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Takeover Defenses of IPO Firms

LAURA CASARES FIELD and JONATHAN M. KARPOFF*

ABSTRACT

Many firms deploy takeover defenses when they go public. IPO managers tend to deploy defenses when their compensation is high, shareholdings are small, and oversight from nonmanagerial shareholders is weak. The presence of a defense is negatively related to subsequent acquisition likelihood, yet has no impact on takeover premiums for firms that are acquired. These results do not support arguments that takeover defenses facilitate the eventual sale of IPO firms at high takeover premiums. Rather, they suggest that managers shift the cost of takeover protection onto nonmanagerial shareholders. Thus, agency problems are important even for firms at the IPO stage.

DESPITE 20 YEARS OF RESEARCH on the topic, there still is little consensus about the effects of corporate takeover defenses. In this paper, we use information from an unusual natural experiment—the use of takeover defenses by firms as they go public—to examine the motives for and consequences of such defenses.

The traditional view is that IPO firms should have—and in fact do have—few if any takeover defenses. For example, Frank Easterbrook and Daniel Fischel (1991, pp. 204–205) argue that “Firms go public in easy to acquire form: no poison pill securities, no supermajority rules or staggered boards. Defensive measures are added later, a sequence that reveals much.” This view reflects two assumptions. The first is that takeover defenses lower firm values because they insulate managers from the discipline of the market for corporate control. The second assumption is that agency conflicts between managers and nonmanagerial shareholders are negligible at IPO firms. This is because the proceeds from an IPO accrue to a relatively small number of firm principals who internalize most of the costs and benefits. If a takeover defense lowers the firm value, these principals would have incentive to avoid its use at the time of the IPO.

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More recent theories, however, suggest that takeover defenses might be important for IPO firms. Brennan and Franks (1997) argue that firm insiders opportunistically take steps at the IPO to ensure that they will maintain their private benefits of control after the firm's stock is publicly traded. This suggests that they could use takeover defenses to help insulate themselves from the market for control. An alternative view is that takeover protection is an implicit portion of IPO managers' compensation, implying that the managers sacrifice some pecuniary compensation to achieve greater job security. A third view is suggested by Zingales (1995) and Mello and Parsons (1998), who argue that the IPO is the first stage in the eventual sale of the firm. This suggests that takeover defenses can be used to facilitate the future sale of the firm and increase its expected takeover premium.

In this paper, we examine the traditional and more recent theories empirically. We find that many firms deploy takeover defenses when they go public. In our sample of 1,019 industrial firms going public from 1988 to 1992, 53 percent have at least one takeover defense at the time of their IPO, including classified boards, supermajority voting provisions, fair price charter amendments, and even poison pills. Firms also tend to select their longer term defensive postures at the time of their IPOs. Although the average firm has 1.71 takeover defenses at its IPO, it acquires only 0.19 additional defenses during the five-year period after its IPO.¹ These results reject the traditional view that IPO managers avoid using takeover defenses. In contrast, they indicate that control issues are important even at the IPO stage.

We also conduct tests to better understand the reasons IPO firms implement defenses. On this matter, most of our results support Brennan and Franks' (1997) argument that IPO managers seek to maintain their private benefits of control after taking the firm public. For example, we find that managers deploy takeover defenses particularly when they own few shares, enjoy high compensation, and are relatively free from monitoring by non-managerial shareholders. This suggests that IPO managers are likely to deploy defenses when their personal benefits are high and they bear few of the costs. Also consistent with Brennan and Franks' argument, we find that takeover defenses at the time of the IPO are associated with longer term firm independence. In contrast, we do not find support for arguments that takeover defenses are an implicit portion of managers' compensation or that defenses help in the eventual sale of the firm by increasing expected takeover premiums.

This paper is organized as follows. Section I describes our sample of 1,019 firms that went public during the 1988 to 1992 period. Section II reports on the uses of various types of takeover defenses in the IPO firms, and, in Section III, we compare the uses to those in seasoned corporations. In Sec-

¹ The 1.71 figure excludes blank check preferred stock, but includes the nine other types of defense summarized in Table II. Rydqvist and Högholm (1995), Field (1998), Coates (2000), and Daines and Klausner (2001) also provide evidence about the use of takeover defenses at IPO firms.

tion IV, we examine the determinants of the likelihood that an IPO firm will deploy a takeover defense. Section V reports on how takeover defenses at the time of the IPO affect both the probability the firm subsequently will be acquired and the acquisition premium for those firms that are acquired. In Section VI, we examine the relation between the use of a takeover defense and the firm's operating performance in the years following its IPO. Section VII summarizes and concludes the paper.

I. Description of the IPO Sample

We use information from the Securities Data Corporation to identify all industrial firms that went public from 1988 through 1992. To be included in the sample, the IPO must involve common stock offered at a minimum price of \$1.00 per share and issued through a firm commitment underwriting agreement. In addition, the firm must be incorporated in the United States at the offer date and be identified on the 1996 CRSP daily tape as having been listed within three months of the offer date. These criteria yield a sample of 1,019 IPOs, which explicitly excludes IPOs by financial institutions, real estate investment trusts, and closed-end mutual funds.

Panel A of Table I reports on the characteristics of the 1,019 sample firms. The mean company age at the time of the IPO is 18.1 years. This is higher than the mean of 12.7 years reported by Ritter (1991), although as indicated by the median of 8.0 years, the distribution is skewed toward older firms. Total assets before the IPO average \$243.1 million, with a median of \$27.7 million. The mean ratio of long-term debt to total assets is 31.1 percent (median = 22.0 percent).

As reported in Panel B of Table I, the gross proceeds from the issues average \$33.6 million, with a median of \$16.5 million. Thus, the gross proceeds are smaller, on average, than the firms' book value of assets. Mikkelsen, Partch, and Shah (1997), in contrast, report that mean proceeds exceed mean assets for a sample of 283 IPOs from 1980 to 1983. An average of 33 percent of the post-IPO outstanding shares are offered at the IPO (median = 31 percent). Sixteen percent of these shares are sold by pre-IPO shareholders. The average one-day initial return of 10.9 percent falls between the 14.06 percent documented by Ritter (1991) for IPOs from 1975 to 1984, and the 8.5 percent documented by Michaely and Shaw (1994) for the 1984 to 1988 period.

II. On the Uses of Takeover Defenses by IPO Firms

Table II reports on the presence of each of 10 types of takeover defenses disclosed in the by-laws or prospectuses of the 1,019 IPO firms in the sample. The features of each defense are described in the Appendix. One striking fact is that many defenses are in place at the time of the IPO. Classified boards, supermajority vote requirements, and shareholder meet-

Table I
Characteristics of Firms Issuing IPOs
during the Period 1988 to 1992

The sample consists of 1,019 firm commitment initial public offerings of stock (no unit offerings) by U.S. companies with an offer price of at least \$1.00. Information is obtained from offering prospectuses and (for the initial return) the 1998 CRSP daily return files. *Company age* is the age of the company at the time of the IPO. *Total assets* and *long-term liabilities* are measured in the year prior to the IPO, as reported in the IPO prospectus. *Total gross proceeds from the offering* are the gross proceeds earned by the company from the IPO. *Shares offered as a fraction of the total shares outstanding* is the shares offered divided by the shares outstanding after the IPO. *The initial return* is the percentage difference between the offer price and the first-day closing price reported on the CRSP file, less the contemporaneous daily return on the value-weighted CRSP index.

	Mean	Median
Panel A: Firm Characteristics		
Company age (years)	18.1	8.0
Total assets before IPO (\$ million)	243.1	27.7
Long-term liabilities/Total assets	31.1%	22.0%
Panel B: Offering Characteristics		
Total gross proceeds to the company from the offering (\$ million)	33.6	16.5
Shares offered as a fraction of total shares outstanding	32.5%	31.1%
Shares offered by pre-IPO shareholders as a fraction of total shares offered	15.5%	0.0%
Initial return	10.9%	5.2%

ing restrictions, for example, all are deployed by substantial minorities of the firms. In addition, 5.4 percent of the firms have unequal voting rights (typically through dual class shares), and 4 percent have stakeholder provisions that allow directors to consider the interests of constituencies other than shareholders in making business and control decisions. Even poison pills appear in some (2.3 percent) IPO firms' governance structures.

The assertion at the beginning of this paper by Easterbrook and Fischel (1991, pp. 204–205) claims that managers wait until after the IPO to acquire most of their takeover defenses. Such a view seems particularly appealing if one thinks of defenses as lowering firm values. We would expect managers to wait until after share ownership is somewhat diffuse, at which time they would bear little of the cost of any new defenses that are adopted.

The evidence, however, contradicts this view. We collected data on defenses acquired during the five years after the IPO by examining proxy statements and news reports on Lexis/Nexis and the Dow Jones News Retrieval Service. A total of 142 of our 1,019 firms acquired poison pills during this five-year period, and 50 firms acquired classified boards. Virtually no other types of defenses were adopted by any of the 1,019 firms during the

Table II
Frequencies of Takeover Defenses in IPO
and Seasoned Firm Samples

Frequencies of 10 types of takeover defenses deployed at 1,019 firms that went public between 1988 and 1992 and at 524 seasoned firms with publicly traded stock. The seasoned firm frequencies are weighted averages of the seasoned firms' use of each provision, where the weights are the fractions of the IPO firms that went public in each year from 1988 through 1992. See the Appendix for a description of each type of takeover defense. "na" indicates that the data are not available.

Takeover Defense	Proportion of Firms with Takeover Defense (%)		<i>t</i> -Statistic for Difference in Proportions
	IPO Firms	Seasoned Firms	
1. Antitakeover provision	1.9	10.1	-5.95***
2. Blank check preferred stock	85.1	84.1	0.49
3. Classified board	36.2	55.4	-7.27***
4. Fair price provision	9.7	40.6	-13.23***
5. Poison pill	2.3	62.1	-27.57***
6. Stakeholder clause	4.0	5.7	-1.39
7. Shareholder meeting restrictions	30.4	41.3	-4.22***
Meetings called only by directors or executives	15.4	na	na
Supermajority required to call special meeting	2.6	na	na
Advance notice requirement	19.1	na	na
Restrictions on action by written consent	23.0	na	na
8. Supermajority vote requirements	28.9	26.5	0.97
Supermajority required to approve mergers	9.2	na	na
Supermajority required to replace directors	27.3	na	na
9. Unequal voting rights	5.4	10.4	-3.34***
10. Miscellaneous antitakeover provisions	13.7	na	na
Board can be removed only for cause	12.8		
Merger must be approved by an inside director	0.2		
Restrictions on transfer of common stock	0.1		
Merger must be approved by separate class of stock	0.3		
Restrictions on how many IPO shares may be purchased	0.2		
Restrictions on votes each shareholder may cast	0.4		

*** Statistical significance at the one percent level, based on a two-tailed test.

five years after their IPOs. (Several firms eliminated takeover defenses, including seven firms that changed from classified to annually elected boards.) We therefore include data only on the subsequent adoptions of poison pills and classified boards.

The adoption rate for new defenses is very small compared to the defenses deployed at the time of the IPO. The average number of defenses at the time

of the IPO is 1.71 (excluding blank check preferred stock).² In contrast, only an average of 0.19 new poison pills or classified boards are adopted during the five years after the IPO, or 0.04 per year. Therefore, in any one of the five years after the IPO, the unconditional expected rate of change in the number of defenses is approximately $0.04/1.71 = 2.2$ percent.

Thus, the evidence indicates that many firms deploy takeover defenses at the time of their IPOs, and firms do not substantially change their defensive postures during the five years after their IPOs. This is inconsistent with the view that IPO firms do not have takeover defenses. Rather, it indicates that managers take efforts to increase their authority over unsolicited takeover offers even at the IPO stage.

III. Comparisons to the Uses of Takeover Defenses at Seasoned Corporations

A. Firm-Level Defenses

As a basis for comparison, Table II also reports on the contemporaneous use of takeover defenses in a sample of 524 seasoned corporations. Data on the defenses deployed by these firms were hand-collected from files maintained by Institutional Shareholders Services, Inc. (ISS), supplemented by additional data provided by Rosenbaum (1989, 1995).³

The use of most takeover defenses among the seasoned firms increased during the 1988 to 1992 period of our IPO sample. To make a time-weighted comparison with the IPO firms, we compute a weighted average of the seasoned firms' use of each type of takeover defense. The weights are the fractions of the IPO firms that went public in each year from 1988 through 1992. So, for example, the fraction of the seasoned firms using classified boards that is reported in Table II (55.4 percent) is a weighted average of the

² As discussed by Rosenbaum (1995, p. xiii), blank check preferred stock can be used as a takeover defense because it can facilitate the adoption of a poison pill. It also can have a purpose unrelated to takeover defense, namely, raising outside capital. That most IPO firms have blank check preferred stock suggests that it does not impose substantial costs on the firms' principals. Because it appears to be a boilerplate item that is included in most IPO governance packages, we exclude blank check preferred stock from most of the summary totals reported in this paper.

³ The seasoned firms do not constitute a matched control sample for the IPO firms because they are not matched by size, industry, or other firm characteristics. It is difficult to obtain comprehensive data on firms' takeover defenses. To our knowledge, the Rosenbaum data are the only such summary data on seasoned companies that are available to the public. The ISS data are not publicly available. Where the two data sources overlap, we find discrepancies in nearly 20 percent of the covered firms. Most discrepancies were resolved by examining proxy materials during the 1988 through 1992 period, but unresolved discrepancies remain for seven percent of the comparison firms. In the tests reported, we use ISS data when discrepancies exist. The results are not materially affected, however, when we instead use Rosenbaum's data as the default.

fraction of these firms that had classified boards in each year from 1988 to 1992. The actual percentage of seasoned firms that had classified boards was slightly smaller than 55.4 percent in 1988, and slightly larger than 55.4 percent in 1992.

The data indicate that IPO firms deploy antigreenmail provisions, classified boards, fair price provisions, poison pills, shareholder meeting restrictions, and unequal voting rights less frequently than do the seasoned firms, and, in each case, the difference is statistically significant. Use rates are not significantly different for stakeholder clauses, blank check preferred stock, and supermajority vote requirements.⁴

The difference in use rates for poison pills is particularly large, as 62 percent of seasoned corporations and only 2 percent of the IPO firms have them. We can make two conjectures about the reason for such a large discrepancy. One possibility is that pills are particularly costly for IPO managers, perhaps because pills decrease share values and IPO managers tend to hold relatively large equity stakes in their companies. Another possibility is that the actual presence of a poison pill is not important because, unlike other defenses, pills can be deployed at virtually any time without shareholder approval or amending the corporate charter. Daines (2001) goes so far as to argue that the actual deployment of a poison pill has become *meaningless* because managers can adopt one whenever they desire: “[E]very firm has a poison pill—either actual or latent . . . and there is no variation between firms with respect to the degree they are protected by a poison pill” (p. 4). Consistent with this view, most recent research indicates that the adoption of a poison pill has a statistically insignificant effect on firm value.⁵

Only 1.9 percent of IPO firms have antigreenmail provisions, compared to 10.1 percent for the comparison firms. By eliminating one way a bidder can profit from making an unsolicited takeover bid, antigreenmail provisions may deter such bids. But they also prevent incumbent managers from paying greenmail to deter an unwanted bid. Thus, the net effect of an anti-

⁴ Note that the shareholder meeting restrictions and supermajority vote restrictions categories are further partitioned for the IPO firms. For example, shareholder meeting requirements refer to any of four subprovisions that affect shareholders’ abilities to call special meetings or act outside of a regular shareholder meeting. At 15.4 percent of the IPO firms, special shareholder meetings can be called only by directors or executives. At 2.6 percent of the firms, a supermajority of shareholders is required to call a special meeting. Advance notice of stockholder proposals and/or nominations of directors is required for 19.1 percent of the firms, and 23.0 percent of the IPO firms have restrictions on action by written consent. A total of 30.4 percent of the IPO firms have at least one of these shareholder meeting restrictions. We do not have a breakdown by subcategory for the seasoned firms, but 41.3 percent of these firms have at least one shareholder meeting restriction.

⁵ Early poison pill studies (Malatesta and Walkling (1988), Ryngaert (1988)) conclude that pills reduce share value, and Bizjak and Marquette (1998) find a positive mean stock return when firms revise poison pills in response to shareholder pressure. Later studies, however, by Brickley, Coles, and Terry (1994), Comment and Schwert (1995), and Danielson and Karpoff (2001) find insignificant average stock price reactions to poison pill adoptions.

Table III
Average Number of Takeover Defenses in IPO
and Seasoned-Firm Samples

The average number of up to 10 types of takeover defenses deployed at 1,019 firms that went public between 1988 and 1992 and at 524 seasoned firms with publicly traded stock. The seasoned firm frequencies are weighted averages of the seasoned firms' use of each provision, where the weights are the fractions of the IPO firms that went public in each year from 1988 through 1992. See the Appendix for a description of each type of takeover defense. "na" indicates that the data are not available.

	IPO Firms	Seasoned Firms	<i>t</i> -Statistic for Difference in Means
Mean number of all categories of takeover defense, including miscellaneous defenses	2.56	na	na
Mean number of takeover defenses 1–9 identified in Table II	2.04	3.36	–8.17***
Mean number of takeover defenses 1–9 identified in Table II, excluding blank check preferred stock	1.19	2.52	–11.35***

*** Statistical significance at the one percent level, based on a two-tailed test.

greenmail provision on takeover deterrence is ambiguous.⁶ We include antigreenmail provisions in our analyses of takeover defenses. All of our empirical results are qualitatively unaffected, however, if antigreenmail provisions are excluded.

Table III reports summary statistics on the uses of takeover defenses. The IPO firms deploy an average of 2.56 of the 10 defenses listed in Table II. Excluding the provisions in the miscellaneous category, for which we lack data from the seasoned firms, IPO firms deploy an average of 2.04 per firm. The seasoned firms, in contrast, have an average of 3.36 defenses. Excluding blank check preferred stock, IPO firms deploy an average of 1.19 defenses, compared to 2.52 for the seasoned firms. The *t*-statistic for the difference in means is –11.35 and is statistically significant at the one percent level. Table IV reports a frequency table of the total number of defenses deployed for each group. A total of 53 percent of the IPO firms deploy at least one of the nonmiscellaneous takeover defenses. Thirty-four percent deploy two or more defenses, and 22 percent have three or more. By comparison, 90 percent of the seasoned corporations have at least one defense, 71 percent have two or more, and 51 percent have three or more.

Thus, while IPO firms deploy defenses, they do so at a lower rate than large seasoned corporations. Seasoned corporations may have more takeover defenses simply because they have had more time to acquire them or because a greater use of defenses is optimal for large firms. An alternative

⁶ Consistent with this ambiguous effect on takeover deterrence, Eckbo (1990) reports that the empirical evidence on the valuation effect of greenmail prohibition also is mixed.

Table IV
Frequency Distribution of the Total Number of Takeover
Defenses in IPO and Seasoned Firm Samples

The total number of eight types of takeover defenses (those numbered 1–9 in Table II, less blank check preferred stock) deployed at 1,019 firms that went public between 1988 and 1992 and at 524 seasoned firms with publicly traded stock. The seasoned firm frequencies are weighted averages of the seasoned firms' use of each provision, where the weights are the fractions of the IPO firms that went public in each year from 1988 through 1992.

Number of Defenses	% IPO Firms	% Seasoned Firms
0	46.7	10.5
≥1	53.3	89.5
≥2	33.7	70.9
≥3	22.0	50.7
≥4	7.7	29.9
≥5	1.8	11.8
≥6	0.4	2.3

possibility is that agency costs are lower at IPO firms than at seasoned corporations and that IPO managers have relatively strong incentives to adopt value-maximizing defenses. According to this view, the difference in use rates implies that takeover defenses impose net costs on nonmanagerial shareholders. Otherwise, IPO managers would deploy defenses at a rate similar to that observed at seasoned firms.

B. Coverage by State Antitakeover Laws

State antitakeover laws constitute an important component of any U.S. corporation's total defensive posture. Consistent with the notion that the state of incorporation matters to at least some IPO managers, 23 percent of our IPO firms reincorporated into new states within two years before going public. The majority of firms reincorporate from states with relatively unrestrictive takeover laws to states with more restrictive takeover laws. For example, 32 percent of the reincorporations involved firms moving from California or Texas—which have no significant antitakeover laws—to Delaware, which has a freeze-out law (otherwise known as a business combination law).

Table V reports on coverage by each of five common types of state anti-takeover laws. (The Appendix contains descriptions of these laws.) Fewer IPO firms than seasoned firms are covered by each of these laws, and in all cases, the differences are statistically significant. For example, 20 percent of the IPO firms are covered by control share acquisition laws, compared to a weighted average coverage rate of 25 percent for the seasoned firms. The differences are similar for fair price laws (11 percent versus 14 percent), cash-out laws (1.5 percent versus 3.6 percent), and poison pill endorsement laws (18 percent versus 32 percent). A total of 80 percent of the IPO firms are incorporated in states that have freeze-out laws, compared to 88 percent

Table V
Coverage by State Antitakeover Laws

Proportion of 1,019 IPO firms incorporated in states with each of five types of state antitakeover laws at the time of the initial public offering, 1988 through 1992. Also reported is a weighted average of the proportions of 524 publicly traded seasoned firms that were covered by each type of law from 1988 through 1992. The weights are determined by the proportions of the IPO firms that went public in each of the years from 1988 through 1992. See the Appendix for descriptions of the state antitakeover laws.

	Proportion of Firms with Stated Characteristic (%)		<i>t</i> -Statistic for Difference in Proportions
	IPO Firms	Seasoned Firms	
Type of state antitakeover law			
Freeze-out law	79.8	88.2	-4.43***
Control share acquisition law	19.7	25.1	-2.35**
Fair price law	10.7	13.8	-1.72*
Cash-out law	1.5	3.6	-2.37**
Poison pill endorsement law	18.3	32.5	-5.93***
Proportion of firms incorporated in Delaware	58.8	51.7	2.63***
Proportion of firms opting out of coverage by a state antitakeover law	7.9	3.1	4.26***

***, **, and * Significant at the 0.01, 0.05, and 0.10 levels, respectively, based on a two-tailed test.

for the seasoned firms. The high rate of coverage by this type of law reflects the fact that Delaware has a freeze-out law. As reported in Table V, 59 percent of the IPO firms and 52 percent of the seasoned firms are incorporated in Delaware.

Most states permit individual firms to opt out of coverage by some or all of an antitakeover law's provisions. A total of eight percent of the IPO firms that are incorporated with states having antitakeover laws (69 out of 868) have language in their corporate charters or prospectuses that indicate that they opted out of such coverage at the time they went public. The weighted mean opt-out rate for the seasoned firms is three percent. The difference is statistically significant at the one percent level, indicating that the IPO firms took actions to avoid coverage by antitakeover defenses at a greater rate than the seasoned firms.

In summary, IPO firms are covered by fewer antitakeover laws than seasoned firms, and the differences in coverage rates are statistically significant for all five of the common antitakeover laws examined. This holds despite the fact that a relatively high percentage of IPO firms incorporate in Delaware, a state that has an antitakeover law. IPO firms also opt out of coverage by antitakeover laws at a significantly higher rate than seasoned firms. Thus, IPO firms deploy takeover defenses at both the firm and state law levels, but at lower rates than large, seasoned corporations.

IV. The Determinants of IPO Firms' Use of Takeover Defenses

A. *The Effects of Managerial Characteristics, Ownership, and Board Structure*

IPO managers' use of takeover defenses implies that control issues are important to them. This and the following sections explore the reasons why. One reason is suggested by Brennan and Franks' (1997) argument that insiders value control and take steps at the time of the IPO to protect their control benefits. This argument implies that managers use takeover defenses to protect their personal benefits of control. Brennan and Franks presume that managers opportunistically shift much of the cost of takeover protection onto nonmanagerial shareholders.⁷ If so, we should observe the defenses primarily where managers own few shares—thus bearing little of the cost of lower share values—and are not closely monitored by nonmanagerial pre-IPO shareholders. We call this view the control benefits hypothesis.

An alternative possibility is that managers' extra takeover protection does not reflect opportunism, but rather, an implicit part of their compensation. According to this view, managers pay for any emoluments that arise from greater takeover protection through lower pay or lower values in their personal holdings of the company's stock. We call this the implicit compensation hypothesis.

To test these propositions, we examine the characteristics of IPO firms that use takeover defenses. Our first empirical model is a logistic regression in which the (untransformed) dependent variable equals one if the firm has any of the provisions listed in Table II other than blank check preferred stock, and zero otherwise.⁸ We examine three groups of explanatory variables. The first group includes three measures of managers' personal benefits of control.

1. *Compensation* is the natural logarithm of the total amount of executives' cash compensation for the fiscal year before the IPO, as reported in the IPO prospectus. The control benefits hypothesis implies that the likelihood of a takeover defense increases with *Compensation*, since managers' pay most likely is correlated with their benefits of control. The implicit compensation hypothesis, in contrast, implies that the takeover protection substitutes for pecuniary compensation and suggests that the likelihood of a defense should be negatively related to managers' pecuniary compensation.

⁷ In Brennan and Franks' model, the takeover protection arises from dispersed ownership, which is facilitated by underpricing at the IPO. They find that "... for the median issue, over 75 percent of underpricing costs are borne by nondirectors ..." (Brennan and Franks 1997, p. 392).

⁸ We exclude blank check preferred stock because, as reported in Table II, it appears to be a boilerplate item that is included by most firms. Its use by IPO firms is not significantly related to any of the explanatory variables discussed below. Some of the results become statistically insignificant when blank check preferred stock is included as a takeover defense. But the results are not sensitive to other modest changes in the definition of the dependent variable. For example, the results are qualitatively the same as those in Table VI when antitakeover or miscellaneous provisions are excluded.

2. *CEO Tenure* is the number of years the CEO has been with the firm. We conjecture that any managerial rents, including any nonpecuniary benefits the CEO derives from the job, are positively related to how long he or she has had the job. Hence, top managers' desire for takeover protection should be positively related to *CEO Tenure*.
3. *CEO Age* is the age of the company's Chief Executive Officer. We conjecture that the present value of any personal pecuniary or nonpecuniary benefits of continued control over corporate resources is negatively related to the CEO's age, because older CEOs generally have fewer working years over which to enjoy such benefits. Under this conjecture, older managers will lobby less for the inclusion of takeover defenses, and the use of takeover defenses should be negatively related to *CEO Age*.

The second group of explanatory variables consists of six variables that reflect the monitoring and control of the firm's managers.

4. *Inside Ownership* is the percent of the firm's common stock owned by directors and officers before the initial public offering. The control benefits hypothesis implies that managers adopt value-decreasing defenses when they do not bear much of the cost personally in terms of lower share values. A second effect is that managerial share ownership in and of itself can substitute for takeover defenses in deterring undesired takeover bids. Both effects predict a negative relationship between the likelihood of a takeover defense and *Inside Ownership*.⁹
5. *Venture* is a dummy variable set equal to one if the IPO firm is financed with venture capital.
6. *Develop* is a dummy variable set equal to one if the IPO firm is a development-stage company. A development-stage company is defined (by FASB statement number 7) as one in which planned principal operations have not commenced or no significant revenue has yet been earned.

Since venture capitalists specialize in small firm investments, we conjecture that they will be skilled in monitoring managers. Barry and Turki (1997) report that development-stage IPO firms tend to be younger and smaller than other IPO firms, suggesting that they have relatively few nonmanagerial shareholders and fewer potential conflicts between managers and other pre-IPO investors. If takeover defenses are costly to nonmanagerial shareholders, as implied by the control benefits hypothesis, both venture-backed and development-stage IPO firms should be less likely than other firms to deploy them.

⁹ The control benefits hypothesis is similar to an argument regarding inside ownership made by Malatesta and Walkling (1988) for seasoned corporations. We use insiders' shareholdings *before* the IPO because this reflects the share of any costs or benefits of a takeover defense that are borne by the insiders. In later tests of acquisition likelihood after the IPO, we use insiders' shareholdings *after* the IPO.

7. *Board Independence* is the fraction of the firm's board members that are neither officers of the firm nor officers of firms with which the firm has significant business connections. Previous research (e.g., Rosenstein and Wyatt (1990), Byrd and Hickman (1992)) indicates that independent directors increase the quality of the board's oversight of managers. If takeover defenses impose costs on nonmanagerial shareholders, they would be less likely to be used when managers are closely monitored by such shareholders.
8. *Board Size* is the number of people on the firm's board of directors.
9. *Boss* is a dummy variable set equal to one if the firm's CEO is also its board chairman. Jensen (1993) and Yermack (1996) argue that the board's ability to monitor managers and protect nonmanagement shareholders' interests decreases with its size. Jensen also argues that directors are more likely to acquiesce to the CEO's desires when he or she also is the board chairman. The control benefits hypothesis therefore implies that the likelihood of a takeover defense should be positively related to both *Board Size* and *Boss*.

The third group of explanatory variables includes control variables that may affect the use of a takeover defense.

10. *Assets* is the natural logarithm of the book value of firm assets, as reported in the IPO prospectus. Takeover vulnerability, and hence the potential value of a defense, may be related to the firm's size.
11. *Leverage* is the ratio of the book value of total debt to the book value of assets, as reported in the IPO prospectus. The firm's leverage, like its size, may affect the firm's vulnerability to takeover and the value of a takeover defense.
12. *State Law* is a dummy variable set equal to one if the state in which the IPO firm is incorporated has any one of the five state antitakeover laws discussed in Table V. We include it because some prior evidence indicates that firm-level defenses and state antitakeover laws are substitutes (e.g., see Karpoff and Malatesta (1989)).
13. *Delaware* is a dummy variable set equal to one if the IPO firm is incorporated in Delaware. We include this variable to measure whether defense likelihood is significantly different for the 59 percent of firms in the sample that incorporate in Delaware. By including a separate dummy for Delaware, *State Law* measures the incremental influence of being covered by a state law other than Delaware's freeze-out law.
14. Finally, we include dummy variables to control for the year in which the firm goes public.

The results from the logistic regression using these variables are reported as Model 1 in Table VI. The *Compensation* coefficient is positive, while that for *CEO Age* is negative. Both are significant at the one percent level. To the extent that these variables are correlated with managers' personal (pecuniary and nonpecuniary) benefits of continued control of the corporation, the

Table VI
The Determinants of IPO Firms' Use of Takeover Defenses

Models 1 and 2 are logistic regressions in which the dependent variable equals one if the firm had at least one takeover defense in place before going public. Model 3 is a Poisson maximum-likelihood model in which the dependent variable equals the number of takeover defenses in place before going public. The sample consists of 895 initial public offerings issued between 1988 and 1992 (576 in Model 2 and 888 in Model 3). The *t*-statistics are given in brackets. Each regression includes fixed year effect dummy variables. *Compensation* is the natural logarithm of the total amount of executives' cash compensation for the fiscal year before the IPO. *CEO Tenure* is the number of years the CEO has been with the firm. *CEO Age* is the age of the company's Chief Executive Officer. *Inside Ownership* is the percent of the firm's common stock owned by directors and officers before the IPO. *Venture* is a dummy variable set equal to one if the IPO firm is financed with venture capital. *Develop* is a dummy variable set equal to one if the IPO firm is a development-stage company. *Board Independence* is the fraction of the firm's board members that are neither officers of the firm nor persons with significant business connections to the firm. *Board Size* is the number of people on the firm's board of directors. *Boss* is a dummy variable set equal to one if the firm's CEO is also its board chairman. *Assets* is the natural logarithm of the book value of firm assets. *Leverage* is the ratio of the book value of total debt to the book value of assets. *State Law* is a dummy variable set equal to one if the state in which the IPO firm is incorporated has any one of the five state antitakeover laws discussed in Table V. *Delaware* is a dummy equal to one if the IPO firm is incorporated in Delaware.

Variable	Model 1: Overall Sample	Model 2: Omitting Reverse-LBOs, Carve-outs, and Dual-class IPOs	Model 3: Determinants of Number of Defenses
<i>Compensation</i>	0.432*** [3.05]	0.259* [1.65]	0.309*** [6.06]
<i>CEO Tenure</i>	0.013 [1.01]	0.021 [1.13]	0.006 [1.32]
<i>CEO Age</i>	-0.028*** [-2.60]	-0.033*** [-2.67]	-0.006 [-1.58]
<i>Inside Ownership</i>	-1.254*** [-3.31]	-1.168** [-2.47]	-0.351*** [-2.92]
<i>Venture</i>	-0.066 [-0.37]	0.103 [0.47]	-0.023 [-0.38]
<i>Develop</i>	-0.889** [-2.46]	-0.945** [-2.46]	-0.709*** [-4.21]
<i>Board Independence</i>	-0.586 [-1.39]	-0.956* [-1.87]	0.141 [0.98]
<i>Board Size</i>	0.177*** [3.68]	0.261*** [4.34]	0.040*** [2.81]
<i>Boss</i>	0.339** [2.08]	0.308 [1.59]	0.048 [0.84]
<i>Assets</i>	0.098 [1.27]	0.146 [1.43]	-0.021 [-0.84]
<i>Leverage</i>	0.035 [0.26]	0.009 [0.06]	-0.038 [-0.75]
<i>State Law</i>	1.553*** [5.47]	1.257*** [4.09]	1.377*** [8.81]
<i>Delaware</i>	0.266 [1.39]	0.478** [2.18]	0.181*** [2.71]
Constant	-7.887*** [-5.13]	-6.760*** [-3.47]	-4.790*** [-8.71]
Likelihood ratio test statistic	172.74***	127.15***	380.79***
Pseudo R^2	0.16	0.16	0.11

***, **, and * Significant at the 0.01, 0.05, and 0.10 levels, respectively, based on a two-tailed test.

results indicate that managers' willingness to implement takeover protection increases with their control benefits. This result is consistent with the hypothesis that IPO managers take steps to preserve their control benefits. It is inconsistent with the view that takeover defenses are an implicit portion of managers' compensation. The positive coefficient for *CEO Tenure* also is consistent with the control benefits hypothesis, although it is not statistically significant at the 10 percent level.

The coefficient for *Inside Ownership* is negative and statistically significant at the one percent level. This result is consistent with the notion that managerial share ownership substitutes for takeover defenses to deter unwanted takeover bids. It also is consistent with the control benefits hypothesis, which implies that managers with large stockholdings are unlikely to adopt antitakeover protection because the subsequent loss in share values is personally costly to them.¹⁰

The likelihood of having a takeover defense is not significantly related to *Board Independence* or *Venture*. It is negatively related to *Develop*, indicating that defenses are unlikely where there are relatively few nonmanagerial shareholders on whom to shift the costs. The likelihood also is positively and significantly related to both *Board Size* and *Boss*. These findings suggest that takeover defenses are more likely to be used by IPO firms with relatively weak controls over senior management.

The likelihood that an IPO firm will use a takeover defense is positively and significantly related to whether the firm is incorporated in a state (other than Delaware) with at least one antitakeover law. This indicates that, among IPO firms, the uses of firm-level and state-level takeover defenses are complementary. The likelihood that a firm will deploy takeover defenses is not significantly related to firm size, leverage, or the Delaware dummy variable. Also, none of the year dummy variables is significantly different from zero, indicating that the probability of using at least one takeover defense did not change significantly during the sample period.

B. Results Excluding Reverse-LBOs, Equity Carve-outs, and Firms with Dual Class Stock

The sample of 1,019 IPOs includes several types of firms. In Model 2 of Table VI we exclude equity carve-outs, firms that previously were taken private in leveraged buyouts, and firms that went public with dual class stock. This reduces the sample to 579 normal IPOs. The results are qualitatively similar to those in Model 1. A primary difference is that the coefficient on managers' compensation is reduced in Model 2 (due primarily to the

¹⁰ In tests not reported in the table, we included the square of *Inside Ownership* as an additional regressor. We also included interaction terms involving a dummy variable for firms in which managers' post-IPO ownership exceeds 50 percent. Our reasoning was that the relation between the likelihood of a takeover defense and managerial ownership may not be linear, or even monotonic. The coefficients for these variables, however, are statistically insignificant.

exclusion of the reverse-LBO firms). Also, the coefficients for the board independence and Delaware variables become statistically significant in Model 2. The signs and magnitudes of the other variables are similar to those in Model 1, indicating that the overall results are not driven by the inclusion of reverse-LBOs, equity carve-outs, and firms with dual-class stock.

C. Determinants of the Number of Takeover Defenses at IPO Firms

Model 3 in Table VI reports on a test in which the dependent variable is the *number* of takeover defenses used by each IPO firm. Data on all types of IPOs are included, although the results are roughly similar when reverse-LBOs, equity carve-outs, and dual-class firms are excluded. Because the dependent variable is a count variable, we use a Poisson maximum-likelihood model. (The results are qualitatively identical using a Tobit censored regression model, censoring the dependent variable at zero.)

The results are similar to those reported in Models 1 and 2. The number of takeover defenses deployed is positively and significantly related to executives' compensation (*Compensation*) and board size (*Board Size*), as well as the dummy variable indicating that the firm is located in a state other than Delaware with an antitakeover law (*State Law*). The number of provisions is negatively and significantly related to directors' and officers' stock ownership (*Inside Ownership*) and a dummy variable indicating that the firm is a development-stage company (*Develop*). Unlike the results in Model 1, *CEO Age* and the dummy variable indicating that the CEO is also the board chairman (*Boss*) are not statistically significant. In addition, the coefficient for the dummy variable for firms incorporated in Delaware is positive and significant at the one percent level.

D. Sensitivity Tests

We examined the effects on our results of several alternate characteristics of the IPO firms, including whether the IPO is an equity carve-out or reverse LBO. These characteristics, however, are unrelated to the likelihood of a takeover defense, and their inclusion in the tests does not materially affect the results reported in Table VI. The likelihood of using a takeover defense also is unrelated to measures of the IPO risk, including the initial one-day stock return and the number of risk factors listed in the prospectus. The likelihood is not significantly related to the number of the firm's employees or whether the firm is owned by members of the same family. It is positively related to the probability of acquisition, as estimated from models similar to those discussed below in Section V, but the coefficients are not statistically significant. The results are unaffected when we include board members with affiliations to the firm in the definition of *Board Independence*. The results also are qualitatively unaffected using probit models instead of logistic models. We conclude that the results reported in Table VI are not sensitive to changes in model specification.

We also examined the decision to deploy each of the takeover defenses listed in Table II separately, by estimating separate logistic regressions for each type of defense. The rationale for such tests is that managers' motives and their firms' characteristics may differ for different types of defenses. Most of the coefficients from these tests are similar in sign to those reported in Table VI, but the test statistics typically are smaller.

Two provisions—fair price provisions and supermajority vote requirements—can protect minority shareholders' interests if the firm is acquired or subject to a takeover bid. A fair price provision protects minority interests from being frozen out of a high takeover premium for their shares, and supermajority vote requirements increase minority shareholders' abilities to block self-dealing actions by majority shareholders. Such provisions may be valuable especially for small shareholders in firms that have large, controlling blockholders. As noted in Section III, supermajority vote requirements are deployed in IPO firms at roughly the same frequency as at seasoned corporations, indicating that they are popular even where the degree of separation between managers and owners is small.

In many model specifications, the use of a fair price provision or supermajority vote requirement is positively related to the number of five percent blockholders before the IPO. In most tests, however, the relationship is not statistically significant. Furthermore, the likelihood of one of these defenses is not significantly related to the fraction of shares controlled by blockholders. These results do not lend much support to the view that voting-related takeover defenses are adopted to protect minority shareholders' interests.

E. Summary: Control Benefits

The evidence reported in this section indicates that takeover defenses are more likely in firms with high managerial compensation, when managers' shareholdings are small, and when the direct oversight from nonmanagerial shareholders is relatively weak. That is, defenses are used when managers' benefits from takeover protection are large, their personal costs low, and they can act relatively independently of the oversight from other shareholders. These results are consistent with the control benefits hypothesis, which holds that IPO managers use takeover defenses to protect their control benefits and shift some of the cost onto nonmanagerial shareholders. The results are not consistent with the implicit compensation hypothesis, which implies that managers contract for extra takeover protection *ex ante* as part of their compensation.

V. Takeover Defenses, Acquisition Likelihood, and Takeover Premiums

A. Effects on Acquisition Likelihood

An additional motive for takeover defenses at IPO firms is suggested by Zingales' (1995) and Mello and Parsons' (1998) models, in which the IPO is the first stage in the eventual sale of the firm. According to this view, defenses can be

used to facilitate control transfers at high share prices. As discussed by DeAngelo and Rice (1983), takeover defenses can encourage high takeover premiums because they help solve a rush-to-tender problem among shareholders and force bidders to negotiate directly with the firm's managers.

In this section, we test whether takeover defenses do, in fact, help increase expected takeover premiums for IPO firms. We first examine acquisition likelihood and then measure the effects of a defense on the premiums for those firms that were acquired. A total of 168 (16.5 percent) of our sample firms were acquired within five years of their IPOs. We have sufficient data to estimate the determinants of acquisition likelihood for 163 of these firms. Table VII reports on logistic regressions in which the (untransformed) dependent variable is one for these 163 firms, and zero otherwise. In addition to the five acquired firms with insufficient data, the tests omit 99 firms that were delisted for other reasons such as bankruptcies or failure to meet exchange listing requirements, plus 31 (for Model 1) or 36 (for Model 2) additional firms that have insufficient data for one or more variable used in the tests.¹¹

We first model acquisition likelihood using control variables that are examined by previous researchers, including Palepu (1986), Ambrose and Megginson (1992), and Song and Walkling (1993). The purpose of this test is to provide a benchmark with which to compare our expanded model (Model 2) that includes governance variables. The control variables include *Assets* and *Leverage*, plus the following measures of the firm's asset structure and performance.

- *Market to Book Ratio* is the ratio of the market value of the firm's stock plus the book value of debt, divided by the book value of assets, measured at year-end following the IPO.
- *Property* is the ratio of the firm's property, plant, and equipment to total assets in the year of the IPO.
- *Liquidity* is the average ratio of net liquid assets (current assets minus current liabilities) to total assets for the three years before acquisition for those firms that were acquired and for years +3 through +5 relative to the IPO for firms that were not acquired.
- *Growth* is the average annual growth in sales for the three years before acquisition for those firms that were acquired and for years +3 through +5 relative to the IPO for firms that were not acquired.
- *Stock Return* is the firm's cumulative stock return for the three years after the IPO or up to two months before the acquisition announcement for those firms that were acquired within three years minus the contemporaneous cumulative return of the Nasdaq equal-weighted index.

¹¹ Sixteen of the sample firms were the targets of unsuccessful takeover attempts. The likelihood of receiving an unsuccessful bid is not significantly related to the presence of a takeover defense. The results reported below and in Table VII are not materially affected when unsuccessful acquisition bids are included in the definition of the dependent variable.

Table VII
Antitakeover Provisions and Acquisition Likelihood

Logistic regressions in which the dependent variable equals one if the firm is acquired within five years of its IPO. Model 1 includes variables examined in previous attempts to model acquisition likelihood. Model 2 includes additional governance variables. The sample consists of 885 initial public offerings issued between 1988 and 1992 for Model 1 and 880 IPOs for Model 2. *t*-statistics are given in brackets. Each regression includes fixed year effect dummy variables. *Assets* is the natural logarithm of the book value of firm assets as of the IPO. *Leverage* is the ratio of the book value of total debt to the book value of assets as of the IPO. *Market to Book Ratio* is the ratio of the market value of the firm's stock plus the book value of debt, divided by the book value of assets, measured in the year of the IPO. *Property* is the ratio of the firm's property, plant, and equipment to total assets in the year of the IPO. *Liquidity* is the average ratio of net liquid assets to total assets for the three years before acquisition for those firms that were acquired and for years +3 through +5 relative to the IPO for firms that were not acquired. *Growth* is the average annual growth in sales for the three years before acquisition for those firms that were acquired and for years +3 through +5 relative to the IPO for firms that were not acquired. *Stock Return* is the firm's cumulative stock return for the three-year period after the IPO, or up to two months before the acquisition announcement for those firms that were acquired within three years, minus the equal-weighted Nasdaq index measured over the same period. *Post-IPO Inside Ownership* is the percent of the firm's common stock owned by directors and officers immediately after the IPO. *Venture* is a dummy variable set equal to one if the IPO firm is financed with venture capital. *Develop* is a dummy variable set equal to one if the IPO firm is a development-stage company. *Board Independence* is the fraction of the firm's board members that are not officers of the firm or persons with significant business connections to the firm. *Board Size* is the number of people on the firm's board of directors. *Boss* is a dummy variable set equal to one if the firm's CEO is also its board chairman. *State Law* is a dummy variable set equal to one if the state in which the IPO firm is incorporated has any one of the five state antitakeover laws discussed in Table V. *Delaware* is a dummy variable set equal to one if the IPO firm is incorporated in Delaware. *Takeover Defense at IPO* is a dummy variable that equals one for firms that have at least one of the defenses listed in Table II (other than blank check preferred stock). *Takeover Defense after IPO* is a dummy variable that equals one for firms that acquire at least one new defense after the IPO.

Variable	Model 1: Using Standard Variables		Model 2: Introducing Governance Variables	
<i>Assets</i>	0.186***	[3.08]	0.173**	[2.492]
<i>Leverage</i>	0.023	[0.14]	-0.003	[-0.016]
<i>Market to Book Ratio</i>	-0.070**	[-2.11]	-0.060*	[-1.861]
<i>Property</i>	0.022	[0.06]	0.036	[0.101]
<i>Liquidity</i>	1.463***	[2.92]	1.805***	[3.368]
<i>Growth</i>	0.050	[1.24]	0.096*	[1.946]
<i>Stock Return</i>	-0.097	[-1.40]	-0.114	[-1.556]
<i>Post-IPO Inside Ownership</i>			0.129	[0.256]
<i>Venture</i>			-0.241	[-1.117]
<i>Develop</i>			-1.698***	[-2.613]
<i>Board Independence</i>			1.848***	[3.496]
<i>Board Size</i>			-0.072	[-1.375]
<i>Boss</i>			-0.024	[-0.122]
<i>State Law</i>			0.148	[0.437]
<i>Delaware</i>			0.245	[1.043]
<i>Takeover Defense at IPO</i>			-0.454**	[-2.230]
<i>Takeover Defense after IPO</i>			-0.648***	[-2.580]
Constant	-5.450***	[-4.47]	-5.838***	[-4.493]
Likelihood ratio test statistic	33.16***		70.44***	
Pseudo R^2	0.04		0.09	

***, **, and * Significant at the 0.01, 0.05, and 0.10 levels, respectively, based on a two-tailed test.

The results from this logistic regression are reported as Model 1 in Table VII. In general, we find a greater degree of predictability in acquisition likelihood than do other researchers who examine seasoned firms. The coefficient for *Assets* is positive and statistically significant at the one percent level. This result differs from that found by Mikkelsen and Partch (1989), Song and Walkling (1993), and Comment and Schwert (1995), who find that acquisition likelihood for seasoned companies is negatively related to firm size. While size appears to deter takeovers among larger, seasoned corporations, such is not the case among IPO firms. Some firms (e.g., Berkshire Hathway) are known to have minimum size requirements on their acquisitions. It is possible that some newly public firms are not acquired simply because they are too small to attract the attention of potential acquirers.

The *Liquidity* coefficient also is positive and significant. Again, this differs from some prior findings for large firms. Ambrose and Megginson (1992), Song and Walkling (1993), and Comment and Schwert (1995), for example, all report that acquisition likelihood for seasoned corporations is not significantly related to the fraction of a firm's assets that are liquid. The coefficient for *Market to Book Ratio* is negative and statistically significant at the 10 percent level, suggesting that IPO firms that go public with high market values are relatively unlikely to be acquired. *Stock Return* also is negatively related to acquisition likelihood, but its coefficient is statistically insignificant at the 10 percent level.

In Model 2, we include several aspects of the firm's governance structure, including *Venture*, *Develop*, *Board Independence*, *Board Size*, *Boss*, *State Law*, and *Delaware*. (Variable definitions are provided in Section IV and in Table VII.) *Post-IPO Inside Ownership* measures officer and director stock ownership immediately after the IPO.

We include two variables representing the firm's defensive posture. *Takeover Defense at IPO* is a dummy variable that equals one for firms that have at least one of the defenses listed in Table II at the time of the IPO (other than blank check preferred stock). Because acquisition likelihood might also depend on defenses acquired after the IPO, we also include a variable, *New Takeover Defense after IPO*, which equals one for firms that acquire at least one new defense after the IPO. As reported in Section II, relatively few defenses are acquired after the IPO.

The inclusion of these governance variables permits us to explain a greater portion of the variation in acquisition likelihood. The chi-squared test statistic for Model 2 is 70.4, and its pseudo *R*-squared is 0.09—double the levels in Model 1. Among the variables that reflect the firm's ownership and governance structure, the coefficient for *Board Independence* is positive and statistically significant at the one percent level, indicating that strong outside board representation tends to facilitate the acquisition of IPO firms. The coefficient for *Develop* is negative and significant, indicating that firms that are in their development stage at the time of their IPO are less likely than other IPO firms to be acquired within five years. Acquisition likelihood is not significantly related to *Post-IPO Inside Ownership*, *Venture*, *Board*

Size, Boss, State Law, or Delaware. Acquisition likelihood is negatively and significantly related to *New Takeover Defense after IPO*, suggesting that defenses acquired after the IPO help firms remain independent. Most important for our inquiry, however, is that the coefficient for *Takeover Defense at IPO* is negative and statistically significant at the five percent level (z -statistic = -2.23). Thus, the presence of a takeover defense at the time of the firm's IPO is negatively related to the probability of acquisition within five years. When all other regressors are set equal to their mean values, the implied probability of takeover is 16.8 percent for firms without takeover defenses and 11.4 percent for those with at least one defense, a difference of 5.4 percent. This result indicates that takeover defenses are associated with longer-run firm independence.

We conducted several tests to examine the sensitivity of this result to changes in model specification. For example, we included the measures of managers' personal benefits that are discussed in Section IV. We substituted slightly different measures for the regressors reported in the table (for example, using different benchmarks to measure abnormal stock returns, or measuring the market-to-book ratio other than at the time of the IPO). Few of the empirical results are affected qualitatively by such changes in model specification. In all tests, the coefficient for *Takeover Defense at IPO* remains negative and statistically significant, although in some cases at the 10 percent level.

B. Effects on Takeover Premiums

Among the 163 firms in our sample that were acquired within five years of their IPOs and that have sufficient data, 83 had takeover defenses at the time of their IPOs. As reported in Table VIII, the mean market-adjusted stock return during the 42 trading days before the acquisition announcement for these 83 firms is 6.0 percent, compared to 9.6 percent for the 80 acquired firms without takeover defenses. The mean two-day market-adjusted stock return upon the announcement is 18.5 percent for the firms with takeover defenses, compared to 14.8 percent for firms without defenses. For the period dating from the day after announcement until the earlier of delisting or six months following announcement (resolution), the mean market-adjusted returns are 8.9 percent for firms with defenses and 14.2 percent for those without defenses. Cumulated over the complete period from 42 trading days before the acquisition announcement until resolution, those with takeover defenses earn an average market-adjusted return of 33.3 percent, compared to 38.4 percent for those without defenses. None of these differences, however, are significantly different from zero at normal significance levels.

Table IX reports the results of multivariate tests of the takeover premiums among IPO firms. Our tests are structured to mimic those reported by Comment and Schwert (1995, Table 4). Model 1 reports estimates based on the full sample of 885 IPOs in our sample that have sufficient data on all

Table VIII
Announcement Period Returns for IPO Firms Acquired
within Five Years

Announcement period returns for the 163 IPO firms which are acquired within five years of the IPO and have CRSP data available with which to calculate announcement period returns. Of these firms, 83 have takeover defenses in place before going public, while 80 did not. *Run-up* is the preannouncement cumulative abnormal return (CAR), measured from $[-42, -2]$ days before the announcement (day 0 is announcement date). *Announcement return* is the CAR measured for the day of the announcement and the day before the announcement $[-1, 0]$. *Resolution* is the CAR measured from the day after announcement through resolution, which is the earlier of delisting and six months $[+1, \text{Resolution}]$. *Total Period* is the CAR measured from two months before announcement through the earlier of six months after announcement or delisting $[-42, \text{Resolution}]$. All returns are measured net of market model returns. Market model parameters are estimated from day -295 (or first day CRSP, if later) through day -43 .

Days over Which CARs Measured	Firms without Defenses before IPO	Firms with Defenses before IPO	<i>t</i> -Statistic for Difference in Means
<i>Run-up</i> $[-42, -2]$	9.6%***	6.0%**	0.93
<i>Announcement Period</i> $[-1, 0]$	14.8%***	18.5%***	-1.35
<i>Resolution</i> $[+1, \text{min}(\text{delisting}, 126)]$	14.2%***	8.9%***	0.91
<i>Total Period</i> $[-42, \text{min}(\text{delisting}, 126)]$	38.4%***	33.3%***	0.69

*** and ** Significant at the 0.01 and 0.05 levels, respectively.

regressors. The takeover premium is measured as the cumulative market-adjusted abnormal stock return from 42 days before the announcement through the earlier of the date of delisting or six months after announcement. For firms that were not acquired, the abnormal return is set equal to zero.¹² Model 2 reports estimates based on the firms that were acquired within five years of their IPOs. Although 163 firms were acquired, we have sufficient data to estimate the regression for only 148 of these firms.

The results indicate that the presence of a takeover defense is not significantly related to takeover premiums in either Model 1 or Model 2. Takeover premiums also are not significantly related to whether the firm is incorporated in a state with an antitakeover law. The one variable that is significantly related to takeover premiums in both models is the prior three-year stock return. The negative coefficients indicate that firms with strong stock performance, when acquired, earn smaller takeover premiums than firms with poorer prior stock price performance.

Table X reports on tests in which the dependent variable is the actual takeover proceeds to target shareholders (expressed as a percentage of equity value 42 days before the takeover announcement), instead of cumula-

¹² Because most takeover premiums are positive, one might consider using a censored regression model to estimate Model 1. However, in our sample, 22 of the takeover premiums are negative. Even when we ignore these 22 observations and estimate Model 1 using a Tobit model and censor the dependent variable at zero, the results are qualitatively identical to those reported.

Table IX
Firm Characteristics and Takeover Premiums

Ordinary least squares regressions in which the dependent variable is the takeover premium measured as the cumulative market-adjusted abnormal return from 42 days before announcement through the earlier of the date of delisting or six months after announcement. Model 1 includes all IPOs with available data [$N = 885$], where the takeover premium is set to zero for those firms not acquired. Model 2 includes only firms acquired within five years of the IPO and with available data [$N = 148$]. *t*-statistics are given in brackets. Each regression includes fixed year effect dummy variables. *Takeover Defense* is a dummy variable that equals one for firms that have at least one of the defenses listed in Table II (other than blank check preferred stock). *Assets* is the natural logarithm of the book value of firm assets as of the IPO. *Leverage* is the ratio of the book value of total debt to the book value of assets as of the IPO. *Market to Book Ratio* is the ratio of the market value of the firm's stock plus the book value of debt, divided by the book value of assets, measured in the year of the IPO. *Property* is the ratio of the firm's property, plant, and equipment to total assets in the year of the IPO. *Liquidity* is the average ratio of net liquid assets to total assets for the three years before acquisition for those firms that were acquired and for years +3 through +5 relative to the IPO for firms that were not acquired. *Growth* is the average annual growth in sales for the three years before acquisition for those firms that were acquired and for years +3 through +5 relative to the IPO for firms that were not acquired. *Stock Return* is the firm's cumulative stock return for the three-year period after the IPO, or up to two months before the acquisition announcement for those firms that were acquired within three years, minus the equal-weighted Nasdaq index measured over the same period.

Variable	Model 1: Including All Firms	Model 2: Firms Acquired within 5 Years of the IPO
<i>Takeover Defense at IPO</i>	-0.017 [-1.018]	0.044 [0.587]
<i>Takeover Defense after IPO</i>	-0.023 [-1.254]	0.110 [1.077]
<i>State Law</i>	-0.005 [-0.236]	-0.035 [-0.316]
<i>Assets</i>	0.006 [1.230]	-0.046* [-1.749]
<i>Leverage</i>	-0.003 [-0.203]	0.086 [0.657]
<i>Market to Book Ratio</i>	-0.001 [-1.055]	0.013 [1.018]
<i>Property</i>	0.017 [0.632]	0.077 [0.612]
<i>Liquidity</i>	0.084** [2.015]	-0.070 [-0.325]
<i>Growth</i>	0.004 [0.921]	0.001 [0.084]
<i>Stock Return</i>	-0.012*** [-2.636]	-0.035** [-1.975]
<i>Auction</i>		-0.165 [-1.043]
Constant	-0.038 [-0.396]	1.341** [2.467]
Adjusted R^2	0.006	0.036

***, **, and * Significant at the 0.01, 0.05, and 0.10 levels, respectively, based on a two-tailed test.

Table X
Firm Characteristics and Actual Takeover Proceeds

Ordinary least squares regressions in which the dependent variable is the actual takeover proceeds expressed as a percentage of equity value 42 days before the takeover announcement. Model 1 includes all IPOs with available data [$N = 885$], where takeover proceeds are set to zero for those firms not acquired. Model 2 includes only firms acquired within five years of the IPO and with available data [$N = 148$]. *t*-statistics are given in brackets. Each regression includes fixed year effect dummy variables. *Takeover Defense* is a dummy variable that equals one for firms that have at least one of the defenses listed in Panel A of Table V (other than blank check preferred stock). *Assets* is the natural logarithm of the book value of firm assets as of the IPO. *Leverage* is the ratio of the book value of total debt to the book value of assets as of the IPO. *Market to Book Ratio* is the ratio of the market value of the firm's stock plus the book value of debt, divided by the book value of assets, measured in the year of the IPO. *Property* is the ratio of the firm's property, plant, and equipment to total assets in the year of the IPO. *Liquidity* is the average ratio of net liquid assets to total assets for the three years before acquisition for those firms that were acquired and for years +3 through +5 relative to the IPO for firms that were not acquired. *Growth* is the average annual growth in sales for the three years before acquisition for those firms that were acquired and for years +3 through +5 relative to the IPO for firms that were not acquired. *Stock Return* is the firm's cumulative stock return for the three year period after the IPO, or up to two months before the acquisition announcement for those firms that were acquired within three years, minus the equal-weighted Nasdaq index measured over the same period.

Variable	Model 1: Including All Firms	Model 2: Firms Acquired within 5 Years of the IPO
<i>Takeover Defense at IPO</i>	-0.022	0.040
	[-0.911]	[0.354]
<i>Takeover Defense after IPO</i>	-0.036	0.127
	[-1.384]	[0.811]
<i>State Law</i>	0.001	-0.055
	[0.017]	[-0.333]
<i>Assets</i>	0.007	-0.085**
	[0.888]	[-2.155]
<i>Leverage</i>	0.005	0.371*
	[0.245]	[1.880]
<i>Market to Book Ratio</i>	-0.001	0.006
	[-0.983]	[0.329]
<i>Property</i>	0.009	0.019
	[0.216]	[0.101]
<i>Liquidity</i>	0.073	-0.329
	[1.198]	[-1.025]
<i>Growth</i>	0.002	-0.007
	[0.364]	[-0.314]
<i>Stock Return</i>	-0.008	-0.010
	[-1.265]	[-0.384]
<i>Auction</i>		-0.110
		[-0.468]
Constant	0.010	2.411***
	[0.072]	[2.975]
Adjusted R^2	-0.003	0.051

***, **, and * Significant at the 0.01, 0.05, and 0.10 levels, respectively, based on a two-tailed test.

tive stock returns over the takeover period. Actual proceeds are positively and significantly related to assets and leverage. They are not, however, significantly related to the presence of a takeover defense.

We also investigated several variations of Models 1 and 2 in Tables IX and X. We examined whether takeover premiums are related to the number of defenses deployed, or to the deployment of each of the 10 defenses listed in Table II considered individually, or to whether the IPO is an equity carve-out or reverse LBO. In none of these tests do we find evidence of a statistically significant relation between takeover premiums and either firm-level or state-level takeover defenses, considered individually or in total, at the time of the IPO.¹³

Zingales (1995) suggests that equity carve-outs are the most likely of all IPOs to be completed as a first stage in the sale of the firm. This suggests that any positive effect of a takeover defense on the expected takeover premium will be most evident in equity carve-out IPOs. However, we can uncover no evidence to support this conjecture either. In tests not reported in a table, we find that the effects of a takeover defense on acquisition likelihood and the realized takeover premium are not significantly different for equity carve-out IPOs than for other IPOs.

Thus, takeover defenses are associated with a lower takeover probability but not with an increase in premium for those firms that are acquired. These results are consistent with the hypothesis that IPO managers seek to maintain their control benefits even after taking their firms public. The results are inconsistent with the notion that takeover defenses are deployed to increase expected takeover premiums.¹⁴

VI. Post-IPO Operating Performance

If managers use defenses to protect their personal control benefits, they may extract those benefits at the expense of firm performance. Similarly, it appears that the defenses deter some acquisitions without any compensating increase in takeover premiums for firms that are acquired. These results suggest that takeover defenses may entrench managers and contribute to poor firm performance.

¹³ In a separate test, we examined *expected* takeover premiums, where expectations are based on predicted values for acquisition likelihood and takeover premiums. We find no significant difference between firms with and without takeover defenses.

¹⁴ Our results differ from those in Comment and Schwert (1995), who find that the presence of a poison pill increases the takeover premium while not affecting the acquisition likelihood. Our tests differ from theirs in several ways. We examine small, newly public companies and record the presence of takeover defenses at the time of the IPO, whereas Comment and Schwert examine NYSE- and AMEX-listed companies and record the presence of a takeover defense in the year before actual or potential acquisition. We consider a broad range of takeover defenses, whereas Comment and Schwert examine only poison pills and two types of state antitakeover laws. Other evidence on these issues is mixed. Ambrose and Megginson (1992), for example, find that classified boards are associated with a decrease in the likelihood a firm will be acquired, but that other takeover defenses have no significant effect on acquisition likelihood.

To examine this hypothesis, we investigate whether post-IPO operating performance is related to the presence of a takeover defense at the time of the IPO. We measure operating performance as operating return on assets (ROA), which is equal to operating income (Compustat item #13) divided by the book value of assets (Compustat item #6). Using the procedure proposed by Barber and Lyon (1996), we match each IPO firm in our sample with a matched control firm selected from the 1999 Compustat (annual and research) files. The control is the median firm within the same four-digit SIC code and ROA within 10 percent of the sample firm in the year of the IPO. If no matches are made at the four-digit level, we select from firms within the same three-digit SIC and, if necessary, two-digit SIC code. The raw change in ROA for IPO firm i from the year of the IPO to year t is

$$\Delta ROA_{i,(0,t)} = ROA_{i,t} - ROA_{i,0}.$$

The adjusted change in ROA, which controls for the contemporaneous change in firm i 's matched control firm, is

$$\begin{aligned} \text{Adjusted } \Delta ROA_{i,(0,t)} &= (ROA_{i,t} - ROA_{i,0}) \\ &\quad - (\text{Matched } ROA_{i,t} - \text{Matched } ROA_{i,0}). \end{aligned}$$

Data to compute $\Delta ROA_{i,(0,1)}$ are available for 910 of the IPO firms, declining to 666 firms for the five-year ROA change ($\Delta ROA_{i,(0,5)}$). Data to compute $\text{Adjusted } \Delta ROA_{i,(0,1)}$ are available for 638 matched pairs of IPO and control firms, declining to 438 matched pairs for the five-year change ($\text{Adjusted } \Delta ROA_{i,(0,5)}$).

Table XI reports the raw and adjusted changes in ROA measured through each of the five years following the IPO. Consistent with the findings of previous researchers, the mean raw change for all firms is negative over all intervals examined.¹⁵ The mean change from the year of the IPO to the following year, for example, is -0.054 , with a t -statistic of -7.92 . The mean change from the IPO year to year 2 is -0.075 with a t -statistic of -8.70 . Operating ROA levels off after year 2, as the mean changes measured through years 3, 4, and 5 are similar to that for year 2.

The mean *adjusted change in operating ROA*, reported in Panel B, also is significantly negative for the first two years after the IPO. From the year of the IPO to the following year it is -0.022 with a t -statistic of -3.89 . From the IPO year to year 2 it is -0.036 with a t -statistic of -4.71 . The mean *adjusted change in operating ROA* reverses somewhat in subsequent years, however, and is insignificantly different from zero over the $(0, 5)$ interval.

¹⁵ Friedlan (1994), Jain and Kini (1994), Mikkelsen, Partch, and Shah (1997), and Teoh, Welch, and Wong (1998) all show that operating performance tends to decline in the one to five years after a firm's IPO.

Table XI
Changes in Operating Performance after the IPO

Average changes in operating return on assets (ROA) for firms going public from 1988 through 1992, measured for each of five years after the IPO. Panel A reports the mean *raw change in operating ROA* dated from the year of the IPO. Panel B reports the mean *adjusted change in operating ROA*, where the adjusted change is the raw change minus the contemporaneous change in ROA for a control firm matched by industry and ROA performance in the year of the IPO (year 0). In Panel A, the number of firms for which ROA data are available range from 910 (for year 1 results) to 666 (for year 5 results). In Panel B, the number of matched pairs of firms range from 638 (for year 1 results) to 438 (for year 5 results). *t*-statistics are in parentheses.

	Change in Operating ROA Measured through				
	Year 1	Year 2	Year 3	Year 4	Year 5
Panel A: Raw Change in Operating ROA					
All firms	-0.054 (-7.92) ^a	-0.075 (-8.70) ^a	-0.072 (-9.29) ^a	-0.057 (-7.15) ^a	-0.067 (-6.44) ^a
Firms without takeover defenses	-0.074 (-6.35) ^a	-0.105 (-6.08) ^a	-0.082 (-5.74) ^a	-0.054 (-3.87) ^a	-0.065 (-3.36) ^a
Firms with takeover defenses	-0.037 (-4.78) ^a	-0.050 (-7.69) ^a	-0.064 (-8.13) ^a	-0.059 (-6.54) ^a	-0.069 (-6.69) ^a
Difference in means	-0.037 (-2.67) ^a	-0.055 (-3.18) ^a	-0.019 (-1.20)	0.006 (0.34)	0.004 (0.21)
Panel B: Adjusted Change in Operating ROA					
All firms	-0.022 (-3.89) ^a	-0.036 (-4.71) ^a	-0.033 (-3.75) ^a	-0.029 (-2.95) ^a	-0.002 (-0.09)
Firms without takeover defenses	-0.034 (-3.95) ^a	-0.055 (-4.00) ^a	-0.054 (-3.14) ^a	-0.034 (-1.85) ^c	0.027 (0.54)
Firms with takeover defenses	-0.014 (-1.83) ^c	-0.023 (-2.63) ^a	-0.019 (-2.10) ^b	-0.025 (-2.36) ^b	-0.021 (-1.78) ^c
Difference in means	-0.020 (-1.71) ^c	-0.032 (-2.10) ^b	-0.035 (-1.91) ^b	-0.009 (-0.46)	0.048 (1.11)

^{a,b,c} Statistical significance at the 0.01, 0.05, and 0.10 levels, respectively, based on a two-tailed test.

The differences in means for both *raw ROA* and *adjusted ROA* are statistically insignificant for firms with and without takeover defenses over the (0, 4) and (0, 5) intervals, suggesting that longer term changes in operating performance are not related to the presence of a takeover defense at the time of the IPO. However, the results for years 1 and 2 indicate that, for periods shortly after the IPO, changes in operating performance tend to be more negative for firms without takeover defenses than for firms with defenses. Over the (0, 1) interval, for example, the mean *adjusted change in operating ROA* is -0.034 for firms without defenses, compared to -0.014 for firms with defenses. This difference is significantly different from zero at the 10 percent level.

This result is inconsistent with the notion that takeover defenses at the time of the IPO contribute to poor operating performance. Thus, while take-

over defenses deter some acquisitions and appear to be used to protect managers' control benefits, there is no evidence that they degrade operating performance or are used to protect managers of firms that are expected to perform badly.¹⁶

VII. Conclusions

Many firms deploy takeover defenses when they go public. Among our sample of 1,019 industrial firms going public from 1988 through 1992, 53 percent have at least one takeover defense at the time of their IPOs. On average, a firm goes public with 1.71 defenses and adopts only 0.19 additional defenses during the five years after its IPO. Thus, the managers of a typical IPO firm seem to care about control issues, and they determine their firm's longer term defensive posture at the time of the IPO.

Zingales (1995) and Mello and Parsons (1998) argue that an IPO is the first stage in the eventual sale of the firm. This suggests that a takeover defense can be used to increase the expected takeover premium when the firm eventually is acquired. Our data, however, do not support this argument. We find that the presence of a takeover defense when a firm goes public is negatively related to the subsequent acquisition likelihood and is unrelated to the takeover premium for those firms that are acquired. Thus, it appears unlikely that takeover defenses systematically help in the eventual sale of the firm by increasing expected takeover premiums.

Instead, most of our findings support an explanation for takeover defenses that is suggested by Brennan and Franks (1997). According to this view, managers take steps at the time of the IPO to ensure the continuation of their personal benefits of control. This view is consistent with our finding that takeover defenses help firms remain independent after the IPO. It also is consistent with evidence that the probability that an IPO firm has a takeover defense is positively related to managers' compensation and is negatively related to managerial ownership and measures of how closely the managers are monitored by nonmanagerial shareholders. Thus, defenses are more likely when managers benefit personally from their positions, bear little of the effects on share value, and can act independently of nonmanagerial oversight. When they can, IPO managers appear to shift the cost of takeover protection onto nonmanagerial shareholders.

These findings indicate that there frequently exists some degree of agency conflict between managers and nonmanagerial shareholders *even at the IPO stage*. That is, the separation of ownership from management does not begin once the IPO occurs. Rather, it is a characteristic of any organizational form in which some of the equity capital is provided by people who do not also

¹⁶ These results loosely are consistent with those in Danielson and Karpoff (2001), who find that the adoption of a poison pill among seasoned firms is associated with subsequent improvements in operating performance, relative to control firms matched by industry and prior performance.

manage the firm's operations. Since most firms raise equity capital from nonmanagerial institutions and individuals before the IPO stage, their equity agency problems are different from those of seasoned corporations only in degree, not in kind.

The existence of agency costs at the IPO stage does not necessarily represent an inefficiency. We would expect pre-IPO investors to pay prices for shares that reflect the expected costs of agency, just as they reflect such other costs as labor and capital. As Demsetz (1983) and others argue, the existence of agency costs does not make the diffusely held corporation inefficient. There are offsetting benefits (e.g., pooling of capital and risk sharing among owners) that make the diffusely held corporation efficient for some productive activities. The outcome may be inefficient only when compared to a Nirvana benchmark in which firms can realize the benefits from risk sharing *and* avoid the costs that arise when managers act as agents for shareholders.

Appendix

Table A.1 gives descriptions of the takeover defenses examined in this study.

Table A.1
Takeover Defenses Examined in this Study

Defense	Explanation
Panel A: Firm-Level Takeover Defenses	
1. Antigreenmail provision	Greenmail refers to an arrangement in which a company repurchases the stock held by a large shareholder, usually at an above-market price, in exchange for the shareholder's agreement not to launch a contest for control of the company for a specified period of time. An antigreenmail provision prohibits a company's managers from entering such an agreement unless the repurchase offer is made to all shareholders on a pro-rata basis, or shareholders approve the transaction.
2. Blank check preferred stock	This is authorized but unissued preferred stock for which the board of directors has broad discretion to establish voting, dividend, conversion, and other rights. Blank check preferred stock can be issued to parties friendly to management to block unwanted hostile bids. It also can be used as a vehicle to implement a poison pill.
3. Classified (or staggered) board	In a classified board, directors are divided into separate classes and elected to overlapping terms. For example, a firm with a three-class classified board would hold elections each year for one-third of the board seats, each with a three-year term. Because only one-third of the board can be replaced each year, a hostile bidder with voting control of the corporation may be unable to control the board for up to two years. Classifying the board also can deter proxy contests for control, because only one-third of the directors stand for elections in any one year.

Table A1—*Continued*

Defense	Explanation
Panel A: Firm-Level Takeover Defenses (<i>continued</i>)	
4. Fair price provision	This provision requires a large shareholder to pay a price set by formula for all shares acquired in the back end of a two-tier acquisition. Typically, the price to be paid is the highest price the shareholder paid for any shares acquired during the first stage of the acquisition. Most fair price provisions do not apply if the large shareholder's offer is approved by the target company's board or if the bidder obtains a specified supermajority level of approval from the target's shareholders.
5. Poison pills	Poison pills are securities that entitle their holders to special rights if the issuing firm becomes the subject of a takeover bid. In a typical case, the poison pill is established by issuing a special dividend in the form of a right to purchase additional shares of the issuing firm's common stock. The rights trade with the common shares until a triggering event such as an unsolicited takeover bid. When such an event occurs, the rights detach and may be exercised at a low price by shareholders other than the bidder. In most poison pills, rights-holders can purchase shares in the bidding company at low prices if the bidder acquires control of the issuing company. Poison pills are also called shareholders rights plans.
6. Stakeholder clause	This refers to charter language that permits directors to consider the effects of their decisions on constituencies other than stockholders. For example, directors may, or may be required to, evaluate the impact of a proposed change in control on employees, host communities, or suppliers. The clause provides a target company's board members with an explicit legal basis to reject takeover bids that are attractive to shareholders.
7. Shareholder meeting requirements	This is a category of antitakeover provisions that inhibit attempts to circumvent the normal corporate decision-making process. These provisions include rules that prohibit shareholders other than directors or executives from calling a shareholder meeting, that require a supermajority of shareholders to call a special meeting, that impose minimum advance notice of stockholder proposals and/or nominations of directors, or that prohibit shareholders from voting to take actions that otherwise would have to await a special or annual shareholder meeting. These restrictions override default provisions in most states' incorporation statutes that permit special meetings or action by written consent.
8. Supermajority vote requirement	These provisions establish approval levels (say, of 75 or 85 percent of outstanding votes) for actions that otherwise would require simple majority approval. These requirements often exceed the level of shareholder participation at a meeting, making action that requires supermajority approval very costly. Supermajority requirements can apply to attempts to replace directors, or to significant transactions such as mergers or asset sales. Those that apply to the amendment of bylaws or corporate charters often are referred to as lock-in provisions.
9. Unequal voting rights	Unequal voting rights occur when common shares do not all have the same voting rights. Under one typical plan called a dual class capitalization, two classes of stock exist, one with voting rights superior to the other. A second type of plan grants long-term stockholders super voting rights.

Table A1—Continued

Defense	Explanation
Panel A: Firm-Level Takeover Defenses (<i>continued</i>)	
10. Miscellaneous antitakeover provisions	This category refers to any of several provisions that can impede an outside bid for control. The most common among the miscellaneous provisions in our sample of IPO firms is language that states that board members can be removed “only for cause,” thus making more difficult any attempt to remove directors that seek to impede a takeover attempt.
Panel B: State Antitakeover Laws	
11. Freeze-out law	Also called a business combination statute, this type of law prohibits a large shareholder from engaging in any business combination with the covered firm for a specified number of years unless approval is obtained from the firm’s directors before the large shareholder acquires more than a specified fraction of shares. Even after the mandatory waiting period, most freeze-out laws allow the business combination to proceed only if the transaction satisfies fair price provisions. Thus, the typical freeze-out law is like a fair price law with a forced delay. The Delaware freeze-out law, adopted in 1988, covers a large number of corporations. It requires a three-year waiting period, although it permits business combinations during the freeze-out period that are approved by two-thirds of the voting stock not held by the interested shareholder. It also permits some business combinations with third parties, such as a sale of assets, during the freeze-out period.
12. Control share acquisition law	First adopted by Ohio in 1982, this type of law requires shareholder approval before a large shareholder may vote shares obtained in a control share acquisition. A control share acquisition refers to an accumulation of shares to above a threshold level, for example, to one-fifth the outstanding shares of a covered corporation.
13. Fair price law	This type of law imposes restrictions that are similar to fair price provisions adopted by many firms. The law regulates the back-end price in a two-tiered takeover bid or other significant business combination involving a large shareholder. The typical fair price law prohibits business combinations between the firm and a large stockholder unless one of two conditions is met. Either (1) prior approval is granted by a supermajority (e.g., 80 percent) of all outstanding voting stock and by a supermajority (e.g., two-thirds) of the outstanding stock not held by the interested stockholder, or (2) stockholders receive a stipulated price for the stock acquired by the large stockholder as part of the business combination. The stipulated price is set by a formula that guarantees the price paid will be very high.
14. Cash-out law	This type of law requires any person who acquires a large stake (e.g., 20 percent) in a firm to notify all other shareholders of the acquisition. All other shareholders are then entitled to sell their shares to the acquirer at a price at least as high as the highest price the acquirer paid in the period over which the large shareholder acquired its shares. This law has been adopted by only three states and was rescinded by one of these states.
15. Poison pill endorsement law	This type of law grants firms the right to adopt poison pill takeover defenses. Poison pill laws can be important because the right to use a poison pill defense is more secure when explicitly authorized by statute and is less likely to be limited by court action.

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