provisions are not negatively correlated with firm valuation. This finding does not imply, however, that none of the eighteen provisions contained in this index is harmful for firm valuation. It might be that one or more provisions have adverse effects, but this effect does not show up in our regressions because it is diluted or counteracted by the effects of the provisions contained in the other provisions index. Indeed, the results of our paper highlight the importance of looking inside the "box" of a broad index to try to identify the effects of particular corporate governance provisions.

Accordingly, we carried out a preliminary investigation to look inside the other provisions index. We ran four sets of eighteen regressions (for seventy-two regressions overall) whose results are displayed in Table X. In particular, for each provision *i* in the other provisions index, we ran the following four types of regressions:

- (a) A regression in which the independent corporate governance variables were provision *i*, and a variable equal to the GIM index minus provision *i*;
- (b) A regression in which the independent corporate governance variables were provision *i*, a variable equal to the other provision index minus provision *i*, and the entrenchment index;
- (c) A regression in which the independent corporate governance variables were provision *i*, dummies for each of the other seventeen provisions in the other provisions index, and the entrenchment index; and
- (d) A regression in which the independent corporate governance variables were provision *i* and dummies for each of the other twenty-three IRRC provisions.

Rows 1, 2, 3, and 4 of Table X display the results of the regressions of type A, type B, type C, and type D respectively (only the coefficient of the provision under investigation in any given regression is displayed). The standard financial controls used in earlier regressions were also used in these regressions (see regressions in Table VII). Of the eighteen IRRC provisions in the other provisions index, seventeen of them do not have a coefficient that is negative and statistically significant in any of the types of regressions used. Indeed, a fair number of them are positive with statistical significance.

With respect to one provision in the other provisions index, pension parachutes, its coefficient is not statistically significant in regression type D, negative and significant at the 10% level in regression types B and C, and negative and significant at the 5% level in regression type A. The results with respect to the negative effect of pension parachutes on firm valuation are thus mixed, and weaker than the results for each of the entrenching provisions. It is worth noting that pension parachutes are present in only 1% of firms as of 2002 (and reached a maximum of 5.3% of firms in 1993). Despite the mixed results and low incidence, the exact correlation between pension parachutes on firm valuation is an issue worth further exploration in future research.

It is important to note that, because of the problem of co-linearity, we do not rule out the possibility that some of the eighteen provisions in the other provisions index are negatively correlated with firm value. We merely note that, using the same method that produced strong and unambiguous results regarding the negative correlation between each of the entrenching provisions and Tobin's *Q*, we do not obtain similar results with respect to any of the elements of the other provisions index.

### *C. Exploring the Issue of Simultaneity*

The findings reported so far have established that the entrenchment index, and the individual provisions that collectively constitute the entrenchment index, are inversely correlated, with economic and statistical significance, with firm valuation. Of course, these findings, by themselves, do not establish that having a higher entrenchment index score is the cause of lower firm valuation. It is possible that the correlation is the result of lower-valued firms adopting entrenching provisions either because low-value firms might be more concerned with hostile takeovers or, alternatively, bad management will tend both to reduce firm valuation and to adopt entrenching provisions.<sup>11</sup> This issue of simultaneity is often raised with respect to studies that find a correlation between various aspects of firm ownership and structure and firm valuation, and it is notoriously difficult to resolve.

This section explores this issue of simultaneity. In doing so, we are assisted by the fact that there was a meaningful amount of stability in firms' entrenchment index scores over the 1990-2002 period. In our data, a firm with a high entrenchment score as of 1990 is likely to have a high entrenchment score in 2002. With respect to some of the entrenching provisions, it is necessary to first obtain shareholder approval before they can be adopted, which made it difficult for firms that did not already have these entrenching provisions as of 1990 to adopt them afterwards. The most notable example of this phenomenon is staggered boards (Bebchuk and Cohen (2004)). With respect to other entrenching provisions that did not require a shareholder vote -- poison pills and golden parachutes -- management could unilaterally adopt these provisions. This makes the presence of these two provisions at a particular point in time more likely to be the result of an endogenous firm decision at that point than the other entrenching provisions. Even so, there are some costs of management of suddenly adopting one of these provisions given possibly negative public, institutional investor and market reaction. It is easier to retain a pre-existing poison pill or golden parachute than to suddenly adopt one.

We examine whether a firm's entrenchment score in 1990, the beginning of our sample period, had a negative correlation with firm valuation in the 1998-2002 period, the years at the

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<sup>11</sup> It is worth noting that the bad management causation story for the documented correlation is hardly a ringing endorsement of entrenching provisions and the managers adopting them.

end of our sample period. While a firm's 1990 entrenchment score is correlated with the firm's entrenchment score during the 1998-2002 period for the reasons described above, the firm's 1990 entrenchment score cannot itself be the result of low-firm valuation during the 1998-2002. Column 1 of Table XI presents the results of running a regression where the dependent variable is the log of industry-adjusted Tobin's Q and the independent variables are firms' entrenchment index scores as of 1990 and firms' other provisions scores in the 1998-2002 period. Column 2 presents the results when dummy variables are used for the different levels of firms' entrenchment index scores as of 1990. Both regressions control for the full set of firm characteristics used in earlier regressions.

As the results in column 1 indicate, a firm's entrenchment index score as of 1990 is negatively correlated, with economic and statistical significance (at the 1% level), with lower firm valuation during the 1998-2002 period. The results when dummies are used for the different levels of the entrenchment index tells the same story. Four out of the five dummy variables are negatively correlated, either at the 1% or 5% level, with lower firm valuation. Only the dummy variable representing the lowest entrenchment score, while having a negative coefficient, was not statistically significant.

It might be suggested, however, that poor management at or prior to 1990 was responsible both for the existence of entrenching provisions in 1990 and for the firm's low valuation in the 1998-2002 period. Of course, the likelihood of this explaining the documented correlation is weakened by the fact that managerial turnover is common over a twelve-year period. Nevertheless, given this possibility, we controlled for the log of firms' industry-adjusted Tobin's Q as of 1990 in the regressions we report in columns 3 and 4 of Table XI. Low firm valuation as of 1990 helps control for poor management as of 1990. As before, entrenching provisions are negatively correlated, with economic and statistical significance (at the 1% level), with lower firm valuation. And, as before, four out of the five dummy variables representing the different levels of the entrenchment index are negatively correlated, either at the 1% or 5% level, with lower firm valuation. Only the dummy variable representing the lowest entrenchment score, while negative, is not statistically significant.

The above evidence is consistent with the possibility that having a higher entrenchment score at least partly brings about (and not merely reflects) lower firm valuation. But this

evidence, we should emphasize, does not definitely establish the direction of causation, and the issue of simultaneity calls for further examination.

## V. ENTRENCHMENT AND STOCK RETURNS

We turn in this section to examine the relationship between a firm's entrenchment index score and the firm's abnormal stock returns. We should stress that for a provision to be associated with negative abnormal return during a given period time is neither a necessary condition, nor a sufficient condition, for the provision to be harmful to shareholders. A corporate governance provision that is harmful to shareholders might have no abnormal returns associated with it during a given period if the market accurately assessed the provision's adverse consequences in the beginning of the period. Conversely, a provision that is in fact beneficial to shareholders might be associated with a negative return during a given period if the market viewed it at the end of the period somewhat less positively – although still positively – than in the beginning of the period. For the purpose of identifying which provisions have adverse effects on shareholders, our findings in the preceding section on Tobin's Q might well be more informative than stock return results contrived in isolation.

Nevertheless, findings that abnormal returns are associated with certain publicly known governance provisions can be quite interesting. They might indicate that the significance of these provisions, or at least the market's perception of their significance, changed over this period. Much attention has therefore been paid to the findings of Gompers, Ishii and Metrick (2003) that firms with low GIM index scores were associated with higher abnormal returns during the 1990s compared to those of firms with high GIM index scores.

Gompers, Ishii, and Metrick (2003) employed the following methodology in calculating the abnormal return associated with differences in GIM index scores. A "Democracy" portfolio was constructed consisting of firms with strong shareholder rights protections, defined as those firms with GIM index score of 5 or less. Likewise, a "Dictatorship" portfolio was constructed consisting of firms with weak shareholder rights protections, defined as those firms with GIM index score of 14 or more. The firms in the Democracy and Dictatorship portfolios roughly correspond to the best and worst 10% of firms in terms of GIM index scores. Democracy and Dictatorship portfolios were constructed both by weighting stock positions by a firm's market

capitalization (value-weighted portfolios) as well as by equally weighting each firm (equal-weighted portfolios).

Gompers, Ishii and Metrick (2003) found that the monthly abnormal return for going long the Democracy portfolio and short the Dictatorship portfolio, value-weighted, was 71 basis points with 1% significance level, and that doing so using equally-weighted portfolios yielded a monthly abnormal return of 45 basis points with 5% significance.<sup>12</sup> Their findings of statistically significant abnormal returns applied only to a trading strategy using Democracy and Dictatorship portfolios -- i.e., firms at the extremes of the GIM index -- in its long and short positions. Expanding their testing to a broader spectrum of firms, including firms in the middle of the GIM index distribution, they found no statistically significant abnormal returns resulting from going long firms with low GIM index scores while shorting firms with high GIM index scores.

We aim in this section to investigate the extent to which the identified correlation between returns and the GIM index during the 1990s might be attributable to the provisions in the entrenchment index. Our main findings are as follows. Low entrenchment index firms are associated with statistically significant abnormal returns both during the 1990-1999 period investigated by Gompers, Ishii, and Metrick, and the longer 1990-2003 time period which our data enables us to study. Moreover, including in our trading strategies firms that are in the middle of the entrenchment index distribution still generates positive monthly abnormal returns with 1% statistical significance, albeit abnormal returns that are smaller than those generated using firms only with extreme entrenchment index scores. We find that this association between entrenchment index scores and stock returns is not due to the entrenchment index being correlated with IRRC provisions not included in the entrenchment index. Finally, we find that the corporate governance provisions not included in the entrenchment index have no explanatory power, above that already provided by the entrenchment index, for returns during the two time periods (1990-1999; 1990-2003) we study.

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<sup>12</sup> We were able to replicate these basic findings with the Fama-French benchmark factors. We found that the value-weighted trading strategy generated a monthly abnormal return of 73 basis points at the 1% level, while the equal-weighted trading strategy generated a monthly abnormal return of 49 basis points at the 5% level.

## *A. The Entrenchment Index and Returns for the 1990s*

### *1. Summary Statistics*

We begin by presenting some basic summary statistics on the entrenchment index and stock returns during the 1990s. Table XII presents the average monthly returns of portfolios of firms, both equally-weighted and valued-weighted, with the same entrenchment scores (0, 1, 2, 3, 4, 5-6) for the September, 1990 – December, 1999 period. Interestingly, the average monthly return drops monotonically as one moves from having an entrenchment score of zero to an index score of five and six. The difference between firms with an entrenchment score of zero and firms with an entrenchment score of five or six is quite substantial: 1.74% versus 1.26% for equally-weighted portfolios and 2.45% versus 1.51% for value-weighted portfolios. Because the returns of value-weighted portfolios can be substantially affected by the returns of a small number of the largest companies, it could be plausibly argued that more attention should be paid to results based on equally-weighted portfolios. But we follow the literature by reporting throughout results based on both equally-weighted and value-weighted portfolios.

This decline in monthly returns as a firm's entrenchment score increases occurs not only when one moves from firms with very low entrenchment scores to firms with very high entrenchment scores but also as entrenchment index scores increase in the middle of the entrenchment index distribution. Moreover, the decline in monthly returns as a firm's entrenchment score increases holds equally true for both equally-weighted and value-weighted portfolios. In both cases, average returns decrease monotonically as one moves to portfolios with higher entrenchment scores.

Obviously, these summary statistics are only suggestive of a possible relationship between the entrenchment index and stock returns in the 1990s. To explore this possibility systematically, it is necessary to control for other factors, such as systematic risk, that might be affecting stock returns for firms with different entrenchment index scores.

## 2. *The Baseline Model: Controlling for the Carhart Four Factors*

To identify the correlation between different levels of the entrenchment index and stock returns, we investigated the following question: What was the abnormal return associated with taking a long position in the firms with a given entrenchment index score and, at the same time, shorting the firms with a higher entrenchment index score? To answer this question, we follow the methodology of Gompers, Ishii, and Metrick (2003) of regressing the return of this long-short trading strategy for month  $t$  (call this variable  $\text{Diff}_t$ ), on the four-factor model of Carhart (1997). In other words, we ran the following regression:

$$\text{Diff}_t = \alpha + b1 * \text{MKTRF}_t + b2 * \text{HML}_t + b3 * \text{SMB}_t + b4 * \text{Momentum}_t + e_t \quad (1)$$

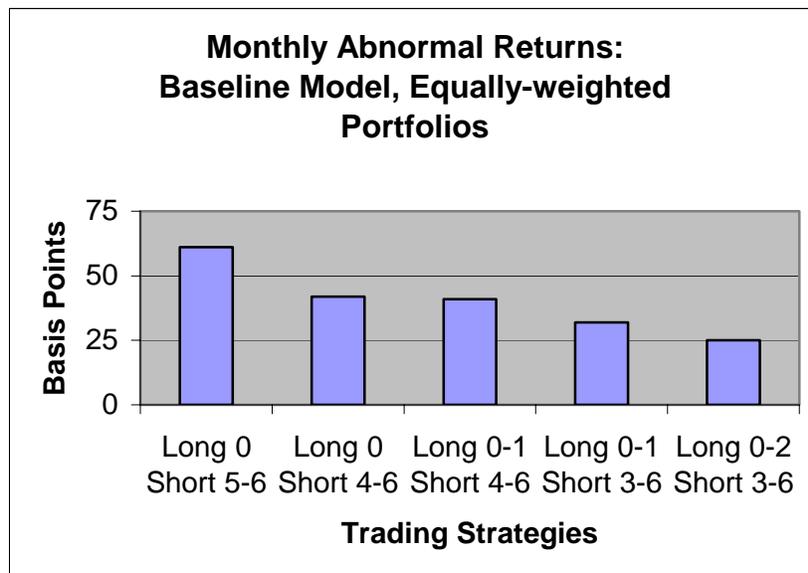
where  $\text{MKTRF}_t$  is the month  $t$  value-weighted market return minus the risk-free rate,  $\text{SMB}_t$  and  $\text{HML}_t$  are the Fama-French zero-investment benchmark factor mimicking portfolios reflecting, respectively, size and book-to-market stock return effects for time  $t$  (see Fama and French 1993) and  $\text{Momentum}_t$  reflects stock return momentum effects for time  $t$  (see Carhart 1997). The Fama-French factors were obtained from Kenneth French's datalibrary and the Carhart momentum factor was constructed by us using the procedures described in Carhart (1997). Accordingly,  $\alpha$  is construed as the monthly abnormal return associated with going long firms with low entrenchment index scores and, simultaneously, shorting firms with high entrenchment index scores.

Monthly abnormal returns were calculated using both value-weighted portfolios and equally-weighted portfolios. These hedging portfolios were updated as new information became publicly available concerning the corporate governance provisions firms had. September 1990 is the starting date of the sample period as this was the month that the first IRRC volume was published and became publicly available. Firm membership in portfolios was adjusted on July 1993, July 1995, February 1998, November 1999 and February 2002 as these are the dates when updated IRRC volumes became publicly available.

Table XIII displays the abnormal return results for the 1990s controlling for the Carhart four factors (the baseline model). These results, regardless of whether one looks at equally-weighted or value-weighted entrenchment index portfolios, are striking. During the 1990s, going long

those firms with the lowest possible entrenchment score (index score of 0) and shorting the high entrenchment index portfolio (index scores of 5 and 6), would have generated a monthly abnormal return of 61 basis points with 1% significance when equal-weighted portfolios are used; and it would have yielded monthly abnormal returns of 116 basis points with 1% significance when value-weighted portfolios are used. On an annual compounded basis, these strategies would have produced an abnormal return of 7.4% when equally-weighted portfolios are used and 14.8% when value-weighted portfolios are used.<sup>13</sup>

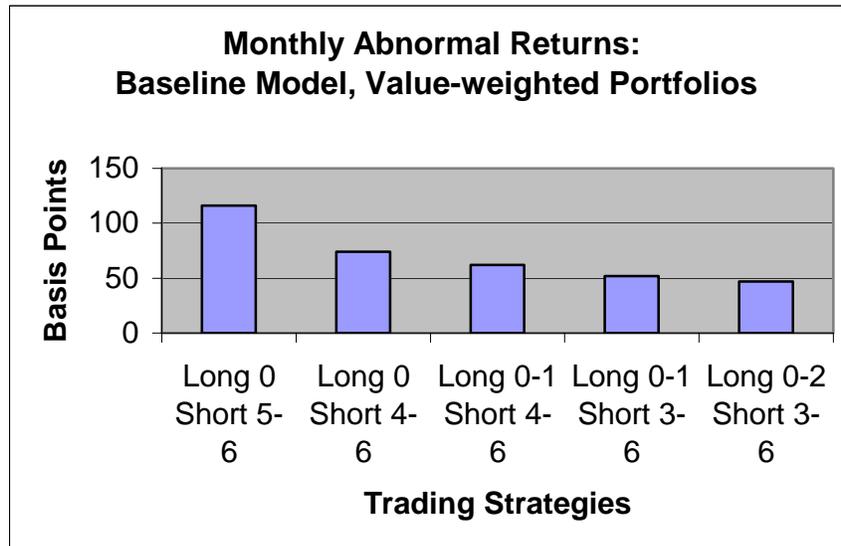
There is another interesting pattern that emerges from the baseline model results in Table XIII. The abnormal returns are all positive with statistical significance at the 1% level but progressively decline, whether equally-weighted or value-weighted portfolios are used in the trading strategy, as one includes more and more firms in the middle of the entrenchment index distribution. This monotonic decline in abnormal returns as the trading strategies include more firms in the middle of the distribution (with the first trading strategy on the far left being long index level 0-short index levels 5-6, then long 0- short 4-6, long 0-1-short 4-6, long 0-1- short 3-6, and finally long 0-2, short 3-6) is illustrated below for equally-weighted portfolios.



The same pattern of declining abnormal returns as firms in the middle of the entrenchment index are added to the long and short positions emerges (with the first trading strategy on the far

<sup>13</sup> These figures are based on compounding the monthly return over the year. Without compounding, the annual abnormal returns would be approximately 7.2% for a strategy based on equally-weighted

left again being long 0-short 5-6, then long 0-short 4-6, long 0-1-short 4-6, long 0-1-short 3-6, and finally long 0-2-short 3-6) when value-weighted portfolios are used. This progression is illustrated below.



This monotonic decline in abnormal returns is to be expected if stock returns are negatively correlated with the degree to which managers are entrenched as captured by the entrenchment index.

### 3. Industry-adjusted Returns

There is, of course, always the possibility that a firm’s corporate governance provisions merely reflect the industry in which the firm happens to operate. That is, it might be that low entrenchment levels were more common in industries that happened to perform well in terms of returns during the 1990s, and that the above findings of abnormal returns were driven by industry association. We therefore control for industry effects on stock returns in the way used by Gompers-Ishii-Metrick (2003)..

In particular, we classified all the firms in our dataset into one of the forty-eight Fama-French (1997) industry classifications, and we then calculated industry-adjusted monthly returns by first

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portfolios and 13.9% for a strategy based on value-weighted portfolios.

subtracting from each firm's monthly stock return the median monthly industry return for the Fama-French industry in which the firm operates. Monthly abnormal industry-adjusted returns on a trading strategy were then calculated by regressing the industry-adjusted returns associated with this strategy (going long firms with a particular entrenchment index score and, simultaneously, shorting other firms with a higher entrenchment index score) on the three Fama-French factors (Fama and French 1993) and a momentum factor (Carhart 1997). The industry-adjusted monthly abnormal returns were calculated for the same trading strategies analyzed in the baseline model. The results are also reported in Table XIII.

As the table indicates, all the long-short portfolios continue to generate positive abnormal returns that are all statistically significant at the 1% level. Also, once again, as one adds firms with index scores in the middle of the distribution to the long and short portfolios, the industry-adjusted monthly abnormal returns monotonically decrease. Finally, the industry-adjusted return estimates are approximately the same as those estimated without adjusting for industry. In short, the abnormal return results generated using the baseline model do not appear to be driven by industry effects.

#### *4. Controlling for other governance provisions*

One potential issue with the preceding analysis is the fact that the entrenchment index is correlated with other corporate governance provisions covered by the IRRC. Recall that the correlation between the entrenchment index and the other provisions index is about 0.3-0.35 during the period of our study. This makes it desirable to examine whether the results associating higher abnormal returns with lower entrenchment index scores are due to a correlation between returns and the other provisions index.

To address this issue, we calculate the results of a new set of trading strategies that seek to control for the provisions in the other provisions index. We wish to test whether, within pools of firms that have similar levels of the other provisions index, going long on low entrenchment companies and short on high entrenchment companies continues to produce positive abnormal returns.

Specifically, we start by dividing all firms into four buckets based on their other provisions index (O index) score. The four buckets were created so as to contain, to the extent possible,

equal numbers of observations. The four buckets of firms consist of firms with low O index scores (index score of 5 or less); firms with medium-low O index scores (index score of 6); firms with medium-high O index scores (index scores of 7 and 8); and firms with high O index scores (index scores of 9 or more). In addition, we used several different divisions of the O index into buckets and found that using them does not affect the results.

With these O buckets in place, we were able to take into account the O distribution, as captured by the four buckets, when calculating abnormal returns associated with going long firms with low entrenchment index scores and short high entrenchment index firms.<sup>14</sup> When considering a trading strategy of going long firms with a given low entrenchment index score level and short firms with a given high entrenchment index score level, we would for each O index bucket create positions (either equally-weighted or value-weighted) consisting of going long all the firms with the given low entrenchment level and short all the firms with the given high entrenchment level in that O index bucket. After doing this, we then created an overall long-short portfolio consisting of an equally-weighted position in each of the four long and short positions created for the four O index buckets. As before, we then regressed the return associated with this long-short portfolio on the Carhart four-factor model, with the intercept term being interpreted as the monthly abnormal return associated with this particular trading strategy.

The basic idea behind constructing portfolios in this way is to ensure that, in constructing our long-short portfolios, the firms purchased and shorted are different in their entrenchment index scores while still being roughly similar in their O index scores. The method is analytically similar to the way in which the Fama-French book-to-market and firm size factors are calculated (see Fama and French 1993) as well as the Carhart momentum factor construction (see Carhart 1997).

The same trading strategies analyzed earlier were used once again. The results, which are reported in Table XIII, indicate that relatively little changes after we control for correlation with the O index. The abnormal returns remain positive and statistically significant at the 1% level, with one exception that is positive and significant at the 5% level. Moreover, the abnormal return estimates are of roughly similar magnitudes. For instance, the monthly abnormal return of going long firms in the bottom half of the distribution and short the top half is 23 basis points for equal-

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<sup>14</sup> It is impossible to do an exact O index distribution given a lack of sufficient firm observations across the entrenchment index to replicate the O index distribution.

weighted portfolios and 50 basis points for value-weighted portfolios, both with 1% significance. Also, the same pattern of decreasing abnormal returns again emerges when looking at the effect of adding firms in the middle of the entrenchment index distribution to the long and short portfolios.

### *B. The Entrenchment Index and Returns for 1990-2003*

Following the initial finding by Gompers, Ishii and Metrick (2003) of correlation between the GIM index and lower stock returns during the period 1990-1999, subsequent work did not find such correlation in a period extended forward to include the beginning of this decade (Core, Guay & Rusticus (2003), Cremers and Nair (2003)). The question therefore naturally arises whether the trading strategies analyzed above, going long firms with low entrenchment index scores and shorting firms with higher entrenchment index scores, would have yielded abnormal returns in the 1990-2003 period.

Turning to this question, we calculated for the period 1990-2003 the abnormal returns for different trading strategies using the Carhart four factors (the baseline model), the industry-adjusted model, and the O-Bucket adjusted model. The results are summarized in Table XIV.

As Table XIV indicates, all the trading strategies, going long on low entrenchment firms and short on high entrenchment firms, continue to produce positive abnormal returns that are large and statistically significant at the 1% level. Furthermore, for both the equal-weighted and value-weighted portfolios, abnormal returns on trading strategies largely continue to decline monotonically as firms in the middle of the entrenchment index are added to the long and short portfolios. This overall pattern emerges in the baseline model, the industry-adjusted model and the O-bucket adjusted model.

In terms of the magnitude of the abnormal returns, the results for the period 1990-2003 are roughly similar to the results for the period 1990-1999 when the trading strategies use equally-weighted portfolios. For example, going long entrenchment index 0 and short index 5-6, would have yielded 61 basis points during 1990-1999 and 60 basis points during 1990-2003 using the baseline four-factor model; would have yielded 60 basis points during 1990-1999 and 66 basis points during 1990-2003 using the industry-adjusted model; and would have yielded 73 basis points during 1990-1999 and 68 basis points during 1990-2003 using the O-bucket-adjusted

model. Similarly, when going long firms with entrenchment index scores of 2 or less and shoring the firms with index 3 or more, moving from 1990-1999 to 1990-2003 would have increased the monthly abnormal return by 2 basis points (to 27 basis points) under the baseline model; by 8 basis points (to 34 basis points) under the industry-adjusted model; and 1 basis point (to 24 basis points) under the O-bucket-adjusted model.

For trading strategies using value-weighted portfolios, the abnormal returns for the 1990-2003 period are significantly smaller than the corresponding trading profits for the 1990-2003 period. The trading profits using value-weighted portfolios in the 1990-2003, however, continue to be quite large in magnitude and, in particular, higher than the abnormal return on the corresponding strategies using equally-weighted portfolios during either the 1990-1999 or 1990-2003 period. For example, during 1990-2003, using value-weightings, going long entrenchment index 0 firms and shorting index 5-6 firms would have yielded a monthly positive abnormal return of 84 basis points under the baseline model; 94 basis points under the industry-adjusted model; and 81 basis points under the O-bucket-adjusted model. In contrast, using equal-weightings, going long index 0 firms and shorting index 5-6 firms during 1990-1999 would have yielded only a monthly positive abnormal return of 61 basis points under the baseline model (or 60 basis points if the period were extended to 2003); 60 basis points under the industry-adjusted model (or 66 if the period were extended to 2003); and 73 basis points under the O-bucket-adjusted model (or 68 if the period were extended to 2003).

### *C. Stock Returns and the Other Provisions Index*

We have found that, even controlling for the other provisions index, the entrenchment index was correlated with stock returns during the period we study. There is still the possibility, however, that the other provisions index was also correlated, controlling for the entrenchment index level, with stock returns. In other words, it is possible to flip the inquiry and ask whether the O index, the IRRC corporate governance provisions not reflected in the entrenchment index, has explanatory power for stock returns.

Accordingly, we calculated the abnormal returns associated with firms' O index scores, controlling for the entrenchment index distribution as captured by different entrenchment index buckets. To this end, we created six entrenchment index buckets, each consisting of all the firms

in a given level of the index from 0 to 5, with the small number of firms with entrenchment index 6 scores added to the bucket with entrenchment index 5 firms. Following the methodology described earlier, we would for each entrenchment index bucket create positions (either equally-weighted or value-weighted) consisting of going long all the firms with a given low O index score and short all the firms with a given high O index score in that entrenchment level bucket. After doing this, we then created an overall long-short portfolio consisting of an equally-weighted position in each of the six long and short positions created for the six entrenchment index buckets. As always, we regressed the return associated with this long-short portfolio on the Carhart four-factor model, with the intercept term being interpreted as the monthly abnormal return associated with this particular trading strategy.

We did the calculations both for the 1990-1999 period and for the 1990-2003 period. The long-short portfolios in O index positions were based on the division of firms into four O index buckets: firms with O index scores between 0 and 5; firms with O index scores of 6; firms with O index scores of 7 or 8; and firms with O index scores of 9 and more. Table XV contains the results of this analysis.

Out of the sixteen trading strategies analyzed, consisting of going long firms with low O index levels and short firms with high O index levels, none generated a statistically significant abnormal returns, even at the 10% level. Indeed, many of the t statistics indicate p values in the range of 80%. In addition to the lack of statistical significance, the coefficients are sometimes negative rather than positive and always small in magnitude, never exceeding .17. These results are consistent with the view that the O index has little residual explanatory power for returns once the entrenchment index is taken into account.

#### *D. Stock Return during Sub-periods of Two or more Years*

In this section we examine how a trading strategy of buying low entrenchment firms and shorting high-entrenchment firms would have performed during various sub-periods of the 1990-2003. Although this strategy would have produced abnormal returns during the full period 1990-2003, it could have under-performed in some sub-period of this fourteen-year period.

Gompers, Ishii, and Metrick (2003) discuss the possibility that the abnormal stock returns associated with their GIM index during the 1990s were the result of the market learning new

information, or responding to changing economic conditions, concerning the importance of good corporate governance. Cremers, John, & Nair (2004) argue that takeover exposure, which is in part a function of corporate governance arrangements, should be correlated with higher expected returns because it is related to a state variable that affects risk premia. In particular, they suggest that the pricing of takeover-exposed firms are more affected by the future cost of capital than takeover-immune firms as the future cost of capital will affect both the probability of takeover and the premium associated with a takeover as the future cost of capital affects the present value of synergies resulting from takeovers.

Both of these explanations involve exogenous shocks that change the pricing effect of corporate governance arrangements. These shocks may be, but need not be, related to an underlying state variable that affects risk premia. Even if the shocks were not related to a common risk factor, shocks could still affect the pricing of corporate governance arrangements, although such a shock would have a one-time affect on pricing. A possible example of a shock unrelated to a common risk factor that could still have pricing effects would be unexpected changes in the legal rules governing managers' fiduciary duties during a takeover contest. Whether or not the shocks are related to a common risk factor, one would expect that these shocks will sometimes increase the value of good corporate arrangements while, at other times, decrease the value of such arrangements. Indeed, for the time period we study, 1990-2003, the Fama-French factors are negative for many sub-periods.

Given that one would expect shocks to go in both directions, whether or not related to a common risk factor, we investigated whether during the period we study there was any period in which firms with low-entrenchment scores under-performed firms with high-entrenchment scores. To this end, we calculated the abnormal returns associated with entrenchment for a variety of sub-periods of our sample period. We focused on calculating abnormal returns for the trading strategy that longs and shorts firms at the extremes in terms of their entrenchment scores as it is for this trading strategy that any corporate governance pricing shock affecting the relative value of low-entrenchment and high-entrenchment firms will be most powerfully felt.

Specifically, we calculated the returns, after controlling for the Carhart four factors, associated with going long firms with entrenchment score of zero and short firms with entrenchment score of 5 or 6. We calculated the abnormal returns associated with this trading strategy for all sub-periods ranging from rolling two-year sub-periods to rolling thirteen-year

sub-periods over our sample period. For example, we calculate the abnormal return periods for all rolling four year sub-periods in our sample, which consists of 1991-1994, 1992-1995, 1993-1996, 1994-1997, 1995-1998, 1996-1999, 1997-2000, 1998-2001, 1999-2002, and 2000-2003. We exclude the year 1990 because we have only three observations in this year as the IRRC data was first released in September of 1990. Accordingly, we calculated the abnormal returns for a total of 78 sub-periods for a total of 156 abnormal return results (78 equally-weighted abnormal returns and 78 value-weighted abnormal returns).

Out of the 156 sub-period abnormal returns, only four were negative with the rest being positive. These negative abnormal returns are quite small, ranging from negative 6 basis points a month to a low of negative 14 basis points a month. Moreover, all four negative abnormal returns are statistically insignificant with their p values ranging from 66% to 89%. Thus, we found no evidence of any period of two or more years in which firms with low entrenchment scores under-performed firms with high-entrenchment scores.

In contrast, out of the 153 sub-period positive abnormal returns, 131 were statistically significant with at least 10% significance. 91 of these positive abnormal returns are statistically significant at the 1% level. In addition, many of the estimated abnormal returns are quite large typically ranging from 50 basis points a month to 150 basis points a month. Thus, the over-performance of low-entrenchment firms during the 1990-2003 is not the result of over-performance during some limited sub-period, with normal or even negative performance outside this sub-period. The consistent finding of positive abnormal returns, with statistical and economic significance, casts some doubt on whether our abnormal return findings can easily be explained by unexpected shocks (whether or not these shocks are related to a common risk factor).

## VI. CONCLUDING REMARKS

A substantial literature has attempted to identify over the past two decades which corporate arrangements and structures are correlated with higher shareholder value. We have sought in this paper to contribute to this literature by identifying which provisions, among the set of 24 IRRC provisions, are negatively correlated with firm performance. We have identified six entrenching provisions that are negatively correlated with firm valuation, as measured by Tobin's Q, as well

as with stock returns during the 1990-2003 period. We have also found that these provisions fully drive the findings documented by prior research that the IRRC provision in the aggregate are correlated with Tobin' Q as well as returns during the 1990s.

Our results contribute to our understanding of the relationship between governance and firm value, and provide a basis for future work in several ways. The six provisions in the entrenchment index are the ones to which researchers, investors, governance advisers, and policymakers interested in improving corporate governance should pay more attention. Knowing which provisions matter also provides a useful starting point for an inquiry into the source of the correlation between the IRRC provisions in the aggregate and firm value.

One important question that remains for future work concerns causation. We present suggestive evidence that, in the aggregate, the entrenching provisions are helping to bring about lower firm valuation. But more work needs to be done. Once the key provisions responsible for the correlation with firm value are known, it is possible to examine whether the answers to these questions vary among the provisions in the entrenchment index. Our conjecture is that the constitutional limitations on shareholder power do bring about, and not merely reflect, lower firm value. In contrast, our conjecture is that the correlation that poison pills and golden parachutes have with lower firm value at least partly reflects the greater tendency of managers of firms with lower firm value to adopt takeover readiness provisions.

Looking beyond the set of IRRC provisions, our analysis cautions against the "kitchen-sink" approach of building ever-larger indexes of governance measures. As we noted in the introduction, shareholder advisory firms, including industry leader ISS, have put forward indexes of good corporate governance based on a massive number of provisions, and the development and use of these indexes has put pressure on firms to adjust their arrangements in ways that would improve their index scores. As this paper highlights, in any large set of governance provisions, many are likely not to matter or to be an endogenous product of others. Compared with a governance ratings scheme based on the key provisions that matter, a governance rating system based on a much large set can push firms in directions that are counter-productive or at least wasteful, and provides a noisier measure of governance quality. In short, adding more provisions to an index is not harmless; in this area, less can be preferable to more. Shareholders and their advisers might do well to focus on those corporate governance provisions that really matter for firm value.

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TABLE I: INCIDENCE OF CORPORATE GOVERNANCE PROVISIONS

	YEAR					
	1990	1993	1995	1998	2000	2002
<b>Entrenchment Index Provisions:</b>						
Staggered Board	59.2%	60.5%	61.8%	59.5%	60.5%	61.9%
Limits to Amend Bylaws	14.5%	16.2%	16.1%	18.2%	20.0%	23.2%
Limits to Amend Charter	3.3%	3.4%	3.1%	3.0%	3.3%	2.5%
Supermajority	39.0%	39.5%	38.4%	34.1%	34.1%	32.3%
Golden Parachutes	53.3%	55.7%	55.2%	56.9%	67.4%	70.2%
Poison Pill	54.4%	57.6%	56.6%	55.4%	59.9%	59.0%
<b>All Other Provisions:</b>						
Limits to Special Meeting	24.8%	30.0%	32.0%	34.8%	38.3%	50.2%
Limits to Written Consent	24.8%	29.3%	32.1%	33.3%	36.2%	46.4%
No Cumulative Vote	81.6%	83.6%	85.0%	87.8%	89.0%	90.4%
No Secret Ballot	97.1%	90.5%	87.8%	90.4%	89.1%	88.8%
Director Indemnification	40.8%	39.5%	38.5%	24.5%	23.6%	19.1%
Director Indemnification Contracts	16.6%	15.2%	12.6%	11.2%	9.1%	8.1%
Director Liability	72.7%	69.2%	65.5%	47.2%	43.1%	33.9%
Compensation Plans	45.3%	66.1%	72.8%	63.2%	72.6%	74.0%
Severance Agreements	13.1%	5.5%	10.2%	11.2%	9.2%	6.1%
Unequal Vote	2.4%	2.0%	1.9%	1.7%	1.5%	1.6%
Blank Check	76.7%	80.1%	85.9%	88.0%	89.4%	90.8%
Fair Price	58.0%	59.1%	57.6%	49.4%	48.5%	44.0%
Cash Out Law	4.1%	3.7%	3.6%	3.1%	2.7%	2.5%
Director Duties	10.4%	11.1%	10.9%	9.9%	10.2%	10.8%
Business Combination Law	84.1%	87.5%	87.4%	88.4%	89.0%	89.1%
Anti-green Mail	19.7%	20.8%	20.1%	17.1%	15.8%	15.0%
Pension Parachutes	4.0%	5.3%	4.0%	2.2%	1.5%	1.0%
Silver Parachutes	4.1%	4.9%	3.5%	2.4%	2.0%	1.7%

TABLE II: INCIDENCE OF THE ENTRENCHMENT INDEX

Entrenchment index	1990	1993	1995	1998	2000	2002
0	13.0%	11.0%	11.0%	10.7%	7.9%	7.3%
1	18.2%	17.3%	17.6%	19.0%	18.0%	15.4%
2	24.3%	25.0%	25.4%	25.9%	24.0%	26.8%
3	25.4%	25.7%	25.3%	25.1%	27.6%	27.2%
4	14.7%	16.3%	16.7%	15.9%	18.2%	18.3%
5	3.7%	4.3%	3.8%	2.8%	3.8%	4.6%
6	0.7%	0.4%	0.2%	0.6%	0.5%	0.4%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE III: CORRELATION MATRIX OF THE ENTRENCHMENT INDEX, OTHER PROVISIONS INDEX, AND GIM INDEX 1990-2002

	Entrenchment Index	Other Provisions Index	GIM Index
Entrenchment Index	1		
Other Provisions Index	0.36	1	
GIM Index	0.74	0.89	1

TABLE IV: CORRELATION MATRIX OF ENTRENCHING PROVISIONS: 1990-2002

	Classified Board	Golden Parachutes	Limits to Amend Bylaw	Limits to Amend Charter	Supermajority	Poison Pill
Classified Board	1					
Golden Parachutes	.167	1				
Limits to Amend Bylaw	.202	.063	1			
Limits to Amend Charter	.093	.018	.24	1		
Supermajority	.176	.037	.047	.092	1	
Poison Pill	.225	.31	.079	.018	.062	1

TABLE V: ENTRENCHMENT INDEX LEVELS OF DIFFERENT TYPES OF FIRMS

Firms in Year 2002	Mean E-Level	Standard Deviation
S&P 500	2.58	1.29
Not in S&P 500	2.46	1.30
Went Public in 1990s	2.30	1.28
Went Public in 1980s	2.35	1.29
Went Public Before 1980	2.82	1.27

TABLE VI: INCIDENCE OF OTHER PROVISIONS INDEX

Index of Other Provisions	1990	1993	1995	1998	2000	2002	Average E-Index: Year 1990	Average E-Index: Year 2002
1	0.15%	0.00%	0.00%	0.00%	0.06%	0.00%	1.50	1.11
2	1.41%	0.68%	0.66%	0.71%	0.52%	0.55%	0.89	1.41
3	3.72%	3.68%	2.41%	3.12%	2.14%	1.64%	1.42	1.61
4	7.58%	6.38%	5.41%	10.88%	8.31%	7.71%	1.67	2.10
5	14.94%	12.91%	13.38%	17.82%	17.85%	15.79%	1.75	2.24
6	19.03%	17.87%	17.98%	17.24%	18.23%	21.86%	2.09	2.72
7	16.36%	16.97%	16.81%	16.53%	19.92%	22.16%	2.36	2.90
8	15.24%	17.49%	19.52%	14.88%	14.99%	13.60%	2.52	2.86
9	10.26%	12.01%	11.77%	9.59%	9.28%	8.50%	2.78	3.33
10	7.21%	6.76%	6.94%	5.71%	5.78%	5.04%	3.01	3.44
11	3.35%	4.28%	4.24%	2.71%	2.14%	2.37%	3.04	3.38
12	0.45%	0.75%	0.66%	0.65%	0.65%	0.49%	2.17	3.40
13	0.30%	0.23%	0.22%	0.18%	0.13%	0.30%	2.25	1.11
Average							2.24	2.49
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		

TABLE VII: THE ENTRENCHMENT INDEX AND FIRM VALUE

This table reports pooled OLS regressions of log (industry-adjusted Tobin's q) on various controls and two specifications of the entrenchment index. Tobin's q is the ratio of the market value of assets to the book value of assets, where the market value of assets is computed as book value of assets plus the market value of common stock less the sum of book value of common stock and balance sheet deferred taxes. Industry-adjusted Tobin's q is equal to Tobin's q minus the median Tobin's q in the industry, where industry is defined by two-digit SIC code. Entrenchment index  $i$  ( $i=1, 2, 3, 4,$  and  $5-6$ ) is equal to 1 if the firm has an entrenchment level  $i$  and 0 otherwise. The other provisions index is equal to the GIM index (Gompers-Ishii-Metrick (2003)) minus the entrenchment index. Insider Ownership is equal to the fraction of shares held by officers and director. ROA is the ratio of net income to assets. CAPEX/assets is the ratio of capital expenditures to assets. R&D per Sales is the ratio of research and development expenditures to total sales. Leverage is the ratio of long-term debt plus debt due in one year to assets. Year dummies and a dummy for missing R&D data are included in all regressions, but their coefficients (as well as the constant) are omitted. Columns 1 and 2 provide OLS estimates, which are White (1980) robust, and columns 3 and 4 provide the results of regressions with fixed firm effects. Robust standards errors appear below the coefficient estimate. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Variable	(1)	(2)	(3)	(4)
Entrenchment Index E	-0.044 <sup>***</sup> 0.004		-0.020 <sup>***</sup> 0.007	
Entrenchment Index 1		-0.092 <sup>***</sup> 0.023		-0.056 <sup>**</sup> 0.022
Entrenchment Index 2		-0.146 <sup>***</sup> 0.022		-0.065 <sup>***</sup> 0.025
Entrenchment Index 3		-0.155 <sup>***</sup> 0.022		-0.077 <sup>***</sup> 0.029
Entrenchment Index 4		-0.206 <sup>**</sup> 0.023		-0.104 <sup>***</sup> 0.031
Entrenchment Index 5-6		-0.282 <sup>***</sup> 0.027		-0.107 <sup>***</sup> 0.040
Other Provisions Index	0.010 <sup>***</sup> 0.003	0.010 <sup>***</sup> 0.003	0.002 0.006	0.002 0.006
Log(Assets)	0.015 <sup>***</sup> 0.004	0.015 <sup>***</sup> 0.004	-0.119 <sup>***</sup> 0.014	-0.118 <sup>***</sup> 0.014
Log(Company Age)	-0.048 <sup>***</sup> 0.008	-0.047 <sup>***</sup> 0.008	-0.026 0.031	-0.026 0.031
Delaware Incorporation	-0.03 <sup>**</sup> 0.01	-0.028 <sup>***</sup> 0.01	0.004 0.04	0.008 0.04
Insider Ownership	0.001 0.001	0.001 0.001	0.005 <sup>***</sup> 0.002	0.005 <sup>**</sup> 0.002
Insider Ownership Square	-0.00003 0	-0.0003 0	-0.0001 <sup>†</sup> 0	-0.0001 <sup>†</sup> 0
ROA	0.008 0.009	0.008 0.009	0.019 0.015	0.019 0.015
CAPEX / Assets	0.994 <sup>***</sup> 0.089	1.00 <sup>***</sup> 0.09	0.868 <sup>***</sup> 0.120	0.869 <sup>***</sup> 0.120
Leverage	-0.544 <sup>***</sup> 0.046	-0.553 <sup>***</sup> 0.046	-0.426 <sup>***</sup> 0.047	-0.427 <sup>***</sup> 0.047
R&D per Sales	0.002 <sup>**</sup> 0.001	0.001 <sup>†</sup> 0.001	-0.001 <sup>**</sup> 0.001	-0.001 <sup>**</sup> 0.001

TABLE VIII  
THE ENTRENCHMENT INDEX AND FIRM VALUE: ANNUAL REGRESSIONS

This table reports mean and median annual OLS regressions of log of industry-adjusted Q and industry-adjusted Q on the entrenchment index and various controls. Industry-adjusted Tobin's q is defined in the same way as in table VII. The independent variables are the same as in the regressions reported in table VII, but the table reports only the coefficients of the entrenchment index E and the other provisions index. Fama-Macbeth coefficients are calculated and reported in the last row. Columns (1) and Column (3) provide OLS estimates that are White (1980) robust, and Column (2) provides the results of median regressions. Robust standards errors appear immediately below the coefficient estimate. Levels of significance are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Year	(1) Log (Industry-adjusted Q) Mean regressions		(2) Log (Industry-adjusted Q) Median Regressions		(3) Industry-adjusted Q Mean Regressions	
	Entrenchment Index	Other Provisions Index	Entrenchment Index	Other Provisions Index	Entrenchment Index	Other Provisions Index
1992	-0.011	0.003	-0.009	-0.001	-0.028	-0.002
	0.009	0.006	0.016	0.011	0.021	0.014
1993	-0.018*	-0.003	-0.022**	-0.007	-0.058**	-0.011
	0.011	0.007	0.010	0.006	0.027	0.016
1994	-0.018**	0.004	-0.037***	0.001	-0.052**	0.010
	0.009	0.006	0.010	0.007	0.020	0.014
1995	-0.016	0.0013	-0.023	-0.005	-0.067**	0.008
	0.011	0.008	0.015	0.011	0.032	0.026
1996	-0.024**	0.011	-0.025*	-0.002	-0.074**	0.029
	0.01	0.007	0.015	0.011	0.029	0.025
1997	-0.014*	0.005	-0.029*	0.017	-0.058**	0.017
	0.008	0.007	0.016	0.011	0.027	0.022
1998	-0.064***	0.022**	-0.058***	0.000	-0.209***	0.066**
	0.014	0.009	0.021	0.014	0.053	0.033
1999	-0.068***	0.005	-0.065***	0.003	-0.327***	0.015
	0.015	0.01	0.016	0.011	0.077	0.054
2000	-0.03**	0.003	-0.066***	-0.003	-0.089**	-0.010
	0.013	0.009	0.020	0.014	0.041	0.028
2001	-0.017*	0.006	-0.024*	0.006	-0.044	0.016
	0.01	0.007	0.014	0.010	0.027	0.019
2002	-0.05***	0.013*	-0.057***	0.000	-0.119***	0.020
	0.013	0.007	0.014	0.009	0.028	0.015
Fama-Macbeth	-0.03***	0.006***	-0.038***	0.001***	-0.102***	0.014***
	0.000	0.000	0.000	0.000	0.001	0.000

TABLE IX  
THE ENTRENCHMENT INDEX PROVISIONS AND FIRM VALUE

This table reports the results of 24 pooled OLS regressions of log (industry-adjusted Tobin's q) on provisions in the entrenchment index and various controls. Each column displays the results of four different regressions investigating a given provision, and it displays only the coefficient of the provision of interest in these four regressions. The independent variables other than governance provisions are the same as in the regressions of table VII. OLS estimates are White (1980) robust. Robust standards errors appear immediately below the coefficient estimate. Levels of significance are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

	Staggered Board	Golden Parachutes	Limits to Amend Bylaws	Limits to Amend Charter	Supermajority	Poison Pill
Coefficient in a regression with (i) the provision, and (ii) the GIM index minus the provision.	-0.035*** 0.011	-0.024** 0.012	-0.079*** 0.022	-0.048*** 0.01	-0.079*** 0.0101	-0.061*** 0.011
Coefficient in a regression with (i) the provision, (ii) the Entrenchment index minus the provision, and (iii) the Index of All Other Provisions.	-0.051*** 0.005	-0.037*** 0.005	-0.047*** 0.004	-0.044*** 0.004	-0.045*** 0.005	-0.042*** 0.005
Coefficient in a regression with (i) the provision, (ii) dummies for each of the other five provisions in the Entrenchment Index, and (iii) the Index of All Other Provisions.	-0.026** 0.011	-0.025** 0.012	-0.067*** 0.021	-0.044*** 0.01	-0.07*** 0.011	-0.046*** 0.011
Coefficient in a regression with (i) the provision, (ii) dummies for each of the other twenty-three IRRC provisions.	-0.030*** 0.011	-0.026** 0.012	-0.068*** 0.022	-0.043*** 0.01	-0.071*** 0.011	-0.048*** 0.011

TABLE X  
INSIDE THE OTHER PROVISIONS INDEX

This table reports the results of seventy-two pooled OLS regressions of log of industry-adjusted Tobin's q on a given provision in the other provisions index and various controls. Industry-adjusted Tobin's Q is defined in the same way as in table VII. For each provision i, four types of regressions are run: (a) A regression in which the independent corporate governance variable are the provision i, and a variable equal to the GIM governance provisions index minus the provision i; (b) A regression in which the independent corporate governance variables are the provision i, a variable equal to the other provision index minus the provision i, and the entrenchment index; (c) A regression in which the independent corporate governance variables are the provision i, dummies for each of the other seventeen provisions in the other provisions index, and the entrenchment index; and (d) A regression in which the independent corporate governance variables are the provision i and dummies for each of the other twenty-three IRRC provisions. The independent non-governance variables are the same as in the regressions reported in table VII. We display only the coefficient on the provision i. OLS estimates are White (1980) robust. Robust standards errors appear immediately below the coefficient estimate. Levels of significance are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

	Blank Check	Limit to Meetings	Limits to Consent	Compensation Plans	Director Indemnification K	Director Indemnification
Regression Type (a)	0.02 0.014	0.025** 0.011	0.001** 0.012	-0.005 0.011	0.031** 0.013	0.003 0.01
Regression Type (b)	0.025* 0.014	0.031*** 0.011	0.002 0.012	0.006 0.011	0.031** 0.013	-0.011 0.01
Regression Type (c)	0.021 0.014	0.037*** 0.012	-0.001 0.014	0.008 0.011	0.036*** 0.013	-0.011 0.01
Regression Type (d)	0.021 0.014	0.034*** 0.012	-0.014 0.013	0.013 0.012	0.035*** 0.013	-0.013 0.01

	No Secret Ballot	Unequal Vote	Anti- Greenmail	Director Duties	Fair Price	Pension Parachutes
Regression Type (a)	0.028* 0.014	-0.048 0.032	-0.008 0.013	-0.004 0.015	0.038*** 0.012	-0.049** 0.021
Regression Type (b)	0.034** 0.014	-0.04 0.032	-0.001 0.012	0.005 0.015	0.032*** 0.012	-0.037* 0.021
Regression Type (c)	0.032** 0.015	-0.03 0.033	-0.012 0.013	0.01 0.015	0.03** 0.012	-0.035* 0.021
Regression Type (d)	0.035** 0.015	-0.035 0.033	-0.009 0.013	0.004 0.015	0.027*** 0.013	-0.031 0.021

	No Cumulative Vote	Director Liability	Business Combination	Silver Parachutes	Cash-Out	Severance Agreements
Regression Type (a)	-.017 0.013	.003 0.011	0.021** 0.016	0.017 0.021	0.026 0.029	.038** 0.0201
Regression Type (b)	-.005 0.012	-0.013 0.011	.024 0.016	0.015 0.022	-0.000 0.028	.022 0.02
Regression Type (c)	-.007 0.013	-0.006 0.011	0.025 0.017	0.021 0.022	-.003 0.03	.021 0.02
Regression Type (d)	-.005 0.012	-0.004 0.011	.026 0.017	0.019 0.022	0.001 0.013	.01 .021

TABLE XI: THE ENTRENCHMENT INDEX AND FIRM VALUE 1998-2002

This table reports pooled OLS regressions of log (industry-adjusted Tobin's q) for 1998-2002 on various controls and two specifications of the entrenchment index. The calculation of industry-adjusted Tobin's Q is described in Table VII. In addition to the controls used earlier in the Table VI regressions, columns 1 and 3 control for firms' 1990 entrenchment index scores, while columns 2 and 4 control for the different levels of firms' 1990 entrenchment index scores. Moreover, columns 3 and 4 control for the log of firms' industry-adjusted Tobin's Q as of 1990. Year dummies and a dummy for missing R&D data are included in all regressions, but their coefficients (as well as the constant) are omitted. White (1980) robust standards errors appear below the coefficient estimate. Significance levels are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

Variable	(1)	(2)	(3)	(4)
Entrenchment Index E 90	-0.024*** 0.005		-0.017*** 0.005	
Entrenchment Index 1 90		-0.045 0.031		-0.036 0.03
Entrenchment Index 2 90		-0.073** 0.029		-0.075*** 0.027
Entrenchment Index 3 90		-0.071** 0.029		-0.054** 0.028
Entrenchment Index 4 90		-0.122*** 0.03		-0.092*** 0.028
Entrenchment Index 5-6 90		-0.105*** 0.039		-0.078** 0.036
Other Provisions Index	0.002 0.004	0.002 0.004	0.002 0.004	0.002 0.004
Log (Industry-Adjusted Q) 90			.289*** .025	.291*** .025
Log(Assets)	0.049*** 0.005	0.049 0.005	0.045*** 0.005	0.044*** 0.005
Log(Company Age)	-0.036** 0.017	-0.032* 0.017	-0.016 0.018	-0.01 0.017
Delaware Incorporation	-0.021 0.015	-0.02 0.015	-.017 0.014	-.015 0.014
Insider Ownership	-0.004* 0.003	0.005* 0.003	-0.003 0.002	-.003 0.002
Insider Ownership Square	0 0	0 0	0 0	0 0
ROA	2.859*** 0.134	2.859*** 0.134	2.457*** 0.147	2.456*** 0.147
CAPEX / Assets	0.173*** 0.167	.729*** 0.031	0.847*** 0.16	0.87*** 0.162
Leverage	-0.403*** 0.058	-0.405*** 0.058	-0.31*** 0.059	0.312*** 0.059
R&D per Sales	1.218*** 0.242	1.28*** 0.242	0.909*** 0.242	0.934*** 0.242

TABLE XII  
SUMMARY STATISTICS ON ENTRENCHMENT INDEX STOCK RETURNS

This table documents the average monthly return of stocks of portfolios of stocks consisting of the same entrenchment index scores (0, 1, 2, 3, 4 or 5-6) for the period of September 1990 – December 1999. Portfolios are constructed using equal weights of stocks and weighting positions in stocks by firms' common stock market capitalization. Stocks entrenchment scores were adjusted when updated information on firms' corporate governance provisions became available: July, 1993; July, 1995; and February 1998.

Entrenchment Index Level	Equal-Weight	Value-Weight
Index 5-6	1.26%	1.51%
Index 4	1.40%	1.85%
Index 3	1.46%	1.93%
Index 2	1.59%	2.26%
Index 1	1.72%	2.33%
Index 0	1.74%	2.45%

TABLE XIII  
MONTHLY ABNORMAL RETURNS ASSOCIATED WITH DIFFERENT TRADING STRATEGIES:  
THE 1990S

This table documents the monthly abnormal returns, and their associated robust standard errors in parenthesis, associated with different trading strategies for the period of September 1990 - December 1999. The monthly abnormal returns were calculated using three different methods. In the baseline model, abnormal returns were calculated by regressing the return associated with a particular trading strategy on the three Fama-French (Fama & French 1993) – the HML factor which captures book-to-market effects, the SMB factor which captures firm size effects and the value-weighted market return in excess of the risk-free rate for further explanation) – and a momentum factor which was calculated using the procedures described in Carhart (1997). The trading strategies analyzed consist of going long a portfolio of stocks with a certain entrenchment index score and, simultaneously, shorting another portfolio of stocks with a higher entrenchment score. These long and short portfolios were adjusted when updated information on firms' corporate governance provisions became available: July, 1993; July, 1995; and February 1998. The long and short portfolios of stocks were constructed using equal weightings of each stock (equal-weight) and by weighting the holding of a stock in the portfolio by its common stock market capitalization (value-weight). With industry-adjusted returns, the monthly abnormal returns were calculated by first subtracting from each firm's monthly stock return the median industry return for the industry in which the firm operates. The Fama-French 48 industry classification (Fama & French 1997) was used in classifying firms across industries. Monthly abnormal returns were then calculated by regressing the industry-adjusted returns associated with a trading strategy on the four Carhart factors used in the baseline model. Finally, with the O-Bucket-Adjusted returns, the long and short portfolios were constructed by first dividing all stocks in the same entrenchment index category (0, 0-1, 0-1-2, 3-4-5-6, 4-5-6 & 5-6) into four other provisions (O) index buckets. The four buckets consist of firms with O scores of 0-5, 6, 7-8, and 9-13. A portfolio in a certain Entrenchment Index category is then constructed by calculating the return of stocks with the desired Entrenchment Index score equally-weighted across the four O buckets. The O Bucket-adjusted returns associated with a particular trading strategy was regressed, as always, on the four Carhart factors. Levels of significance are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

<b>Long – Short Portfolios</b>	Baseline Model		Industry-adjusted		O-Bucket-Adjusted	
	Equal-Weight	Value-Weight	Equal-Weight	Value-Weight	Equal-Weight	Value-Weight
Index 0 – Index 5-6	.61*** (.200)	1.16*** (.284)	.60*** (.182)	1.01*** (.301)	.73*** (.269)	1.16*** (.298)
Index 0 – Index 4-5-6	.42*** (.134)	.74*** (.191)	.47*** (.116)	.82*** (.198)	.61*** (.195)	.89*** (.210)
Index 0-1 – Index 4-5-6	.41*** (.138)	.62*** (.153)	.44*** (.109)	.62*** (.154)	.34** (.141)	.77*** (.180)
Index 0-1 – Index 3-4-5-6	.32*** (.106)	.52*** (.141)	.34*** (.088)	.57*** (.130)	.28*** (.107)	.58*** (.161)
Index 0-1-2–Index 3-4-5-6	.25*** (.079)	.47*** (.116)	.26*** (.067)	.51*** (.108)	.23*** (.071)	.50*** (.123)

TABLE XIV  
MONTHLY ABNORMAL RETURNS ASSOCIATED WITH DIFFERENT TRADING STRATEGIES:  
1990-2003

This table documents the monthly abnormal returns, and their associated robust standard errors in parenthesis, associated with different trading strategies for the period of September 1990 - December 2003. The abnormal returns were calculated in the same manner as in Table XIII : the baseline model, industry-adjusted returns, and O Bucket-adjusted returns. The long and short portfolios were adjusted when updated information on firms' corporate governance provisions became available: July, 1993; July, 1995; February 1998; November, 1999; and February 2002. The long and short portfolios of stocks were constructed using equal weightings of each stock (equal-weight) and by weighting the holding of a stock in the portfolio by its common stock market capitalization (value-weight). Levels of significance are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

<b>Long – Short Portfolios</b>	Baseline Model		Industry-adjusted		O-Bucket-Adjusted	
	Equal-Weight	Value-Weight	Equal-Weight	Value-Weight	Equal-Weight	Value-Weight
Index 0 – Index 5-6	.60*** (.185)	.84*** (.224)	.66*** (.156)	.94*** (.230)	.68*** (.220)	.81*** (.246)
Index 0 – Index 4-5-6	.39*** (.145)	.57*** (.186)	.48*** (.125)	.67*** (.185)	.50*** (.169)	.60*** (.206)
Index 0-1 – Index 4-5-6	.42*** (.133)	.52*** (.157)	.52*** (.114)	.53*** (.151)	.35*** (.130)	.58*** (.179)
Index 0-1 – Index 3-4-5-6	.37*** (.107)	.41*** (.132)	.43*** (.090)	.46*** (.125)	.34*** (.100)	.43*** (.144)
Index 0-1-2–Index 3-4-5-6	.27*** (.085)	.37*** (.117)	.34*** (.070)	.39*** (.110)	.24*** (.074)	.38*** (.121)

TABLE XV  
MONTHLY ABNORMAL RETURNS ASSOCIATED WITH DIFFERENT TRADING STRATEGIES CONTROLLING  
FOR ENTRENCHMENT INDEX DISTRIBUTION

This table documents the monthly abnormal returns, and their associated t-statistics in parenthesis, associated with trading strategies controlling, as in Table XIII and XIV, for the three Fama-French factors (Fama & French 1993) and the Carhart (1997) momentum factor. Portfolios are constructed by first dividing all stocks in the same other provisions (O) category -- 0-5, 6, 7-8, or 9-13 -- into six entrenchment index categories. The six entrenchment index buckets are entrenchment index scores of 0, 1, 2, 3, 4 and 5-6. A portfolio in a certain O index category is then constructed by calculating the equally-weighted return of stocks with the desired O index category across the six Entrenchment buckets. Within each Entrenchment bucket, the equally-weighted and value-weighted return of stocks in the same O category were calculated. The monthly abnormal returns associated with going long and short various portfolios was calculated for both the period of September 1990 – December 1999 period and the longer period of September 1990 – December 2003. The long and short portfolios were adjusted when updated information on firms' corporate governance provisions became available: July, 1993; July, 1995; February 1998; November, 1999; and February 2002. Levels of significance are indicated by \*, \*\*, and \*\*\* for 10%, 5%, and 1% respectively.

	1990-1999		1990-2003	
	Equal-Weight	Value-Weight	Equal-Weight	Value-Weight
<b>Long – Short Portfolios</b>				
Index 0-5 - Index 9-13	.10 (.162)	.13 (.180)	.07 (.133)	.05 (.146)
Index 0-5 – Index 7-8	-.024 (.143)	.08 (.124)	.03 (.124)	.17 (.106)
Index 0-5 – Index 6	-.10 (.148)	-.01 (.155)	-.04 (.136)	-.05 (.141)
Index 0-6 – Index 7-13	.10 (.107)	.02 (.056)	.07 (.096)	.05 (.051)

TABLE XVI: SUB-PERIODS

Two-Year Periods			Three-Year Periods		
	Equal- Weighted	Value- Weighted		Equal- Weighted	Value- Weighted
1991-1992	-0.06	-0.1	1991-1993	-0.14	0.76 *
1992-1993	-0.08	0.2	1992-1994	0.38	0.41
1993-1994	0.32	0.57	1993-1995	0.627 **	0.79 **
1994-1995	0.93 ***	0.84 *	1994-1996	0.809 ***	0.76 **
1995-1996	0.82 *	0.61	1995-1997	0.71 **	0.96 *
1996-1997	0.51	1.11 *	1996-1998	0.64 **	1.48 ***
1997-1998	0.74	1.93 **	1997-1999	0.77 *	1.63 **
1998-1999	1.02 *	1.52 *	1998-2000	1.27 ***	1.26 *
1999-2000	1.33 **	0.79	1999-2001	1.158 **	0.71
2000-2001	1.25 **	0.8	2000-2002	0.918 *	0.46
2001-2002	0.61	0.36	2001-2003	0.37	2.21
2002-2003	0.22	-0.1			

Four-Year Periods			Five-Year Periods		
	Equal- Weighted	Value- Weighted		Equal- Weighted	Value- Weighted
1991-1994	0.15	0.73 **	1991-1995	0.32	0.89 ***
1992-1995	0.56 **	0.69 *	1992-1996	0.59 **	0.72 **
1993-1996	0.63 **	0.75 **	1993-1997	0.63 ***	0.88 ***
1994-1997	0.8 ***	0.96 **	1994-1998	0.7 ***	1.15 ***
1995-1998	0.64 **	1.3 ***	1995-1999	0.76 **	1.36 ***
1996-1999	0.74 **	1.44 ***	1996-2000	1 ***	1.41 ***
1997-2000	1.11 ***	1.52 ***	1997-2001	1.02 ***	1.44 ***
1998-2001	1.21 ***	1.19 ***	1998-2002	0.98 ***	0.88 **
1999-2002	0.9 **	0.47	1999-2003	0.75 **	0.36
2000-2003	0.68 *	0.31			

Six-Year Periods			Seven-Year Periods		
	Equal- Weighted	Value- Weighted		Equal- Weighted	Value- Weighted
1991-1996	0.39 *	0.88 ***	1991-1997	0.4 *	0.98 ***
1992-1997	0.58 ***	0.85 ***	1992-1998	0.65 ***	1.14 ***
1993-1998	0.63 ***	1.13 ***	1993-1999	0.69 ***	1.2 ***
1994-1999	0.73 ***	1.17 ***	1994--2000	0.93 ***	1.21 ***
1995-2000	0.98 ***	1.38 ***	1995-2001	0.91 ***	1.34 ***
1996-2001	0.95 ***	1.37 ***	1996-2002	0.79 ***	1.08 ***
1997-2002	0.84 **	1.11 ***	1997-2003	0.76 ***	0.95 ***
1998-2003	0.86 ***	0.74 **			

TABLE XVI: SUB-PERIODS (CONT...)

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<b>Eight-Year Periods</b>		
	<b>Equal- Weighted</b>	<b>Value- Weighted</b>
1991-1998	0.48 **	1.21 ***
1992-1999	0.77 ***	1.27 ***
1993-2000	0.85 ***	1.21 ***
1994--2001	0.89 ***	1.21 ***
1995-2002	0.75 ***	1.08 ***
1996-2003	0.73 ***	0.95 ***

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<b>Nine-Year Periods</b>		
	<b>Equal- Weighted</b>	<b>Value- Weighted</b>
1991-1999	0.48 **	1.21 ***
1992-2000	0.77 ***	1.27 ***
1993-2001	0.85 ***	1.21 ***
1994--2002	0.89 ***	1.21 ***
1995-2003	0.75 ***	1.08 ***

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<b>Ten-Year Periods</b>		
	<b>Equal- Weighted</b>	<b>Value- Weighted</b>
1991-2000	0.72 ***	0.13 ***
1992-2001	0.83 ***	1.23 ***
1993-2002	0.72 ***	1.03 ***
1994--2003	0.72 ***	0.9 ***

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<b>Eleven-Year Periods</b>		
	<b>Equal- Weighted</b>	<b>Value- Weighted</b>
1991-2001	0.7 ***	1.19 ***
1992-2002	0.75 ***	1.07 ***
1993-2003	0.68 ***	0.92 ***

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<b>Twelve-Year Periods</b>		
	<b>Equal- Weighted</b>	<b>Value- Weighted</b>
1991-2002	0.62 ***	1.04 ***
1992-2003	0.71 ***	0.96 ***

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<b>Thirteen-Year Periods</b>		
	<b>Equal- Weighted</b>	<b>Value- Weighted</b>
1991-2003	0.6 ***	0.94 ***

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