

# Universal Demand Laws Did Not Increase Management Entrenchment

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February 26, 2023

## Abstract

An emerging line of research based on Appel (2019) finds that firms incorporated in Universal Demand (UD) law adopting states experience an increase in the use of entrenchment provisions. Our granular investigation shows that the empirical link between UD laws and management entrenchment is not supported by the evidence. We instead find that the results in Appel (2019) are driven by a small number of firms adopting poison pill and golden parachute provisions after substantial long-term drops in market value. Using hand-collected data, we additionally find that the vast majority of changes in the use entrenchment provisions among affected firms were in fact announced before the enactment of UD laws. The evidence calls into question the existence of a cause-and-effect link between UD laws and management entrenchment.

**Keywords:** Universal Demand Laws, Corporate Governance, E-Index, ISS Database.

**JEL Codes:** G34, G38, K22, K41.

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**Acknowledgements:** We thank Ian Appel, Bernie Black, Dain Donelson, Jill Fisch, Robert Bartlett, Cathy Hwang, Holger Spamann, Irene Yi (discussant), seminar participants at U.C. Berkeley, the 2021 Annual Meeting of the American Law & Economics Association, and the 2022 Ackerman Conference of the European Corporate Governance Institute at Bar Ilan University for feedback. We also thank Roberta Romano and Sarath Sanga for state of incorporation data, and James Hicks for research assistance. We gratefully acknowledge support from the Center for Financial Reporting and Management at Berkeley Haas and the Berkeley Center for Law and Business. The views expressed here are those of the authors and not necessarily those of Dimensional Fund Advisors, its employees, or directors.

Research in corporate law and finance seeks to identify the relationship between litigation risk and corporate governance. Separating causation from association, however, poses a challenge for this research because companies with different levels of litigation risk may differ along dimensions that are endogenously related to their governance structure. To address the issue of endogeneity, Appel (2019) introduced in a novel paper the enactment of Universal Demand (UD) laws as an exogenous source of variation in litigation risk.

UD laws are enacted by 23 states between 1989 and 2005 and require that shareholders make a demand on the board before suing for breach of fiduciary duty or other derivative actions. Because the board can refuse the demand or otherwise prosecute the case, or decline to prosecute, Appel (2019) proposes that UD laws decrease the ability of shareholders to litigate and effectively monitor the board. His empirical investigation uses the ISS governance database and zeroes in on variation in the widely used index of management entrenchment (E-Index), which captures the sum of provisions restricting shareholder voting power and antitakeover provisions (Bebchuk et al. 2009). The key finding is that the enactment of UD laws led to a significant increase in management entrenchment.

As UD laws are exogenously imposed by the state, they have the potential to address the issue of endogeneity in the relationship between litigation risk and corporate governance. Building on Appel (2019), a fast-growing stream of research relies on the link between the enactment of UD laws and management entrenchment as the causal channel to identify the effects of exogenous changes in litigation risk on a wide array of firm outcomes, including the quality of outside directors (Masulis et al. 2020), corporate takeover efficiency (Chu and Zhao 2021), peer effects on the use of antitakeover provisions (Foroughi et al. 2021), corporate disclosure (Bourveau et al. 2018), earnings management (Huang et al. 2020), reporting conservatism (Manchiraju et al. 2021), corporate innovation (Lin et al. 2020), and the cost of capital (Houston et al. 2018; Ni and Yin 2018).

Despite the repeated use of the UD law setting, the theoretical rationale for UD laws' effect on the use of entrenchment provisions remains ambiguous. The intended effect of UD laws is to eliminate frivolous litigation that imposes undue litigation costs. Indeed, Donelson et al. (2022) find that the adoption of UD laws had no detectable impact on derivative litigation. Therefore, UD laws are unlikely to have an effect on management entrenchment as they are purported to eliminate only frivolous suits.

The stream of studies using UD laws has relied on the theory that these laws make fiduciary duty lawsuits harder to prosecute, and thereby allow boards to escape monitoring and to relax corporate governance measures. However, this theory belies the reality that,

with or without UD laws, breach of fiduciary duty lawsuits rarely, if ever, result in liability for directors and officers (Black et al. 2006). Furthermore, fiduciary duties cover the duty of loyalty and care, affecting how a board considers a matter and whether and how a director can engage in a conflicted interest transaction. Even if UD laws did result in less fiduciary-duty litigation, it is unclear why a relaxation of fiduciary duties would affect the use of entrenchment provisions, including provisions restricting shareholder voting power and antitakeover provisions.

Given the ambiguous *a priori* effects, we raise the possibility that the association between UD laws and the use of entrenchment provisions found in Appel (2019) is confounded by power and identification issues. As an alternative explanation, we explore the limitations in the ISS database and the resulting misclassification of pre-event changes in the use of entrenchment provisions as post-event changes in the E-Index. To probe the effect of the adoption of UD laws on the E-Index, we evaluate the use of entrenchment provisions among treated and control firms before and after the enactment of UD laws. The treated group includes firms incorporated in UD law adopting states with coverage in the Institutional Shareholder Services (ISS) legacy database between 1990 and 2006. The control group includes firms with ISS coverage incorporated in non-adopting states. With respect to the pre-post comparisons, our design hews closely to the timeline of the ISS survey release dates. Specifically, we collect data on the use of entrenchment provisions and compute the change in the E-Index between (a) the last ISS survey before the UD law effective date and (b) the first ISS survey after the UD law effective date.

Between 1990 and 2006, we identify 110 unique firms incorporated in UD law adopting states that have coverage between consecutive ISS surveys centered on the effective date of UD laws. We find that only 20 cases out of the 110 treated firms appear to experience a pre-post increase in their E-Index, a pooled adoption rate of 18.2%. Dissecting the changes in the E-Index, we further find that these 20 affected firms collectively adopted a total of 23 entrenchment provisions, with poison pill and golden parachute provisions accounting for 21 out of the total of 23 provision adoptions. Whereas the comparison of consecutive ISS surveys allows the identification of changes in the use of entrenchment provisions, it does not allow for the identification of the exact timing of such changes. It follows that using the ISS legacy data, pre-event changes could be misclassified as *seemingly* post-event changes in the E-Index.

To identify cases of misclassification, we hand-collect information on the exact adoption dates of individual entrenchment provisions across the 20 affected firms in UD law adopting

states. We find that in 13 out of the 20 affected firms the change actually occurred *before* the enactment of UD laws. Collectively, as many as 16 out of the 23 entrenchment provisions adopted across the 20 affected firms were announced prior to the enactment of UD laws. Our case-by-case analysis shows that only 7 out of the 110 treated firms experience an increase in their E-Index following the enactment of UD laws.

Our evidence implies that using the raw ISS legacy data, the estimated adoption rate of entrenchment provisions among affected firms is overstated by almost a factor of three. After correcting for the misclassification of pre-event changes in the use of entrenchment provisions, the frequency of treated firms experiencing an increase in their E-Index after the enactment of UD laws drops from 18.2% to 6.4%. Whereas the corrected adoption rate of entrenchment provisions is low, it is possible that control firms in non-adopting states remove existing provisions so that pre-post changes in entrenchment differ significantly between treated and control firms. To explore this possibility, we compare treated and control firms before and after the enactment of UD laws across adopting states. Our state-by-state analysis does not yield evidence of a significant increase in the use of entrenchment provisions for treated firms in UD law adopting states relative to control firms in non-adopting states.

Starting with Appel (2019), UD law studies typically estimate the pooled effect of UD laws across adopting states. Next, we evaluate the implications of the misclassification of pre-event changes in the use of entrenchment provisions as post-event changes in the E-Index within the context of Appel's pooled regression model. Replicating Appel (2019), we show that the estimated pooled effect of UD laws on entrenchment is indistinguishable from zero after correcting for misclassification of pre-event changes in the use of entrenchment provisions. A key inference is that Appel's finding of an increase in the E-Index following the enactment of UD laws is driven by 13 companies adopting entrenchment provisions, primarily poison pills and golden parachutes, *before* the enactment of UD laws.

Our last set of results provides insights into the fundamental reasons behind the decision to adopt entrenchment provisions. Our analysis zeroes in on the group of 20 affected firms across UD law adopting states. We find that this group underperforms the market index by as much as -38% in the two years leading to their adoption of entrenchment provisions. This finding is consistent with the idea that management chooses to adopt entrenchment provisions following poor performance and extends prior evidence on the endogenous choice of takeover deterrents (e.g., Catan 2019). The link to past performance casts doubt on the alternative possibility that management chooses to become more entrenched in

anticipation of the enactment of UD laws and a potential decrease in future derivative litigation risk.

Ultimately, we find that not only is the relationship between UD laws and entrenchment found by Appel (2019) based on a small number of affected firms, but the majority of these changes are also incorrectly specified. Our case-by-case analysis shows that the vast majority of changes in the E-Index of affected firms occur prior to the enactment of UD laws and therefore cannot be causally related to these laws. Moreover, we find that these changes are made in the wake of substantial long-term drops in market value consistent with the endogenous adoption of poison pill and golden parachute provisions in response to poor firm performance. We conclude that the empirical link between UD laws and management entrenchment is not supported by the evidence. Our results have broader implications for studies that zero in on the identification of the timing of changes in management entrenchment using the ISS legacy database and adds to research highlighting the difficulty of coding and measuring corporate governance (e.g., Spamann 2010; Larcker et al. 2015; Karthaus et al. 2021; Frankenreiter et al. 2021).

## **I. Institutional Background**

### **A. Background on UD Laws**

Directors are subject to fiduciary duties, which encompass the duty of care and the duty of loyalty. Enforcement of these duties occurs through litigation. Director fiduciary duties run from the director to the company, and so it is only the company which can bring an enforcement suit. However, the company is run by directors who are unlikely to agree to have the company sue themselves for an alleged fiduciary duty breach. To address this issue, courts and legislative statutes allow for derivative actions. These are actions against directors and officers brought by shareholders on behalf of the company to enforce fiduciary duties (e.g., Erickson 2010; Thompson and Thomas 2004).

Because the derivative action right lies with the company itself, the law has not automatically permitted shareholders to sue for a breach of fiduciary duty. Instead, corporate laws in each state require that shareholders must first make a demand on the company to bring the lawsuit (Davis 2008). The company will form a special litigation committee (SLC) of disinterested directors to consider the demand. The SLC can recommend pursuing the suit, settling the suit, or dismissing the action. Shareholders can then challenge the decision of the SLC if it is not made on a disinterested basis (Krishnan et al. 2020).

UD laws were first adopted in 1989 in Georgia and Michigan. These laws were put forth by a public interest group and purported to eliminate frivolous fiduciary duty suits because they required that without exception, for suits alleging a breach of fiduciary duty by directors, shareholders had to make a pre-suit demand on the company. This eliminated the option for shareholders to sue first and plead demand futility to avoid having to submit a demand on the board. UD laws also generally require that courts defer to the decision of an SLC to refuse to continue the potential lawsuit. This deference is under the so-called business judgement rule and generally provides that so long as the members of the SLC acted in a disinterested and informed capacity, the court will defer to the SLC's decision. Appendix 1 of the Supplement provides the list of adopting states along with the corresponding citation and effective date obtained from state legislative records between 1989 and 2005.<sup>1</sup>

## **B. The theoretical effect of UD laws**

There are multiple potential theoretical effects of UD laws on corporate governance. Appel (2019) and follow-up UD law papers operate under the assumption that UD laws present a significant obstacle to derivative lawsuits. These papers further rely on the theory that increased barriers to derivative lawsuits undermine the deterrence effect of lawsuits permitting *the worst types of management to get away with the most serious kinds of misconduct*.<sup>2</sup> At a minimum, these papers assume that UD laws have a discernable effect on management behavior.

A countervailing theory, though, posits no deterrence effect for UD laws. Instead, the intended effect of UD laws is to do away with frivolous litigation that imposes undue litigation costs on companies. In this scenario, for lawsuits alleging breaches of fiduciary duties, SLCs are fully able to consider these issues and allow the non-frivolous lawsuits to proceed. UD laws, therefore, should have no effect on management entrenchment because they eliminate only frivolous suits. This theory is supported by the fact that directors are rarely held personally liable for breaches of fiduciary duty no matter the litigation regime and are exculpated from monetary damages for breaches of the duty of care (Black et al. 2006). Eliminating fiduciary duty suits is thus about eliminating litigation costs for companies and directors-and-officers (D&O) insurers.

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<sup>1</sup> We note that, following Donelson et al. (2022), we use 2000 as the UD law adoption year for the state of Utah. Appel (2019) and several follow-up studies incorrectly use 1992 as the UD adoption date for Utah based on a partial adoption of a revision of the Model Business Corporations Act.

<sup>2</sup> "New York State May Put Curbs on Certain Types of Holder Suits," Richard B. Schmitt, Wall St. J., Nov. 29, 1983.

Beyond the countervailing theory there is the issue of whether UD laws even have an effect on the measures UD law papers study. In this vein, Appel (2019) posits a variety of consequences from UD law passage, including entrenching actions by the board, higher quality directors, differing disclosure patterns, and differing costs of debt and equity. However, the mechanism for this effect is unclear. Duty of care cases relate to how a board considered matters brought to its decision-making, involving an inquiry into whether the board had sufficient information when it made its decision, as well as other timing and process variables. These processes do not appear to be related to the topics that UD law papers have examined. Meanwhile, duty of loyalty cases involve self-dealing conduct that provides private gains to directors. These are principally related-party transactions and usurpations of corporate opportunity. The relation of the duty of loyalty to UD laws is again ambiguous as these types of duty of loyalty claims are limited to self-dealing, rather than general governance issues of the type that UD law papers have examined. In particular, the duty of loyalty does not regulate the use of governance provisions embedded in entrenchment indexes. In the particular instance of claims related to takeovers, these are principally direct not derivative actions and so unaffected by UD laws.

## **II. Research Design**

### **A. State of incorporation and headquarter location data**

We start with the universe of firms in the CRSP-Compustat merged database between 1990 and 2006. Our sample starts in 1990 because ISS survey coverage was initiated in September 1990. The last year in our sample corresponds to the first available ISS survey in January 2006, after Rhode Island and South Dakota enacted UD laws in July 2005. To derive our sample, we first require non-missing information about total assets and market capitalization at the end of the fiscal year. Following prior research, we exclude financials (SIC 6000-6999), utilities (SIC 4900-4999), and non-classifiable firms (SIC 9000-9999). We further require non-missing information about the state of incorporation and headquarters location. We exclude non-US incorporated firms as well as re-incorporated firms because UD laws may endogenously affect the choice of incorporation.

To identify treated and control firms, we obtain state of incorporation data from the SEC Analytics Suite database. The SEC Analytics Suite extracts point-in-time information from SEC's EDGAR system and its coverage is restricted in the post-1996 period. We merge the SEC Analytics Suite database with pre-1996 state of incorporation data used in Sanga (2020), who compiles records from Thomson Reuters, LexisNexis, and Moody's. To identify in-state and out-of-state incorporations, we also obtain point-in-time headquarters location data

from the SEC Analytics Suite database to identify in-state companies. Due to lack of pre-1996 headquarter information, we backfill the first available information, effectively assuming that corporate headquarter relocations occur infrequently.

Appendix 2 of the Supplement reports the frequency of firms incorporated in each state between 1990 and 2006. Consistent with prior work, we observe that the distribution of incorporation clusters is not uniform (e.g., Hu and Spamann 2020). In fact, nearly 55% of firms in the general CRSP-Compustat population are incorporated in Delaware. Focusing on Delaware, we note that in-state incorporations account for just 0.4% of the general CRSP-Compustat population, which underscores that most Delaware incorporations are out-of-state incorporations. Collectively, we observe that the group of 23 UD law adopting states account for 15.2% of the general CRSP-Compustat population.

## **B. Corporate governance data**

We obtain governance data from the ISS governance legacy database. ISS collects information on corporate governance provisions from public filings every two or three years between 1990 and 2006. The legacy database covers the S&P1500 constituents and other large public firms with high institutional ownership. The ISS database tracks 24 governance provisions, each coded as a binary indicator. Following Bebchuk et al. (2009), we use the ISS data to construct the entrenchment index (E-Index).<sup>3</sup> Between 1990 and 2006, the ISS legacy database provides information only on the following dates: September 1990, July 1993, July 1995, February 1998, February 2000, February 2002, January 2004, and January 2006. Between 1990 and 2006, the minimum (maximum) lag between consecutive ISS surveys is 1.9 (2.8) years. The ISS database does not provide information about the exact adoption date for the provisions that it tracks, and there is no documentation regarding the underlying sources and coding process. This is an important limitation because the comparison of consecutive ISS surveys allows the identification of changes in the use of entrenchment provisions over the window stretching between the surveys, but not the precise date of adoption. A key implication that we explore is that pre-event changes could be misclassified as *seemingly* post-event changes in the E-Index.

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<sup>3</sup> The E-Index is defined as the sum of six governance provisions which are arguably detrimental to shareholders and have been associated with negative outcomes. With respect to the E-Index components, we note that four of the provisions, including classified boards, supermajority voting, and the limits on shareholder bylaw and charter amendments, can restrict shareholder voting power. The two remaining provisions, poison pills and golden parachutes, are antitakeover provisions which can theoretically insulate the company management from the risk of a hostile takeover. Appendix 3 of the Supplement provides detailed variable definitions.



### C. Research design

To identify the effect of UD laws on the use of entrenchment provisions, we compare treated and control firms in terms of the pre-post change in their E-Index before and after the adoption of UD laws. The treated group includes firms incorporated in UD law adopting states. The vast majority of treated firms are in-state incorporations; that is, they are incorporated in the state of the headquarters location. The control group includes firms incorporated in states that never adopted UD laws. The control group is dominated by firms incorporated in Delaware. The state of Delaware never adopted UD laws and, as we saw earlier, nearly 55% of firms in the general CRSP-Compustat population are incorporated in Delaware. Given the dominance of Delaware in the market for out-of-state incorporations, we report results for (a) the full control group of in-state and out-of-state incorporations, (b) the restricted control group that excludes out-of-state incorporations and dual-class companies. The restricted control group effectively drops the bulk of Delaware firms as most Delaware incorporations are out-of-state incorporations. We further drop dual-class companies from the restricted control group because Bebchuk's et al. (2009) E-Index was not designed to capture management entrenchment for such companies.

With respect to the pre- and post-UD law adoption comparisons, our design hews closely to the timeline of the ISS survey release dates. We compute changes in the E-Index and its components between (a) the last ISS survey before the UD law effective date and (b) the first ISS survey after the UD law effective date. As an illustrative example, consider the adoption of UD laws in Pennsylvania (PA). Figure 1 illustrates that PA adopted UD laws in April 1997 (event date). The last ISS survey before April 1997 was released in July 1995 (pre-event survey), and the first ISS survey after PA's UD law adoption was released in February 1998 (post-event survey). We zero in on the change in the E-Index between consecutive ISS surveys centered on the event date; that is, between the July 1995 ISS survey and the February 1998 ISS survey. Our design effectively allows for changes in corporate governance to appear with a lag equal to the difference between the UD law effective date and the first ISS survey after the UD law effective date. Across UD law adopting states, the average lag is 14.5 months.<sup>4</sup>

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<sup>4</sup> An alternative design would use the second ISS survey after the UD law effective date. As ISS collects information on corporate governance provisions every two or three years between 1990 and 2006, this alternative design would allow for an even longer lag between the UD law effective date and the second ISS survey post-UD law (on average, 40 months). However, the effort to identify a cause-effect link would be further confounded by random economic events that would occur over longer windows. In addition, using the second ISS survey

Figure 1 also illustrates a deeper issue with respect to the identification of the effect of UD laws. Consider the scenario of a firm that is incorporated in PA that adopts entrenchment provisions after the pre-event ISS survey was released in July 1995 but before the UD law effective date in April 1997. While the comparison of ISS survey data would capture changes in the E-Index between consecutive surveys, it would not allow for the identification of the exact timing of the adoption of individual entrenchment provisions.

Due to the significant lag between surveys in the ISS legacy database, observed changes in the use of entrenchment provisions between consecutive ISS surveys centered on the UD law effective date may actually happen prior to the adoption of UD laws. One direct approach to correcting this issue would be to use the exact dates of adoption of the various governance provisions tracked by the ISS surveys. Importantly, the ISS legacy database does not provide the adoption dates for individual entrenchment provisions and therefore the data on the use of provisions blend together pre- and post-event changes in the E-Index. To overcome this issue, we first identify firms incorporated in adopting states. We then separate cases that appear in the ISS legacy database as adopters of any of the six entrenchment provisions underlying the E-Index. For these cases, we hand-collect information from public filings and identify the exact adoption date for each governance provision. This procedure allows us to separate changes in the E-Index that occur between consecutive ISS surveys but before the UD law effective date for each adopting state.

### **III. Empirical Results**

#### **A. Distribution of treated firms across UD law adopting states**

Table 1, Panel A, reports the UD law effective dates (event dates) across adopting states together with the release dates of the consecutive ISS surveys before and after the event date and the number of treated firms incorporated in each UD law adopting state. The total count of incorporations includes both in-state and out-of-state incorporations. The sample includes firms with pre-post coverage on the ISS legacy database. The sample does not include firms incorporated in Georgia, Michigan, and Florida because all three states adopted UD laws prior to the introduction of the first ISS survey in September 1990. Also, our sample does not include firms incorporated in Montana, New Hampshire, Arizona, and South Dakota due to lack of coverage in the ISS legacy database.

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after the UD law effective date would not be possible for states adopting UD laws closer to the end of ISS legacy coverage in 2006, including Massachusetts, Rhode Island, and South Dakota.

Pooling across the remaining sixteen adopting states with ISS coverage, our sample includes 110 unique treated firms. We observe that 97 out of the 110 firms are in-state incorporations, 9 of which are also dual-class stocks. This finding is consistent with the fact that Delaware dominates the market for out-of-state incorporations, while UD law adopting states primarily attract in-state incorporations. Focusing on the sixteen adopting states with ISS coverage, the number of incorporations is as low as a single firm for as many as six states, including Mississippi, Nebraska, Maine, Wyoming, Idaho, and Iowa.

Table 1, Panel B, summarizes the distribution of treated firms with ISS coverage across adopting states. We separate the nine adopting states with at least four treated firms with pre-post ISS coverage (WI, VA, NC, CT, PA, TX, UT, IA, and MA) from other adopting states (MI, NE, ME, WY, ID, HI, and RI). We report the frequency distributions for all incorporations and in-state incorporations. The evidence shows that Pennsylvania accounts for a quarter of all treated firms, followed by Massachusetts (16%), Virginia (15%), North Carolina (10%), Wisconsin (7%), Texas (6%), Connecticut (5%), Utah (5%), and Iowa (4%). Together, these nine adopting states account for 93% of all treated firms. The frequency distributions are consistent when we focus on in-state incorporations and exclude dual-class firms.

## **B. Frequency of treated firms seemingly adopting entrenchment provisions**

Table 2, Panel A, reports the frequency distribution of treated firms with a seeming increase in their E-Index between consecutive ISS surveys centered on the UD law effective date across adopting states. Across adopting states, we find that only 20 cases out of the 110 treated firms appear to experience a pre-post increase in their E-Index, a pooled adoption rate of 18.2%. We note that 10 out of these 20 cases are incorporated in Pennsylvania, three cases are incorporated in Massachusetts, two cases are incorporated in Texas and Utah respectively, and one case is incorporated in Connecticut. The frequency of treated firms experiencing a pre-post increase in their E-Index is exactly zero in Wisconsin, Virginia, North Carolina, and Iowa. All other adopting states account for the remaining two cases.

Next, we probe the adoption of individual entrenchment provisions. We find that the 20 affected firms for which the comparison of ISS surveys before and after the enactment of UD laws indicates a pre-post increase in their E-Index adopted a total of 23 entrenchment provisions. We observe that poison pill and golden parachute provisions account for 21 out of the total of 23 provision adoptions. In contrast, the adoption of provisions restricting shareholder voting power is rare. Table 2, Panel B, provides consistent evidence after excluding firms incorporated in a different state from that of their headquarters location (4

cases, CBS Corp., Checkpoint Systems, Wainoco Oil, Union Pacific) and firms with dual-class structure (1 case, Comcast Corp.).

### **C. Misclassification of pre-event adoptions as post-event changes in E-Index**

An important limitation of the ISS legacy database is that there is a significant lag between consecutive ISS surveys centered on the UD law effective date in each adopting state. In addition, the ISS legacy database does not provide information about the exact adoption dates of individual entrenchment provisions across firms. While one can measure changes in the E-Index and its components between consecutive ISS surveys, the legacy database does not allow for the identification of the exact timing of such changes. It follows that pre-event changes in the use of entrenchment provisions can be misclassified as seemingly post-event changes. This is a key issue as a prerequisite for causal identification is that the change in the use of entrenchment provisions among affected firms incorporated in UD law adopting states occurs after, not before, the laws were enacted.

Research using UD laws for identification does not explore the misclassification issue and does not separate changes in the E-Index that occur between consecutive ISS surveys but before the UD law effective date. We next hand-collect information on the exact adoption dates of individual entrenchment provisions across the 20 affected firms in UD law adopting states that seemingly experience an increase in their E-Index between consecutive ISS surveys. Our hand-collection efforts focus on identifying the exact adoption dates of each of the 23 individual entrenchment provisions adopted among these 20 affected firms. For each case, we search SEC EDGAR and Capital IQ for public filings associated with the adoption of entrenchment provisions, including annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and DEF14A definitive proxy statements.

Table 3 provides information about the adoption dates across the six entrenchment provisions underlying the E-Index, along with the links to the original SEC filings. We provide detailed references and relevant text excerpts from the SEC filings in Appendix 4 of the Supplement. We successfully identify the adoption dates for 21 out of the 23 entrenchment provisions across the 20 cases of affected firms that seemingly experience a pre-post increase in their E-Index. We fail to identify the public filings for two cases: (a) the adoption of a golden parachute provision by Comcast Corp. (between the ISS surveys of July 1995 and January 1998), and (b) the adoption of a poison pill provision by Wainoco Oil Corp. (also between the ISS surveys of July 1995 and January 1998). For these two cases, we assume that the provision adoption took place in the midpoint of the window between the UD law effective date and the first post-event ISS survey date. The last column in Table 3 reports the

values of an indicator that equals one if the provision adoption precedes the UD law effective date in the state of incorporation. The key finding is that 16 out of the 23 entrenchment provisions that were adopted across the 20 affected firms were announced prior to the enactment of UD laws.

As an example, consider the case of Charming Shoppes incorporated in Pennsylvania. Based on the ISS legacy data, the company adopted a golden parachute provision between the ISS surveys of July 1995 and January 1998. In the absence of more precise information, one might conclude that the golden parachute provision was adopted *after* the enactment of UD laws in Pennsylvania on April 21, 1997. This conclusion would be incorrect. The DEF14A definite proxy statement filed on May 23, 1996, shows that Charming Shoppes adopted the golden parachute provision almost one year prior to the UD law effective date in Pennsylvania and, therefore, cannot be causally attributed to the enactment of UD laws. Without information from company filings, the change in the E-Index of Charming Shoppes between consecutive ISS surveys would be misclassified as a post-event change.

Table 4 summarizes the state-by-state frequency of treated firms that still experience an increase in their E-Index after correcting for the misclassification of pre-event changes in the use of entrenchment provisions. Table 4, Panel A, reports that only 7 out of the 110 treated firms experienced an increase in their E-Index after the enactment of UD laws, which implies an adoption rate of 6.4%. Furthermore, all 7 cases are associated with the adoption of poison pills and golden parachute provisions. After eliminating out-of-state incorporations and dual-class firms, Table 4, Panel B, shows that the pooled frequency of treated firms experiencing an increase in their E-Index drops to 5.7%.

Our case-by-case investigation shows that the estimated adoption rate of entrenchment provisions among affected firms is overstated by almost a factor of three in the raw ISS legacy data. More specifically, the adoption rate of entrenchment provisions among treated firms drops from 18.2% to 6.4% after correcting for the misclassification of pre-event changes in their E-Index. The prevalence of misclassification of pre-event adoptions as post-event changes in the E-Index implies that the parallel-trends assumption is violated in prior applications of the UD law setting and throws into question the causal connection between UD laws and entrenchment documented in Appel (2019).

#### **D. State-by-state comparison of treated and control firms**

While the corrected adoption rate of entrenchment provisions among treated firms is low, we acknowledge that it is possible that control firms that were not impacted by the enactment of UD laws remove existing provisions so that pre-post changes in entrenchment

differ significantly between treated and control firms. We explore this possibility by comparing treated and control firms before and after the enactment of UD laws across adopting states. In particular, we estimate the following regression model separately for each UD law adopting state

$$y_{i,s,t} = \beta_s I(TREAT_{i,s,t}) + \gamma_{j,t} + c_{i,s,t} + \varepsilon_{i,s,t} \quad (1)$$

where  $y_{i,s,t}$  is the change in the E-Index,  $I(TREAT_{i,s,t})$  is an indicator that equals one after the adoption of UD laws in firm  $i$ 's state of incorporation  $s$  as of the end of calendar year  $t$ ,  $\gamma_{jt}$  is a vector of GICS sector fixed effects, and  $c_{i,s,t}$  is a vector of time-varying firm characteristics, including log total assets, leverage, cash holdings, R&D intensity, and capital expenditure.

Table 5 reports the state-by-state regression results. We focus on the nine adopting states with at least four treated firms with pre-post ISS coverage: WI, VA, NC, CT, PA, TX, UT, IA, and MA. Panel A reports results based on equation (1). If firm characteristics are endogenously affected by the adoption of UD laws, the inclusion of time-varying firm controls may introduce estimation bias (Angrist and Pischke 2008). Panel B reports results excluding the vector of time-varying firm characteristics from the right-hand-side of equation (1). We zero in on E-Index changes between consecutive ISS surveys centered on the effective date of UD laws and use our hand-collected information to correct the ISS data for the misclassification of pre-event changes as post-event changes in the E-Index among treated firms.

The  $\beta_s$  coefficient provides the pre-post comparison of treated firms incorporated in each UD law adopting state relative to control firms incorporated in non-adopting states. We report wild bootstrapped t-statistics using the implementation of Roodman et al. (2019). The wild bootstrap is suitable when conventional inference becomes unreliable due to the violation of large-sample assumptions. Heath et al. (2022) point out that the repeated reuse of experimental settings—like the UD law adoption setting— leads to a multiple testing problem. As of the writing of our paper, Appel's UD law setting has been reused in more than 120 studies. Heath et al. show that a new hypothesis should have a t-stat of  $\sim 3.5$  if there are 120 prior findings in the same setting. Across specifications, the  $\beta_s$  estimate never crosses the threshold of statistical significance.

Taken together, our state-by-state analysis does not yield any evidence of a significant increase in the use of entrenchment provisions for treated firms incorporated in UD law adopting states relative to control firms incorporated in non-adopting states.

## E. Replicating and extending Appel (2019)

Starting with Appel (2019), UD law studies typically use a pooled regression model specification with firm and sector-year fixed effects to estimate the effect of the adoption of UD laws between 1989 and 2005. Using consistent notation with equation (1), Appel’s baseline regression model specification is

$$y_{i,s,t} = \beta I(TREAT_{i,s,t}) + \theta_i + \gamma_{j,t} + c_{i,s,t} + \varepsilon_{i,s,t} \quad (2)$$

Following Goodman-Bacon (2021), the pooled coefficient ( $\beta$ ) on the treatment indicator is not easily interpretable because it is a weighted average of all possible pairs that compare one group that changes treatment status to another group that does not. The weights are based on the group sizes and the variance in treatment in each of the pairs. Goodman-Bacon (2021) shows that identification is confounded because already treated observations act as controls in some pairs. Unlike the pooled specification, the state-by-state two-group, two-period difference-in-differences (DID) design in equation (1) is free of the problematic comparisons that use already-treated firms as controls.

Next, we evaluate the implications of the misclassification of pre-event changes as post-event changes in the E-Index in the context of Appel’s baseline model. Table 6 reports these results. First, we replicate Appel’s sample construction steps. The pooled sample does not require company coverage between consecutive ISS surveys centered on the enactment of UD laws. Panels A and B of Table 6 confirm that we derive a consistent sample of 18,162 firm-year observations and that our E-Index statistics closely match Appel’s paper.

Table 6, Panel C, reports the pooled regression results based on equation (2). Column 1 reports a significantly positive coefficient on the treatment indicator, which replicates Appel’s finding of an increase in the E-Index following the enactment of UD laws. Next, we additively decompose the treatment indicator to separate the group of 13 unique treated firms that are incorrectly classified as experiencing a post-event increase in their E-Index. The treatment indicator excluding the misclassified firms is  $I(TREAT^{true})$  and the treatment indicator including only the misclassified firms is  $I(TREAT^{false})$ . Column 2 shows that the coefficient on  $I(TREAT^{true})$  is indistinguishable from zero whereas the coefficient on  $I(TREAT^{false})$  is significantly positive. The key inference is that Appel’s finding of an increase in the E-Index following the enactment of UD laws is driven by 13 companies adopting poison pill and golden parachute provisions before the enactment of UD laws.

The state-by-state and pooled analyses deliver a consistent message. Prior evidence of an empirical link between the enactment of UD laws and management entrenchment is confounded by a small number of firms incorporated in UD law adopting states. Our case-by-case investigation underscores the importance of clearly identifying the timing and frequency of changes in the use of entrenchment provisions among affected firms when investigating cause-and-effect outcomes of UD laws. Indeed, our evidence shows that the vast majority of changes in the use entrenchment provisions among affected firms were in fact announced before the enactment of UD laws and thus cannot be causally attributed to UD laws.

#### **F. Past performance and future adoption of entrenchment provisions**

The evidence so far challenges the existence of a cause-and-effect link between UD laws and management entrenchment. Catan (2019) provides evidence that poison pill adoptions are preceded by significant drops in firm value. In what follows, we extend this result in the UD law setting and test whether the adoption of entrenchment provisions among treated firms is preceded by negative stock return performance.

We focus on the group of 20 affected firms experiencing an increase in their E-Index (see Table 2, Panel A) and measure the cumulative stock returns leading to the date of adoption of entrenchment provisions (see Table 3). For companies adopting multiple provisions, we focus on the first adoption. We obtain stock return data from CRSP and report market-adjusted as well as size and B/M factor-adjusted returns using the Fama-French 5 × 5 portfolio breakpoints. We dropped one case, MKS Instruments, Inc., due to the lack of CRSP coverage of privately held firms. Effectively, we examine the stock return performance of 19 treated firms adopting entrenchment provisions. We note that for 18 out of the 19 cases with CRSP coverage the target firm adopts antitakeover provisions, which includes 12 firms that adopt golden parachutes and six that adopt poison pills.<sup>5</sup>

Table 7, Panel A, shows that the adoption of entrenchment provisions is preceded by significant underperformance relative to the market in the order of  $-17.8\%$  in the prior year. Evidence of underperformance is not sensitive to the use of factor-adjusted returns. The evidence is also unchanged on a value-weighted basis and, therefore, the effect is not

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<sup>5</sup> An emerging literature questions the effectiveness of poison pill and golden parachutes provisions as takeover deterrents. Catan and Kahan (2016) argue that the ability of a firm to adopt a poison pill at any time, a so-called shadow poison pill, may make a poison pill adoption meaningless. Klausner (2013) also points out the irrelevance of antitakeover provisions in the presence of a shadow pill. Lund and Schonlau (2017) argue that golden parachutes are not a takeover deterrent because they incentivize managers to sell the firm.



concentrated on smaller treated firms. The evidence becomes stronger using a longer return cumulation window. In fact, the group of affected firms adopting entrenchment provisions underperforms the market index by  $-38.4\%$  in the prior two years. Table 7, Panel B, reports consistent results after eliminating out-of-state incorporations and dual-class firms. Our evidence of a strong link between the adoption of entrenchment provisions and past stock performance casts doubt on the alternative possibility that management chooses to become more entrenched in anticipation of the enactment of UD laws and a potential decrease in future derivative litigation risk.

#### IV. Conclusion

Our granular investigation shows that the link between UD laws and corporate governance found by Appel (2019) is influenced by a small number of firms adopting poison pill and golden parachute provisions after substantial long-term drops in value. Using hand-collected data, we find that the vast majority of changes in the use entrenchment provisions among affected firms are in fact announced before the enactment of UD laws and cannot be causally attributed to UD laws. Our paper complements and extends Donelson's et al. (2022) study of the validity of using UD laws as a shock to derivative litigation risk. Different from prior research, our case-by-case investigation underscores the importance of clearly identifying the timing and frequency of changes in the use of entrenchment provisions when investigating the impact of changes in litigation risk on governance and firm outcomes.

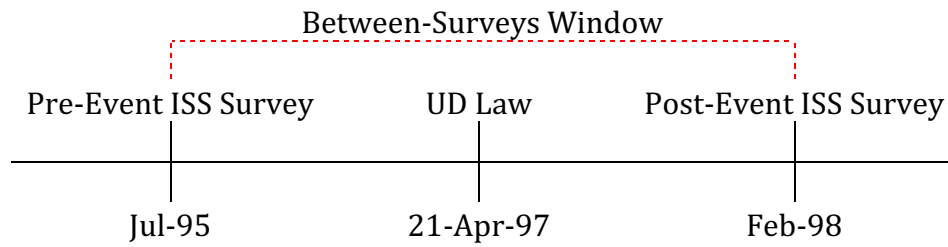
We conclude that the empirical link between UD laws and management entrenchment is not supported by the evidence. More broadly, our paper adds to methods papers in corporate law and finance. Spamann (2010) reevaluates the coding of the anti-director rights index and tells a cautionary tale about the need for validation of legal data. In this regard, our evidence on the misclassification of pre-event changes in the E-Index as post-event changes reinforces Spamann's point in the UD law setting. Black et al. (2022) emphasize the importance of confirming the principal causal channels of natural experiments. Failure to provide support for the *principal causal channels* raises questions about the robustness of *other indirect effects*. In the same vein, our evidence of a tenuous link between UD laws and entrenchment provisions raises questions about the validity of follow-up studies on the indirect effects of UD law adoption on various firm outcomes, including corporate disclosures and financial reporting choices, investment, and cost of capital.

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**Figure 1**  
**Research Design Timeline: An Illustrative Example**



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**Explanation:** This figure illustrates our DID research design using the effective date of UD laws in Pennsylvania as an illustrative example. Our DID research design contains two time periods, pre and post, and two groups, treated and control.

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**Table 1**  
**Treated Firm Counts Across UD Law Adopting States**

**Panel A: Research Design Timeline and Treated Firm Counts.**

Treated State	DID Timeline			Treated States		
	UD Law Effective Date	Pre- ISS Survey	Post- ISS Survey	All Inc.	In State	In State w/o Dual
Georgia	Jul-1989	NA	Sep-1990	NA	NA	NA
Michigan	Oct-1989	NA	Sep-1990	NA	NA	NA
Florida	Jul-1990	NA	Sep-1990	NA	NA	NA
Wisconsin	May-1991	Sep-1990	Jul-1993	8	7	6
Montana	Jan-1992	Sep-1990	Jul-1993	NA	NA	NA
Virginia	Jul-1992	Sep-1990	Jul-1993	17	12	11
New Hampshire	Jan-1993	Sep-1990	Jul-1993	NA	NA	NA
Mississippi	Jul-1993	Jul-1993	Jul-1995	1	1	1
North Carolina	Oct-1995	Jul-1995	Feb-1998	11	9	7
Arizona	Jan-1996	Jul-1995	Feb-1998	NA	NA	NA
Nebraska	Jan-1996	Jul-1995	Feb-1998	1	1	1
Connecticut	Jan-1997	Jul-1995	Feb-1998	5	5	3
Maine	Sep-1997	Jul-1995	Feb-1998	1	1	1
Pennsylvania	Apr-1997	Jul-1995	Feb-1998	27	24	23
Texas	Sep-1997	Jul-1995	Feb-1998	7	7	7
Wyoming	Jul-1997	Jul-1995	Feb-1998	1	NA	NA
Idaho	Jul-1998	Feb-1998	Feb-2000	1	1	1
Utah	May-2000	Feb-2000	Feb-2002	5	4	4
Hawaii	Jul-2001	Feb-2000	Feb-2002	1	1	1
Iowa	Jan-2003	Feb-2002	Jan-2004	4	4	3
Massachusetts	Jul-2004	Jan-2004	Jan-2006	18	18	18
Rhode Island	Jul-2005	Jan-2004	Jan-2006	2	2	1
South Dakota	Jul-2005	Jan-2004	Jan-2006	NA	NA	NA
Treated Firm Counts				110	97	88

**Panel B: Distribution of Treated Firms Across UD States.**

	Distribution of Treated Firms			
	All Inc.	In State w/o Dual	% All Inc.	% In State w/o Dual
Pennsylvania	27	23	25%	26%
Massachusetts	18	18	16%	20%
Virginia	17	11	15%	13%
North Carolina	11	7	10%	8%
Wisconsin	8	6	7%	7%
Texas	7	7	6%	8%
Connecticut	5	3	5%	3%
Utah	5	4	5%	5%
Iowa	4	3	4%	3%
Other Adopting States	8	6	7%	7%
<b>Treated Firms</b>	<b>110</b>	<b>88</b>	<b>100%</b>	<b>100%</b>

**Explanation:** Panel A reports the UD law effective dates across adopting states together with the release dates of the consecutive ISS surveys before and after the event date and the number of treated firms incorporated across adopting states. Panel B reports the distribution of treated firms with consecutive ISS coverage across adopting states. We separate the nine adopting states with at least four treated firms with pre-post ISS coverage (WI, VA, NC, CT, PA, TX, UT, IA, and MA) from other adopting states (MI, NE, ME, WY, ID, HI, and RI).

**Interpretation:** Between 1990 and 2006, we identify 110 unique firms incorporated in UD law adopting states that have coverage between consecutive ISS surveys centered on the effective date of UD laws.

**Table 2**  
**Frequency of Treated Firms Adopting Entrenchment provisions**

**Panel A: Treated Firms, All Incorporations.**

	Frequency of Treated Firms Adopting Entrenchment Provisions						$\Delta(\text{EINDEX}) > 0$	OBS	% Adopt
	CB	SV	LB	LC	PP	GP			
Pennsylvania	0	0	0	0	5	6	10	27	37.0%
Massachusetts	0	0	1	0	1	1	3	18	16.7%
Virginia	0	0	0	0	0	0	0	17	0.0%
North Carolina	0	0	0	0	0	0	0	11	0.0%
Wisconsin	0	0	0	0	0	0	0	8	0.0%
Texas	0	0	0	0	2	1	2	7	28.6%
Connecticut	0	0	0	0	0	1	1	5	20.0%
Utah	0	0	0	0	0	2	2	5	40.0%
Iowa	0	0	0	0	0	0	0	4	0.0%
Other Adopting States	0	1	0	0	1	1	2	8	25.0%
<b>Pooled</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>12</b>	<b>20</b>	<b>110</b>	<b>18.2%</b>

**Panel B: Treated Firms, In-State Incorporations Ex Dual-Class.**

	Frequency of Treated Firms Adopting Entrenchment provisions						$\Delta(\text{EINDEX}) > 0$	OBS	% Adopt
	CB	SV	LB	LC	PP	GP			
Pennsylvania	0	0	0	0	4	3	7	23	30.4%
Massachusetts	0	0	1	0	1	1	3	18	16.7%
Virginia	0	0	0	0	0	0	0	11	0.0%
North Carolina	0	0	0	0	0	0	0	7	0.0%
Wisconsin	0	0	0	0	0	0	0	6	0.0%
Texas	0	0	0	0	2	1	2	7	28.6%
Connecticut	0	0	0	0	0	1	1	3	33.3%
Utah	0	0	0	0	0	1	1	4	25.0%
Iowa	0	0	0	0	0	0	0	3	0.0%
Other Adopting States	0	1	0	0	0	0	1	6	16.7%
<b>Pooled</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>7</b>	<b>15</b>	<b>88</b>	<b>17.0%</b>

**Explanation:** This table reports the frequency of treated firms experiencing an increase in their E-Index between consecutive ISS surveys centered on the effective date of UD laws across adopting states. We separate the nine adopting states with at least four treated firms with pre-post ISS coverage from other adopting states (MI, NE, ME, WY, ID, HI, and RI). The columns correspond to the six entrenchment provisions underlying the E-Index, including classified board (CB), supermajority voting (SV), limit bylaw (LB), limit charter (LC), poison pill (PP), and golden parachute (GP). The sample includes 110 firms incorporated in UD law adopting states between 1990 and 2006 with ISS coverage around the UD law effective date. Panel A reports the frequency distribution for the full sample. Panel B excludes out-of-state incorporations and dual-class companies.

**Interpretation:** Across adopting states, we find that only 20 cases out of the 110 treated firms appear to experience a pre-post increase in their E-Index, a pooled adoption rate of 18.2%. These 20 affected firms collectively adopted a total of 23 entrenchment provisions, with poison pill and golden parachute provisions accounting for 21 out of the total of 23 provision adoptions.

**Table 3**  
**Identifying the Adoption Dates of Entrenchment Provisions**

State	Company Name	UD Law Date	Pre-Event ISS	Post-Event ISS	CB	SV	LB	LC	PP	GP	Filings	Adoption	I(PRE)
MS	FIRST MISSISSIPPI CORP	7/1/1993	Jul-1993	Jul-1995	0	1	0	0	0	0	<a href="#">10-K</a>	9/26/1990	1
CT	GERBER SCIENTIFIC INC	1/1/1997	Jul-1995	Feb-1998	0	0	0	0	0	1	<a href="#">DEF14A</a>	4/28/1995	1
PA	COMCAST CORP	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	0	1	NA	9/24/1997*	0
PA	SUN INC	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	1	0	<a href="#">8-K</a>	2/1/1996	1
PA	CBS CORP	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	0	1	<a href="#">DEF14A</a>	11/28/1995	1
PA	CBS CORP	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	1	0	<a href="#">10-K</a>	12/29/1995	1
PA	CROWN CORK & SEAL CO INC	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	1	0	<a href="#">8-A</a>	8/7/1995	1
PA	ARMSTRONG WORLD IND INC	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	0	1	<a href="#">DEF14A</a>	3/18/1997	1
PA	CHARMING SHOPPES INC	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	0	1	<a href="#">DEF14A</a>	5/23/1996	1
PA	CHECKPOINT SYSTEMS INC	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	0	1	<a href="#">DEF14A</a>	7/1/1995	1
PA	MINE SAFETY APPLIANCES CO	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	1	0	<a href="#">10-K</a>	2/10/1997	1
PA	GLATFELTER P H CO	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	0	1	<a href="#">DEF14A</a>	3/13/1997	1
PA	INTELLIGENT ELECTRONICS INC	4/21/1997	Jul-1995	Feb-1998	0	0	0	0	1	0	<a href="#">10-K</a>	3/8/1996	1
TX	SOUTHWEST AIRLINES CO	9/1/1997	Jul-1995	Feb-1998	0	0	0	0	1	0	<a href="#">10-K</a>	7/18/1996	1
TX	TCA CABLE TV INC	9/1/1997	Jul-1995	Feb-1998	0	0	0	0	0	1	<a href="#">DEF14A</a>	3/28/1996	1
TX	TCA CABLE TV INC	9/1/1997	Jul-1995	Feb-1998	0	0	0	0	1	0	<a href="#">10-K</a>	1/15/1998	0
WY	WAINOCO OIL CORP	7/1/1997	Jul-1995	Feb-1998	0	0	0	0	0	1	<a href="#">10-Q</a>	4/1/1996	1
WY	WAINOCO OIL CORP	7/1/1997	Jul-1995	Feb-1998	0	0	0	0	1	0	NA	10/29/1997*	0
UT	UNION PACIFIC CORP	5/1/2000	Feb-2000	Feb-2002	0	0	0	0	0	1	<a href="#">DEF14A</a>	11/1/2000	0
UT	FRANKLIN COVEY CO	5/1/2000	Feb-2000	Feb-2002	0	0	0	0	0	1	<a href="#">DEF14A</a>	9/1/2000	0
MA	TERADYNE INC	7/1/2004	Jan-2004	Jan-2006	0	0	0	0	0	1	<a href="#">10-Q</a>	9/3/2004	0
MA	MERCURY COMPUTER SYSTEMS	7/1/2004	Jan-2004	Jan-2006	0	0	0	0	1	0	<a href="#">Form 8-A12G</a>	12/14/2005	0
MA	MKS INSTRUMENTS INC	7/1/2004	Jan-2004	Jan-2006	0	0	1	0	0	0	<a href="#">S-1/A</a>	2/17/1999	1
Total:	23 provisions (20 unique firms)				0	1	1	0	9	12			16

**Explanation:** This table provides information about the adoption dates across the six entrenchment provisions underlying the E-Index, along with the links to the original SEC filings. The last column reports the values of I(PRE), an indicator that equals one if the provision adoption precedes the UD law effective date in the state of incorporation. We fail to identify the public filings for two cases. For these two cases, we assume that the provision adoption took place in the midpoint of the window between the UD law effective date and the post-event ISS survey date (\*). The Supplement provides page references and relevant text excerpts from the SEC filings.

**Interpretation:** We hand-collect information on the exact adoption dates of individual entrenchment provisions across the 20 affected firms in UD law adopting states. Our case-by-case analysis shows that 16 out of the 23 entrenchment provisions that were adopted across the 20 affected firms were announced prior to the enactment of UD laws.



**Table 4**  
**Corrected Frequency of Treated Firms Adopting Entrenchment provisions**

**Panel A: Treated Firms, All Incorporations.**

	Corrected Frequency of Treated Firms Adopting Entrenchment Provisions						$\Delta(\text{EINDEX}) > 0$	OBS	% Adopt
	CB	SV	LB	LC	PP	GP			
Pennsylvania	0	0	0	0	0	1	1	27	3.7%
Massachusetts	0	0	0	0	1	1	2	18	11.1%
Virginia	0	0	0	0	0	0	0	17	0.0%
North Carolina	0	0	0	0	0	0	0	11	0.0%
Wisconsin	0	0	0	0	0	0	0	8	0.0%
Texas	0	0	0	0	1	0	1	7	14.3%
Connecticut	0	0	0	0	0	0	0	5	0.0%
Utah	0	0	0	0	0	2	2	5	40.0%
Iowa	0	0	0	0	0	0	0	4	0.0%
Other Adopting States	0	0	0	0	1	0	1	8	12.5%
<b>Pooled</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>7</b>	<b>110</b>	<b>6.4%</b>

**Panel B: Treated Firms, In-State Incorporations Ex Dual-Class.**

	Corrected Frequency of Treated Firms Adopting Entrenchment Provisions						$\Delta(\text{EINDEX}) > 0$	OBS	% Adopt
	CB	SV	LB	LC	PP	GP			
Pennsylvania	0	0	0	0	0	1	1	23	4.3%
Massachusetts	0	0	0	0	1	1	2	18	11.1%
Virginia	0	0	0	0	0	0	0	11	0.0%
North Carolina	0	0	0	0	0	0	0	7	0.0%
Wisconsin	0	0	0	0	0	0	0	6	0.0%
Texas	0	0	0	0	1	0	1	7	14.3%
Connecticut	0	0	0	0	0	0	0	3	0.0%
Utah	0	0	0	0	0	1	1	4	25.0%
Iowa	0	0	0	0	0	0	0	3	0.0%
Other Adopting States	0	0	0	0	0	0	0	6	0.0%
<b>Pooled</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>88</b>	<b>5.7%</b>

**Explanation:** This table reports the corrected frequency of treated firms experiencing an increase in the E-Index across UD law adopting states of incorporation. We correct the entrenchment indicators based on the actual timing of the provision adoption and the effective date of UD laws using hand-collected data. We separate the nine adopting states with at least four treated firms with pre-post ISS coverage from other adopting states (MI, NE, ME, WY, ID, HI, and RI). The columns correspond to the six entrenchment provisions underlying the E-Index, including classified board (CB), supermajority voting (SV), limit bylaw (LB), limit charter (LC), poison pill (PP), and golden parachute (GP). Panel A reports the frequency distribution for the full sample. Panel B excludes out-of-state incorporations and dual-class companies.

**Interpretation:** Our evidence shows that only 7 out of the 110 treated firms experienced an increase in their E-Index after the enactment of UD laws, which implies an adoption rate of 6.4%. All 7 cases are associated with the adoption of poison pills and golden parachute provisions.

**Table 5**  
**State-by-State Analysis**

**Panel A: Regression Results With Controls.**

	Dependent Variable = $\Delta(EINDEX)$								
	WI	VA	NC	CT	PA	TX	UT	IA	MA
<i>I(TREAT)</i>	-0.1088	-0.029	-0.1542	-0.1063	-0.1109	0.0752	0.0261	-0.0198	0.0374
<i>T-stat (wild)</i>	<i>-1.89</i>	<i>-0.79</i>	<i>-1.45</i>	<i>-1.93</i>	<i>-1.81</i>	<i>0.56</i>	<i>0.08</i>	<i>-0.53</i>	<i>0.36</i>
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated OBS	8	17	11	5	27	7	5	4	18
Control OBS	658	658	631	631	631	631	816	983	912

**Panel C: Regression Results Without Controls.**

	Dependent Variable = $\Delta(EINDEX)$								
	WI	VA	NC	CT	PA	TX	UT	IA	MA
<i>I(TREAT)</i>	-0.0523	-0.0562	-0.1441	-0.0854	-0.1053	0.0901	0.0025	-0.0195	0.0707
<i>T-stat (wild)</i>	<i>-1.58</i>	<i>-1.86</i>	<i>-1.44</i>	<i>-1.90</i>	<i>-1.77</i>	<i>0.68</i>	<i>0.01</i>	<i>-0.60</i>	<i>0.71</i>
Controls	NO	NO	NO	NO	NO	NO	NO	NO	NO
Sector FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Treated OBS	8	17	11	5	27	7	5	4	18
Control OBS	658	658	631	631	631	631	816	983	912

**Explanation:** Panel A reports state-by-state regression results using all incorporations. Panel B excludes out-of-state incorporations and dual-class companies. We zero in on E-Index changes between consecutive ISS surveys centered on the effective date of UD laws and use our hand-collected information to correct the ISS data for the misclassification of pre-event changes as post-event changes in the E-Index among treated firms. We focus on the nine adopting states with at least four treated firms with pre-post ISS coverage: WI, VA, NC, CT, PA, TX, UT, IA, and MA. The vector of firm-level controls includes log total assets, financial leverage, cash holdings, R&D intensity, and capital expenditure. We report wild bootstrapped t- statistics using two-tailed tests.

**Interpretation:** Our state-by-state analysis does not yield any evidence of a significant increase in the use of entrenchment provisions for treated firms incorporated in UD law adopting states relative to control firms incorporated in non-adopting states.

**Table 6**  
**Pooled Analysis**

**Panel A: Sample Construction.**

Steps	OBS.
US-firms in Compustat from 1990 to 2006 with non-missing state of incorporation and headquarter data	99,316
Exclude financials, utilities, and unclassified firms	77,752
Exclude time-varying incorporations	71,424
Exclude firms with missing financials and block holder data	60,983
Exclude firms that were never covered in ISS data	25,942
Exclude missing ISS data after backfilling the gap years	18,162

**Panel B: Descriptive Statistics.**

Variable	OBS	Mean	Median	Std. Dev.
E-Index	18,162	2.11	2.00	1.32
Golden Parachute	18,162	0.59	1.00	0.49
Classified Board	18,162	0.59	1.00	0.49
Poison Pill	18,162	0.57	1.00	0.50
Limit Bylaw	18,162	0.17	0.00	0.38
Supermajority Voting	18,162	0.17	0.00	0.38
Limit Charter	18,162	0.02	0.00	0.15

**Panel C: Revising UD Law Effect on Management Entrenchment.**

	Dependent Variable = EINDEX	
	(1)	(2)
<i>I(TREAT)</i>	0.1507	.
<i>T-stat</i>	2.15	
<i>I(TREAT<sup>true</sup>)</i>	.	0.0717
<i>T-stat</i>		0.81
<i>I(TREAT<sup>false</sup>)</i>	.	0.5734
<i>T-stat</i>		4.08
Controls	Yes	Yes
Firm FE	Yes	Yes
Year & Sector FE	Yes	Yes
Adj. R2	87.2%	87.2%
OBS.	18,162	18,162

**Explanation:** This table replicates Appel's (2019) sample construction and baseline results. Panel A describes the sample construction steps. Panel B reports the descriptive statistics. Panel C first replicates Appel's (2019) regression results and then additively decomposes the treatment indicator to separate the group of 13 unique treated firms that are incorrectly classified as experiencing a post-event increase in their E-Index. We report t-statistics based on clustered standard errors by state of incorporation.

**Interpretation:** Prior evidence of an increase in the E-Index following the enactment of UD laws is driven by 13 companies adopting poison pill and golden parachute provisions before the enactment of UD laws.

**Table 7**  
**Past Performance and Future Adoption of Entrenchment Provision**

**Panel A: All Incorporations.**

	Market-Adjusted Returns		Factor-Adjusted Returns	
	One Year	Two Years	One Year	Two Years
EW Return	-17.8%	-38.4%	-14.9%	-35.7%
VW Return	-16.0%	-34.4%	-13.4%	-30.8%
Std. Dev.	26.6%	44.0%	26.4%	39.5%
OBS	19	19	19	19

**Panel B: In State Incorporations Ex Dual-Class.**

	Market-Adjusted Returns		Factor-Adjusted Returns	
	One Year	Two Years	One Year	Two Years
EW Return	-19.7%	-38.3%	-16.9%	-35.2%
VW Return	-18.6%	-33.8%	-16.1%	-29.3%
Std. Dev.	26.1%	45.2%	25.7%	40.6%
OBS	18	18	18	18

**Explanation:** This table reports equal-weighted (EW), and value weighted (VW) mean cumulative returns for the one- and two-year windows leading to the adoption of entrenchment provisions. The sample covers the group of treated firms incorporated in UD law adopting states that experiencing a post-UD law increase in their E-Index. To measure the cumulative stock return performance, we use entrenchment provision dates as identified in our hand-collected data. We obtain stock return data from CRSP and report market-adjusted returns as well as size and B/M factor-adjusted returns using the Fama-French 5×5 portfolio breakpoints.

**Interpretation:** We find that the adoption of entrenchment provisions among treated firms incorporated in UD law adopting states is preceded by substantial long-term drops in value.