

Management Quality, Anti-Takeover Provisions, and Performance in IPOs

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Abstract

We shed new light on the role of anti-takeover provisions in firms going public by analyzing the relationship between the quality and reputation of a firm's management and the prevalence of anti-takeover provisions in the corporate charters of IPO firms, and the influence of this relationship on post-IPO performance. We test the implications of two theories regarding the above two relationships: the "managerial entrenchment" hypothesis, which implies that anti-takeover provisions are meant mainly to enhance the control benefits enjoyed by existing firm management by minimizing the probability of takeovers by rival management teams, and therefore always reduce shareholder value; and the "long-term value creation" hypothesis, which argues that such provisions, while they entrench firm management, can also be value enhancing in the hands of higher quality management teams, since they allow such managements to create superior long-term value for the firm without paying undue attention to short-term pressures arising from the market for corporate control. Our empirical results can be summarized as follows. First, firms with higher quality managers are associated with a greater number of anti-takeover provisions relative to those with lower quality managements. Further, within the former category, firms with larger growth options are associated with a greater number of anti-takeover provisions. Second, when we divide our sample by management quality (higher versus lower) and then by the number of anti-takeover provisions (greater versus smaller) within each management quality category, firms with higher management quality and a greater number of anti-takeover provisions outperform firms in the remaining three categories in terms of both post-IPO operating and post-IPO stock return performance. The evidence thus rejects the managerial entrenchment hypothesis and supports the long-term value creation hypothesis.

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1. Introduction

Why do firms adopt various anti-takeover provisions (ATPs) in their corporate charters when they go public? The prevailing view seems to be that anti-takeover provisions reduce shareholder value, and are meant only to entrench existing firm management, allowing them to have a higher probability of maintaining control and consume the private benefits of control by reducing the probability of takeovers by rival management teams. Thus, in an important paper, Field and Karpoff (2002) suggest that anti-takeover provisions are a mechanism through which IPO managers seek to maintain their private benefits of control after taking a firm public. They find that IPO managers deploy takeover defenses when they own few shares, enjoy high compensation, and are relatively free from monitoring by non-managerial shareholders. Daines and Klausner (2001) also have empirical results which they interpret as broadly supporting the managerial entrenchment hypothesis.¹

The empirical evidence, however, indicates that the use of anti-takeover provisions in IPOs has increased rather than decreased: Bebchuk (2003) points out that 82% of firms going public in 2002 made use of staggered boards, while only 35% of firms going public during 1988-1992 did so. Further, in contrast to the view that anti-takeover provisions are value reducing, Field and Karpoff (2002) did not find any evidence that anti-takeover provisions at the time of IPO contribute to poor post-IPO operating performance. In fact, their evidence indicates that post-IPO operating performance in the years immediately after the IPO is poorer for firms without takeover defenses than for firms with defenses. All of the above indicates that perhaps there is

¹ The managerial entrenchment hypothesis is, however, only the most prominent among several alternative rationales that have been suggested for the use of anti-takeover provisions in corporate charters. See, e.g., Bebchuk (2003) for a detailed discussion of these rationales.

more to the use of anti-takeover provisions in IPOs than a blatant attempt to entrench current management at the expense of reduced shareholder value.

The objective of the current paper is to shed new light on the use of anti-takeover provisions in IPO charters by testing the implications of two alternative theories regarding the relationship between the quality of a firm's management and the prevalence of anti-takeover provisions, and regarding the relationship between management quality, anti-takeover provisions, and post-IPO performance. The first hypothesis we test is the managerial entrenchment hypothesis (discussed above), which implies that firms with lower management quality are the ones which are likely to have stronger anti-takeover provisions in their corporate charters when going public (since higher quality managers can rely more on the votes of outside shareholders to maintain control in the face of potential takeover threats). Further, the above theory implies that regardless of the ability of the management team, stronger anti-takeover provisions lead to poorer post-IPO performance, since they reduce the disciplining effect of the market for corporate control on firm management.

The second hypothesis we test is the long-term value creation hypothesis by Chemmanur and Jiao (2005). They develop a theoretical analysis which demonstrates that, in an environment of asymmetric information about management quality, dual class share structures and other anti-takeover provisions may be value enhancing in the hands of high quality managers by allowing such managers to create superior value for the firm by investing in risky, long-term projects without fear of losing control to inferior rivals in a control contest if the project is in temporary difficulties. Anti-takeover provisions will be value destroying, under their theory, in the hands of lower quality managers, since they can use these provisions to enjoy benefits of control without being able to create any superior long-term value.

The analysis of Chemmanur and Jiao (2005) implies that firms with more reputable managers will be more likely to include stronger anti-takeover provisions in their corporate charters, since the benefit of being able to create long-term value will dominate any reduction in

the IPO share price imposed on them by the equity market due to having such provisions. Further, among higher management quality firms, those with larger growth options will have stronger anti-takeover provisions, since there is a greater opportunity for value creation in such firms. Their analysis also implies that, for firms with higher management quality, having stronger anti-takeover provisions in their corporate charters will result in better post-IPO performance. Thus, if we divide a sample of firms going public into four groups: high and low management quality firms, with each group subdivided into those with a greater or smaller number of anti-takeover provisions, their prediction is that firms in the group with high management quality and a greater number of anti-takeover provisions will outperform those in the remaining three groups, on average, both in terms of post-IPO operating and in terms of post-IPO stock return performance. We develop the implications of the above two theories in more detail in section 2.

We test the implications of the above two theories using a sample of firms going public between 1993 and 2000. We make use of measures of management quality developed by two of the authors of the current study in Chemmanur and Paeglis (2005). Data on management quality and anti-takeover provisions are hand-collected from IPO prospectuses. We study 19 different anti-takeover provisions at the firm level: these are briefly described in Appendix A.

Our empirical results can be summarized as follows. First, we find that firms with higher management quality and reputation have, on average, stronger (a greater number of) anti-takeover provisions in their corporate charter. Further, when we divide our sample into four groups: firms with higher or lower management quality, and into those with larger or smaller growth options in each management quality group, we find that, on average, firms with higher management quality and larger growth options have significantly more anti-takeover provisions in their charters compared to those in the other three groups. The above results clearly contradict the idea that the role of anti-takeover provisions in IPO charters is only to entrench firm management, and support the notion that they allow better managers to create long-term value for the firm by insulating

them from short-term pressures arising from the market for corporate control (as suggested by Chemmanur and Jiao (2005)).

Our results on long-term post-IPO performance of firms going public also contradict the idea that anti-takeover provisions are value reducing devices used only to entrench firm management. We find that, if we divide our sample of firms going public into four categories: those with higher or lower management quality, and into those having a greater or smaller number of anti-takeover provisions (in each management quality category), firms with higher management quality and a greater number of anti-takeover provisions strongly outperform those in the remaining three groups, on average, both in terms of long-term post-IPO operating performance and in terms of long-term post-IPO stock returns. The above results again support the notion that stronger anti-takeover provisions help higher quality firm managements create long-term value for the firm by insulating them from the short-term pressures generated by the market for corporate control.

Our paper is related to several strands in the literature. The first strand is the literature studying the role of anti-takeover provisions in the corporate charters of firms going public discussed at some length above. The second strand is the literature studying the role of anti-takeover provisions in corporate charters in contexts other than IPOs: see, e.g., Borokhovich, Brunarski, and Parrino (1997), who document that after a firm adopts anti-takeover provisions, takeovers become less likely, and managers tend to increase their own pay; Masulis, Wang, and Xie (2006), who document that acquirers with more anti-takeover provisions have lower abnormal returns around acquisition announcements; and Garvey and Hanka (1999), who document that firms reduce debt levels after adopting anti-takeover provisions. The third strand is the literature relating the prevalence of anti-takeover provisions in a firm's corporate charter and shareholder value. A prominent example of this literature is Gompers, Ishii, and Metrick (2003), who find that firms with a larger number of anti-takeover provisions have lower stock returns; however, Core, Guay, and Rusticus (2006) question the above finding, arguing that there is no

evidence that a larger number of anti-takeover provisions causes poorer stock returns.² Finally, our paper also contributes to the newly emerging literature on the relationship between the management quality of a firm and various aspects of its IPO (Chemmanur and Paeglis (2005)) or other financial policies (see, e.g., Chemmanur, Paeglis, and Simonyan (2005)).³

In contrast to much of literature reviewed above studying the role of anti-takeover provisions in corporate charters in the context of IPOs as well as other corporate events, the evidence presented in this paper indicates that stronger anti-takeover provisions in a firm's corporate charter do not necessarily destroy shareholder value. Our empirical analysis indicates that anti-takeover provisions play a more nuanced role in affecting shareholder value: while a greater number of anti-takeover provisions may indeed destroy shareholder value in the hands of lower quality management (possibly by entrenching them more strongly), anti-takeover provisions are value enhancing in the hands of higher quality firm management. Thus, by incorporating the role of management quality into the empirical analysis of the relationship between anti-takeover provisions and IPO firm value for the first time in the literature, we are able to provide a more complete picture regarding the relationship between the prevalence of anti-takeover provisions in a firm's corporate charter and shareholder value.

The rest of this paper is organized as follows. Section 2 summarizes the relevant theory and develops the hypotheses we test in later sections. Section 3 describes our data and sample selection procedure. Section 4 develops our measures of management quality and reputation, as well as measures of firm quality and governance. Section 5 presents our empirical tests and results. Section 6 concludes.

² There are also a number of event studies on the adoption of anti-takeover provisions: see, e.g., Jarrell and Poulsen (1987), Karpoff and Malatesta (1989), or Baghat and Jefferies (1991).

³ Our paper is also indirectly related to the empirical literature on the rationale for dual class voting structures in IPOs: see Arugaslan, Cook, and Kieschnick (2005) and the literature comparing the performance and valuation of IPO firms with single class and dual class voting structures: see, e.g., Smart and Zutter (2003).

2. Theory and Hypotheses

We now develop the hypotheses arising from the existing theoretical literature for the relationship between management quality and the prevalence of anti-takeover provisions in IPO firms, and also the relationship between management quality, anti-takeover provisions, and post-IPO performance (operating and stock return performance).

There are two broad sets of theories that have implications for why firms adopt anti-takeover provisions, and for post-IPO performance. The first set of theories can be thought of as emerging from the seminal works of Grossman and Hart (1988) and Harris and Raviv (1988, 1989), which imply that dual class voting structures and other anti-takeover provisions are inefficient. The above models consider a setting where the incumbent management of a firm (large shareholder) obtains not only cash flow or “security” benefits (arising from his equity ownership in the firm) but also private benefits from being in control; outside shareholders receive only security benefits. These models come to the conclusion that dual class voting structures and other anti-takeover provisions are value reducing, since they reduce the chance of takeovers by rival management teams who can increase the cash flows to current shareholders by managing the firm better than does the incumbent. Thus, under the above theories, anti-takeover provisions are inefficient, and the only role of such provisions is to entrench existing management and reduce the chance of losing their benefits of control. From now on, we will refer to the above hypothesis as the “managerial entrenchment” hypothesis of anti-takeover provisions.

While the above models do not incorporate different levels of management quality, allowing for such variation in quality would imply that firms with less able management teams are more likely to have a greater number of anti-takeover provisions under the managerial entrenchment hypothesis. This is because higher quality managers will be more able to resist future takeover attempts based on attracting support from outside shareholders, so that it will be lower quality managers that would benefit more from (and therefore adopt) a greater number of

(stronger) anti-takeover provisions in their corporate charter. This will be the first hypothesis that we will test later (**H1A**).

The managerial entrenchment hypothesis predicts no direct relationship between the extent of growth options available to a firm and the strength of anti-takeover provisions in its corporate charter (**H2A**). However, it does have predictions regarding the relationship between management quality, anti-takeover provisions, and the post-IPO operating and stock return performance of the firm. Given that they may lose control of their firm (and the associated control benefits) through a takeover, incumbent management will be motivated to work harder in managing the firm and thus attracting votes from outside shareholders if they assess a greater probability of such a credible takeover attempt occurring: see Chemmanur and Yan (2004) for a model with effort choice by incumbent management and incorporating the disciplinary effect of takeovers. Since stronger anti-takeover provisions reduce the chance of such credible takeover attempts from succeeding (i.e., they reduce the “threat” of takeovers), the managerial entrenchment hypothesis implies that, regardless of management quality, firms characterized by stronger anti-takeover provisions will have poorer post-IPO operating performance, since incumbent management (whether of high or low quality) is likely to work less hard in firms with stronger anti-takeover provisions (**H3A**). Since long-term stock returns move hand-in-hand with operating performance, the managerial entrenchment hypothesis also implies a negative relationship between the prevalence of anti-takeover provisions in a firm’s IPO corporate charter and post-IPO stock returns (**H4A**).

In contrast to the above theories, Chemmanur and Jiao (2005) develop a model suggesting that the role of dual class voting structures and other anti-takeover provisions may not merely be that of entrenching incumbent management (though they may perform such a role in many firms). They consider a setting in which the incumbent management of a private firm wishes to sell equity to outsiders in an IPO to raise external financing to implement the firm’s project. As in earlier models, the incumbent obtains both security benefits (from the equity he

owns in the firm) and private benefits of control. The firm can adopt one of two projects (strategies): a long-term project or a short-term project. A long-term project is intrinsically more valuable than a short-term project, and therefore maximizes long-term value. However, adopting it may cause the firm's equity to be undervalued in the short-term, since it may show less signs of success in the short-run compared to a short-term project (in other words, a long-term project takes a longer time to resolve outsiders' uncertainty about project's success or failure). Thus, incumbent management has a greater chance of losing control to potential rivals (even those less able than him) if he adopts the long-term project and if outside investors believe that the firm's project is not progressing well in the short-term, since the latter may vote for the rival in a control contest occurring at that time (if the incumbent does not hold enough voting power on his own account to defeat such a rival). The incumbent may be either talented or untalented: talented managers have a lower cost of exerting effort, and a comparative advantage in implementing projects relative to the untalented managers. The incumbent's talent is private information: outsiders observe only a prior probability that he is talented (i.e., his "reputation"). In this situation, the incumbent makes a joint decision regarding the voting structure and other anti-takeover provisions in the corporate charter for his firm's IPO, the kind of project to adopt (long-term or short-term), and the extent of effort to exert in implementing this project.

The equilibrium in Chemmanur and Jiao (2005) is driven by the choice made by a truly talented incumbent (since an untalented incumbent would mimic such choices, in order to not reveal his true type to the equity market). The choice of a talented incumbent between adopting stronger versus weaker anti-takeover provisions depends on three effects. First, the insulation from the takeover market provided by stronger anti-takeover provisions would allow the incumbent to create more value by implementing a long-term rather than a short-term project. Second, the insulation from the takeover market provided by stronger anti-takeover provisions also allows untalented incumbents to slack off by not exerting effort, thus dissipating value without any fear of losing control to potential rivals. Since the equity markets cannot perfectly

distinguish between talented and untalented incumbents, this “loss of discipline” effect is also reflected in the talented incumbent’s firm’s IPO share price if he adopts stronger anti-takeover provisions structure (and favors his adopting a weaker anti-takeover provisions structure instead). Third, regardless of the kind of project adopted, there is a higher chance for incumbent management to maintain control under a corporate charter with stronger (more) anti-takeover provisions.

Chemmanur and Jiao (2005) demonstrate that, when the reputation (perceived management quality) of incumbent management is high enough, and the firm has greater opportunities for long-term value creation, then, in equilibrium, management would adopt an IPO charter with stronger anti-takeover provisions. This is because, in the above circumstances, the long-term value creation effect dominates any reduction in IPO share value arising from the loss of discipline effect, and such stronger anti-takeover provisions will in fact be value-enhancing for shareholders (i.e., efficient). From now on, we will refer to the above hypothesis of anti-takeover provisions as the “long-term value creation” hypothesis.

The above hypothesis leads to two testable predictions regarding the prevalence of anti-takeover provisions in IPO firms’ corporate charters. The first prediction is that higher quality managers would adopt corporate charters with a greater number of anti-takeover provisions (**H1B**). Notice that the above is in direct opposition to the prediction of the managerial entrenchment hypothesis. The second prediction is that among the firms with higher management quality, those with greater opportunity for long-term value creation (i.e., larger growth options) are more likely to adopt stronger (more) anti-takeover provisions in their corporate charters. In other words, the prediction is that, if we divide the IPO sample into four groups based on management quality as well as growth options: high management quality with larger growth options (Group 1); high management quality with smaller growth options (Group 2); lower management quality with larger growth options (Group 3); and lower management quality with smaller growth options (Group 4); firms in Group 1 (high management quality and larger growth

options) would be characterized by the greatest number of anti-takeover provisions (since there is the greatest opportunity for value creation here) and Group 4 would be characterized by the least number of anti-takeover provisions (since there is the least opportunity for long-term value creation in such firms) (**H2B**).

Long-term value creation hypothesis also has predictions for the relationship between management quality, anti-takeover provisions, and the post-IPO performance of firms that differ from those of the managerial entrenchment hypothesis. Since, under the long-term value creation hypothesis a greater number of anti-takeover provisions are, in fact, value enhancing for firms managed by higher quality managers, the prediction is that there will be a positive relationship between the number of anti-takeover provisions and post-IPO operating performance for such firms. In other words, if we divide our IPO sample into four categories based on management quality as well as anti-takeover provisions: high management quality with stronger anti-takeover provisions; high management quality with weaker anti-takeover provisions; low management quality with stronger anti-takeover provisions; and low management quality with weaker anti-takeover provisions; the average post-IPO operating performance of firms in the high management quality and stronger anti-takeover provisions category would be significantly better than the average for firms in the remaining three categories (**H3B**). Since long-term post-IPO stock returns move together with post-IPO operating performance, the long-term value creation hypothesis also implies that firms in the first category would, on average, outperform those in the remaining three categories in terms of long-term post-IPO stock returns (**H4B**).

3. Data and Sample Selection

The data used in this study comes from several different databases. The list of initial public offerings of common equity between 1993 and 2000 is from the SDC/Platinum Global New Issue database. We eliminate REITs, closed-end funds, and unit offerings. After elimination of equity carve-outs, financial firms (all firms with SIC codes between 6000 and 6999), and

foreign companies, we are left with 2,779 firms. We then exclude previous leveraged buyouts (LBOs) and roll-ups. There are 19 firms not found on the Center for Research in Security Prices (CRSP) and/or Compustat, while for five firms CRSP and SDC show different first dates of trading. After elimination of these, we are left with 2,644 firms in our sample.⁴

In order to isolate the effects of management quality on IPO performance, and to remove any confounding effects arising from the presence of venture capitalists or institutional investors as backers of the firm, we confine our study to non-venture-backed firms and those having no institutional investors prior to the IPO. In addition to the direct effect of venture capitalists on IPO performance (through venture capital certification), venture capitalists can also significantly influence the management quality of venture-backed firms either by selecting members of the management team, or by performing various roles (e.g., selecting underwriters, legal representation) that would be performed by firm management in non-venture-backed firms. (See, for example, Hellman and Puri (2002), who find that venture capitalists play a significant role in the professionalization of start-up firms in general, and in the hiring of their top management in particular.) Similar arguments apply to institutional investors as well. We therefore eliminate from the sample venture-backed firms and firms that have significant shareholdings (greater than 5%) by corporations and financial institutions prior to the IPO (unless these institutional entities are explicitly mentioned as wholly owned by firm insiders). This leaves us with our final sample of 719 IPO firms. The information about shareholders is from the significant shareholders section of the IPO prospectus. Table 1 shows how we arrived at our final sample.

Various measures of management quality (described in the next section) are hand-collected from the prospectuses of firms going public. The prospectuses are from the Thomson Financial database. In particular, information about the team size, as well as tenure, former work experience, education level, and board memberships of the team members are from the

⁴ We did not explicitly screen out firms with offer prices below \$5. However, we have only 29 such firms in our sample. Excluding these firms does not alter our results.

management section of the IPO prospectuses. Stock returns necessary to study long-term stock return performance subsequent to IPOs are from CRSP, while the accounting data necessary to study post-IPO operating performance are from Compustat. Information on anti-takeover provisions and internal governance mechanisms (such as proportion of outside directors, CEO/Chairman-of-the-board duality, and insider stock ownership both before and after IPO) came from IPO prospectuses.

4. Measures of Management Quality and Reputation, and Firm Quality

In this section, we describe our measures of management quality and reputation as well as proxies for other aspects of firm quality that we use as control variables in various regressions.

4.1. Measures of Management Quality and Reputation

We measure management quality and reputation along the following three broad dimensions: management team resources, management team structure, and management reputation in the business community. To measure each of these dimensions, we use the following variables.

Management team resources refer to the human and knowledge resources (including both education and relevant work experience) available to firm management. This is measured by the number of executive officers and vice presidents on a firm's management team (TSIZE).

Team resources also depend upon knowledge and education of its members, which we measure in two ways. Our second measure of team resources is the percentage of the management team with an MBA degree (PMBA). We also measure the percentage of management team members who are Certified Public Accountants (PCPA). Higher percentages of MBAs and CPAs imply higher management quality.

Another contributing factor that increases management team resources is relevant work experience, which we measure in two ways. First, we look at the percentage of the management

team who have served as executive officers and/or vice presidents prior to joining the IPO firm (PFTEAM). Second, we also look at the percentage of team members who have previously been partners in a law or accounting firm (PLAWACC). Clearly, expertise in law and accounting can be a useful asset to the firm at the time of going public as well as subsequently. In summary, the greater the value of the above variables, the better is the management quality.

The second dimension along which we measure management quality, namely, management team structure, reflects the extent of uniformity or heterogeneity in the tenures of management team members, and their relative importance to the management team. We look at the average tenure of the management team (TENURE), defined as the average number of years team members have been with a firm. Higher average tenure may indicate cohesion and shared experiences, and thus would imply lower transaction costs among team members.

However, long tenures might also indicate the presence of complacency and rigidifying effects on team interactions. An ideal team would have members from different cohorts, which would allow for an inflow of new ideas and perspectives. Thus, a higher management quality would be associated not only with a long average tenure, but also with a higher dispersion of tenures. Our second measure of team structure, therefore, is tenure heterogeneity, defined as the coefficient of variation of the team members' tenures (TENHET).

The third measure of team structure we use is CEO dominance. On the one hand, a strong-willed and dominating chief executive officer may severely diminish possible contributions from subordinate team members. On the other hand, a strong CEO might improve the cohesion of the management team. Thus, while we believe that CEO dominance is an important measure of team quality, we are agnostic about the direction of the expected impact (positive or negative) of this measure on management quality. Our measure of CEO dominance is the ratio of CEO salary and bonus in the fiscal year preceding IPO to the average salary and bonus of other team members listed in the executive compensation section of the prospectus (FCEO). Assuming that CEOs have a substantial influence over their own pay and nearly total

influence over their subordinates' pay, this measure reflects the gap between the CEO's assessment of his own worth to the firm and his assessment of other team members' worth, and is thus a good measure of CEO dominance.⁵

The third dimension along which we measure management quality, namely, management reputation in the business community, reflects the reputation built up by members of the management team. This is measured by the number of corporate boards (apart from that of their own firm) that management team members sit on (BOARDS). While the measures discussed above also partially measure management reputation, this variable is a better index of the reputation and visibility of a firm's management in the business community. Again, the greater the value of this variable, the higher the quality and reputation of a firm's management.

Panel A of Table 2 summarizes our measures of management quality and reputation and control variables that will be used in subsequent analysis. The average (median) management team size (TSIZE) was 5.4 (5) with the smallest management team consisting of only one person, and the largest one of 15 members. On average 7.5 percent of managers had an MBA degree (PMBA), 11.8 percent were CPAs (PCPA), 38.1 percent had held a top management position at another firm prior to joining the IPO firm (PFTEAM), and 3.1 percent have been a partner in a law or accounting firm (PLAWACC). The average tenure (TENURE) ranged from 1 to 30.1 years, with a mean (median) of 6.8 (5.7) years. On average, CEOs were earning 38.1 percent more than the average member of their management team (FCEO).

Though the variables described above are expected to measure management quality and reputation, each of them may have unique limitations as a measure of the underlying unobservable construct. Therefore, we use common factor analysis to construct a single variable for each management quality dimension described above that captures variation common to the

⁵ Similar measures have been used in the strategy and organizational behavior literature to study the influence of management team quality and reputation on firm performance: see, e.g., D'Aveni (1990) and Hambrick and D'Aveni (1992), who use such measures to study the deterioration of management team quality around bankruptcies. See also Chemmanur and Paeglis (2005).

observable proxies of management quality.⁶ In order to ensure that various factors are capturing only the effects of management quality and not those of firm quality such as firm size (Panel B of Table 2 shows that some of our management quality and reputation proxies are correlated with firm size) we use firm-size-adjusted proxy variables to extract the factors. Team resources factor (TRF) score is obtained using common factor analysis on the firm-size-adjusted TSIZE, MBA, CPA, FTEAM, and LAWACC variables. Team structure factor (TSF) score is obtained using common factor analysis on the firm-size-adjusted TENURE, TENHET, and FCEO variables.

Table 3 reports the results of the above common factor analysis. Panel A presents starting communalities, calculated as the squared multiple correlations obtained from regressing each of the management quality measures on the other measures within the same dimension, while Panel B reports the eigenvalues of the reduced correlation matrices. As suggested by Harman (1976), the number of factors needed to approximate the original correlations among individual measures is equal to the number of summed eigenvalues needed to exceed the sum of communalities. In our sample the summed communalities are less than the eigenvalues for the first factor in the factor analysis for each dimension of management quality and reputation, suggesting that one factor in each of the dimensions parsimoniously explains the intercorrelations among the individual measures. Correlations between the common factor scores and their respective original measures of management quality are reported in Panel C, while Panel D reports summary statistics of the team resources factor (TRF) and the team structure factor (TSF) scores.

⁶ A number of papers in the empirical corporate finance and accounting literature make use of factor analysis to isolate the unobservable construct underlying several proxy variables. See, e.g., Gaver and Gaver (1993) and Guay (1999), who make use of factor analysis to study the size of a firm's investment opportunity set.

4.2. *Proxies for Other Aspects of Firm Quality and Internal Governance*

In order to separate the effects of management quality and reputation from those of other dimensions of firm quality and internal governance, we control for these other dimensions using the following proxies.⁷

First, a common firm quality variable used in many IPO studies is the firm size. We use the natural log of the book value of the firm's assets immediately prior to its IPO as a proxy for the firm size (LNBVA). The larger the firm, the higher the firm quality.⁸ Second, we control for the proportion of outside directors (directors that are listed in the management section of the prospectus and are not executive officers of the company, founders, former employees, or anyone who is engaged in any kind of business dealings with a firm) on the board of directors (ODIR). There are two ways in which outside directors can influence firm quality. First, outside directors may provide additional knowledge (inputs and perspectives) to the firms' management. Second, they also provide linkages to external parties, such as underwriters, financial institutions, and auditors. The greater the proportion of outside directors, the higher the firm quality.⁹

Third, we control for CEO/Chairman-of-the-board duality (BOSS). This dummy variable is equal to one if a firm's CEO is also a Chairman of its board of directors, and zero otherwise. Separation of the roles of a CEO and a Chairman of the board creates greater management accountability and improves internal governance and firm quality.¹⁰ Fourth, we also control for insider stock ownership defined as a percentage of a firm's shares owned by executive officers and directors both before and after (depending on a particular test) the IPO (INSIDERB and

⁷ Similar proxies are used by Field and Karpoff (2002) in their study of takeover defenses of IPO firms.

⁸ This measure of firm quality has been widely used in the literature (see, e.g., Ritter (1984), Michaely and Shaw (1994)).

⁹ Several studies in the corporate control literature have shown that outside directors enhance firm value (see, among others, Cotter, Shivdasani, and Zenner (1997) and Borokhovich, Parrino, and Trapani (1996)).

¹⁰ See, e.g., Yermack (1997) who shows that firms which separate the roles of a CEO and a Chairman of the board receive higher valuation and Rechner and Dalton (1991) who show that such firms outperform those with combined roles of CEO and Chairman.

INSIDERA, respectively). A sufficiently large insider stock ownership may serve as a substitute for anti-takeover provisions.

5. Empirical Tests and Results

In this section we discuss the empirical methodology used to test our hypotheses and report results. In section 5.1 we present the results of our empirical tests regarding the relationship between management quality and the prevalence of anti-takeover provisions. In section 5.2 we present the results of our empirical tests regarding the relationship between management quality, growth options, and anti-takeover provisions. In section 5.3 we present the results of our empirical tests of the relationship between management quality, anti-takeover provisions, and post-IPO operating performance. Finally, in section 5.4 we present the results of our empirical tests regarding the relationship between management quality, anti-takeover provisions, and post-IPO long-term stock return performance.

5.1. Relationship between Management Quality and the Prevalence of Anti-Takeover Provisions

In this section we study the relationship between management quality and the prevalence of anti-takeover provisions in IPO firms. According to the managerial entrenchment hypothesis firms with lower quality management teams will be more likely to adopt stronger (a greater number of) anti-takeover provisions in their corporate charters prior to going public (**H1A**) so that managers will secure their positions and consume private benefits of control. Long-term value creation hypothesis, however, predicts the opposite: firms with higher quality management teams will be more likely to have stronger (a greater number of) anti-takeover provisions in their corporate charters prior to going public (**H1B**) so that managers will be insulated from unwanted takeover bids and will be able to implement long-term value creating projects. We first present the results of univariate tests and then analyze the above relationships using multivariate regressions.

5.1.1. Univariate Tests

Table 4 reports the frequencies of firm level anti-takeover provisions for our sample of IPO firms and the results of our univariate tests of the relationship between the quality and reputation of a firm's management and the prevalence of anti-takeover provisions. These firm level anti-takeover provisions are briefly described in Appendix A.

First of all, it is worth noting that the frequencies of most of the firm level anti-takeover provisions in our sample of IPO firms for 1993 to 2000 have increased sharply compared to the frequencies reported by Field and Karpoff (2002) for their sample of IPO firms for 1988 to 1992. These findings provide further evidence of increased use over years of anti-takeover provisions in corporate charters of IPO firms as reported by Bebchuk (2003). For example, frequencies of the following provisions have almost doubled from a 1988-1992 sample to a 1993-2000 sample: a restriction on the ability of common shareholders to call shareholder meetings (from 15.4 to 37.3 percent), an advance notice requirement to call shareholder meetings (from 19.1 to 41.17 percent), an unequal voting rights (from 5.4 to 10.3 percent), and a requirement to remove directors only for a cause (from 12.8 to 24.5 percent). There is also a sizeable increase in the frequencies of other provisions such as a blank check preferred stock (from 85.1 to 93.6 percent), a staggered/classified board (from 36.2 to 43.5 percent), a stakeholder clause (from 4.0 to 7.0 percent), a restriction on action by written consent (from 23.0 to 26.0 percent), and a supermajority required to approve mergers (from 9.2 to 13.8 percent). On the other hand, frequencies of some other provisions have decreased: for example, a supermajority required to replace directors (from 27.3 to 14.3 percent), a fair price provision (from 9.7 to 3.5 percent), and a poison pill (from 2.3 to 1.4 percent).

To study the relationship between management quality and anti-takeover provisions we split the sample by the median management quality factor scores (TRF and TSF) and compare the frequencies of anti-takeover provisions between these two sub-samples. From now on we will refer to the firms with below median management quality factor scores as "low management

quality firms,” and those with above median management quality factor scores as “high management quality firms.”

We find that team resources factor (TRF) score has a significant influence on the prevalence of anti-takeover provisions in IPO firms. In particular, high management quality firms (i.e. firms with an above median TRF score) have significantly more provisions regulating shareholder meetings. For example, proportion of high management quality firms with a restriction on the ability of common shareholders to call shareholder meetings, an advance notice requirement, and a restriction on action by written consent is by approximately 10 percent larger compared to the proportion of low management quality firms with the same provisions. These differences are statistically significant at the 1 percent level. Further, proportions of high management quality firms (according to TRF score) with staggered boards, supermajority requirements to remove directors, and requirements to replace directors only for a cause are significantly larger than proportions of low management quality firms with the same provisions. These differences are statistically significant at the 5 percent level. On the other hand, proportion of high management quality firms with anti-greenmail provisions is significantly smaller than that of low management quality firms.

Team structure factor (TSF) score has a significant influence on the prevalence of a fair price provision, poison pill, and a stakeholder clause provision. Proportions of high management quality firms with such provisions (according to TSF score) are significantly larger than proportions of low management quality firms with the same provisions. The results of univariate tests indicate that the higher the management quality in IPO firms the greater the prevalence of anti-takeover provisions in such firms. These results provide support for long-term value creation hypothesis (**H1B**) and contradict the managerial entrenchment hypothesis (**H1A**).

5.1.2. Multivariate Tests

To study the relationship between management quality and reputation and the prevalence of anti-takeover provisions in IPO firms, we estimate the following Poisson maximum-likelihood specification:

$$\begin{aligned} ATP_i = & \beta_0 + \beta_1 TSIZE_i + \beta_2 PMBA_i + \beta_3 PCPA_i + \beta_4 PFTEAM_i + \beta_5 PLAWACC_i + \\ & + \beta_6 TENURE_i + \beta_7 TENHET_i + \beta_8 FCEO_i + \beta_9 BOARDS_i + \beta_{10} CERDA_i + \\ & + \beta_{11} INSIDERB_i + \beta_{12} ODIR_i + \beta_{13} BOSS_i + \beta_{14} LNBVA_i + \beta_{15} LEVERAGE_i + \\ & + \beta_{16} STATELAW_i + \beta_{17} DELAWARE_i + YEAR_i + IND_i + \varepsilon_i, \end{aligned} \quad (1)$$

where the dependent variable, ATP, is the total number of anti-takeover provisions (1 through 19 in Appendix A, excluding blank check preferred) that an IPO firm has in place prior to going public. In addition to management quality and reputation variables as well as other firm quality and internal governance variables described in sections 4.1 and 4.2, we also control for a firm's growth options measured as a ratio of the sum of capital expenditures and R&D expenses to the book value of assets prior to IPO (CERDA). We control for growth options since, according to our long-term value creation hypothesis, firms with higher quality managers which have greater growth options are more likely to use anti-takeover provision to shield themselves from unwanted takeover attempts and implement value creating long-term projects (**H2B**). LEVERAGE is a ratio of the long-term debt to the book value of assets prior to IPO.¹¹ STATELAW is a dummy variable that takes on a value of one if a state in which an IPO firm is incorporated has at least one anti-takeover provision described in Appendix A, and zero otherwise. We include this variable since state anti-takeover provisions can serve as substitutes for firm level anti-takeover provisions (see, e.g., Karpoff and Malatesta (1989) and Field and Karpoff (2002)). DELAWARE is a dummy variable that takes on a value of one if an IPO firm is incorporated in the state of Delaware, and zero otherwise. Since 45 percent of IPO firms in our sample are incorporated in Delaware we include this variable to control for the effect that Delaware corporate legislation

¹¹ Field and Karpoff (2002) argue that firm's leverage, like its size, may have an effect on a firm's vulnerability to takeovers and a value of its anti-takeover provisions.

may have on the likelihood of adopting anti-takeover provisions. YEAR and IND are dummy variables that control for a year of going public and industry (measured by 2-digit SIC codes).

Regression 1 in Table 5 presents the results of estimation of equation (1). We find that management team size (TSIZE) as well as the percentage of managers with MBA degrees (PMBA) and the percentage of managers who are CPAs (PCPA) have positive and significant impact on the number of anti-takeover provisions in IPO firms. The coefficients of these independent variables are significant at the 1 percent level (except for the latter, which is significant at the 5 percent level). We also find that firms with longer tenures of its managers (TENURE) and more dominating CEOs (FCEO) have a greater number of anti-takeover provisions. The coefficients of these variables are significant at the 10 percent level. Further, in regression 2 in Table 5 we replace raw management quality variables with management quality factor scores (TRF and TSF). Factor regression also shows a significant positive relationship between management quality and the number of anti-takeover provisions; the coefficient of team resources factor (TRF) score is positive and significant at the 1 percent level and the coefficient of team structure factor (TSF) score is positive and significant at the 5 percent level.

Next, we repeat the above analysis using logit regressions with a dependent variable that takes on a value of one if an IPO firm has three or more anti-takeover provisions (as in Appendix A, excluding blank check preferred), and zero otherwise.¹² The results of these logit regressions, (regressions 3 and 4 in Table 5) confirm the results of Poisson maximum-likelihood estimations. In regression 3 with raw management quality variables, PMBA, PCPA, TSIZE, and FCEO have positive and significant impact on the prevalence of anti-takeover provisions in IPO firms with the coefficients of the first two variables being significant at the 1 percent level, while the coefficients of the last two variables are significant at the 5 percent level. In regression 4 we use

¹² We use three or more anti-takeover provisions as a cut-off number since it roughly divides the sample into two equal parts: there are 336 firms in our sample that have two or less anti-takeover provisions in their corporate charters and 383 firms that have more than two anti-takeover provisions in their corporate charters.

management quality factor scores in place of raw management quality variables; both factors, TRF and TSF, have a positive and significant influence on the prevalence of anti-takeover provisions with their coefficients being significant at the 1 and 5 percent levels, respectively. These results provide further support for long-term value creation hypothesis (**H1B**) and contradict managerial entrenchment hypothesis (**H1A**).

We also study the relationship between management quality and reputation and the likelihood of having individual anti-takeover provisions. In Panel A of Table 6 we report the results of logit regressions where dependent variables are equal to one if an IPO firm has an individual anti-takeover provision, and zero otherwise. We report the results for those anti-takeover provisions that are adopted by more than 10 and less than 90 percent of firms in our sample.

Regression results show that management quality variables have a positive and significant influence on the likelihood of IPO firms adopting individual anti-takeover provisions. In particular, firms with a greater percentage of MBAs in their management teams (PMBA) have a significantly greater likelihood of having a staggered board, a restriction on shareholders' ability to call shareholder meetings, a restriction on voting by written consent, and a requirement for directors to be removed only for a cause. Management team size (TSIZE) has a positive and significant impact on the likelihood of having a restriction on shareholders' ability to call shareholder meetings, an advance notice requirement, and a supermajority requirement to remove directors. Firms with larger percentage of CPAs in their management teams (PCPA) have a greater likelihood of having a staggered board and a supermajority requirement to amend charter or bylaws, while firms with a larger percentage of their management team with prior experience as partners at law or accounting firms (PLAWACC) have a greater likelihood of having an advance notice requirement and a supermajority requirement to remove directors. Firms with more dominating CEOs (FCEO) have a greater likelihood of having a restriction on shareholders' ability to call shareholder meetings, an advance notice requirement, and a supermajority

requirement to amend charter or bylaws. Tenure heterogeneity (TENHET) positively and significantly influences the likelihood of having a restriction on voting by written consent but negatively influences the likelihood of having a supermajority requirement to amend charter or bylaws. Finally, average tenure of management team members (TENURE) positively and significantly influences the likelihood of prohibiting cumulative voting for election of directors.

In Panel B of Table 6 we report the results of logit regressions where we replace raw management quality variables by management quality factor scores. Team resources factor (TRF) score has a significant and positive influence on the likelihood of IPO firms having a restriction on shareholders' ability to call shareholder meetings, an advance notice requirement, a restriction on voting by written consent, and a supermajority requirement to remove directors. Team structure factor (TSF) score has a positive and significant influence on the likelihood of having a restriction on shareholders' ability to call shareholder meetings and an advance notice requirement. These results confirm the positive relationship between management quality and the prevalence of anti-takeover provisions in IPO firm corporate charters both on aggregate as well as individual provision level.

Both univariate and multivariate tests of the relationship between management quality and reputation and the prevalence of anti-takeover provisions in IPO firms demonstrate that firms with higher quality managements have a significantly greater number of anti-takeover provisions prior to going public. In particular, such firms have a greater likelihood of having staggered boards, various shareholder meeting restrictions, and a number of supermajority voting requirements. These findings support the long-term value creation hypothesis (**H1B**) and contradict managerial entrenchment hypothesis (**H1A**).

5.2. Relationship between Management Quality, Growth Options, and the Prevalence of ATPs

In this section we study the relationship between management quality, growth options, and the prevalence of anti-takeover provisions. Long-term value creation hypothesis predicts that

anti-takeover provisions are more likely to be adopted by higher quality managers of firms that have greater growth options (**H2B**). These anti-takeover provisions would allow better and more reputable managers to shield themselves from possible takeovers threats and implement long-term value creating projects. We controlled for growth options in the previous regressions of the relationship between management quality and the prevalence of anti-takeover provisions (Tables 5 and 6). The coefficient of this variable (CERDA) in all specifications is positive (though not statistically significant), indicating that firms with larger growth options are more likely to have a greater number of anti-takeover provisions.

To study the interaction between management quality and growth options, and their impact on the prevalence of anti-takeover provisions, we split our sample into four groups. In Group 1 we place firms with above median management quality factor score (TRF or TSF) and above median growth options (we adjust growth options for industry medians). In Group 2 we place firms with above median management quality factor score (TRF or TSF) and below median growth options. In Group 3 we place firms with below median management quality factor score (TRF or TSF) and above median growth options. Finally, in Group 4 we place firms with below median management quality factor score (TRF or TSF) and below median growth options. In other words, Group 1 represents firms with higher quality managers and high growth options, Group 2 represents firms with higher quality managers and low growth options, Group 3 represents firms with lower quality managers and high growth options, and Group 4 represents firms with lower quality managers and low growth options. Next, we create a dummy variable for each group and use them as independent variables (instead of management quality and growth option variables) in equation (1).

Table 7 reports the results of Poisson maximum-likelihood estimations of the total number of anti-takeover provisions (1 through 19 in Appendix A, excluding blank check preferred) on management quality and growth option group dummies and control variables. In regressions 1 and 3 we include only the dummy variable for Group 1 (management quality is

measured by TRF and TSF scores, respectively). In both regressions the coefficients of Group 1 dummy are positive and statistically significant. This indicates that higher management quality firms with larger growth options have a significantly greater number of anti-takeover provisions compared to the rest of the sample (coefficients of Group 1 dummy in regressions 1 and 3 are significant at the 5 and 1 percent levels, respectively). In regressions 2 and 4 we use dummy variables for Groups 2, 3, and 4. In both regressions the coefficients of Groups 2, 3, and 4 are negative: they are all statistically significant in regression 4 and only the coefficient of Group 4 is significant in regression 2. This indicates that firms in Groups 2, 3, and 4 have less anti-takeover provisions compared to Group 1. The results also indicate that firms in Group 4 (firms with lower management quality and lower growth options; in other words, firms with the lowest potential for long-term value creation) have significantly less anti-takeover provisions compared to firms in Group 1. These findings provide further support for the long-term value creation hypothesis (**H2B**) according to which firms with higher quality managers who have larger growth options (firms with the greatest potential for long-term value creation) are more likely to have a greater number of anti-takeover provisions and firms with the lowest potential for long-term value creation are more likely to have less anti-takeover provisions.

5.3. Relationship between Management Quality, ATPs, and Post-IPO Operating Performance

In this section we study the relationship between management quality, anti-takeover provisions, and post-IPO operating performance. Managerial entrenchment hypothesis predicts that regardless of management quality firms associated with a greater number of anti-takeover provisions will be more likely to have poorer post-IPO operating performance due to “loss of discipline” effect (**H3A**).

Long-term value creation hypothesis, on the other hand, predicts that firms with higher quality managers that have a greater number of anti-takeover provisions will use this protection to implement long-term value creating projects. Implementation of these projects will be reflected in

a better post-IPO operating performance for such firms compared to the rest of the firms in the IPO sample (**H3B**). Consistent with this hypothesis, we presented evidence in the previous section that higher management quality firms use stronger (a greater number of) anti-takeover protection when they have long-term value increasing projects (larger growth options).

We use four measures of operating performance: OIBD/Assets, ROA, profit margin, and OIBD/Sales, where OIBD is the operating income before depreciation plus interest income (Compustat items 13 and 15), Assets are the book value of total assets (item 6), ROA is the ratio of net income (item 172) to assets, and profit margin is the ratio of net income to sales (item 12). We further adjust these measures for industry performance by subtracting contemporaneous industry (2-digit SIC code) medians.

To test hypothesis **H3A** we split our sample into two roughly equal groups: firms with stronger anti-takeover protection (firms with three or more anti-takeover provisions as in Appendix A) and firms with weaker anti-takeover protection (firms with two or less anti-takeover provisions as in Appendix A). Panel A of Table 8 compares industry-adjusted median operating performance measures of firms in these two groups for the year of IPO (year 0) and the subsequent four years.

Consistent with the findings of previous literature operating performance of IPO firms deteriorates in the years following the IPO for all firms, irrespective of the level of anti-takeover protection (see, e.g., Jain and Kini (1994), Mikkelson, Partch, and Shah (1997), Field and Karpoff (2002)). However, firms with stronger anti-takeover protection consistently and significantly outperform firms with weaker anti-takeover protection (median tests are significant at the 1 percent level) in all years after the IPO. These results contradict the managerial entrenchment hypothesis (**H3A**) and provide further support for findings of Field and Karpoff (2002) who reported a positive relationship between the prevalence of anti-takeover provisions and post-IPO

operating performance which was contrary to their prediction that takeover defenses may entrench managers and contribute to poor firm performance.¹³

To test the hypothesis that high quality managers use anti-takeover provisions to ward off unwanted takeovers and implement long-term value creating projects (**H3B**), we split our sample into two groups. In Group A we place firms with above median management quality factor score (TRF or TSF) and three or more anti-takeover provisions (as in Appendix A, excluding blank check preferred). We place the rest of the sample in Group B. In other words Group A represents firms with higher quality managers and stronger anti-takeover protection. We then compare post-IPO operating performance of Group A to that of Group B.

Panel B of Table 8 compares industry-adjusted median operating performance measures of firms in Group A to those of firms in Group B for the year of IPO (year 0) and the subsequent four years. Firms with higher management quality and with stronger anti-takeover protection (firms in Group A) consistently outperform firms in the rest of the sample (Group B) in all four years after the IPO. Median industry-adjusted operating performance of firms in Group A is consistently greater than that of firms in Group B in the year of IPO and all of the following four years for both management quality factor scores and across all four measures of operating performance. When management quality is measured by TRF score, firms in Group A significantly outperform firms in Group B in at least three out of five years after the IPO (including the year of IPO as well). For example, firms in Group A significantly outperform firms in Group B in years 0, 3, and 4 based on ROA, profit margin, and OIBD/Sales measures and in years 1, 3, and 4 based on OIBD/Assets measure. When management quality is measured by TSF score, firms in Group A significantly outperform firms in Group B in all years (0 through 4) based on all four measures of operating performance.

¹³ Field and Karpoff (2002) showed that firms with takeover defenses that went public in the period of 1988 to 1992 experienced significantly less underperformance in three years following their IPOs compared to firms with no takeover defenses that went public in the same period.

These results provide support for long-term value creation hypothesis (**H3B**) and offer management quality as an explanation for poor post-IPO performance of firms with weaker anti-takeover protection documented by our findings above and by Field and Karpoff (2002). Firms with higher quality managers who have the greatest potential for value creation are more likely to use anti-takeover provisions to protect themselves against potential takeovers and to implement long-term value creating projects.

5.4. Relationship between Management Quality, ATPs, and Post-IPO Stock Return Performance

In this section we study the relationship between management quality, anti-takeover provisions, and post-IPO long-term stock return performance. Managerial entrenchment hypothesis predicts that regardless of management quality firms with stronger anti-takeover protection will have poorer post-IPO long-term stock return performance due to “loss of discipline” effect (**H4A**). Long-term value creation hypothesis predicts that firms with higher quality managers and stronger anti-takeover defenses use this protection to protect themselves against unwanted takeovers and to implement long-term value creating projects which will result in a better post-IPO operating performance for such firms. Since operating performance and stock return performance move hand in hand, the long-term value creation hypothesis would predict a superior stock return performance for such firms as well (**H4B**).

We study the stock return performance of IPO firms relative to various benchmarks: NASDAQ equal- and value-weighted indices, CRSP equal- and value weighted indices, S&P 500 index, and matching non-IPO firms. To choose a matching non-IPO firm for each of IPO firms in our sample we utilize propensity score matching technique. This technique has a number of advantages. First, no constraints are imposed on matching variables. Second, a large number of matching variables can be used. Third, this technique produces accurate estimates in a setting

where the event group significantly differs from the population of potential matches (see Dehejia and Wahba (2002)).¹⁴

We use a “nearest-match” propensity score matching algorithm. Let $X_{i,j}$ be a vector of independent characteristics observed for firm i in fiscal year j prior to the IPO. The set of the factors $X_{i,j}$ for firm i in year j consists of the following measures: OIBD/Assets, ROA, (Capital expenditures + R&D expenses)/Assets, and natural logarithm of total assets. Let $D_{i,j}$ be a dummy that is equal to one for IPO firms and zero otherwise. We estimate the propensity score logit function as $P_{i,j} = P(D_{i,j} = 1|X_{i,j})$ for each year from 1993 to 2000 using the entire Compustat universe after excluding firms that conducted IPOs in the previous three years, REITs, closed-end funds, and foreign firms. With estimated propensity scores $P_{i,j}$ we match each IPO firm to a single non-IPO firm with the closest $P_{i,j}$ score in the same year and industry (2-digit SIC code).

We calculate five-year average holding period return for a portfolio of firms in Groups A and B (as described above section 5.3) and a portfolio of corresponding benchmarks. We define a year as twelve 21-trading day intervals (252 days). Holding period returns for each firm and a corresponding benchmark are calculated as $[\prod_{t=1}^{T_i} (1 + R_{it}) - 1] \times 100\%$, where R_{it} is the return on IPO firm stock i or a corresponding benchmark on the t -th day of the five-year event window and T_i is the number of trading days in the event window. T_i is equal to 1,260 if an IPO firm survives for five years after the issue. For firms that were delisted before the end of the five-year window, the holding period return is calculated until the delisting date, and the corresponding benchmark's return is calculated over the same truncated period. If the matching non-issuer is delisted, the next closest propensity score matched firm's return is used. $t = 1$ corresponds to the first day after the

¹⁴ Propensity score matching method has already been used in the finance literature to pair-match companies based on a given set of characteristics. In particular, Villalonga (2004) uses propensity score matching method in her study of diversification discount to find appropriate benchmark companies for diversifying firms. Hillion and Vermaelen (2004) apply propensity score matching in their study of the performance of companies issuing floating-priced convertibles.

issue date. We don't include the issue day return as it is frequently difficult for an ordinary investor to buy a share of an IPO firm at an offering price.¹⁵

To test hypothesis **H4A** we split our sample into two groups as in the case of operating performance: firms with stronger anti-takeover protection (firms with three or more anti-takeover provisions) and firms with weaker anti-takeover protection (firms with two or less anti-takeover provisions).

In Panel A of Table 9 we report the average buy-and-hold returns and five-year wealth relatives for portfolios of IPO firms split into two groups by the prevalence of anti-takeover provisions and corresponding benchmarks. Wealth relatives are calculated as a ratio of the end-of-period wealth from holding a portfolio of IPO firms to the end-of-period wealth from holding a portfolio of a corresponding benchmark. Consistent with previous studies of post-IPO stock return performance IPO firms underperform corresponding benchmarks in five years after going public since wealth relatives of IPO firms are all less than one (see, e.g., Ritter (1991), Loughran and Ritter (1995), Brav and Gompers (1997), Teoh, Welch, and Wong (1998)). However, IPO firms with stronger anti-takeover protection have consistently larger wealth relatives using various benchmarks compared to IPO firms with weaker anti-takeover protection (except for one case where the benchmark is a matching non-IPO firm). Also, if we compare directly the average five-year buy-and-hold returns of firms with stronger versus weaker anti-takeover protection we can see that former have 27.85 percent compared to 17.22 percent of the latter.¹⁶

In panel B of Table 9 we report the average buy-and-hold returns for portfolios of IPO firms and CRSP equal-weighted index and five-year wealth relatives by cohort years. The wealth relatives of firms with stronger anti-takeover protection are larger than those of firms with weaker

¹⁵ Including the issue day return in our analysis does not change the results.

¹⁶ The average five-year portfolio returns for IPO firms compared to a benchmark of non-IPO firms is different from the portfolio returns of IPO firms compared to corresponding stock indices because fifty IPO firms were lost due to missing accounting variables when implementing propensity score matching. IPO portfolio returns in the case of matching non-IPO firms are calculated over 669 IPO firms while IPO portfolio returns in the cases of indices are calculated over the entire sample of 719 IPO firms.

anti-takeover protection in five out of eight years. These results do not provide support for managerial entrenchment hypothesis **H4A**.

To test the long-term value creation hypothesis **H4B** we divide our sample into two Groups A and B as described in section 5.3. In Group A we place firms with above median management quality factor score (TRF or TSF) and with three or more anti-takeover provisions (as in Appendix A, excluding blank check preferred). We place the rest of the sample in Group B. In other words, Group A represents firms with higher quality managers and stronger takeover defenses.

In Panel C of Table 9 we report the average buy-and-hold returns and five-year wealth relatives for portfolios of IPO firms and corresponding benchmarks. IPO firms in Group A have larger wealth relatives compared to IPO firms in Group B across both management quality factor scores and across all benchmarks. When management quality is measured by TRF score, the average five-year buy-and-hold portfolio return for IPO firms in Group A is slightly larger than that for IPO firms in Group B: 23.65 percent compared to 22.56 percent, respectively. However wealth relatives of firms in Group A are larger than those in Group B across all benchmarks. When management quality is measured by TSF score, the average five-year buy-and-hold portfolio return for IPO firms in Group A is much larger than that for IPO firms in Group B: 50.16 percent compared to 14.38 percent, respectively.

In Panel D of Table 9 we report the average buy-and-hold returns for portfolios of IPO firms and CRSP equal-weighted index and five-year wealth relatives by cohort years. The wealth relatives of firms in Group A are larger than or equal to the wealth relatives of firms in Group B for seven out of eight years when management quality is measured by TRF score. The wealth relatives of firms in Group A are larger than the wealth relatives of firms in Group B for five out of eight years when management quality is measured by TSF score. These results indicate that firms in Group A have better post-IPO stock return performance compared to firms in Group B and provide support for long-term value creation hypothesis **H4B**.

We also study stock return performance using the calendar time portfolio approach with the Fama and French (1993) three-factor model augmented by Carhart's (1997) momentum variable.¹⁷ This multi-factor model serves as a benchmark for expected returns (see, e.g., Ritter and Welch (2002)). In this approach, the estimates of intercepts serve as measures of monthly abnormal returns, with negative intercepts indicating underperformance and positive ones indicating outperformance. We estimate the following regression:

$$(R_{pt} - R_{ft}) = \alpha + \beta(R_{mt} - R_{ft}) + s SMB_t + h HML_t + u UMD_t + \varepsilon_t, \quad (2)$$

where dependent variable for each calendar month of the sample period is calculated as the equally-weighted monthly percentage return on a portfolio of IPO firms that have gone public during the prior 60 months minus risk-free rate. R_{mt} is the return on the CRSP value-weighted index in month t ; R_{ft} is the 1-month T-bill yield in month t ; SMB_t is the return on a portfolio of small stocks minus the return on a portfolio of large stocks in month t ; HML_t is the return on a portfolio of high book-to-market stocks minus the return on a portfolio of low book-to-market stocks in month t , and UMD_t is the return on a portfolio of high prior return stocks minus the return on a portfolio of low prior return stocks in month t .

Panels A and B of Table 10 present ordinary least squares (OLS) and weighted least squares (WLS) estimations of equation (2), respectively, for firms with stronger anti-takeover protection (three or more anti-takeover provisions as in Appendix A, excluding blank check preferred) and for firms with weaker anti-takeover protection (two or less anti-takeover provisions as in Appendix A, excluding blank check preferred).¹⁸ Intercepts in all of the regressions in Panels A and B of Table 10 are positive but statistically insignificant which means that, although IPO firms in both categories experience slightly positive abnormal returns over a five year period after they go public, these returns are not statistically significantly different from

¹⁷ Jagadeesh and Titman (1993) and Carhart (1997), among others, have shown that momentum in stock returns is an important factor in explaining performance.

¹⁸ For weighted least squares (WLS) the weights are determined by the number of IPO firms in the monthly portfolio.

zero. These results indicate that none of the categories of firms performed significantly better than the other category and thus do not provide support for or contradict the managerial entrenchment hypothesis **H4A**.

Panels C and D of Table 10 present ordinary least squares (OLS) and weighted least squares (WLS) estimations of regression (2), respectively, for IPO firms in Group A (higher management quality firms with a greater number of anti-takeover provisions) and Group B (the rest of the sample) as defined in the previous section. When management quality is measured by team resources factor (TRF) score, the intercepts for firms in Group A are generally larger than the intercepts for firms in Group B. For example, using OLS estimation, the intercept for firms in Group A is equal to 0.65 and significant at the 10 percent level, which means that firms in Group A have significant positive abnormal returns of 0.65 percent per month on average over five-year period after their IPO. The intercept for firms in Group B is smaller at 0.41 percent per month and not statistically significant, which means that firms in Group B have positive abnormal returns of 0.41 percent per month but this returns are not significantly different from zero. The results are similar when we use weighted least squares (WLS) estimation. Firms in Group A have positive abnormal returns of 0.73 percent per month and this intercept is significant at the 5 percent level, while firms in Group B have positive abnormal returns of only 0.29 percent per month and these returns are statistically indistinguishable from zero. When management quality is measured by team structure factor (TSF) score, the intercepts for firms in Group A are generally smaller than the intercepts for firms in Group B. However, none of the intercepts are significantly different from zero. These results provide further support for the long-term value creation hypothesis **H4B**.

Our findings on post-IPO long-term stock return performance using calendar time approach demonstrate that anti-takeover provisions on their own do not result in significant abnormal returns (either positive or negative) after firms go public. However, stronger anti-takeover protection coupled with higher management quality does result in significant positive abnormal returns after IPO. This indicates that management quality is an important factor in

explaining the relationship between the prevalence of anti-takeover provisions and the post-issue performance of IPO firms.

In summary, the results of long-term post-IPO performance (both operating and stock return) contradict the managerial entrenchment hypothesis and provide support for long-term value creation hypothesis.

6. Conclusion

In this paper we have shed new light on the role of anti-takeover provisions in firms going public by analyzing the relationship between the quality and reputation of a firm's management and the prevalence of anti-takeover provisions in the corporate charters of IPO firms. We also studied the relationship between management quality, anti-takeover provisions, and post-IPO performance. We tested the implications of two theories regarding the above two relationships: the "managerial entrenchment" hypothesis, which implies that anti-takeover provisions are meant mainly to enhance the control benefits of existing firm management by minimizing the probability of takeovers by rival management teams, and therefore always reduce shareholder value; and the "long-term value creation" hypothesis, which argues that such provisions, while they entrench firm management, can also be value enhancing in the hands of higher quality management teams, since they allow such managements to create superior long-term value for the firm without paying undue attention to short-term pressures arising from the market for corporate control.

Our empirical results can be summarized as follows. First, firms with higher quality managers are associated with a greater number of anti-takeover provisions relative to those with lower quality managers. Further, within the former category, those with larger growth options are associated with a larger number of anti-takeover provisions. Second, regardless of management quality, firms with a greater number of anti-takeover provisions outperform firms with small number of ant-takeover provisions both in terms of post-IPO operating and stock return

performance. Third, if we divide our sample of IPO firms into four categories: those with higher or lower management quality and into those with a greater or smaller number of anti-takeover provisions within each management quality category, firms with higher management quality and a greater number of anti-takeover provisions outperform firms in the remaining three categories in terms of both post-IPO operating and post-IPO stock return performance. The evidence thus rejected the managerial entrenchment hypothesis and supported the long-term value creation hypothesis.

Thus, in contrast to much of literature studying the role of anti-takeover provisions in corporate charters in the context of IPOs as well as other corporate events, the evidence presented in this paper indicates that stronger anti-takeover provisions in a firm's corporate charter do not necessarily destroy shareholder value. The evidence emerging from our empirical analysis indicates that anti-takeover provisions play a more nuanced role in affecting shareholder value: while a greater number of anti-takeover provisions may indeed destroy shareholder value in the hands of poorer quality management (possibly by entrenching them more strongly), our analysis indicates that anti-takeover provisions are value enhancing in the hands of higher quality firm management. Thus, by incorporating the role of management quality into our empirical analysis for the first time in the literature, we are able to provide a more complete picture regarding the relationship between the prevalence of anti-takeover provisions in a firm's corporate charter and shareholder value.

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Appendix A

Descriptions of anti-takeover provisions as in Table 4.

| Provision | Description |
|--|---|
| Firm-level anti-takeover provisions | |
| 1. Anti-greenmail provision | Greenmail refers to targeted stock repurchases by management, usually at a substantial premium over market value, of company shares from groups or individuals seeking control of company. Anti-greenmail provisions prohibit managers from entering into such arrangements with bidders, unless they are approved by shareholders or the same repurchase offer is made to all shareholders. |
| 2. Blank check preferred stock | This is preferred stock which is authorized but not issued. It gives a company's board of directors power to issue shares of preferred stock at its discretion and determine its voting, distribution, conversion, and other rights at the time of the issue. Blank check preferred stock can be placed with friendly parties to deter potential takeover bids by diluting bidders' equity and voting positions. It can be also used to establish poison pills. |
| 3. Staggered (classified) boards | A staggered board is a board of directors which is usually divided into three classes, with each class serving a three-year term, and each class being elected in different years. Classifying the board makes it more difficult to change the control of the company through proxy contests since only a minority of directors is elected each year. A bidder who has the voting control of the company will be unable to gain the control of the board in a single election and would need up to two years for that. |
| 4. Fair price provision | This provision is usually adopted to defend against two-tiered front-end-loaded tender offers when the bidder first buys a controlling block of shares and then offers lower price to remaining shareholders. This usually forces the target shareholders to tender their shares in the first stage regardless of the price offered, since the second stage price is going to be lower. Fair price provisions usually require the bidders to pay the remaining shareholders the same price as was paid to acquire the controlling block in the first stage. The bidder may avoid such pricing requirements if the offer is approved typically by the supermajority of disinterested shareholders or the board of directors. |
| 5. Poison pills | Also know as shareholder rights plans, poison pills are financial instruments in a form of rights or warrants issued to shareholders that trade with common shares. When triggered by a hostile takeover attempt poison pills detach, trade separately, and become valuable. Poison pills can dilute a bidder's equity holdings and voting interests in a target company by giving a right to common shareholders to buy additional shares of the target company at a steep discount or they can dilute a bidder's equity holdings in a merged company by giving a right to target firm shareholders to buy discounted shares of post-merger company. |
| 6. Stakeholder clause | This provision permits directors, when evaluating takeover bids, to consider the interests of constituencies other than shareholders such as employees, creditors, suppliers, customers, surrounding communities, and others. Stakeholder clause provides target firm directors with legal basis to take actions that could be value-decreasing to shareholders, for example, turn down attractive takeover bids. |
| Shareholder meeting restrictions | |
| 7. Meetings called only by directors or executives | This provision does not allow common shareholders and authorizes only directors or executives to call special shareholder meetings to act on matters that arise between regularly scheduled meetings. It can deter potential takeovers by delaying removal of directors by a controlling bidder or by hindering the ability of common shareholders to vote on attractive bids. |
| 8. Supermajority required to call special meetings | This provision allows common shareholders to call special shareholder meetings if they can get the consent of a shareholder or groups of shareholders holding a supermajority of outstanding shares. |
| 9. Advanced notice requirement | This provision requires shareholders to give an advanced notice regarding the matters they intend to present at the shareholders' meeting. It usually specifies a "window" for the earliest and the latest dates for such submissions, e.g., no later than 60 days prior to the meeting with a submittal window of at least 60 days. Advance notice requirements can deter takeovers by prohibiting the shareholders to vote on matters regarding the takeover bids if a proper advance notice was not submitted. |
| 10. Restrictions on action by written consent | An action by written consent is an event when an action is taken without a meeting if shareholders individually or collectively consent in writing to such action. A provision that limits the ability of shareholders to act by written consent, by prohibiting it or requiring unanimous/majority written consent, can delay takeovers by forcing a bidder to take an action at the next scheduled meeting. |

Supermajority vote requirements

- | | |
|--|---|
| 11. Supermajority required to approve mergers | This provision requires the vote of a supermajority (usually, at least two-third and up to 90 percent) of shareholders to approve mergers, business combinations, or asset sales. Supermajority requirements are often unreachable either because they exceed the level of shareholder participation at a meeting or because of a large size of insider or ESOP share holdings. |
| 12. Supermajority required to replace directors | This provision requires the vote of a supermajority of shareholders to replace directors and can deter takeovers by limiting the ability of a bidder to remove directors opposing the takeover. |
| 13. Supermajority required to amend charter and bylaws | This provision requires the vote of a supermajority of shareholders to amend charter or bylaws and restricts the ability of shareholders to repeal other anti-takeover provisions which are usually proposed as amendments to charter and bylaws. |
| 14. Unequal voting rights | Unequal voting rights refer to a share structure with more than one class of common shares that have different voting rights. Usually insiders of a firm, such as managers and inside directors, hold a class of shares that gives them more than one vote per share compared to the class held by other shareholders with only one vote per share. |

Miscellaneous anti-takeover provisions

- | | |
|--|--|
| 15. Directors can be removed only for cause | According to this provision members of a board of directors can be removed only for a cause which limits the ability of potential acquirers to remove directors opposing the takeover. |
| 16. Merger must be approved by inside directors | This is another miscellaneous provision which requires the approval of inside directors or directors not related to a potential bidder for a merger to take effect. |
| 17. Restrictions on transfer of common stock | This type of provision puts various restrictions on transfer of common stock. For example, a provision like this may require principal shareholders to offer their shares first to other principal shareholders before selling them. |
| 18. Restrictions on votes each shareholder may cast | This type of provision puts various restrictions on the votes each shareholder may cast. For example, shareholders who own more shares than a pre-specified threshold may cast only half of their votes. |
| 19. Prohibition of cumulative voting for election of directors | Cumulative voting permits shareholders to put together (cumulate) all their votes for directors and distribute these votes among one, a few, or all directors when more than one director is nominated for election. Cumulative voting makes easy for minority shareholders to elect their own representatives and can be particularly important in proxy contests. Prohibition of cumulative voting limits the ability of bidders to elect their own representatives to the board of directors. |

State anti-takeover provisions

- | | |
|-----------------------------------|---|
| 20. Freeze-out law | This type of law requires a large shareholder who surpasses a certain share ownership threshold (usually from 5 percent up to 25 percent) to wait for a certain period of time (from one up to five years) before gaining control of the firm, unless the transaction is approved by the board of directors or the majority of shareholders. Even after the waiting period most acquirers are subject to fair price provisions. Freeze-out law is the only state anti-takeover law in Delaware with a trigger threshold of 15 percent and a waiting period of 3 years. |
| 21. Control share acquisition law | According to this statute, if a shareholder acquires shares that increase his or her holdings above a certain threshold (or a series of thresholds) then these shares do not have voting rights unless they are approved by a majority or supermajority of disinterested shareholders. |
| 22. Fair price law | Similar to firm level fair price provisions, state level fair price provisions regulate the back-end price of two-tier takeover bids. Around one half of the states having these provisions allow the fair price requirements to be bypassed if approved by a majority of disinterested shareholders, while approximately 40 percent require supermajority of all shares outstanding. Some states allow boards to approve a transaction without shareholder approval. Fair price provisions typically require potential bidders to pay the highest market value of stock on a certain date (for example, the date tender offer commenced or the date it was announced) or the highest price paid by acquirer prior to becoming an interested shareholder. |

23. Poison pill endorsement law
This type of law removes courts from the position of challenging potentially abusive pills, thus making boards more secure in their right to use poison pills.
24. Constituency law
Constituency statutes similar to firm level stakeholder clauses grant boards the right to consider the interests of other constituencies such as bondholders, employees, creditor, host communities, and even a society as a whole when evaluating takeover bids.
25. Cash-out law
According to this law, disinterested shareholders are given the right to sell their shares to a large shareholder, after he or she takes a controlling position, and this controlling shareholder must buy those shares at the highest acquiring price. This provision allows disinterested shareholders to “cash out” of their position at the expense of a controlling shareholder.
26. Anti-greenmail law
State level anti-greenmail provisions prohibit repurchasing shares from large shareholders at a premium if those shares were held for less than a pre-specified period of time, unless a transaction is approved by a majority of disinterested shareholders or a board of directors. Six states adopted this type of law and one state later repealed it.
27. Disgorgement law
This type of law requires that an acquirer must “disgorge” or pay back to the company any profits realized from the sale of company’s stock purchased before achieving the control status. This law prevents potential acquirers from buying a large stake, announcing a battle for control, and then selling the stake at a higher price resulting from the prospect of potential acquisition. This provision was adopted by two states: Ohio and Pennsylvania.

Table 1
Number of IPOs by year

| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | Total |
|-------------------------------|------|------|------|------|------|------|------|------|-------|
| Total | 615 | 516 | 539 | 792 | 473 | 307 | 499 | 376 | 4,117 |
| Unit offerings | 91 | 108 | 85 | 119 | 24 | 12 | 2 | 3 | 444 |
| Equity carve-outs | 98 | 68 | 40 | 64 | 36 | 26 | 39 | 30 | 401 |
| Financial firms | 48 | 29 | 31 | 62 | 71 | 67 | 44 | 10 | 362 |
| Foreign firms | 10 | 4 | 17 | 25 | 3 | 1 | 34 | 37 | 131 |
| Former LBOs | 40 | 12 | 10 | 12 | 3 | 0 | 0 | 5 | 82 |
| Roll-ups | 0 | 0 | 2 | 8 | 7 | 9 | 2 | 1 | 29 |
| CRSP/Compustat not available | 3 | 4 | 1 | 4 | 3 | 2 | 1 | 1 | 19 |
| Unclear first date of trading | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 5 |
| Venture-backed | 128 | 106 | 169 | 253 | 155 | 100 | 288 | 239 | 1,438 |
| Significant shareholders | 72 | 60 | 82 | 108 | 51 | 38 | 45 | 31 | 487 |
| Final sample | 125 | 123 | 102 | 136 | 119 | 52 | 44 | 18 | 719 |

Table 2

Summary statistics of management quality and other control variables for the sample of 719 IPO firms between 1993 and 2000

TSIZE is the size of a firm's management team, defined as the number of executive officers with a rank of vice president or higher. PMBA is the percentage of a firm's management team with MBA degrees. PCPA is the percentage of a firm's management team who are Certified Public Accountants. PFTEAM is the percentage of the management team who have served as executive officers and/or vice presidents or higher prior to joining the IPO firm. PLAWACC is the percentage of the management team who have previously been partners in a law or accounting firm. TENURE is the average number of years management team members have been with a firm. TENHET is the coefficient of variation of the team members' tenures. FCEO is the ratio of CEO salary and bonus in the fiscal year preceding the IPO to the average salary and bonus of other management team members. BOARDS is the number of other companies' boards that management team members sit on. CERDA is the measure of growth options calculated as a ratio of the sum of capital expenditures and research and development (R&D) expenses to the book value of assets at the end of the fiscal year prior to IPO. INSIDERB and INSIDERA are proportions of insider stock ownership immediately prior to and after IPO, respectively. ODIR is the proportion of outside directors in the board of directors. BOSS is an indicator variable equal to one if a CEO is also a chairman of the board of directors, and zero otherwise. LNBVA is the natural logarithm of the book value of the firm's assets immediately prior to IPO. LEVERAGE is a ratio of the long-term debt to the book value of assets prior to IPO. STATELAW is an indicator variable equal to 1 if a state in which a firm is incorporated has at least one state anti-takeover provision and 0 otherwise. DELAWARE is an indicator variable equal to one if a firm is incorporated in the state of Delaware, and zero otherwise.

Panel A: Summary statistics of independent variables

| | Minimum | Mean | Median | Maximum | Standard deviation |
|----------|---------|--------|--------|---------|--------------------|
| TSIZE | 1.000 | 5.424 | 5.000 | 15.000 | 2.223 |
| PMBA | 0.000 | 0.075 | 0.000 | 0.800 | 0.145 |
| PCPA | 0.000 | 0.118 | 0.077 | 0.833 | 0.141 |
| PFTEAM | 0.000 | 0.381 | 0.333 | 1.000 | 0.277 |
| PLAWACC | 0.000 | 0.031 | 0.000 | 0.750 | 0.088 |
| TENURE | 1.000 | 6.770 | 5.667 | 30.125 | 4.890 |
| TENHET | 0.000 | 2.172 | 0.940 | 22.854 | 2.911 |
| FCEO | 0.000 | 1.381 | 1.259 | 5.425 | 0.584 |
| BOARDS | 0.000 | 0.367 | 0.000 | 7.000 | 0.933 |
| CERDA | 0.000 | 0.201 | 0.081 | 5.985 | 0.450 |
| INSIDERB | 0.056 | 0.813 | 0.900 | 1.000 | 0.219 |
| INSIDERA | 0.010 | 0.564 | 0.592 | 0.983 | 0.185 |
| ODIR | 0.000 | 0.313 | 0.333 | 1.000 | 0.264 |
| BOSS | 0.000 | 0.730 | 1.000 | 1.000 | 0.444 |
| LNBVA | 12.064 | 16.726 | 16.843 | 23.810 | 1.543 |
| LEVERAGE | 0.000 | 0.239 | 0.140 | 6.378 | 0.400 |
| STATELAW | 0.000 | 0.921 | 1.000 | 1.000 | 0.270 |
| DELAWARE | 0.000 | 0.452 | 0.000 | 1.000 | 0.498 |

Panel B: Correlations between independent variables

| | TSIZE | PMBA | PCPA | PFTEAM | PLAWACC | TENURE | TENHET | FCEO | BOARDS | CERDA |
|----------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|
| TSIZE | 1.000 | | | | | | | | | |
| PMBA | 0.023 | 1.000 | | | | | | | | |
| PCPA | -0.148 | 0.007 | 1.000 | | | | | | | |
| PFTEAM | -0.104 | -0.011 | -0.021 | 1.000 | | | | | | |
| PLAWACC | -0.039 | -0.068 | 0.242 | 0.017 | 1.000 | | | | | |
| TENURE | 0.084 | -0.058 | -0.051 | -0.515 | -0.085 | 1.000 | | | | |
| TENHET | 0.036 | -0.034 | 0.033 | -0.202 | 0.018 | 0.396 | 1.000 | | | |
| FCEO | 0.153 | 0.013 | -0.013 | -0.123 | 0.033 | 0.176 | 0.141 | 1.000 | | |
| BOARDS | 0.092 | 0.013 | -0.073 | 0.049 | -0.001 | 0.026 | -0.034 | -0.014 | 1.000 | |
| CERDA | -0.017 | 0.010 | -0.079 | 0.050 | -0.020 | -0.152 | -0.092 | -0.109 | -0.053 | 1.000 |
| INSIDERB | 0.010 | -0.042 | 0.017 | -0.023 | 0.056 | 0.011 | 0.095 | 0.049 | -0.062 | -0.038 |
| INSIDERA | 0.134 | 0.026 | -0.004 | -0.069 | 0.044 | 0.056 | 0.070 | 0.082 | -0.031 | 0.011 |
| ODIR | -0.059 | 0.073 | -0.016 | 0.087 | 0.013 | -0.132 | -0.110 | -0.057 | 0.042 | 0.089 |
| BOSS | 0.008 | -0.026 | -0.056 | -0.095 | -0.056 | 0.112 | 0.121 | 0.073 | 0.011 | -0.109 |
| LNBVA | 0.367 | 0.056 | -0.008 | -0.157 | 0.047 | 0.396 | 0.164 | 0.253 | 0.121 | -0.224 |
| LEVERAGE | -0.033 | -0.045 | 0.015 | 0.039 | 0.050 | 0.007 | 0.033 | -0.057 | -0.009 | 0.190 |
| STATELAW | -0.018 | -0.105 | 0.023 | 0.027 | 0.030 | 0.009 | -0.004 | 0.075 | 0.089 | 0.029 |
| DELAWARE | 0.155 | 0.018 | -0.138 | 0.069 | 0.024 | -0.044 | -0.057 | 0.005 | 0.051 | 0.014 |

| | INSIDERB | INSIDERA | ODIR | BOSS | LNBVA | LEVERAGE | STATELAW | DELAWARE |
|----------|----------|----------|--------|--------|-------|----------|----------|----------|
| INSIDERB | 1.000 | | | | | | | |
| INSIDERA | 0.816 | 1.000 | | | | | | |
| ODIR | -0.173 | -0.144 | 1.000 | | | | | |
| BOSS | 0.131 | 0.070 | -0.113 | 1.000 | | | | |
| LNBVA | 0.039 | 0.191 | -0.089 | -0.057 | 1.000 | | | |
| LEVERAGE | 0.072 | 0.032 | -0.014 | -0.035 | 0.083 | 1.000 | | |
| STATELAW | 0.038 | 0.012 | -0.037 | -0.006 | 0.028 | 0.048 | 1.000 | |
| DELAWARE | 0.008 | 0.051 | -0.028 | 0.025 | 0.101 | -0.041 | 0.267 | 1.000 |

Table 3

Selected statistics related to a common factor analysis of eight measures of management quality and reputation

The sample consists of 719 initial public offerings between 1993 and 2000. TRF is the management team resources factor score obtained using common factor analysis on the firm-size-adjusted TSIZE, MBA, CPA, FTEAM, and LAWACC. TSF is the management team structure factor score obtained using common factor analysis on the firm-size-adjusted TENURE, TENHET, and FCEO. TSIZE is the size of a firm's management team, defined as the number of executive officers with a rank of vice president or higher. PMBA is the number of management team members with MBA degrees. CPA is the number of management team members who are Certified Public Accountants. FTEAM is the number of management team members who have served as executive officers and/or vice presidents or higher prior to joining the IPO firm. LAWACC is the number of management team members who have previously been partners in a law or accounting firm. TENURE is the average number of years management team members have been with a firm. TENHET is the coefficient of variation of the team members' tenures. FCEO is the ratio of CEO salary and bonus in the fiscal year preceding the IPO to the average salary and bonus of other management team members.

| Panel A: Estimated communalities of eight management quality measures | | | | | |
|---|--------|--------|--------|--------|--------|
| | TSIZE | MBA | CPA | FTEAM | LAWACC |
| TRF | 0.2268 | 0.0397 | 0.0731 | 0.1889 | 0.0623 |
| | TENURE | TENHET | FCEO | | |
| TSF | 0.1354 | 0.1386 | 0.0134 | | |

| Panel B: Eigenvalues of the reduced correlation matrix of eight management quality measures | | | | | |
|---|---------|----------|----------|----------|----------|
| | 1 | 2 | 3 | 4 | 5 |
| TRF | 0.79100 | 0.22089 | 0.00599 | -0.16880 | -0.25828 |
| TSF | 0.53624 | -0.02008 | -0.22875 | | |

| Panel C: Correlations between the common factors and eight management quality measures | | | | | |
|--|--------|--------|--------|--------|--------|
| | TSIZE | MBA | CPA | FTEAM | LAWACC |
| TRF | 0.8375 | 0.3401 | 0.3820 | 0.7351 | 0.3270 |
| | TENURE | TENHET | FCEO | | |
| TSF | 0.8068 | 0.8175 | 0.2943 | | |

| Panel D: Descriptive statistics of the common factors extracted from eight management quality measures | | | |
|--|--------|--------|--|
| | TRF | TSF | |
| Maximum | 3.142 | 3.154 | |
| Third quartile | 0.426 | 0.286 | |
| Median | -0.097 | -0.134 | |
| First quartile | -0.516 | -0.409 | |
| Minimum | -1.333 | -1.607 | |
| Mean | 0.000 | 0.000 | |

Table 4

Frequencies of anti-takeover provisions in 719 IPO firms between 1993 and 2000 split by management quality factor scores

Each provision is described in detail in Appendix A. TRF is the management team resources factor score obtained using common factor analysis on the firm-size-adjusted TSIZE, MBA, CPA, FTEAM, and LAWACC. TSF is the management team structure factor score obtained using common factor analysis on the firm-size-adjusted TENURE, TENHET, and FCEO. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

| | Overall sample | Team resources factor (TRF) score | | | Team structure factor (TSF) score | | |
|---|----------------|-----------------------------------|--------------|---|-----------------------------------|--------------|---|
| | | Above median | Below median | <i>t</i> -statistic for difference in proportions | Above median | Below median | <i>t</i> -statistic for difference in proportions |
| 1. Anti-greenmail provision | 1.53 | 0.56 | 2.50 | -2.126** | 1.97 | 1.12 | 0.916 |
| 2. Blank check preferred stock | 93.60 | 94.99 | 92.22 | 1.515 | 94.08 | 93.82 | 0.148 |
| 3. Staggered boards | 43.53 | 47.35 | 39.72 | 2.067** | 43.66 | 44.10 | -0.118 |
| 4. Fair price provision | 3.48 | 2.79 | 4.17 | -1.010 | 5.35 | 1.69 | 2.664** |
| 5. Poison pills | 1.39 | 1.67 | 1.11 | 0.641 | 2.25 | 0.56 | 1.918* |
| 6. Stakeholder clause | 6.95 | 6.69 | 7.22 | -0.283 | 9.30 | 4.78 | 2.363** |
| Shareholder meeting restrictions | | | | | | | |
| 7. Meetings called only by directors or executives | 37.27 | 42.90 | 31.67 | 3.131*** | 36.62 | 38.48 | -0.512 |
| 8. Supermajority required to call special meetings | 1.81 | 1.67 | 1.94 | -0.275 | 2.25 | 1.40 | 0.371 |
| 9. Advanced notice requirement | 41.17 | 45.96 | 36.39 | 2.617*** | 40.85 | 41.85 | -0.273 |
| 10. Restrictions on action by written consent | 26.01 | 30.64 | 21.39 | 2.840*** | 23.94 | 28.37 | -1.343 |
| Supermajority vote requirements | | | | | | | |
| 11. Supermajority required to approve mergers | 13.77 | 13.09 | 14.44 | -0.526 | 14.65 | 13.20 | 0.556 |
| 12. Supermajority required to replace directors | 14.33 | 17.27 | 11.39 | 2.256** | 14.37 | 14.33 | 0.015 |
| 13. Supermajority required to amend charter and bylaws | 29.76 | 30.36 | 29.17 | 0.350 | 28.17 | 31.74 | -1.039 |
| 14. Unequal voting rights | 10.29 | 8.91 | 11.67 | -1.214 | 9.30 | 11.52 | -0.969 |
| Miscellaneous anti-takeover provisions | | | | | | | |
| 15. Directors can be removed only for cause | 24.48 | 27.30 | 21.67 | 1.757* | 23.10 | 26.12 | -0.936 |
| 16. Merger must be approved by inside directors | 0.28 | 0.56 | 0.00 | 1.418 | 0.28 | 0.28 | 0.002 |
| 17. Restrictions on transfer of common stock | 3.62 | 3.06 | 4.17 | -0.791 | 3.66 | 3.65 | 0.007 |
| 18. Restrictions on votes each shareholder may cast | 0.97 | 0.84 | 1.11 | -0.376 | 1.13 | 0.84 | 0.383 |
| 19. Prohibition of cumulative voting for election of director | 74.13 | 72.42 | 75.83 | -1.043 | 75.49 | 73.03 | 0.749 |

Table 5

Relationship between management quality and reputation and the prevalence of anti-takeover provisions

The sample consists of 719 initial public offerings between 1993 and 2000. TSIZE is the size of a firm's management team, defined as the number of executive officers with a rank of vice president or higher. PMBA is the percentage of a firm's management team with MBA degrees. PCPA is the percentage of a firm's management team who are Certified Public Accountants. PFTEAM is the percentage of the management team who have served as executive officers and/or vice presidents or higher prior to joining the IPO firm. PLAWACC is the percentage of the management team who have previously been partners in a law or accounting firm. TENURE is the average number of years management team members have been with a firm. TENHET is the coefficient of variation of the team members' tenures. FCEO is the ratio of CEO salary and bonus in the fiscal year preceding the IPO to the average salary and bonus of other management team members. BOARDS is the number of other companies' boards that management team members sit on. CERDA is the measure of growth options calculated as a ratio of the sum of capital expenditures and research and development (R&D) expenses to the book value of assets at the end of the fiscal year prior to IPO. INSIDERB is the proportion of insider stock ownership immediately prior to IPO. ODIR is the proportion of outside directors in the board of directors. BOSS is an indicator variable equal to one if a CEO is also a chairman of the board of directors, and zero otherwise. LNBVA is the natural logarithm of the book value of the firm's assets immediately prior to IPO. LEVERAGE is the ratio of the long-term debt to the book value of assets prior to IPO. STATELAW is an indicator variable equal to one if a state in which a firm is incorporated has at least one state anti-takeover provision, and zero otherwise. DELAWARE is an indicator variable equal to one if a firm is incorporated in the state of Delaware, and zero otherwise. TRF is the management team resources factor score obtained using common factor analysis on the firm-size-adjusted TSIZE, MBA, CPA, FTEAM, and LAWACC. TSF is the management team structure factor score obtained using common factor analysis on the firm-size-adjusted TENURE, TENHET, and FCEO. *t*-statistics are in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

| | Poisson maximum-likelihood regressions with total number of ATPs (1 through 19 in Appendix A, excluding blank check preferred) as dependent variable | | Logit regressions with dependent variable equal 0 if a firm has two or less ATPs (as in Appendix A, excluding blank check preferred), and 1 otherwise | |
|-----------------------|--|----------------------|---|-----------------------|
| | 1 | 2 | 3 | 4 |
| Constant | -2.358 (-3.90)*** | -2.424 (-4.06)*** | -10.100 (-7.56)*** | -10.397 (-8.17)*** |
| TRF | | 0.085 (2.68)*** | | 0.433 (3.24)*** |
| TSF | | 0.089 (2.32)** | | 0.318 (2.03)** |
| TSIZE | 0.031 (2.83)*** | | 0.119 (2.57)** | |
| PMBA | 0.446 (3.15)*** | | 1.894 (2.97)*** | |
| PCPA | 0.427 (2.51)** | | 1.812 (2.78)*** | |
| PFTEAM | -0.017 (-0.17) | | 0.132 (0.36) | |
| PLAWACC | 0.313 (1.18) | | 0.908 (0.87) | |
| TENURE | 0.011 (1.76)* | | 0.017 (0.70) | |
| TENHET | -0.003 (-0.29) | | 0.022 (0.60) | |
| FCEO | 0.071 (1.90)* | | 0.366 (2.26)** | |
| BOARDS | -0.008 (-0.32) | -0.017 (-0.72) | -0.051 (-0.51) | -0.076 (-0.77) |
| CERDA | 0.068 (1.11) | 0.070 (1.17) | 0.222 (1.06) | 0.190 (0.91) |
| INSIDERB | -0.107 (-1.04) | -0.108 (-1.05) | -0.643 (-1.52) | -0.635 (-1.53) |
| ODIR | 0.013 (0.15) | 0.018 (0.22) | -0.218 (-0.64) | -0.182 (-0.54) |
| BOSS | -0.023 (-0.47) | -0.019 (-0.39) | -0.148 (-0.73) | -0.168 (-0.84) |
| LNBVA | 0.128 (6.54)*** | 0.170 (10.52)*** | 0.410 (5.40)*** | 0.539 (8.07)*** |
| LEVERAGE | -0.084 (-1.26) | -0.098 (-1.51) | 0.079 (0.35) | 0.028 (0.13) |
| STATELAW | 0.831 (6.83)*** | 0.838 (6.93)*** | 2.004 (4.91)*** | 1.964 (4.95)*** |
| DELAWARE | 0.049 (1.07) | 0.041 (0.92) | 0.149 (0.81) | 0.093 (0.52) |
| Year dummies | Yes | Yes | Yes | Yes |
| Industry dummies | Yes | Yes | No | No |
| N | 711 | 711 | 711 | 711 |
| Pseudo R ² | 0.1140 | 0.1080 | 0.1811 | 0.1620 |

Table 6

Relationship between management quality and reputation and individual anti-takeover provisions

The sample consists of 719 initial public offerings between 1993 and 2000. Dependent variables are equal to one if an IPO firm has an individual anti-takeover provision and zero otherwise. TSIZE is the size of a firm's management team, defined as the number of executive officers with a rank of vice president or higher. PMBA is the percentage of a firm's management team with MBA degrees. PCPA is the percentage of a firm's management team who are Certified Public Accountants. PFTEAM is the percentage of the management team who have served as executive officers and/or vice presidents or higher prior to joining the IPO firm. PLAWACC is the percentage of the management team who have previously been partners in a law or accounting firm. TENURE is the average number of years management team members have been with a firm. TENHET is the coefficient of variation of the team members' tenures. FCEO is the ratio of CEO salary and bonus in the fiscal year preceding the IPO to the average salary and bonus of other management team members. BOARDS is the number of other companies' boards that management team members sit on. CERDA is the measure of growth options calculated as a ratio of the sum of capital expenditures and research and development (R&D) expenses to the book value of assets at the end of the fiscal year prior to IPO. INSIDERB is the proportion of insider stock ownership immediately prior to IPO. ODIR is the proportion of outside directors in the board of directors. BOSS is an indicator variable equal to one if a CEO is also a chairman of the board of directors, and zero otherwise. LNBVA is the natural logarithm of the book value of the firm's assets immediately prior to IPO. LEVERAGE is a ratio of the long-term debt to the book value of assets prior to IPO. STATELAW is an indicator variable equal to 1 if a state in which a firm is incorporated has at least one state anti-takeover provision and 0 otherwise. DELAWARE is an indicator variable equal to one if a firm is incorporated in the state of Delaware, and zero otherwise. TRF is the management team resources factor score obtained using common factor analysis on the firm-size-adjusted TSIZE, MBA, CPA, FTEAM, and LAWACC. TSF is the management team structure factor score obtained using common factor analysis on the firm-size-adjusted TENURE, TENHET, and FCEO. *t*-statistics are in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Relationship between raw management quality variables and individual anti-takeover provisions

| Dependent variable | Staggered boards | Meetings called only by directors or executives | Advanced notice requirement | Restrictions on action with written consent | Super-majority required to approve mergers | Super-majority required to remove directors | Super-majority required to amend charter and bylaws | Unequal voting rights | Directors can be removed only for cause | Prohibited cumulative voting |
|-----------------------|----------------------|---|-----------------------------|---|--|---|---|-----------------------|---|------------------------------|
| Constant | -5.171 (-4.38)*** | -9.526 (-6.78)*** | -9.775 (-7.19)*** | -5.123 (-3.70)*** | -5.001 (-2.68)*** | -8.423 (-4.50)*** | -8.513 (-6.28)*** | -14.501 (-6.57)*** | -7.097 (-4.78)*** | -0.692 (-0.57) |
| TSIZE | 0.041 (1.00) | 0.111 (2.50)** | 0.107 (2.44)** | 0.062 (1.33) | 0.079 (1.42) | 0.133 (2.47)** | 0.006 (0.14) | -0.007 (-0.11) | 0.037 (0.81) | -0.020 (-0.46) |
| PMBA | 1.396 (2.45)** | 1.783 (2.98)*** | 0.658 (1.11) | 1.151 (1.82)* | -0.710 (-0.79) | 0.942 (1.24) | 0.730 (1.23) | 0.655 (0.71) | 1.172 (1.93)* | 0.372 (0.59) |
| PCPA | 1.189 (1.96)* | 0.610 (0.91) | 0.401 (0.63) | 0.592 (0.80) | 0.623 (0.79) | 0.629 (0.74) | 1.080 (1.68)* | -0.610 (-0.54) | 0.644 (0.93) | 0.622 (0.89) |
| PFTEAM | 0.260 (0.74) | -0.497 (-1.25) | 0.069 (0.18) | 0.256 (0.61) | -0.520 (-1.04) | -0.490 (-0.96) | 0.104 (0.27) | -0.753 (-1.12) | -0.121 (-0.30) | 0.321 (0.82) |
| PLAWACC | 0.513 (0.53) | 0.267 (0.25) | 1.897 (1.90)* | 0.694 (0.60) | 0.915 (0.72) | 2.853 (2.42)** | 0.439 (0.42) | -1.389 (-0.73) | 0.293 (0.26) | 1.019 (0.85) |
| TENURE | 0.030 (1.31) | -0.011 (-0.45) | 0.017 (0.70) | -0.018 (-0.67) | 0.018 (0.58) | -0.010 (-0.32) | 0.017 (0.73) | -0.012 (-0.33) | -0.004 (-0.17) | 0.055 (2.06)** |
| TENHET | 0.003 (0.08) | 0.046 (1.30) | 0.014 (0.41) | 0.080 (2.15)** | -0.038 (-0.92) | -0.070 (-1.42) | -0.070 (-1.95)** | 0.053 (1.15) | 0.018 (0.49) | -0.033 (-0.89) |
| FCEO | 0.165 (1.15) | 0.303 (1.96)** | 0.449 (2.92)*** | 0.229 (1.43) | -0.136 (-0.65) | 0.248 (1.30) | 0.247 (1.66)* | -0.325 (-1.35) | 0.137 (0.86) | -0.083 (-0.53) |
| BOARDS | -0.045 (-0.50) | 0.032 (0.32) | 0.049 (0.50) | 0.090 (0.91) | -0.150 (-1.01) | -0.060 (-0.47) | -0.122 (-1.21) | 0.149 (1.07) | -0.003 (-0.03) | 0.134 (1.20) |
| CERDA | -0.111 (-0.49) | 0.203 (0.91) | 0.093 (0.41) | 0.525 (2.39)** | -1.739 (-2.06)** | 0.354 (1.53) | -0.021 (-0.08) | -0.432 (-0.70) | -0.026 (-0.11) | 0.000 (0.00) |
| INSIDERB | -1.402 (-3.54)*** | 0.134 (0.31) | 0.276 (0.66) | -0.666 (-1.49) | 0.269 (0.49) | -0.919 (-1.75)* | -0.017 (-0.04) | 1.279 (1.79)* | -0.397 (-0.91) | 0.242 (0.57) |
| ODIR | 0.187 (0.59) | 0.176 (0.51) | 0.143 (0.42) | -0.345 (-0.93) | -0.254 (-0.56) | -0.007 (-0.02) | 0.140 (0.41) | -0.657 (-1.18) | 0.320 (0.89) | 0.250 (0.71) |
| BOSS | -0.143 (-0.76) | -0.129 (-0.63) | -0.141 (-0.70) | 0.241 (1.08) | -0.110 (-0.41) | 0.486 (1.76)* | 0.273 (1.32) | -0.514 (-1.67)* | 0.079 (0.37) | -0.172 (-0.81) |
| LNBVA | 0.216 (3.16)*** | 0.357 (4.53)*** | 0.365 (4.77)*** | 0.130 (1.65)* | 0.061 (0.62) | 0.207 (2.22)** | 0.312 (4.15)*** | 0.691 (5.73)*** | 0.170 (2.21)** | 0.012 (0.17) |
| LEVERAGE | -0.050 (-0.22) | -0.474 (-1.48) | -0.392 (-1.29) | -0.279 (-0.87) | -0.031 (-0.10) | 0.109 (0.36) | -0.086 (-0.32) | 0.648 (2.51)** | -0.071 (-0.26) | -0.112 (-0.51) |
| STATELAW | 1.347 (3.54)*** | 1.133 (2.65)*** | 1.305 (3.16)*** | 0.565 (1.17) | 2.838 (2.77)*** | 2.488 (2.41)** | 1.594 (3.18)*** | -0.298 (-0.53) | 2.242 (3.01)*** | 1.378 (4.40)*** |
| DELAWARE | 0.204 (1.18) | 0.795 (4.25)*** | 0.180 (0.99) | 1.241 (6.01)*** | -1.378 (-5.18)*** | -0.370 (-1.55) | -0.028 (-0.15) | 0.462 (1.53) | 0.237 (1.22) | -0.407 (-2.08)** |
| Year dummies | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes |
| N | 711 | 711 | 711 | 711 | 711 | 711 | 711 | 711 | 711 | 711 |
| Pseudo R ² | 0.0901 | 0.1731 | 0.1610 | 0.1473 | 0.1108 | 0.0919 | 0.0858 | 0.2103 | 0.0919 | 0.0442 |

Panel B: Relationship between management quality factor scores and individual anti-takeover provisions

| Dependent variable | Staggered boards | Meetings called only by directors or executives | Advanced notice requirement | Restrictions on action with written consent | Super-majority required to approve mergers | Super-majority required to remove directors | Super-majority required to amend charter and bylaws | Unequal voting rights | Directors can be removed only for cause | Prohibited cumulative voting |
|-----------------------|----------------------|---|-----------------------------|---|--|---|---|-----------------------|---|------------------------------|
| Constant | -5.307 (-4.77)** | -10.180 (-7.55)*** | -10.401 (-7.96)*** | -5.030 (-3.86)*** | -5.661 (-3.19)*** | -8.845 (-4.97)*** | -8.231 (-6.43)*** | -14.779 (-6.94)*** | -7.149 (-5.06)*** | -0.815 (-0.71) |
| TRF | 0.197 (1.64) | 0.366 (2.83)*** | 0.331 (2.59)*** | 0.264 (1.96)** | 0.124 (0.75) | 0.378 (2.44)** | 0.015 (0.12) | -0.114 (-0.58) | 0.129 (0.98) | -0.100 (-0.77) |
| TSF | 0.215 (1.50) | 0.325 (2.12)** | 0.311 (2.08)** | 0.244 (1.48) | 0.031 (0.17) | -0.077 (-0.39) | -0.098 (-0.65) | 0.142 (0.67) | 0.107 (0.67) | 0.102 (0.63) |
| BOARDS | -0.060 (-0.66) | 0.002 (0.02) | 0.035 (0.35) | 0.074 (0.75) | -0.145 (-1.00) | -0.095 (-0.75) | -0.142 (-1.40) | 0.146 (1.08) | -0.021 (-0.21) | 0.140 (1.26) |
| CERDA | -0.143 (-0.65) | 0.225 (1.01) | 0.078 (0.35) | 0.502 (2.32)** | -1.707 (-2.09)** | 0.367 (1.62) | -0.065 (-0.26) | -0.338 (-0.57) | -0.027 (-0.11) | -0.029 (-0.14) |
| INSIDERB | -1.400 (-3.58)*** | 0.099 (0.24) | 0.276 (0.67) | -0.618 (-1.41) | 0.201 (0.37) | -0.910 (-1.78)* | -0.049 (-0.12) | 1.240 (1.74)* | -0.399 (-0.92) | 0.202 (0.48) |
| ODIR | 0.217 (0.69) | 0.187 (0.55) | 0.171 (0.51) | -0.313 (-0.85) | -0.357 (-0.80) | 0.031 (0.07) | 0.156 (0.46) | -0.611 (-1.12) | 0.340 (0.95) | 0.250 (0.72) |
| BOSS | -0.160 (-0.86) | -0.098 (-0.48) | -0.133 (-0.67) | 0.222 (1.00) | -0.124 (-0.47) | 0.481 (1.76)* | 0.270 (1.32) | -0.499 (-1.65)* | 0.074 (0.35) | -0.194 (-0.93) |
| LNBVA | 0.289 (4.94)*** | 0.471 (6.74)*** | 0.496 (7.32)*** | 0.186 (2.79)*** | 0.114 (1.42) | 0.291 (3.72)*** | 0.332 (5.19)*** | 0.670 (6.27)*** | 0.211 (3.23)*** | 0.040 (0.64) |
| LEVERAGE | -0.061 (-0.27) | -0.556 (-1.74)* | -0.416 (-1.42) | -0.268 (-0.87) | -0.045 (-0.16) | 0.020 (0.07) | -0.113 (-0.45) | 0.637 (2.47)** | -0.102 (-0.39) | -0.089 (-0.41) |
| STATELAW | 1.331 (3.56)*** | 1.060 (2.54)** | 1.347 (3.31)*** | 0.561 (1.17) | 2.859 (2.80)*** | 2.523 (2.45)** | 1.648 (3.33)*** | -0.475 (-0.86) | 2.196 (2.97)*** | 1.377 (4.48)*** |
| DELAWARE | 0.159 (0.94) | 0.756 (4.18)*** | 0.180 (1.01) | 1.218 (6.06)*** | -1.381 (-5.30)*** | -0.366 (-1.58) | -0.080 (-0.44) | 0.472 (1.60) | 0.214 (1.12) | -0.431 (-2.24)** |
| Year dummies | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes |
| N | 711 | 711 | 711 | 711 | 711 | 711 | 711 | 711 | 711 | 711 |
| Pseudo R ² | 0.0802 | 0.1570 | 0.1476 | 0.1357 | 0.0999 | 0.0705 | 0.0738 | 0.1996 | 0.0849 | 0.0370 |

Table 7

Relationship between management quality, growth options, and the prevalence of anti-takeover provisions

Poisson maximum-likelihood regressions with dependent variable equal to the total number of anti-takeover provisions (1 through 19 in Appendix A, excluding blank check preferred). The sample consists of 719 initial public offerings between 1993 and 2000. GROUP1 through GROUP4 are dummy variables representing four management quality and growth option groups. Management quality is measured by management quality factor scores (TRF or TSF). Growth options are measured by an industry median-adjusted (2-digit SIC code) ratio of the sum of capital expenditures and R&D expenses to total assets in the year prior to IPO. GROUP1 represents firms with above median management quality factor score and with above median growth options. GROUP2 represents firms with above median management quality factor score and with below median growth options. GROUP3 represents firms with below median management quality factor score and with above median growth options. GROUP4 represents firms with below median management quality factor score and with below median growth options. TRF is the management team resources factor score obtained using common factor analysis on the firm-size-adjusted TSIZE, MBA, CPA, FTEAM, and LAWACC. TSF is the management team structure factor score obtained using common factor analysis on the firm-size-adjusted TENURE, TENHET, and FCEO. BOARDS is the number of other companies' boards that management team members sit on. CERDA is the measure of growth options calculated as a ratio of the sum of capital expenditures and research and development (R&D) expenses to the book value of assets at the end of the fiscal year prior to IPO. INSIDERB is the proportion of insider stock ownership immediately prior to IPO. ODIR is the proportion of outside directors in the board of directors. BOSS is an indicator variable equal to one if a CEO is also a chairman of the board of directors, and zero otherwise. LNBVA is the natural logarithm of the book value of the firm's assets immediately prior to IPO. LEVERAGE is a ratio of the long-term debt to the book value of assets prior to IPO. STATELAW is an indicator variable equal to one if a state in which a firm is incorporated has at least one state anti-takeover provision, and zero otherwise. DELAWARE is an indicator variable equal to one if a firm is incorporated in the state of Delaware, and zero otherwise. *t*-statistics are in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

| | Management quality measured by team resources factor (TRF) score | | Management quality measured by team structure factor (TSF) score | |
|-----------------------|---|----------------------|---|----------------------|
| | 1 | 2 | 3 | 4 |
| Constant | -2.348 (-8.45)*** | -2.298 (-8.30)*** | -2.252 (-8.07)*** | -2.125 (-7.55)*** |
| GROUP1 | 0.094 (2.02)** | | 0.147 (3.07)*** | |
| GROUP2 | | -0.032 (-0.57) | | -0.157 (-2.69)*** |
| GROUP3 | | -0.051 (-0.87) | | -0.125 (-2.12)** |
| GROUP4 | | -0.201 (-3.43)*** | | -0.157 (-2.61)*** |
| BOARDS | -0.019 (-0.86) | -0.023 (-1.04) | -0.017 (-0.77) | -0.017 (-0.78) |
| INSIDERB | -0.083 (-0.87) | -0.087 (-0.91) | -0.105 (-1.10) | -0.101 (-1.06) |
| ODIR | 0.003 (0.04) | -0.018 (-0.23) | 0.018 (-0.22) | 0.013 (-0.16) |
| BOSS | -0.006 (-0.14) | -0.002 (-0.04) | -0.016 (-0.35) | -0.013 (-0.27) |
| LNBVA | 0.161 (11.76)*** | 0.163 (11.87)*** | 0.156 (11.32)*** | 0.157 (11.30)*** |
| LEVERAGE | -0.063 (-1.07) | -0.068 (-1.17) | -0.062 (-1.04) | -0.062 (-1.05) |
| STATELAW | 0.861 (7.46)*** | 0.878 (7.59)*** | 0.855 (7.40)*** | 0.854 (7.40)*** |
| DELAWARE | 0.029 (0.69) | 0.023 (0.54) | 0.040 (0.94) | 0.040 (0.93) |
| Year dummies | Yes | Yes | Yes | Yes |
| N | 719 | 719 | 711 | 711 |
| Pseudo R ² | 0.0823 | 0.0851 | 0.0823 | 0.0824 |

Table 8

Relationship between management quality, anti-takeover provisions, and the post-issue operating performance of 719 IPO firms between 1993 and 2000

OIBD/Assets is a ratio of operating income before depreciation plus interest income (Compustat items 13 and 15) to book value of total assets (item 6). ROA is the return on assets and is measured as a ratio of net income (item 172) to book value of total assets. Profit margin is a ratio of net income to total sales (item 12). OIBD/Sales is a ratio of operating income before depreciation plus interest income to total sales. All performance measures are adjusted for industry performance by subtracting contemporaneous industry (2-digit SIC code) medians. Year 0 is the year of IPO. Median test is Wilcoxon two-sample rank-sum test. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

Panel A: The median level of industry-adjusted operating performance in IPO firms by the prevalence of anti-takeover provisions

Firms with stronger anti-takeover protection have three or more anti-takeover provisions (as in Appendix A, excluding blank check preferred). Firms with weaker anti-takeover protection have two or less anti-takeover provisions (as in Appendix A, excluding blank check preferred).

| Performance measures | Stronger anti-takeover protection | | Weaker anti-takeover protection | | Median test |
|----------------------|-----------------------------------|-----|---------------------------------|-----|-------------|
| | Value | N | Value | N | |
| OIBD/Assets 0 | 5.42% | 373 | 2.61% | 330 | 4.219*** |
| OIBD/Assets 1 | 3.40% | 356 | -1.05% | 311 | 4.604*** |
| OIBD/Assets 2 | 3.59% | 321 | -1.18% | 280 | 4.277*** |
| OIBD/Assets 3 | 3.57% | 295 | -0.78% | 261 | 4.554*** |
| OIBD/Assets 4 | 3.41% | 260 | 0.73% | 224 | 3.241*** |
| ROA 0 | 4.48% | 373 | 2.86% | 330 | 3.193*** |
| ROA 1 | 3.00% | 357 | 0.35% | 312 | 4.321*** |
| ROA 2 | 2.06% | 322 | -0.85% | 281 | 4.179*** |
| ROA 3 | 2.67% | 296 | -1.06% | 264 | 5.203*** |
| ROA 4 | 1.79% | 262 | 0.01% | 226 | 3.415*** |
| Profit margin 0 | 2.85% | 371 | 1.99% | 323 | 3.174*** |
| Profit margin 1 | 2.25% | 357 | 0.00% | 309 | 3.896*** |
| Profit margin 2 | 1.44% | 321 | -0.89% | 280 | 3.953*** |
| Profit margin 3 | 2.11% | 295 | -1.03% | 260 | 5.385*** |
| Profit margin 4 | 1.35% | 262 | -0.26% | 224 | 3.461*** |
| OIBD/Sales 0 | 4.25% | 371 | 1.37% | 323 | 4.332*** |
| OIBD/Sales 1 | 3.04% | 356 | -0.56% | 308 | 4.135*** |
| OIBD/Sales 2 | 2.65% | 320 | -1.40% | 279 | 4.687*** |
| OIBD/Sales 3 | 3.58% | 294 | -0.25% | 258 | 4.725*** |
| OIBD/Sales 4 | 2.23% | 260 | 0.00% | 221 | 3.856*** |

Panel B: The median level of industry-adjusted operating performance in IPO firms split into two groups by management quality and the prevalence of anti-takeover provisions. Group A represents firms with above median management quality factor score (TRF or TSF) and with three or more anti-takeover provisions (as in Appendix A, excluding blank check preferred). Group B represents the rest of the sample. TRF is the management team resources factor score obtained using common factor analysis on the firm-size-adjusted TSIZE, MBA, CPA, FTEAM, and LAWACC. TSF is the management team structure factor score obtained using common factor analysis on the firm-size-adjusted TENURE, TENHET, and FCEO.

| Performance measures | Management quality measured by team resources factor (TRF) score | | | | | Management quality measured by team structure factor (TSF) score | | | | |
|----------------------|--|-----|---------|-----|-------------|--|-----|---------|-----|-------------|
| | Group A | | Group B | | Median test | Group A | | Group B | | Median test |
| | Value | N | Value | N | | Value | N | Value | N | |
| OIBD/Assets 0 | 4.37% | 205 | 3.94% | 498 | 1.442 | 7.31% | 182 | 2.74% | 514 | 5.416*** |
| OIBD/Assets 1 | 3.40% | 193 | 1.15% | 474 | 2.126** | 5.09% | 178 | 0.39% | 481 | 5.226*** |
| OIBD/Assets 2 | 2.07% | 170 | 0.67% | 431 | 1.604 | 5.42% | 164 | -0.07% | 430 | 4.693*** |
| OIBD/Assets 3 | 3.71% | 156 | 0.96% | 400 | 2.499** | 4.87% | 149 | 0.64% | 401 | 4.211*** |
| OIBD/Assets 4 | 3.46% | 135 | 1.43% | 349 | 1.794* | 3.98% | 131 | 1.39% | 347 | 2.553** |
| ROA 0 | 4.18% | 205 | 3.25% | 498 | 1.790* | 5.27% | 182 | 3.01% | 514 | 3.627*** |
| ROA 1 | 2.87% | 194 | 1.37% | 475 | 1.529 | 4.04% | 178 | 0.90% | 483 | 4.736*** |
| ROA 2 | 1.77% | 170 | 0.56% | 433 | 1.259 | 2.73% | 164 | 0.12% | 432 | 4.400*** |
| ROA 3 | 2.77% | 156 | 0.44% | 404 | 2.532** | 3.91% | 150 | 0.01% | 404 | 4.849*** |
| ROA 4 | 1.88% | 136 | 0.44% | 352 | 2.050** | 2.53% | 132 | 0.44% | 350 | 3.049*** |
| Profit margin 0 | 3.09% | 204 | 2.33% | 490 | 2.273** | 2.80% | 182 | 2.33% | 506 | 2.522** |
| Profit margin 1 | 1.76% | 194 | 1.06% | 472 | 0.711 | 2.94% | 178 | 0.64% | 480 | 4.261*** |
| Profit margin 2 | 1.18% | 169 | 0.29% | 432 | 0.761 | 2.38% | 164 | 0.00% | 430 | 4.276*** |
| Profit margin 3 | 2.29% | 155 | 0.17% | 400 | 2.787*** | 2.94% | 150 | 0.02% | 400 | 4.632*** |
| Profit margin 4 | 1.92% | 136 | 0.06% | 350 | 1.917* | 2.21% | 132 | 0.25% | 348 | 3.434*** |
| OIBD/Sales 0 | 4.90% | 204 | 2.57% | 490 | 2.683*** | 4.85% | 182 | 2.22% | 506 | 3.478*** |
| OIBD/Sales 1 | 2.47% | 193 | 0.86% | 471 | 1.592 | 3.86% | 178 | 0.45% | 478 | 4.395*** |
| OIBD/Sales 2 | 2.20% | 169 | 0.17% | 430 | 1.579 | 3.68% | 164 | -0.20% | 428 | 4.301*** |
| OIBD/Sales 3 | 3.18% | 155 | 0.60% | 397 | 2.573** | 3.61% | 149 | 0.48% | 398 | 3.884*** |
| OIBD/Sales 4 | 2.03% | 135 | 0.85% | 346 | 1.832* | 2.21% | 131 | 0.81% | 344 | 2.880*** |

Table 9

Relationship between management quality, anti-takeover provisions, and the post-issue stock return performance of 719 IPO firms between 1993 and 2000

For each IPO firm and a corresponding benchmark buy-and-hold returns are calculated by compounding daily returns for 1,260 trading days after the issue. If an IPO firm is delisted before the end of the five-year period returns of IPO firms and corresponding benchmarks are compounded until the delisting date. Wealth relatives are calculated as $\sum(1 + R_{i,T}) / \sum(1 + R_{benchmark,T})$, where $R_{i,T}$ is the buy-and-hold return on IPO firm i for a period T and $R_{benchmark,T}$ is the buy-and-hold return on a benchmark over the same period. Matching non-issuers are selected based on propensity score matching algorithm, where each IPO firm is matched with a single non-issuing firm in the fiscal year prior to IPO within the same industry (2-digit SIC code) based on the following matching criteria: OIBD/Assets, ROA, (Capital expenditures + R&D expenses)/Assets, natural logarithm of the total assets. Firms with stronger anti-takeover protection have three or more anti-takeover provisions (as in Appendix A, excluding blank check preferred). Firms with weaker anti-takeover protection have two or less anti-takeover provisions (as in Appendix A, excluding blank check preferred). Group A in Panels C and D represents firms with above median management quality factor score (TRF or TSF) and with three or more anti-takeover provisions (as in Appendix A, excluding blank check preferred). Group B represents the rest of the sample. TRF is the management team resources factor score obtained using common factor analysis on the firm-size-adjusted TSIZE, MBA, CPA, FTEAM, and LAWACC. TSF is the management team structure factor score obtained using common factor analysis on the firm-size-adjusted TENURE, TENHET, and FCEO.

Panel A: Average five-year buy-and-hold portfolio returns and wealth relatives for IPO firms versus various benchmarks by the prevalence of anti-takeover provisions

| Benchmarks | Stronger anti-takeover protection | | | | Weaker anti-takeover protection | | | |
|----------------------|-----------------------------------|----------------|----------------------|-----------------|---------------------------------|----------------|----------------------|-----------------|
| | N | IPO return (%) | Benchmark return (%) | Wealth relative | N | IPO return (%) | Benchmark return (%) | Wealth relative |
| Nasdaq EW index | 383 | 27.85 | 312.77 | 0.31 | 336 | 17.22 | 336.38 | 0.27 |
| Nasdaq VW index | 383 | 27.85 | 103.04 | 0.63 | 336 | 17.22 | 126.66 | 0.52 |
| CRSP EW index | 383 | 27.85 | 191.40 | 0.44 | 336 | 17.22 | 204.22 | 0.39 |
| CRSP VW index | 383 | 27.85 | 80.32 | 0.71 | 336 | 17.22 | 98.08 | 0.59 |
| S&P 500 index | 383 | 27.85 | 77.03 | 0.72 | 336 | 17.22 | 95.71 | 0.60 |
| Matching non-issuers | 360 | 31.92 | 52.57 | 0.86 | 305 | 25.19 | 32.92 | 0.94 |

Panel B: Average five-year buy-and-hold portfolio returns and wealth relatives for IPO firms versus CRSP equal-weighted index by cohort years and by the prevalence of anti-takeover provisions

| Year | Stronger anti-takeover protection | | | | Weaker anti-takeover protection | | | |
|------|-----------------------------------|----------------|--------------------------|-----------------|---------------------------------|----------------|--------------------------|-----------------|
| | N | IPO return (%) | CRSP EW index return (%) | Wealth relative | N | IPO return (%) | CRSP EW index return (%) | Wealth relative |
| 1993 | 54 | 118.22 | 288.18 | 0.56 | 71 | 40.96 | 269.23 | 0.38 |
| 1994 | 47 | 75.81 | 271.94 | 0.47 | 76 | 84.35 | 262.50 | 0.51 |
| 1995 | 51 | 78.43 | 253.35 | 0.50 | 51 | 0.86 | 238.79 | 0.30 |
| 1996 | 85 | 0.58 | 165.64 | 0.38 | 51 | -22.08 | 153.89 | 0.31 |
| 1997 | 73 | -28.48 | 116.15 | 0.33 | 46 | -10.33 | 96.65 | 0.46 |
| 1998 | 32 | -17.25 | 101.95 | 0.41 | 20 | -64.57 | 105.42 | 0.17 |
| 1999 | 28 | 1.26 | 149.24 | 0.41 | 16 | -31.36 | 141.97 | 0.28 |
| 2000 | 13 | -56.53 | 157.12 | 0.17 | 5 | -36.64 | 140.15 | 0.26 |

Panel C: Average five-year buy-and-hold portfolio returns and wealth relatives for IPO firms versus various benchmarks split into two groups by management quality and the prevalence of anti-takeover provisions

| Benchmarks | Management quality measured by team resources factor (TRF) score | | | | | | | | Management quality measured by team structure factor (TSF) score | | | | | | | |
|----------------------|--|----------------|----------------------|-----------------|---------|----------------|----------------------|-----------------|--|----------------|----------------------|-----------------|---------|----------------|----------------------|-----------------|
| | Group A | | | | Group B | | | | Group A | | | | Group B | | | |
| | N | IPO return (%) | Benchmark return (%) | Wealth relative | N | IPO return (%) | Benchmark return (%) | Wealth relative | N | IPO return (%) | Benchmark return (%) | Wealth relative | N | IPO return (%) | Benchmark return (%) | Wealth relative |
| Nasdaq EW index | 212 | 23.65 | 280.83 | 0.32 | 507 | 22.56 | 341.77 | 0.28 | 185 | 50.16 | 364.44 | 0.32 | 526 | 14.38 | 308.80 | 0.28 |
| Nasdaq VW index | 212 | 23.65 | 87.83 | 0.66 | 507 | 22.56 | 125.05 | 0.54 | 185 | 50.16 | 136.54 | 0.63 | 526 | 14.38 | 105.75 | 0.56 |
| CRSP EW index | 212 | 23.65 | 173.06 | 0.45 | 507 | 22.56 | 207.57 | 0.40 | 185 | 50.16 | 220.24 | 0.47 | 526 | 14.38 | 188.95 | 0.40 |
| CRSP VW index | 212 | 23.65 | 68.00 | 0.74 | 507 | 22.56 | 97.25 | 0.62 | 185 | 50.16 | 105.17 | 0.73 | 526 | 14.38 | 82.47 | 0.63 |
| S&P 500 index | 212 | 23.65 | 64.60 | 0.75 | 507 | 22.56 | 94.61 | 0.63 | 185 | 50.16 | 102.51 | 0.74 | 526 | 14.38 | 79.52 | 0.64 |
| Matching non-issuers | 198 | 27.98 | 35.24 | 0.95 | 467 | 29.20 | 47.08 | 0.88 | 176 | 54.11 | 62.99 | 0.95 | 483 | 20.51 | 37.01 | 0.88 |

Panel D: Average five-year buy-and-hold portfolio returns and wealth relatives for IPO firms versus CRSP equal-weighted index by cohort years split into two groups by management quality and the prevalence of anti-takeover provisions

| Year | Management quality measured by team resources factor (TRF) score | | | | | | | | Management quality measured by team structure factor (TSF) score | | | | | | | |
|------|--|----------------|--------------------------|-----------------|---------|----------------|--------------------------|-----------------|--|----------------|--------------------------|-----------------|---------|----------------|--------------------------|-----------------|
| | Group A | | | | Group B | | | | Group A | | | | Group B | | | |
| | N | IPO return (%) | CRSP EW index return (%) | Wealth relative | N | IPO return (%) | CRSP EW index return (%) | Wealth relative | N | IPO return (%) | CRSP EW index return (%) | Wealth relative | N | IPO return (%) | CRSP EW index return (%) | Wealth relative |
| 1993 | 20 | 246.99 | 280.43 | 0.91 | 105 | 41.45 | 276.84 | 0.38 | 39 | 74.94 | 291.00 | 0.45 | 83 | 78.06 | 272.71 | 0.48 |
| 1994 | 21 | 48.48 | 267.09 | 0.40 | 102 | 87.80 | 265.91 | 0.51 | 32 | 109.80 | 276.35 | 0.56 | 89 | 73.27 | 262.76 | 0.48 |
| 1995 | 24 | 46.77 | 247.31 | 0.42 | 78 | 37.46 | 245.69 | 0.40 | 27 | 96.06 | 271.54 | 0.53 | 73 | 21.67 | 237.66 | 0.36 |
| 1996 | 45 | 6.34 | 165.43 | 0.40 | 91 | -14.97 | 159.16 | 0.33 | 51 | 18.02 | 165.59 | 0.44 | 85 | -23.48 | 158.62 | 0.30 |
| 1997 | 52 | -17.72 | 118.60 | 0.38 | 67 | -24.36 | 100.86 | 0.38 | 26 | -30.62 | 126.69 | 0.31 | 93 | -18.90 | 103.56 | 0.40 |
| 1998 | 22 | -32.49 | 94.40 | 0.35 | 30 | -37.62 | 109.80 | 0.30 | 4 | -42.50 | 100.28 | 0.29 | 47 | -33.72 | 101.92 | 0.33 |
| 1999 | 19 | -14.63 | 130.91 | 0.37 | 25 | -7.54 | 158.51 | 0.36 | 3 | 95.01 | 190.54 | 0.67 | 41 | -18.33 | 143.38 | 0.34 |
| 2000 | 9 | -48.71 | 151.17 | 0.20 | 9 | -53.29 | 153.63 | 0.18 | 3 | 3.71 | 169.88 | 0.38 | 15 | -61.94 | 148.91 | 0.15 |

Table 10

Relationship between management quality, anti-takeover provisions, and the post-issue stock return performance of the sample of 719 initial public offerings between 1993 and 2000, estimated using calendar time portfolios

The dependent variable is the equally weighted monthly percentage return on a portfolio of IPO firms that have gone public during the prior 60 months minus risk-free rate. Regressions in Panels A and C are estimated using ordinary least squares (OLS), while regressions in Panels B and D are estimated using weighted least squares (WLS), with the weights based on the number of IPO firms in the monthly portfolio. α is the regression intercept, R_{mt} is the return on the value-weighted index of NYSE, Amex, and NASDAQ stocks in month t ; R_{ft} is the 1-month T-bill yield in month t ; SMB_t is the return on a portfolio of small stocks minus the return on a portfolio of large stocks in month t ; HML_t is the return on a portfolio of high book-to-market stocks minus the return on a portfolio of low book-to-market stocks in month t , and UMD_t is the return on a portfolio of high prior return stocks minus the return on a portfolio of low prior return stocks in month t . t -statistics are in parentheses. Firms with stronger anti-takeover protection have three or more anti-takeover provisions (as in Appendix A, excluding blank check preferred). Firms with weaker anti-takeover protection have two or less anti-takeover provisions (as in Appendix A, excluding blank check preferred). The number of firms in the portfolio ranges from 4 to 279 for the firms with stronger anti-takeover protection and from 3 to 245 for the firms with weaker anti-takeover protection. Group A in Panels C and D represents firms with above median management quality factor score (TRF or TSF) and with three or more anti-takeover provisions (as in Appendix A, excluding blank check preferred). Group B represents the rest of the sample. TRF is the management team resources factor score obtained using common factor analysis on the firm-size-adjusted TSIZE, MBA, CPA, FTEAM, and LAWACC. TSF is the management team structure factor score obtained using common factor analysis on the firm-size-adjusted TENURE, TENHET, and FCEO. The number of firms in the portfolio ranges from 1 to 152 for the firms in Group A and from 3 to 378 for the firms in Group B when management quality is measured by TRF score, while the number of firms in the portfolio ranges from 3 to 160 for the firms in Group A and from 3 to 359 for the firms in Group B when management quality is measured by TSF score. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Ordinary least squares (OLS) regressions by the prevalence of anti-takeover provisions

| | α | $R_{mt} - R_{ft}$ | SMB_t | HML_t | UMD_t | R^2 |
|-----------------------------------|----------------|--------------------|--------------------|------------------|---------------------|-------|
| Stronger anti-takeover protection | 0.42 (1.38) | 1.04 (12.62)*** | 0.94 (11.19)*** | 0.01 (0.11) | -0.36 (-6.36)*** | 0.80 |
| Weaker anti-takeover protection | 0.65 (1.41) | 0.78 (6.32)*** | 1.02 (8.07)*** | -0.15 (-0.92) | -0.42 (-4.91)*** | 0.63 |

Panel B: Weighted least squares (WLS) regressions by the prevalence of anti-takeover provisions

| | α | $R_{mt} - R_{ft}$ | SMB_t | HML_t | UMD_t | R^2 |
|-----------------------------------|----------------|--------------------|--------------------|--------------------|---------------------|-------|
| Stronger anti-takeover protection | 0.43 (1.45) | 1.02 (13.47)*** | 0.90 (12.35)*** | -0.06 (-0.56) | -0.40 (-7.59)*** | 0.84 |
| Weaker anti-takeover protection | 0.44 (1.11) | 0.73 (6.96)*** | 0.94 (8.90)*** | -0.37 (-2.54)** | -0.49 (-6.12)*** | 0.71 |

Panel C: Ordinary least squares (OLS) regressions split into two groups by management quality and the prevalence of anti-takeover provisions

| | Management quality measured by team resources factor (TRF) score | | | | | | Management quality measured by team structure factor (TSF) score | | | | | |
|---------|--|--------------------|--------------------|------------------|---------------------|-------|--|--------------------|-------------------|------------------|---------------------|-------|
| | α | $R_{mt} - R_{ft}$ | SMB_t | HML_t | UMD_t | R^2 | α | $R_{mt} - R_{ft}$ | SMB_t | HML_t | UMD_t | R^2 |
| Group A | 0.65 (1.71)* | 1.07 (10.42)*** | 1.01 (9.68)*** | -0.08 (-0.63) | -0.43 (-6.05)*** | 0.76 | -0.11 (-0.30) | 0.97 (10.37)*** | 0.82 (8.64)*** | 0.11 (0.91) | -0.21 (-3.27)*** | 0.69 |
| Group B | 0.41 (1.17) | 0.87 (9.35)*** | 0.95 (10.00)*** | -0.02 (-0.13) | -0.35 (-5.38)*** | 0.73 | 0.61 (1.60) | 0.92 (9.05)*** | 1.00 (9.60)*** | -0.10 (-0.79) | -0.41 (-5.90)*** | 0.73 |

Panel D: Weighted least squares (WLS) regressions split into two groups by management quality and the prevalence of anti-takeover provisions

| | Management quality measured by team resources factor (TRF) score | | | | | | Management quality measured by team structure factor (TSF) score | | | | | |
|---------|--|--------------------|--------------------|------------------|---------------------|-------|--|--------------------|--------------------|--------------------|---------------------|-------|
| | α | $R_{mt} - R_{ft}$ | SMB_t | HML_t | UMD_t | R^2 | α | $R_{mt} - R_{ft}$ | SMB_t | HML_t | UMD_t | R^2 |
| Group A | 0.73 (1.98)** | 1.04 (11.11)*** | 0.97 (10.86)*** | -0.17 (-1.40) | -0.45 (-7.30)*** | 0.81 | 0.23 (0.82) | 1.02 (13.73)*** | 0.88 (12.07)*** | 0.14 (1.40) | -0.30 (-5.37)*** | 0.80 |
| Group B | 0.29 (0.90) | 0.83 (9.88)*** | 0.89 (10.66)*** | -0.19 (-1.61) | -0.42 (-6.69)*** | 0.78 | 0.44 (1.25) | 0.86 (9.39)*** | 0.93 (10.45)*** | -0.28 (-2.33)** | -0.47 (-7.39)*** | 0.79 |