



Do takeover laws matter? Evidence from five decades of hostile takeovers[☆]

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ABSTRACT

This study evaluates the relation between hostile takeovers and 17 takeover laws from 1965 to 2014. Using a data set of largely exogenous legal changes, we find that certain takeover laws, such as poison pill and business combination laws, have no discernible impact on hostile activity, while others such as fair price laws have reduced hostile takeovers. We construct a Takeover Index from the laws and find that higher takeover protection is associated with lower firm value, consistent with entrenchment and agency costs. However, conditional on a bid, firms with more protection achieve higher premiums, consistent with increased bargaining power.

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1. Introduction

In 1985, businessman Ronald Perelman made a hostile bid for Revlon, the cosmetics company. The Chief Executive

Officer (CEO) of Revlon at the time responded with disdain and arranged for the Revlon board of directors to adopt a number of takeover defenses, including an early form of the poison pill, to fight off Perelman's bid. The contest was resolved in Perelman's favor when the Delaware courts intervened, adopting the so-called Revlon rule, which requires that when a company puts itself up for sale, it must sell for the highest price reasonably available (Bruck, 1988). The adoption of the Revlon rule occurred at a time of heightened hostile takeover activity, when many rules governing hostile takeovers were adopted by both state legislatures and courts. However, while the time of the Revlon decision marked a surge in the number of these laws, the legal environment around takeovers has been evolving for approximately 50 years.

The varying effect of takeover laws has implications for the theory that the takeover market is an external disciplinary mechanism for corporate governance (Manne, 1965). Numerous studies have used variation in specific takeover defenses or antitakeover laws as a proxy for

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changes in firm corporate governance (e.g., [Bertrand and Mullainathan, 1999, 2003](#); [Schwert, 2000](#); [Karpoff and Malatesta, 1989](#)). [Lel and Miller \(2015\)](#) provide evidence that links takeover activity and managerial discipline to the legal environment in an international setting. As they point out in their study, the use of an external influence, such as takeover laws, has come into favor to sidestep the endogeneity problem that arises when measuring takeover defenses at the firm level (see also [Core et al., 2006](#)). But, while specific studies have focused on individual or selected antitakeover statutes, none has examined the full array of takeover laws, and remaining unexplored is how the full spectrum of the legal environment impacts hostile takeover activity over an extended period of time. Moreover, [Coates \(2000\)](#) criticizes many studies of antitakeover provisions for failing to have a longitudinal time frame sufficient to account for changes in legal regimes and markets. Our study addresses these gaps in the literature.

We use a data set of 17 different takeover laws and court decisions from 1965 through 2014 to measure the variation in takeover laws and their long-term impact on hostile activity. We also utilize a novel data set of Merger and Acquisition (M&A) hostility back to 1965. We find that the general susceptibility to a hostile takeover peaked in 1973 and has varied substantially since then. As a proportion of total M&A equal-weighted volume, hostile activity peaked in 1967 at 40% immediately prior to the enactment of the Williams Act and declined to about 8.6% in 2014. Although hostile activity is less common than it once was, it has certainly not disappeared.

[Bertrand and Mullainathan \(1999\)](#) use variation in the timing and adoption of business combination (BC) laws by states to proxy for corporate governance quality of firms incorporated in each state. Numerous studies conducted since then rely on business combination laws as a plausibly exogenous proxy for governance quality ([Karpoff and Wittry, 2015](#)). However, the relation between these laws and actual levels of takeover activity remains questionable, with [Comment and Schwert \(1995\)](#) concluding that the passage of business combination laws had no discernible deterrence effect on overall M&A rates. We find similar results for hostile takeover rates. Moreover, the value-weighted proportion of firms covered by these laws jumped from 0% pre-1985 to over 95% by 1990. Thus, BC laws alone seem unlikely to provide a reliable measure of external pressures on firms' corporate governance, casting doubt on the relevance of this proxy in academic research.

We continue our analysis by examining the extent to which a wide array of takeover legislation and case law has influenced hostile activity levels over the past five decades. This analysis includes the Williams Act in 1968, the first-generation takeover laws and their repeal, business combination laws, fair price provisions, control share acquisition statutes, control share cash-out statutes, poison pill cases and statutes, mandatory classified board laws, expanded constituency laws, disgorgement provisions, anti-greenmail laws, golden parachute restrictions, tin and silver parachute blessings, assumption of labor contract laws, and the Revlon, Unocal, and Blasius standards of review (based on *Revlon, Inc. v. MacAndrews & Forbes Holdings*; *Unocal v. Mesa Petroleum*; and *Blasius Industries v. At-*

las Corp., respectively). By focusing on state-level variation in the takeover environment that is largely exogenous to firm-level decisions, we are able to more cleanly measure the true impact on hostile activity, takeover premiums, and firm value.

Following the analysis of which takeover laws matter, we turn to constructing a firm-level index of takeover susceptibility from the impactful legal determinants in the hostile takeover models (hereafter, Takeover Index), in conjunction with other plausibly exogenous determinants of takeover susceptibility. We then examine the relation between the Takeover Index and firm-level economic outcomes. To mitigate omitted variables bias, the index is constructed using legal determinants as well as other control variables such as aggregate capital liquidity ([Harford, 2005](#)) and firm age ([Shumway, 2001](#)) that impact the probability of hostile takeover but are not functions of firm choice. Variation in takeover susceptibility results from three sources in this model: (1) the legal determinants, (2) a macroeconomic factor (capital liquidity), and (3) a firm-specific factor that is not subject to firm choice (firm age). In this way, the index represents a middle ground between existing governance proxies such as the Governance Index (G-Index) ([Gompers et al., 2003](#)), that are subject to endogeneity concerns and single law proxies, such as BC laws, that are plausibly exogenous but lack power.

The emphasis on hostile activity instead of all M&A transactions is important in the development of the index for two reasons. First, we make no prediction for the relation between antitakeover laws and overall merger activity. For example, if a 100% bullet-proof antitakeover law were passed, no more hostile takeovers would be expected. However, a continuation of M&A activity in aggregate would still be expected as managers seek to maximize shareholder value by pursuing synergies. The volume of total M&A transactions is influenced by numerous factors that are unrelated to takeover laws such as industry technological shifts ([Harford, 2005](#)), whereas bidders' ability to pursue these transactions via hostile means is related much more directly to the legal environment. Second, as we seek to create an index related to governance, it is important to focus on takeovers that could be disciplinary in nature. As discussed by [Hartzell et al. \(2004\)](#), target CEOs typically receive wealth gains roughly equivalent to their expected lifetime income stream in their sample of primarily negotiated (friendly) takeovers. Thus, interpreting friendly acquisitions as a corporate governance mechanism is difficult. We therefore isolate hostile deals for the development of the index and then turn to a full sample of M&A transactions in subsequent tests because the level of protection can have implications for premiums in both friendly and hostile takeovers.

We find that firm value is positively associated with susceptibility to hostile takeovers. The relation is significant in three of four decade subperiods and is significant when estimated on our entire sample. The result is robust to inclusion of indices of firm-level defenses such as the G-Index or Entrenchment Index (E-Index). Shareholders thus appear to value the disciplinary market for corporate control, and the secular decline in hostile takeover rates in recent years could perpetuate agency problems related to

entrenchment such as the managerial quiet life (Bertrand and Mullainathan, 1999). To the extent that firms deploy similar defenses to thwart shareholder activism, this trend underscores the relation between takeover defenses and corporate governance.

We also find that takeover premiums are significantly negatively related to the Takeover Index in the 1990s and 2000s. This supports the idea that firm susceptibility to hostile takeovers reduces managers' bargaining power in change-of-control transactions, consistent with Jarrell and Bradley (1980) evidence on first-generation laws.

Our study is unique in that it covers all US-incorporated firms and measures hostile takeover levels over a five-decade period. We show that laws previously thought to have negative wealth effects, particularly BC laws, might not have had a significant effect on firms, and we instead find evidence that other takeover laws among the 17 examined had more significant impact. Our findings are consistent with the theory that takeover laws are of varying strength and effect and that particular laws can have no effect at all (Catan and Kahan, 2014). This more nuanced view of antitakeover laws is consistent with a contemporaneous study by Karpoff and Wittry (2015), which explores the political economy of these takeover laws and also presents similar results with respect to BC laws.

Our study thus shows the efficacy of common governance proxies, namely, takeover defenses, but on a level that is at least somewhat exogenous from managerial influence. It advances prior studies of firm-level defenses or subsets of takeover legislation such as BC laws. Our Takeover Index offers researchers a comprehensive tool to measure external forces on corporate governance engendered by the legal environment and provides new evidential support for the beneficial role that the disciplinary market for corporate control can play in corporate governance.

This paper proceeds as follows. Section 2 reviews existing literature. Section 3 describes our sample and provides descriptive statistics. Section 4 reports our empirical results, and Section 5 concludes.

2. Existing literature

M&A and corporate governance each represents a voluminous line of literature. Our study primarily draws upon three areas within these fields: (1) the use of takeover laws as a proxy for corporate governance, (2) the shareholder wealth effects of takeover laws, and (3) the impact of takeover laws on the incidence of hostile takeovers.

2.1. Takeover laws and corporate governance

Studies that examine attributes related to corporate governance have principally focused on a single class of second-generation laws: BC laws. These laws prohibit bidders from engaging in a business combination with a target for a pre-set period, typically three to five years, upon the bidder's acquisition of 20% or more of the target's equity unless the purchase is pre-approved by the target's board. Table 1 defines these and other cases or laws under consideration throughout our study.

Previous studies have largely found an inverse relation between measures attributed to governance and the enactment of BC laws. Bertrand and Mullainathan (1999, 2003), for example, examine the enactment of state business combination laws between 1976 and 1995 and whether they allow managers to live the quiet life. They find that workers' wages rise and that new investment in plants falls in the wake of the passage of business combination laws. The authors conclude that "better governance does in fact improve economic performance and does not involve only a transfer of rents to shareholders." (2003, p. 1046). Giroud and Mueller (2010) refine these results and find that business combination laws have greater effect in noncompetitive than in competitive industries.

Other studies examining state antitakeover laws and their effect on corporate governance have focused on specific corporate governance attributes. Garvey and Hanka (1999) examine second-generation antitakeover laws and firm leverage and find that firms protected by such laws reduce their leverage relative to firms unprotected from the takeover market. Cheng et al. (2005) find that the enactment of second-generation antitakeover laws results in reduced managerial stock ownership. Francis et al. (2010) also examine the effect of state BC laws on bondholders, finding that bond prices increase and bond yields decrease in states with stricter BC laws. Finally, Lel and Miller (2015) find that exogenous shocks to the threat of takeover resulting from the passage of laws that reduce frictions to M&A increase managerial discipline through enhanced monitoring by the board of directors.

Other studies have constructed measures of takeover susceptibility using state laws in conjunction with firm-level takeover defenses, such as the Governance Index (Gompers et al., 2003). The G-Index is a measure of 24 corporate governance and takeover-related provisions including six types of state takeover laws (business combination laws, golden parachute restrictions, control share acquisition laws, control share cash-out laws, expanded constituency laws, and fair price laws). The G-Index covers the Standard & Poor's (S&P) 500 and approximately nine hundred to thirteen hundred additional firms and is drawn from Investor Responsibility Research Center data published in six different volumes: September 1990, July 1993, July 1996, February 1998, November 1999, and February 2002. The authors (p. 107) find that "firms with stronger shareholder rights have higher firm value, higher profits, higher sales growth, lower capital expenditures, and made fewer corporate acquisitions." Bebchuk et al. (2009) attribute these findings largely to six provisions internal to the corporate governance of the firm, which they refer to as the Entrenchment Index, or E-Index. Cremers and Ferrell (2014) expand the E-Index and G-index over the 1978–2007 period for approximately one thousand firms and find that the correlation between firm value and shareholder rights is largely driven by Cremers et al. (2009) takeover factor, which captures time-varying investment opportunities.

Indices based on firm-level variables, such as the G-Index or E-Index have been criticized for endogeneity concerns (e.g., Core et al., 2006; Bhagat et al., 2008; Brickley and Zimmerman, 2010). In addition, Larcker et al. (2015)

Table 1
Takeover laws defined.

Statute	Definition
Williams Act	The 1968 amendment to the Securities and Exchange Commission Act of 1934 to regulate tender offers. Requires Securities and Exchange Commission filings, disclosure, and waiting periods. Applies equally to all firms in all states.
1st Generation Statutes	Requires state filing and review requirements. Allows target firm executives, directors, or state commissioners to seek a hearing to delay or block a proposed takeover. The US Supreme Court struck down the Illinois statute (and all other states' statutes by implication) in its <i>Edgar v. Mite</i> decision in 1982. Several states struck down their statutes before or after this (1st Gen Case in Table 2).
Business Combination	Also known as freeze-out statutes, prohibits bidders from engaging in a business combination with a target for a pre-set period upon the bidder's acquisition of 20% or more of the target's equity unless the purchase is pre-approved by the target's board or a specified percentage of disinterested target stockholders.
Fair Price	Requires disinterested board approval, a supermajority vote of shareholders (usually 80%), or the payment of a minimum price in any second step merger.
Control Share Acquisition	Any target shares acquired by bidder in excess of a threshold cannot be voted by the bidder unless approved by a majority or supermajority of disinterested target shareholders.
Control Share Cash-Out	Dissident target shareholders gain the right to cash-out or sell their shares to the bidder at the highest acquiring price paid during the acquisition period.
Poison Pill	If executed, dilutes a hostile bidder's toehold stake significantly. A stronger version, known as a dead-hand pill, can be redeemed prior to expiration only by the directors who adopted the pill even if those directors are removed through a proxy contest.
Mandatory Staggered Board	Requires all firms to have a staggered, or classified, board of directors. Generally one-third of directors stand for reelection each year.
Expanded Constituency	Allow boards to consider welfare interests other than shareholders in their deliberations, including workers, creditors, localities, and social considerations.
Disgorgement	Allows a target to recover any potential profits obtained by a person or group who held more than 20% of the issuer in an 18-month period prior to the takeover.
Anti-Greenmail	Prohibits targets from repurchasing toehold shares from a hostile bidder at a premium to the current stock price.
Golden Parachute Restriction	Limits the ability of a target to issue large severance payments to executives in the event of a successful takeover.
Tin Parachute Blessing	Also known as silver parachutes, allows the target to issue large severance payments to a significant number of employees in the event of a successful takeover.
Assumption of Labor Contracts	Requires a successful hostile bidder to assume all preexisting labor contracts of the target firm after a change in control.
Revlon	Delaware case <i>Revlon, Inc. v. MacAndrews & Forbes Holdings</i> requiring target directors to obtain the best price reasonably available. Can prevent a target from accepted an inferior offer from a friendly white knight bidder. This duty or standard has been explicitly adopted or rejected by several other states in subsequent cases.
Unocal	Delaware case <i>Unocal v. Mesa Petroleum</i> requiring that a board's defensive response to a takeover threat be reasonable in relation to the threat posed. Allows the "just say no" strategy. This duty or standard has been explicitly adopted or rejected by several other states in subsequent cases.
Blasius	Delaware case <i>Blasius Industries v. Atlas Corp.</i> preventing boards from taking actions that interfere with shareholder voting, such as delaying shareholder meetings or imposing new supermajority approval requirements on major decisions. This duty or standard has been explicitly adopted or rejected by several other states in subsequent cases.

note that the data underlying these indices contain measurement error. These factors have led to greater interest in plausibly exogenous proxies for corporate governance, such as those examined in our study.

2.2. The wealth effects of takeover laws

Studies on the wealth effects of state antitakeover laws have largely focused on the announcement and enactment of second-generation antitakeover laws. Studies of second-generation antitakeover laws generally find a reduction in shareholder and bondholder value in the wake of their enactment (Pugh and Jahera, 1990; Sidak and Woodward, 1990; Karpoff and Malatesta, 1989; Hackl and Testani, 1988; Schumann, 1988; Romano, 1987). Similar findings follow the adoptions of extreme second-generation antitakeover statutes (Ryngaert and Netter, 1988 (on Ohio law); Szewczyk and Tsetsekos, 1992, Karpoff and Malatesta, 1990, 1995 (on Pennsylvania law); Swartz, 1998 (on Massachusetts law)). These works are primarily event studies around stock price reactions to news reports or the enactment of second-generation statutes. They do not analyze the longer-term wealth effects of these laws, a gap

highlighted by Coates (2001), who notes that the impact of these laws varies over time as capital markets shift. In addition, Catan and Kahan (2014) note that many of these studies use the incorrect enactment dates for their analysis.

2.3. The effect of takeover laws on hostile activity and premiums

Studies on the general effect of takeover laws on hostile activity have largely focused on individual laws. Comment and Schwert (1995) examine the effect of business combination laws on overall M&A rates and a subset of hostile takeover activity. They find that poison pill and control share laws result in higher premiums but do not appear to significantly deter M&A transactions, on average. This is contrary to a prior study by Hackl and Testani (1988), which examines business combination laws through 1988, finding that these laws reduced hostile takeover rates, with states passing these laws experiencing a 48% reduction in relative hostile takeover rates. Similarly, Jarrell and Bradley (1980) find that takeover premiums increased significantly following the enactment of the first-generation

antitakeover laws, and Smiley (1981) shows a significant deterrent effect on hostile bids from these regulations.

Our study builds on each of these research areas by exploring the wealth effects of a full array of takeover laws over a five-decade period.

3. Sample description

To compile a list of takeover laws from 1965 through 2014, we draw upon various data sources. Aranow et al. (1977) provide detailed tables on the provisions of the first-generation antitakeover statutes adopted by most states. Jarrell and Bradley (1980) list the effective dates of most of these statutes. The RiskMetrics publication, *State Takeover Laws*, provides details and effective dates for the second-generation antitakeover statutes as well as details of many relevant cases. Barzua (2010) reports further detail on the strength of poison pill statutes and cases, strength of constituency statutes, and relevant cases for the application or rejection of standards of review for directors (Revlon, Unocal, and Blasius). We supplement these data with our own search of relevant case law through West-Law, LexisNexis, and readings of state business codes. In several instances, we find conflicting information from the various sources. In these cases, we rely upon the original state business codes and case law source materials.

Our data on M&A and hostile takeover activity come from several sources. We rely on Securities Data Company (SDC) coverage from 1981 through 2014. We use data provided by Schwert (2000) for the period 1975 through 1980. For 1965–1974 we collect M&A hostility by first obtaining data on all Center for Research in Securities Prices (CRSP) delistings due to merger-related reasons. We then search for *Wall Street Journal* articles about the delistings to identify whether hostility is indicated as part of the bidding process for the target. For this purpose, we measure hostility as an unsolicited deal accompanied by target resistance for a period of time. This provides a fairly consistent measure of hostility across all of our data sources.

For all data sources, we code observations for successfully completed deals of US publicly traded targets by both domestic and foreign acquirers. We exclude the (historically) regulated industries of banking and financials [Standard Industrial Classification (SIC) codes 6000–6999], railroads (SIC codes 4000–4099), airlines (SIC codes 4500–4599), and utilities (SIC codes 4900–4999). For robustness, we reestimate the tests with these industries included and the results are qualitatively unchanged. These tables are unreported for brevity.

We combine our merger data with CRSP and Compustat to obtain a sample of 215,830 firm-years with 4613 merger-related delistings. We merge takeover law coverage for all firms based on their state of incorporation data, which we first draw from the Wharton Research Data Services (WRDS) SEC Analytics Suite, then from SDC, and finally from Compustat if the prior data source fails to match a given firm. SEC Analytics provides annual state of incorporation tagged in public filings through Electronic Data Gathering, Analysis, and Retrieval system (EDGAR), with coverage from 1995 onwards. We supplement this approach with incorporation data from historical Moody's

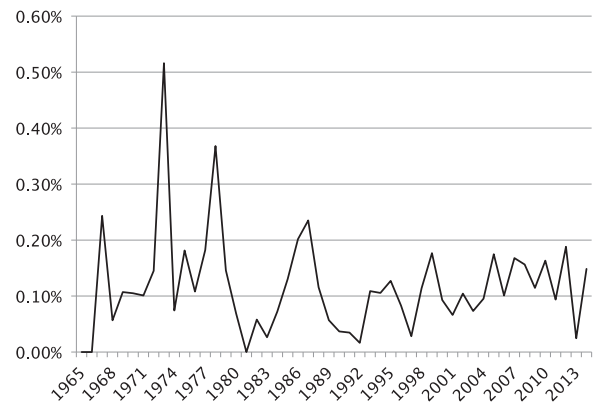


Fig. 1. Hazard rate of being acquired by hostile takeover in any given year (equal-weighted). Firm-years are coded zero for no takeover or for friendly takeover and one for hostile takeover.

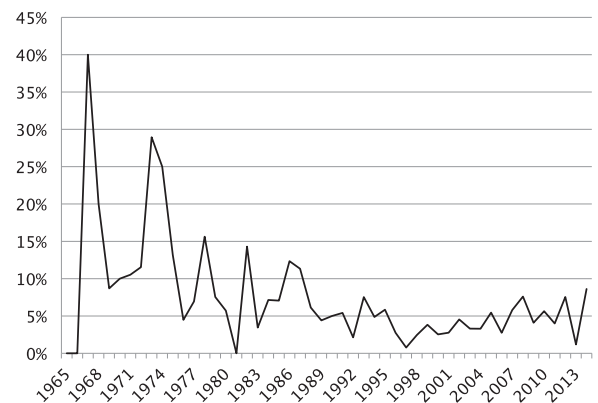


Fig. 2. Conditional on being acquired in a given year, probability of hostility (equal-weighted). Firm-years are coded zero for friendly takeover and one for hostile takeover. Firm-years with no takeovers are excluded.

manuals, which provides fuller coverage for sample firms in the 1960s and 1970s.

The disciplining force of the hostile takeover market depends upon takeovers being a credible threat. Fig. 1 reports the equal-weighted hazard rate of being acquired by hostile takeover in any given year. The figure shows that the unconditional susceptibility to a hostile takeover peaked at 0.52% in 1973 and spiked again in 1987 at 0.24%, in the midst of the fourth merger wave. Since the early 1990s the hazard rate has fluctuated from near zero to 0.20%.

Fig. 2 sets forth the equal-weighted probability of hostility conditional on a firm being successfully acquired in a given year. The 1960s, 1970s and 1980s were decades characterized by high rates of hostile takeover activity. In 1967, just before the enactment of the Williams Act in 1968, 40% of takeovers in our sample were hostile, a number that fell quickly by 1969 to 8.7%. In the 1970s another wave of hostile activity peaked at 28.9% and then again fell. The next peak was in the 1980s, around the demise of first-generation antitakeover laws. Since that time and with the regime shift that occurred in the late 1980s, the chance of any acquisition being hostile has averaged below 10%. However, hostile activity recently surged to 8.6% in 2014, following the depressed market valuations in the recent

recession and coinciding with a rise in shareholder activism and overall cheap takeover credit financing.

We cover 13 different types of state takeover laws, one federal statute, and three state court standards of review over the 50 year period of our study (see Table 2). Cov-

erage in our study begins with the federal Williams Act, which became effective for all states on July 29, 1968. In addition to legislative acts, we code for the Revlon, Unocal, and Blasius takeover standards of review. These standards are named for the Delaware court cases that adopted

Table 2

Takeover law effective dates.

This table reports the effective dates by state of various takeover laws and cases. Laws and cases are defined in Table 1. The Williams Act became effective for all states on 7/29/1968. The 1st Generation statutes were overturned by the “1st Gen Case” if given; all statutes were eliminated (by implication) after the *Edgar v. Mite* case on 6/22/1982. Wisconsin’s Control Share Acquisition statute was adopted on 4/18/1984, repealed on 4/10/1986, and a new statute adopted on 4/22/1986. Poison Pill statutes and cases are adopted with normal strength unless otherwise noted as strong (S) or as rejected, i.e., “No” (N). We assume that all states had access to the poison pill after the *Georgia-Pacific Corp. v. Great Northern Nekoosa Corp.* case on 1/16/1990. Mandatory Staggered Board statutes are indicated as adopted by (Y) and subsequently repealed as (N). Nebraska’s Expanded Constituency statute was adopted on 4/8/1988, repealed on 4/25/1995, and a new statute adopted on 3/7/2007 (Karpoff and Wittry, 2015). Revlon, Unocal, and Blasius standards are either adopted by given states on a date, i.e., “Yes” (Y) or rejected, i.e., “No” (N).

State	1st Gen	1st Gen Case	Business Combination	Fair Price	Control Share Acquisition.	Control Share Cash-Out	Poison Pill statute	Poison Pill case	Disgorgement
AL									
AK	6/12/1976								
AZ			7/22/1987 (Combo)		7/22/1987		1/1/1996		
AR	3/24/1977								
CA									
CO	7/1/1975						3/31/1989	10/31/1986 (N)	
CT	6/2/1976	12/3/1980	6/7/1988	6/4/1984			1/1/1997		
DE	5/1/1976	11/17/1978	2/2/1988				10/1/2003 (S)		
FL	10/1/1977			7/2/1987	7/2/1987		7/1/1990	11/19/1985	
GA	3/23/1977		3/3/1988	7/1/1985			7/1/1989	11/14/1988 (N)	
HI	5/24/1974				4/23/1985			7/3/1997 (S)	
ID	7/1/1975	8/10/1978	3/22/1988 (Combo)		3/22/1988		6/17/1988		
IL	9/8/1977	10/17/1980	8/2/1989	8/23/1985			3/22/1988		
IN	5/1/1975		4/1/1986 (Combo)		4/1/1986		8/2/1989		
IA	1/1/1979		7/1/1997				4/1/1986	4/17/1986	
KS	7/1/1974		7/1/1989		4/21/1988		12/31/1989		
KY	7/1/1976		7/13/1984 (Combo)				7/15/1988		
LA	6/28/1976	4/30/1979		7/13/1984	6/11/1987				
ME	3/24/1978		4/6/1988			9/19/1985	7/1/2003	1/16/1990	
MD	7/1/1976	9/3/1982	6/21/1983 (Combo)		4/11/1989		6/1/1999 (S)		
MA	5/22/1976		7/18/1989		7/21/1987		7/18/1989		
MI	7/1/1976	1/21/1981	5/29/1984 (Combo)		4/1/1988		7/23/2001	11/25/1986	
MN	8/1/1973		6/1/1987	8/1/1991	8/1/1984		8/1/1995	11/10/1986	
MS	7/1/1977			7/1/1985	1/1/1991		4/20/2005		
MO	6/7/1978	9/3/1981	6/23/1986 (Combo)		6/13/1984		8/28/1999		
MT									
NE	4/27/1977		4/9/1988		4/9/1988				
NV	3/4/1969	4/8/1981	10/1/1991 (Combo)		7/1/1987		10/1/1989		
NH	3/25/1977								
NJ	4/27/1977	12/17/1980	1/23/1986 (Combo)				6/29/1989	5/6/1985 (N)	
NM									
NY	11/1/1976		12/16/1985 (Combo)				12/21/1988	7/6/1988 (N)	
NC	6/28/1977			4/23/1987	5/13/1987		7/1/1990		
ND									
OH	10/9/1969		4/11/1990 (Combo)		11/18/1982		11/22/1986		4/11/1990
OK	6/12/1980	7/17/1981	9/1/1991		6/24/1987				
OR			4/4/1991		7/18/1987		3/5/1989		
PA	3/3/1976	2/12/1981	3/23/1988 (Combo)		4/27/1990	12/23/1983	3/23/1988	10/8/1998 (S)	4/27/1990
RI			7/3/1990 (Combo)			7/3/1990			
SC	6/12/1978	12/4/1980	4/22/1988 (Combo)		4/22/1988		6/9/1998		
SD	7/1/1975		7/1/1990 (Combo)		7/1/1990	7/1/1990	7/1/1990		
TN	3/17/1976		3/11/1988 (Combo)		3/11/1988		5/17/1989		
TX	5/6/1977		9/1/1997				1/1/2006		
UT	2/5/1976				5/29/1987		4/24/1989		
VT							7/1/2008		
VA	3/5/1968	1/6/1983	6/1/1985 (Combo)		7/1/1989		4/2/1990	9/6/2000 (S)	
WA			7/28/1985 (Combo)				6/11/1998		
WV									
WI	7/1/1972		4/24/1984 (Combo)		4/18/1984*		9/17/1987	9/26/1986	
WY			3/11/1989		3/20/1990		7/1/2009		

(continued on next page)

Table 2
(continued)

State	Mandatory Staggered Board	Anti Greenmail	Golden Parachute Restriction	Tin Parachute Blessing	Assumption of Labor Contracts	Expanded Constituency	Revlon	Unocal	Blasius
AL									
AK									
AZ		7/22/1987	7/22/1987			7/22/1987			
AR								7/12/1993 (Y)	
CA							1/4/2002 (Y)	4/12/1989 (Y)	
CO									
CT						6/7/1988			7/27/2000 (Y)
DE					4/8/1988		3/13/1986 (Y)	6/10/1985 (Y)	7/25/1988 (Y)
FL						6/27/1989		6/7/1989 (Y)	
GA						7/1/1989			7/3/1997 (N)
HI						6/7/1989			
ID						3/22/1988			
IL						8/23/1985	12/1/1988 (Y)	12/1/1988 (Y)	
IN	7/1/2009 (Y)					4/1/1986	4/21/1987 (Y)	4/21/1987 (Y)	6/18/1993 (N)
IA	3/23/2011 (Y) 12/14/2014 (N)					12/31/1989	4/10/2001 (N)	4/10/2001 (N)	
KS							9/26/2003 (Y)	9/26/2003 (Y)	
KY						7/15/1988			
LA						7/10/1988			
ME						9/19/1985			
MD						6/1/1999	11/4/2004 (N)	11/9/1988 (Y)	6/1/1999 (N)
MA	4/18/1990 (Y)			7/18/1989	7/18/1989	7/18/1989	11/12/2009 (Y)	4/1/2004 (N)	3/15/2005 (Y)
MI								6/30/2003 (N)	4/11/1990 (Y)
MN		3/1/1988	6/26/1987			6/1/1987	9/26/1986 (Y)	9/26/1986 (Y)	5/8/2003 (Y)
MS						7/1/1990	2/4/1987 (Y)	2/4/1987 (Y)	
MO						5/6/1986	6/17/1999 (Y)	6/17/1999 (Y)	
MT									
NE						See note below			
NV						10/1/1991	6/19/1997 (Y) 7/1/1999 (N)	3/20/1985 (N)	6/19/1997 (Y) 7/1/1999 (N)
NH							11/20/2001 (Y)		
NJ						6/29/1989		2/11/1998 (N)	2/11/1998 (N)
NM						4/9/1987			
NY		2/14/1986				7/23/1987	1/6/1986 (Y) 6/17/1997 (N)	1/6/1986 (N)	
NC						10/1/1993	8/10/2001 (N)	8/10/2001 (N)	10/10/1984 (N)
ND						8/1/1993			
OH						10/10/1984	5/9/1990 (N)	11/22/1986 (N)	11/22/1986 (N)
OK	9/1/2010 (Y) 3/5/2013 (N)								
OR						3/5/1989		12/15/1993 (Y)	
PA				4/27/1990	4/27/1990	12/19/1990	6/30/1987 (N)	4/7/1986 (N)	4/27/1990 (N)
RI				7/3/1990	7/3/1990	7/3/1990			
SC									
SD						7/1/1990			
TN		3/11/1988				3/11/1988			
TX						1/1/2006		2/24/1989 (Y)	
UT									
VT						4/16/1998			
VA						3/31/1988	6/11/1999 (N)	9/22/1995 (N)	1/1/1986 (N)
WA									
WV									
WI		9/18/1987				1/1/1991	2/4/1999 (N)	3/18/1989 (Y)	
WY						1/1/1990			

them. Many other states have either accepted or explicitly rejected these standards through subsequent case law (Barzuza, 2010). In sum, our study evaluates the effects of these 17 laws and cases on hostile takeover activity from 1965 through 2014.

Our *a priori* predictions of the impacts of the various laws on hostile takeover activity are influenced by

two factors. On the one hand, stronger target defenses should reduce bidders' willingness to launch hostile contests, which reduces observed hostile activity. On the other hand, stronger target defenses should increase targets' bargaining power, which could increase the observance of target resistance in merger negotiations. Thus, the impacts of the various laws on observed hostile activity depend on

which factor dominates. All else equal, we expect most of the laws or cases in our sample to strengthen target resistance and reduce bidders' incentives to launch hostile contests. Exceptions include anti-greenmail provisions, golden parachute restrictions, and acceptance of the Revlon and Blasius standards. These provisions tend to weaken target defenses and bargaining power. The Unocal standard could either strengthen or weaken target resistance depending on the specific takeover context, so we have no a priori predictions regarding this case.

Table 2 reports the dates of adoption in each state for each of the takeover laws and cases. First-generation state antitakeover statutes were eventually struck down in a series of court cases culminating in the US Supreme Court. In "1st Gen Case," we mark the date a federal court struck down a state's first-generation statute. All of these statutes were effectively overturned by the Supreme Court's decision in *Edgar v. Mite*, which was decided on June 22, 1982. We subsequently code as zero all first-generation statutes after this date.

Poison pill statutes are coded "(S)" for strong if they provide that a board can adopt dead-hand or no-hand poison pills. Dead-hand and no-hand pills, prohibited in Delaware by court decision, allow for a board to provide that the pill survives for a certain period even after the adopting directors are voted off the board. Several states overturned poison pills in the 1980s ["(N)" for "no" appears next to the case date], but these standards were reversed by subsequent state laws fairly quickly. We code these states as having no poison pill after each case and being permissive of a poison pill after the state legislature acted. In addition to including state cases, we search for court cases validating the use of poison pills of varying strength. *Bebchuk and Jackson (2014)* theorize that poison pill statutes are vulnerable to challenge due to preemption by the Williams Act, but none has been overturned as of the end of 2016.

We assume that all states had access to poison pills of normal strength after the *Georgia-Pacific Corp. v. Great Northern Nekoosa Corp.* case was decided on January 16, 1990, unless that state allows for strong-form (S) pills by either case or statute. The *Great Northern Nekoosa* case is chosen because, even after the poison pill was validated in Delaware in the *Moran v. Household International, Inc.* decision, uncertainty still remains about its effectiveness in other states. Some states passed statutes validating the poison pill, but, even after *Moran*, courts in Colorado (1986), Georgia (1988), and New York (1988) struck down poison pills as per se invalid takeover defenses. However, each of these decisions was statutorily overturned. The final known challenge to the per se validity of a poison pill was made in the *Great Northern Nekoosa* case. The court in that case found the poison pill valid, stating that an assertion that the poison pill is invalid does "not represent statements of the current law on the issue."

Mandatory classified board laws require that all firms incorporated in a state have a staggered board of directors. This generally requires that only one-third of the board of directors comes up for reelection in a given year. This provides the board with a longer time period over which to fight off hostile proxy fights.

Expanded constituency statutes allow target directors to consider an expanded set of factors when evaluating a bid, including employee welfare, impacts on the local economy, and environmental concerns. These statutes allow directors to ignore shareholder value in favor other constituencies as a possible takeover defense.

For Revlon, Unocal, and Blasius standards, the date when they are either adopted or rejected is noted "(Y)" (for yes) if adopted or "(N)" (for no) if rejected. In many cases, a standard has been neither explicitly accepted nor explicitly rejected by a particular state, which means that the state has not had a legal court case setting a precedent for the given standard. As such, the standard for that issue remains open to future guidance by the courts if a case should arise.

Several states passed multiple takeover statutes within the same bill. For example, on July 22, 1987, Arizona adopted its business combination, fair price provisions, control share acquisition statute, expanded constituency statute, anti-greenmail statute, and golden parachute restriction. A number of states adopted both business combination and fair price provisions within the same statute [noted as "(combo)" statutes in Table 2]. Nonetheless, most states passed separate enactments of given laws, providing ample variation in firm-level coverage for empirical tests.

A few of these statutes include provisions for companies' board of directors to opt out of their application by board decision. Consistent with other studies (*Comment and Schwert, 1995*), we do not take into account firm-level opt-outs from the takeover laws in our sample due to evidence that a low number of opt-outs exist for these laws (*Listokin, 2010*) and also in an effort to maintain the exogeneity of the legal codings. However, we do include laws from Indiana, Iowa, Massachusetts, and Oklahoma requiring mandatory classified boards. A high rate of opt-outs from application of these statutes is evident (*Faleye, 2007*), so we hypothesize that these laws might not have a substantial impact on takeover activity. Georgia's fair price and business combination statute and Tennessee's control share acquisition statute are opt-in statutes (*Karpoff and Wittry, 2015*). These statutes cover 1.17% of our sample in firm-years.

Table 3 reports the frequency of firm-years covered by various laws over the 1965–2014 sample period on both an equal-weighted and an asset value-weighted basis. All variables are binary indicators coded zero prior to adoption of a state law and one following adoption. Poison pill is coded one for all states following the *Georgia-Pacific Corp. v. Great Northern Nekoosa Corp.* case in 1990. The relevant dates for the legal codings are reported in Table 2.

The equal-weighted coverage frequencies are relative to the full sample period. First-generation takeover laws cover the 38 states but, because of their short duration, cover only 11,417 firm-years. Second-generation takeover statutes in the form of business combination laws cover 33 states and, because most remain in effect today, cover 124,572 firm-years. Poison pill statutes and cases cover all 50 states after our interpretation of the 1990 court decision, 143,622 firm-years, and approximately 71% of the equal weighted firm-years. In contrast, golden parachute

Table 3

Sample coverage by takeover laws.

This table reports the percentage of equal-weighted and asset value-weighted firm-years associated with each takeover law or case. Laws and cases are defined in Table 1. Firm-years are coded zero prior to the adoption of state laws and one after. Acceptance or rejection (i.e., “Yes” or “No”) of Revlon, Unocal, and Blasius standards are not mutually exclusive for a given state if the state has multiple cases to accept and reject a standard over time. If a state has not issued a case ruling on Revlon, Unocal, or Blasius prior to a given firm-year, that firm-year is coded as zero.

Takeover law	States	Firm-years	Equal-weighted firm-years (percent)	Value-weighted firm-years (percent)
1st Generation Statutes	38	11,417	5.64	4.47
Business Combination	33	124,572	61.57	73.70
Fair Price	27	42,045	20.78	25.03
Control Share Acquisition	27	36,091	17.84	11.76
Control Share Cash-Out	3	3,127	1.55	1.79
Poison Pill	50	143,622	70.98	77.62
Strong Form Poison Pill	5	3,495	1.73	3.43
Mandatory Staggered Board	4	2,444	1.21	0.61
Expanded Constituency	35	41,025	20.28	23.57
Disgorgement	2	4,369	2.16	3.07
Anti-Greenmail	5	11,951	5.91	9.92
Golden Parachute Restriction	2	4,128	2.04	0.55
Tin Parachute Blessing	3	4,608	2.28	1.93
Assumption of Labor Contracts	4	85,429	42.22	50.28
Revlon (Yes) = +1	12	98,357	48.61	55.86
Revlon (No) = −1	9	14,870	7.35	11.94
Unocal (Yes) = +1	14	108,557	53.65	55.70
Unocal (No) = −1	10	22,468	11.10	17.84
Blasius (Yes) = +1	6	83,983	41.51	49.24
Blasius (No) = −1	9	15,656	7.74	9.80

restriction statutes were enacted in only two states and cover 4,128 firm-years or about 2% of the equal-weighted firm years in our sample. Finally, assumption of labor contracts applies to four states. However, because one of these is Delaware, it covers a large proportion of the sample at 85,429 firm-years.

In terms of cases, 12 states have adopted the Revlon standard and nine states have rejected the Revlon standard. The Unocal standard has been adopted by 14 states and rejected by ten states. The Blasius standard has been adopted by six states and rejected by nine states. These results are in accord with Barzuza (2010), who highlights that not all states adopt these standards, providing variation to takeover regimes not just in laws but also in cases.

The Internet Appendix reports the correlation matrix for all the takeover law variables. In general, the laws are not highly correlated, mitigating concerns about multicollinearity in subsequent regressions.

4. Empirical results

This section provides empirical analysis of the various takeover laws and their impact on hostile takeover activity across the US and through time.

4.1. Business combination laws

Bertrand and Mullainathan (1999, 2003) test the quiet life hypothesis of managerial entrenchment using business combination laws as a proxy for firms' corporate governance environment. However, Comment and Schwert (1995) conclude that BC laws have no discernible impact on aggregate M&A levels and, if anything, potentially increase M&A activity slightly. It thus remains to be seen

whether, over a longer sample period, BC laws impact aggregate M&A levels, the unconditional probability of a firm being successfully taken over through hostile means in any given year, or the likelihood of observing hostility conditional on successful M&A activity. In Table 4, we examine these three possibilities.

We construct logit models that predict aggregate M&A activity in Columns 1 and 2, hostile M&A activity in Columns 3 and 4, and proportional M&A activity in Columns 5 and 6. The sample size shrinks slightly in Columns 3 and 4 as we drop delistings that cannot be matched to the SDC, CRSP, or Schwert deal samples. In even numbered columns, we include the following control variables: log of firm age and its square ($\ln \text{Age}$), a time trend counter of years (*Time Trend*), and capital liquidity (*Capital Liquidity*). Firm age is not identically distributed across states of incorporation. For example, the median firm age is 12.4 years in Delaware, 9.3 years in California, and 19.1 years in Connecticut. *Capital Liquidity* is defined as the rolling four-quarter average of the spread between the rate on commercial & industrial (C&I) loans minus the federal funds rate. Harford (2005) finds that this spread is a significant predictor of aggregate M&A activity and waves. *Time Trend* captures fixed trends in takeover activity throughout the sample period. The independent variable of interest, *Bus. Combination*, equals one if a firm is covered by a BC law in its state of incorporation in a given year and zero otherwise. Standard errors are clustered by firm and year to control for lack of independence between observations.

In the first column of Table 4, the BC law coefficient is positive and statistically significant. However, after including the control variables in Column 2, the BC law coefficient is not statistically different from zero. This is

Table 4

Do business combination laws affect merger and acquisition levels and hostility?

This table presents logit models with the dependent variable in Columns 1 and 2 equal to one if a firm is successfully acquired in a given year and zero otherwise; in Columns 3 and 4 equal to one if a firm is successfully acquired as part of a hostile takeover in a given year and zero otherwise; in Columns 5 and 6 equal to one if a successful acquisition involves hostility and equal to zero if a successful acquisition does not involve hostility. *Age* is firm age in years publicly traded, *Time Trend* is a yearly counter, *Capital Liquidity* is the spread between the commercial and industrial (C&I) loan rate and the federal funds rate, and *Bus. Combination* equals one if a firm is covered by a business combination law in a given year and zero otherwise. All models include an unreported constant. Standard errors are clustered by firm and year, and *p*-values are reported in parentheses with ..., .. and . indicating statistical significance at the 1%, 5%, and 10% level, respectively.

Variable	Acquired		Hostile Hazard		Hostile Single-Period	
	(1)	(2)	(3)	(4)	(5)	(6)
Bus. Combination	0.601*** (0.000)	0.094 (0.333)	-0.133 (0.384)	-0.215 (0.226)	-0.710*** (0.000)	-0.147 (0.368)
Ln Age		1.777*** (0.000)		1.347*** (0.000)		-0.055 (0.900)
(Ln Age) ²		-0.372*** (0.000)		-0.112 (0.122)		0.151* (0.080)
Time Trend		0.039*** (0.000)		-0.000 (0.974)		-0.035*** (0.000)
Capital Liquidity		-0.325*** (0.000)		-0.153 (0.231)		0.040 (0.796)
N	215,830	215,702	213,899	213,772	4,613	4,612
Pseudo R ²	0.81%	3.66%	0.03%	3.46%	1.38%	5.73%

similar to the findings in [Comment and Schwert \(1995\)](#). We note a significantly negative coefficient on *Capital Liquidity*, indicating that, as spreads widen and capital becomes more expensive, aggregate M&A levels decline, consistent with [Harford \(2005\)](#). Also, in Column 2, M&A levels have been increasing over time and show a concave relation with firm age.

Hostile takeovers are essentially discrete time hazard data, similar to the data on bankruptcy examined by [Shumway \(2001\)](#). As demonstrated by Shumway, single-period static models can be inconsistent and lead to incorrect inferences, whereas hazard models produce consistent estimates and are thus more appropriate when firms change over time. The binary dependent variable takes a value of one only if the firm is acquired by hostile means in the following year. In Columns 3 and 4, we estimate a multi-period logit model and find that firms covered by BC laws are less likely to be successfully acquired through hostile means in any given year. However, this variable is not statistically significant in either model. The smaller conditional sample in Column 5 shows a statistically significant negative coefficient on BC laws, but after including the control variables in Column 6, the coefficient loses significance. BC laws were rapidly adopted during the late 1980s. Thus, binary variables that indicate BC law adoption effectively function as late 1980s dummy variables in large panel regressions. The time trend variable is highly significant in Column 6, suggesting that a large part of the negative coefficient in Column 5 is attributable to the BC dummies picking up the long-term downward trend in hostile activity. These results fail to provide support for the use of this proxy as a potential measure of managerial entrenchment. In addition, we cannot rule out the possibility that managers respond to the passage of BC laws with firm-level changes that offset the potential impact of these laws or that these laws have no incremental effect on takeovers given other mechanisms already in place but could if they were the only allowable mechanism.

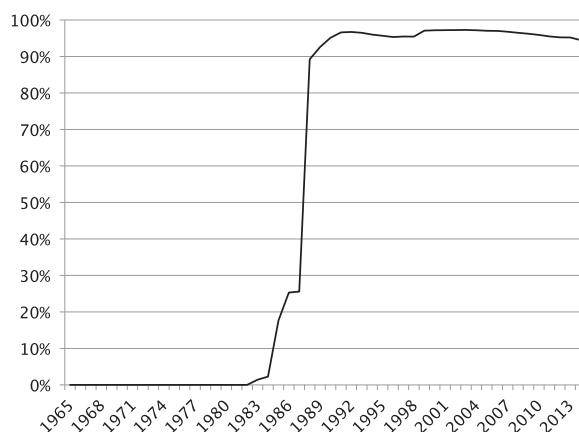


Fig. 3. Value-weighted percentage of firms covered by a business combination law annually. Weighted by firms' total assets.

[Fig. 3](#) provides a picture of the variability in this metric over time and reports the asset value-weighted percentage of firms covered by BC laws over the full sample period. It jumps from 0% prior to 1983 to over 95% after 1989. Thus, even though states and, hence, firms exhibit some cross sectional variability in coverage during this short window, over longer horizons the BC variation appears to be driven predominantly by a time shift around the late 1980s. This could be related to the 1987 US Supreme Court decision in *CTS Corp. v. Dynamics Corp. of America*, which validated a business combination law and other types of antitakeover laws. The sharp rise in coverage of these firms highlights that prior studies of business combination laws have minimal cross sectional variability across firms. It thus appears important to examine the effects of other laws to obtain sufficient cross sectional variability in governance and entrenchment proxies.

Table 5

Which takeover laws predict hostile takeover hazard (without control variables)?

This table presents rare event logit models with the dependent variable equal to one if the firm is acquired through hostile takeover in a given year and zero otherwise. All variables are defined in Table 1. Standard errors are clustered by firm and year. *p*-values are in parentheses with ***, **, and * representing statistical significance at the 1%, 5%, and 10% level, respectively. AIC=Akaike information criterion.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	-7.025*** (0.000)	-7.025*** (0.000)	-7.025*** (0.000)	-7.025*** (0.000)	-6.641*** (0.000)	-6.644*** (0.000)	-6.648*** (0.000)	-6.638*** (0.000)	-6.637*** (0.000)
Williams Act	0.379 (0.645)	0.379 (0.645)	0.381 (0.644)	0.420 (0.610)					
1st Generation	0.202 (0.545)	0.202 (0.544)	0.201 (0.546)						
Statutes									
Business	0.452 (0.206)	0.448 (0.213)	0.457 (0.204)	0.452 (0.207)	0.456 (0.203)	0.480 (0.134)	0.483 (0.122)	0.612** (0.050)	0.602* (0.059)
Combination									
Fair Price	-0.757* (0.068)	-0.751* (0.071)	-0.734* (0.074)	-0.742* (0.071)	-0.735* (0.075)	-0.691* (0.088)	-0.654* (0.092)	-0.728* (0.058)	-0.739* (0.053)
Control Share	0.036 (0.919)								
Acquisition									
Control Share	1.502*** (0.002)	1.497*** (0.002)	1.486*** (0.002)	1.459*** (0.003)	1.483*** (0.002)	1.511*** (0.002)	1.528*** (0.001)	1.229*** (0.008)	1.221*** (0.009)
Cash-Out									
Poison Pill	-0.299 (0.265)	-0.295 (0.248)	-0.297 (0.246)	-0.328 (0.188)	-0.299 (0.229)	-0.376* (0.085)	-0.368* (0.088)	-0.350* (0.096)	-0.353* (0.094)
Strong Form	0.773 (0.160)	0.770 (0.156)	0.724 (0.174)	0.729 (0.171)	0.725 (0.174)	0.748 (0.166)			
Poison Pill									
Mandatory	1.634*** (0.003)	1.645*** (0.002)	1.596*** (0.010)	1.579** (0.011)	1.594** (0.010)	1.665*** (0.009)	1.385* (0.058)	0.279 (0.689)	
Staggered Board									
Expanded	0.406 (0.194)	0.418 (0.125)	0.429 (0.124)	0.430 (0.120)	0.429 (0.123)	0.464* (0.097)	0.483* (0.079)	0.419* (0.094)	0.449** (0.040)
Constituency									
Disgorgement	1.531*** (0.009)	1.548*** (0.011)	1.514** (0.021)	1.515** (0.020)	1.514** (0.021)	1.582*** (0.015)	1.546** (0.018)	1.357* (0.063)	1.347* (0.060)
Anti-Greenmail	0.187 (0.690)	0.171 (0.685)							
Golden Parachute	-0.887 (0.300)	-0.848 (0.261)	-0.721 (0.354)	-0.714 (0.358)	-0.720 (0.355)	-0.813 (0.265)	-0.854 (0.248)	-0.889 (0.233)	-0.888 (0.235)
Restriction									
Tin Parachute	-1.615* (0.052)	-1.607* (0.065)	-1.571* (0.079)	-1.556* (0.082)	-1.570* (0.079)	-1.567* (0.075)	-1.265 (0.154)		
Blessing									
Assumption of	-1.217** (0.011)	-1.216** (0.013)	-1.222** (0.011)	-1.222** (0.011)	-1.222** (0.011)	-1.259*** (0.005)	-1.261*** (0.007)	-1.531*** (0.000)	-1.515*** (0.000)
Labor Contracts									
Revlon	0.383* (0.093)	0.382* (0.089)	0.406** (0.045)	0.402** (0.047)	0.406** (0.046)	0.377* (0.074)	0.363* (0.086)	0.360* (0.084)	0.348* (0.059)
Unocal	-0.087 (0.682)	-0.089 (0.673)	-0.113 (0.536)	-0.115 (0.528)	-0.113 (0.535)				
Blasius	0.545* (0.056)	0.547* (0.054)	0.545** (0.044)	0.546** (0.043)	0.546** (0.044)	0.553* (0.050)	0.562* (0.098)	0.663** (0.047)	0.675** (0.042)
N	213,899	213,899	213,899	213,899	213,899	213,899	213,899	213,899	213,899
AIC	3735.7	3733.7	3731.9	3730.3	3729.6	3728.1	3727.4	3727.1	3725.2

4.2. Constructing the Takeover Index

To develop the Takeover Index, we expand the sample to include the full set of takeover laws and cases. After identifying which variables contribute to the model that best explains the unconditional rate of hostile takeovers, we use the coefficients to construct the index. In Table 5, we examine unconditional rates of hostile takeovers using only the legal variables as determinants. In Table 6, we add variables to mitigate omitted variables bias, which is the most appropriate specification to use in the index construction. For comparison, we also examine the rate of hostility conditional on M&A activity in Table 7.

To avoid overfitting, after starting with all variables in the first logit model, we examine the Akaike information criterion (AIC) and then drop one variable, reestimate the model, and examine the resulting AIC. If it improves to a lower value, we drop another variable and continue to iterate through this process until the AIC is minimized. If dropping a particular variable does not improve AIC, we

try dropping a different variable until we reach a model in which no further improvements to AIC can be made. The model with the minimum AIC is estimated in the final column of Tables 5 through 7, and represents the model of best fit. The goal of this process is to determine which laws matter for takeover activity and in what direction they matter.

In Tables 5 and 6, we use the rare events logit regression from King and Zeng (2001), which corrects for underestimation of the probability of rare events in samples with very high proportions of non-events in the binary dependent variable, and we cluster standard errors by firm and year to correct for dependence.

Table 5 reports results for the legal variables without additional controls. Each legal variable is coded zero for firm incorporation years in which a law is not in effect and one if a law is in effect at that time. For court decisions, the set of possible values is $[-1,0,1]$, corresponding to reject, no decision, and uphold. Even though we code for exact dates of effectiveness for the various laws as shown in

Table 2, we take the value in force at the end of each firm-year. For example, a firm incorporated in Delaware would have a zero on the BC law for all years of existence in 1987 and prior and a one for 1988 and beyond. Similarly, a firm incorporated in Maryland would have a zero on the Revlon standard prior to 2004, a “–1” for 2004 through 2008, and a “+1” for 2009 and beyond. For California, we follow Barzuza (2010) and code a 1982 case as adopting an interpretation of California law similar to the Revlon standard, even though *Revlon, Inc. v. MacAndrews & Forbes Holdings* had yet to be decided.

We find that a number of legal variables are related to hostile takeover rates, such as *Business Combination*, *Fair Price*, *Poison Pill*, *Control Share Cash-Out*, *Expanded Constituency*, *Disgorgement*, *Golden Parachute Restriction*, *Assumption of Labor Contracts*, as well as *Blasius* and *Revlon*. However, the results in Table 4 that suggest using legal variables alone may result in a spurious relation due to omitted variables bias. For this reason, we repeat the exercise in Table 5 but add the control variables from Table 4 to the model. Table 6 reports the results from these tests.

Table 6

Which takeover laws predict hostile takeover hazard?

This table presents rare event logit models with the dependent variable equal to one if the firm is acquired through hostile takeover in a given year and zero otherwise. All variables are defined in Table 1. Standard errors are clustered by firm and year. *p*-values are in parentheses with ***, **, and * representing statistical significance at the 1%, 5%, and 10% level, respectively. AIC=Akaike information criterion.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	–9.030*** (0.000)	–9.031*** (0.000)	–9.030*** (0.000)	–8.958*** (0.000)	–8.965*** (0.000)	–8.971*** (0.000)	–8.930*** (0.000)	–8.919*** (0.000)
Ln Age	1.273*** (0.000)	1.273*** (0.000)	1.274*** (0.000)	1.274*** (0.000)	1.263*** (0.000)	1.262*** (0.000)	1.267*** (0.000)	1.258*** (0.000)
(Ln Age) ²	–0.101 (0.153)	–0.101 (0.153)	–0.101 (0.153)	–0.101 (0.153)	–0.098 (0.166)	–0.098 (0.167)	–0.099 (0.163)	–0.096 (0.179)
Time Trend	0.016 (0.241)	0.016 (0.241)	0.016 (0.240)	0.018 (0.205)	0.018 (0.188)	0.019 (0.163)	0.017 (0.183)	0.017 (0.188)
Capital Liquidity	–0.239* (0.085)	–0.239* (0.085)	–0.240* (0.084)	–0.245* (0.082)	–0.241* (0.089)	–0.243* (0.083)	–0.221* (0.096)	–0.222* (0.093)
Williams Act	0.103 (0.905)	0.102 (0.905)	0.102 (0.906)					
1st Generation Statutes	0.259 (0.439)	0.259 (0.440)	0.258 (0.440)	0.279 (0.401)	0.280 (0.401)	0.279 (0.402)		
Business Combination	0.298 (0.389)	0.295 (0.401)	0.292 (0.410)	0.289 (0.413)	0.285 (0.414)			
Fair Price	–0.801** (0.045)	–0.806** (0.042)	–0.796** (0.046)	–0.796** (0.046)	–0.773** (0.045)	–0.635** (0.032)	–0.640** (0.030)	–0.662** (0.029)
Control Share Acquisition	0.071 (0.825)	0.068 (0.812)						
Control Share Cash-Out	1.153** (0.015)	1.152** (0.014)	1.146** (0.016)	1.152** (0.016)	1.158** (0.014)	1.169** (0.016)	1.137** (0.019)	1.111** (0.021)
Poison Pill	–0.453 (0.186)	–0.453 (0.179)	–0.450 (0.176)	–0.459 (0.170)	–0.459 (0.168)	–0.415 (0.211)	–0.433 (0.193)	–0.390 (0.245)
Strong Form Poison Pill	0.501 (0.350)	0.506 (0.328)	0.513 (0.326)	0.505 (0.333)				
Mandatory Staggered Board	1.092* (0.052)	1.098* (0.090)	1.134* (0.071)	1.132* (0.070)	0.910 (0.200)	1.038 (0.134)	1.010 (0.149)	0.992 (0.154)
Expanded Constituency	0.231 (0.432)	0.230 (0.435)	0.246 (0.380)	0.244 (0.384)	0.256 (0.357)	0.316 (0.320)	0.316 (0.316)	0.231 (0.505)
Disgorgement	1.039* (0.070)	1.048* (0.085)	1.085* (0.094)	1.084* (0.094)	1.060 (0.100)	1.090* (0.093)	1.091* (0.093)	1.064* (0.095)
Anti-Greenmail	0.020 (0.966)							
Golden Parachute Restriction	–0.555 (0.505)	–0.530 (0.486)	–0.488 (0.502)	–0.490 (0.500)	–0.511 (0.486)	–0.448 (0.526)	–0.441 (0.533)	
Tin Parachute Blessing	–1.187 (0.148)	–1.192 (0.173)	–1.177 (0.186)	–1.172 (0.188)	–0.948 (0.292)	–1.164 (0.190)	–1.140 (0.199)	–1.153 (0.198)
Assumption of Labor Contracts	–1.078** (0.019)	–1.075** (0.018)	–1.080** (0.021)	–1.083** (0.020)	–1.095** (0.022)	–0.880** (0.023)	–0.879** (0.023)	–0.841** (0.030)
Revlon	0.404* (0.058)	0.408** (0.044)	0.401** (0.038)	0.406** (0.036)	0.398** (0.039)	0.404** (0.037)	0.398** (0.039)	0.356* (0.051)
Unocal	–0.150 (0.495)	–0.153 (0.393)	–0.147 (0.422)	–0.148 (0.420)	–0.157 (0.396)	–0.179 (0.310)	–0.181 (0.306)	–0.233 (0.167)
Blasius	0.443 (0.112)	0.441* (0.099)	0.443 (0.102)	0.440 (0.103)	0.459 (0.144)	0.483 (0.119)	0.487 (0.117)	0.497 (0.117)
N	213,772	213,772	213,772	213,772	213,772	213,772	213,772	213,772
AIC	3620.0	3618.0	3616.0	3614.2	3612.7	3611.3	3610.2	3609.0

(continued on next page)

Table 6
(continued)

Variable	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Constant	−8.922*** (0.000)	−8.916*** (0.000)	−8.813*** (0.000)	−8.778*** (0.000)	−8.779*** (0.000)	−8.775*** (0.000)	−8.360*** (0.000)
Ln Age	1.255*** (0.000)	1.264*** (0.000)	1.240*** (0.000)	1.216*** (0.000)	1.216*** (0.000)	1.204*** (0.000)	0.821*** (0.000)
(Ln Age) ²	−0.095 (0.184)	−0.096 (0.179)	−0.089 (0.210)	−0.083 (0.251)	−0.083 (0.251)	−0.080 (0.268)	
Time Trend	0.017 (0.179)	0.009 (0.317)					
Capital Liquidity	−0.224* (0.091)	−0.187 (0.131)	−0.138 (0.201)	−0.135 (0.209)	−0.135 (0.209)	−0.137 (0.206)	−0.142 (0.188)
Williams Act 1st Generation Statutes Business Combination							
Fair Price	−0.547** (0.040)	−0.635** (0.034)	−0.491* (0.084)	−0.501* (0.076)	−0.501* (0.077)	−0.464* (0.084)	−0.494* (0.064)
Control Share Acquisition							
Control Share Cash-Out	1.086** (0.021)	1.115** (0.017)	1.153** (0.014)	0.846* (0.066)	0.849* (0.066)	0.964** (0.024)	0.960** (0.024)
Poison Pill	−0.330 (0.320)						
Strong Form Poison Pill							
Mandatory Staggered Board	1.087* (0.094)	0.989 (0.133)	1.176* (0.066)	0.080 (0.893)			
Expanded Constituency							
Disgorgement	1.050 (0.102)	0.996 (0.109)	1.029 (0.105)	0.841 (0.238)	0.847 (0.228)		
Anti-Greenmail Golden Parachute Restriction							
Tin Parachute Blessing	−1.076 (0.208)	−1.073 (0.209)	−1.209 (0.147)				
Assumption of Labor Contracts	−0.858** (0.023)	−0.918** (0.016)	−0.796** (0.038)	−0.958*** (0.007)	−0.963*** (0.007)	−0.720*** (0.008)	−0.749*** (0.005)
Revlon	0.355* (0.054)	0.314* (0.058)	0.314* (0.067)	0.316* (0.063)	0.320** (0.047)	0.283* (0.063)	0.286* (0.059)
Unocal	−0.261 (0.131)	−0.306* (0.064)	−0.262 (0.112)	−0.256 (0.103)	−0.254* (0.100)	−0.259* (0.094)	−0.260* (0.093)
Blasius	0.476 (0.128)	0.519* (0.096)	0.511 (0.115)	0.622* (0.051)	0.620* (0.051)	0.427 (0.116)	0.429 (0.110)
N	213,772	213,772	213,772	213,772	213,772	213,772	213,772
AIC	3607.5	3606.9	3605.8	3605.6	3603.6	3603.1	3602.6

Table 6 has the most direct test of the effects of the various laws on hostile takeover rates and ultimately the disciplinary market for corporate control. In Column 15, hostile takeover rates are unrelated to the passage of prevalent legal statutes such as *Business Combination*, *Poison Pill*, *Control Share Acquisition*, *Expanded Constituency*, and the *1st Generation Statutes*. We believe that our results are consistent with the adaptability of the takeover market as theorized in Kahan and Rock (2002), which posits that acquirers were able to work around the poison pill by running parallel proxy contests. Certain less common laws also fail to be significant determinants such as *Tin Parachute Blessing*, *Mandatory Staggered Board*, and *Disgorgement*, although few states enacted them.

Takeovers decline significantly following *Fair Price* laws and *Assumption of Labor Contracts*, as would be predicted given the potency of these laws. We also find that Revlon's

adoption incentivized hostile takeover activity, an event likely attributable to the heightened obligation Revlon placed on a board to consider such bids. Hostile takeovers declined in states adopting the Unocal standard and increased in states adopting the Blasius precedent. This is also in line with theory, as Blasius imposed tight restrictions on a target board's ability to interfere with a shareholder vote that could unseat directors and force a takeover, and Unocal was seen as a more moderate test that gave wide discretion to the board's ability to adopt defensive measures. *Control Share Cash-Out* laws increased hostile activity, which could reflect targets' increased willingness to negotiate more aggressively due to their improved bargaining power. Taken together, our results again reinforce the point that takeover laws have varied impact, depending upon their strength and can either discourage or encourage takeover activity.

To summarize the economic magnitudes of the coefficient estimates from the final column in Table 6, we convert the coefficients to odds ratios (unreported). The largest coefficient is for *Control Share Cash Out* laws, which increase the hostile hazard by a factor of 2.61 times. The hostile hazard increases by a factor of 2.27 times for a one unit increase in log age, 1.54 times following *Blasius* adoption, and 1.33 times following *Revlon* adoption. Hostile hazard decreases for the following, in which odds ratios are less than one: changing by a factor of 0.77 following *Unocal* adoption, 0.61 for *Fair Price* laws, and 0.47 for *Assumption of Labor Contracts* laws. Hostile hazard also changes by a factor of 0.87 for a one unit increase in capital liquidity

(that is, hostile takeovers decline slightly when financing is more expensive).

Although we believe our multi-period logit tests in Table 6 provide the clearest picture of the effect of takeover laws on hostile activity for the reasons cited by Shumway (2001), we also estimate a single period logit for robustness in Table 7. The main difference between these two sets of tests is the sample. In Table 6, we use all firm-year observations, whether or not there is any acquisition activity, while in Table 7 the sample is limited to firm-year observations in which an acquisition is observed (both friendly and hostile). In this way, Table 6 is a test of unconditional hostile activity, and Table 7 is a test of

Table 7

Which takeover laws predict hostility conditional on acquisition?

This table presents logit models with dependent variable equal to one if a given acquisition involves hostility and zero if friendly. Additional columns appear on the following page. All variables are defined in Table 1. All models include an unreported constant. Standard errors are clustered by firm and year. *p*-values are in parentheses with ***, **, and * representing statistical significance at the 1%, 5%, and 10% level, respectively. AIC=Akaike information criterion.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Ln Age</i>	0.255 (0.561)	0.258 (0.564)	0.256 (0.565)	0.266 (0.549)	0.252 (0.575)	0.246 (0.582)	0.230 (0.602)	0.227 (0.609)
<i>(Ln Age)²</i>	0.090 (0.298)	0.089 (0.311)	0.090 (0.307)	0.088 (0.314)	0.091 (0.304)	0.093 (0.295)	0.096 (0.275)	0.096 (0.275)
<i>Time Trend</i>	-0.023* (0.052)	-0.024** (0.042)	-0.024** (0.040)	-0.025** (0.010)	-0.025** (0.011)	-0.024** (0.011)	-0.024** (0.012)	-0.023** (0.012)
<i>Capital Liquidity</i>	-0.003 (0.985)							
<i>Williams Act</i>	-1.831** (0.011)	-1.827** (0.013)	-1.826** (0.013)	-1.825** (0.013)	-1.820** (0.013)	-1.824** (0.013)	-1.831** (0.013)	-1.830** (0.013)
<i>1st Generation Statutes</i>	-0.261 (0.392)	-0.264 (0.393)	-0.265 (0.392)	-0.255 (0.407)	-0.263 (0.391)	-0.265 (0.388)	-0.261 (0.395)	-0.264 (0.390)
<i>Business Combination</i>	0.214 (0.564)	0.215 (0.560)	0.219 (0.556)	0.202 (0.586)	0.185 (0.611)	0.223 (0.536)	0.222 (0.534)	0.246 (0.462)
<i>Fair Price</i>	-0.881** (0.044)	-0.879** (0.046)	-0.870** (0.046)	-0.872** (0.048)	-0.870* (0.051)	-0.849* (0.065)	-0.839* (0.063)	-0.871** (0.047)
<i>Control Share Acquisition</i>	0.252 (0.484)	0.247 (0.489)	0.235 (0.477)	0.230 (0.482)	0.200 (0.524)	0.232 (0.429)	0.239 (0.413)	0.250 (0.368)
<i>Control Share Cash-Out</i>	0.811* (0.073)	0.811* (0.070)	0.803* (0.067)	0.799* (0.066)	0.784* (0.067)	0.783* (0.070)	0.784* (0.068)	0.721* (0.085)
<i>Poison Pill</i>	-0.100 (0.771)	-0.094 (0.775)	-0.090 (0.777)					
<i>Strong Form Poison Pill</i>	0.257 (0.657)	0.256 (0.658)	0.237 (0.665)	0.241 (0.660)	0.262 (0.639)	0.266 (0.636)		
<i>Mandatory Staggered Board</i>	0.524 (0.576)	0.525 (0.575)	0.500 (0.634)	0.486 (0.643)	0.519 (0.628)	0.532 (0.613)	0.363 (0.733)	
<i>Expanded Constituency</i>	0.161 (0.578)	0.162 (0.578)	0.172 (0.560)	0.149 (0.611)	0.121 (0.709)			
<i>Disgorgement</i>	0.770 (0.189)	0.771 (0.187)	0.760 (0.212)	0.745 (0.210)	0.747 (0.213)	0.726 (0.241)	0.707 (0.247)	0.665 (0.254)
<i>Anti-Greenmail</i>	0.068 (0.887)	0.054 (0.909)						
<i>Golden Parachute Restriction</i>	-0.442 (0.591)	-0.427 (0.602)	-0.382 (0.637)	-0.352 (0.659)				
<i>Tin Parachute Blessing</i>	-1.581 (0.125)	-1.580 (0.125)	-1.557 (0.159)	-1.554 (0.160)	-1.585 (0.156)	-1.532 (0.162)	-1.372 (0.181)	-1.106 (0.116)
<i>Assumption of Labor Contracts</i>	-0.916* (0.052)	-0.916* (0.052)	-0.925** (0.049)	-0.930** (0.048)	-0.892** (0.049)	-0.920** (0.038)	-0.933** (0.040)	-0.972** (0.023)
<i>Revlon</i>	0.236 (0.260)	0.237 (0.261)	0.239 (0.246)	0.226 (0.272)	0.204 (0.289)	0.211 (0.257)	0.210 (0.265)	0.203 (0.256)
<i>Unocal</i>	-0.372* (0.083)	-0.375* (0.080)	-0.381** (0.041)	-0.398** (0.019)	-0.421*** (0.008)	-0.436*** (0.006)	-0.447*** (0.005)	-0.454*** (0.006)
<i>Blasius</i>	0.488* (0.099)	0.489 (0.101)	0.495* (0.082)	0.505* (0.085)	0.505* (0.088)	0.487* (0.090)	0.499 (0.110)	0.521* (0.095)
<i>N</i>	4,612	4,613	4,613	4,613	4,613	4,613	4,613	4,613
<i>AIC</i>	1791.8	1790.0	1788.0	1786.1	1784.4	1782.5	1780.7	1778.8

(continued on next page)

Table 7
(continued)

Variable	(9)	(10)	(11)	(12)	(13)	(14)
<i>Ln Age</i>						
<i>(Ln Age)²</i>	0.140*** (0.000)	0.140*** (0.000)	0.139*** (0.000)	0.138*** (0.000)	0.139*** (0.000)	0.140*** (0.000)
<i>Time Trend</i>	−0.024** (0.012)	−0.022** (0.019)	−0.020** (0.028)	−0.018** (0.049)	−0.018** (0.047)	−0.018* (0.051)
<i>Capital Liquidity</i>						
<i>Williams Act</i>	−1.768** (0.016)	−1.776** (0.016)	−1.859** (0.011)	−1.867** (0.010)	−1.857** (0.011)	−1.869** (0.010)
<i>1st Generation Statutes</i>	−0.256 (0.404)	−0.266 (0.384)				
<i>Business Combination</i>	0.243 (0.467)					
<i>Fair Price</i>	−0.875** (0.046)	−0.714** (0.021)	−0.691** (0.027)	−0.593** (0.050)	−0.544* (0.074)	−0.523* (0.082)
<i>Control Share Acquisition</i>	0.248 (0.372)	0.263 (0.355)	0.276 (0.332)			
<i>Control Share Cash-Out</i>	0.716* (0.085)	0.739* (0.096)	0.776* (0.081)	0.703 (0.114)	0.662 (0.143)	0.710 (0.113)
<i>Poison Pill</i>						
<i>Strong Form Poison Pill</i>						
<i>Mandatory Staggered Board</i>						
<i>Expanded Constituency Disgorgement</i>	0.652 (0.268)	0.654 (0.276)	0.646 (0.284)	0.754 (0.232)	0.655 (0.280)	
<i>Anti-Greenmail Golden Parachute Restriction</i>						
<i>Tin Parachute Blessing</i>	−1.092 (0.121)	−1.162 (0.114)	−1.170 (0.116)	−0.923 (0.196)	−1.005 (0.146)	−0.951 (0.152)
<i>Assumption of Labor Contracts</i>	−0.979** (0.021)	−0.810** (0.026)	−0.797** (0.029)	−0.871** (0.019)	−0.812** (0.028)	−0.625* (0.069)
<i>Revlon</i>	0.202 (0.257)	0.210 (0.236)	0.222 (0.219)	0.210 (0.247)		
<i>Unocal</i>	−0.452*** (0.007)	−0.462*** (0.005)	−0.455*** (0.005)	−0.435** (0.011)	−0.367** (0.035)	−0.385** (0.025)
<i>Blasius</i>	0.520* (0.094)	0.542* (0.074)	0.535* (0.076)	0.542* (0.086)	0.621* (0.060)	0.449 (0.154)
<i>N</i>	4,613	4,613	4,613	4,613	4,613	4,613
<i>AIC</i>	1777.0	1775.5	1774.4	1773.5	1772.4	1771.5

proportional hostile activity. The results in Table 7 are generally similar to those in the Table 6, with most of the same determinants surviving to the final model. One notable exception is that the Williams Act is a significant negative determinant in Table 7 but not in Table 6. Overall, the tests illustrate that single period logit models, as utilized by numerous prior studies of hostile activity, are likely to provide similar inference relative to multi-period models such as the ones estimated in this study (e.g., Palepu, 1986; Morck et al., 1988; Shivdasani, 1993; Schwert, 2000).

The external threat of takeover is an important corporate governance mechanism, and researchers frequently require a reliable measure of this threat. As demonstrated in Tables 6 and 7, state-level legislation that determines the threat of takeover is demonstrably richer than BC laws alone. We construct the firm-level Takeover Index as the probability of hostile takeover using the coefficients from the final model in Table 6. Variation in the index values results from changes in the legal environment, changes in the aggregate rate spread, and changes in firm age. The

equal-weighted average of this index across firms, reported in basis points, is produced in Fig. 4, which is essentially the fitted prediction of the Fig. 1 hostile takeover hazard.

In Fig. 5, we chart equal-weighted frequency rates of the legal variables in the index. All variables in all years remain under 80% of coverage, providing sizable cross-sectional variation for identification. *Control Share Cash-Out* laws were enacted in only a few minor states from 1983 to 1990, resulting in the consistently low coverage. *Assumption of Labor Contracts* laws were also enacted in only a few states. Delaware was one of these states, thus the large spike in coverage in 1988. Finally, *Revlon* coverage shows both increases and decreases over time as some key states rejected the standard or first accepted and then later rejected the standard.

In Fig. 6, we chart the index values over time for a selection of prominent states; the four largest states by observations (California, Delaware, Nevada, and New York) as well as Connecticut, Florida, and Massachusetts, because they have particularly high (Connecticut and Massachusetts) or low (Florida) index values. The figure

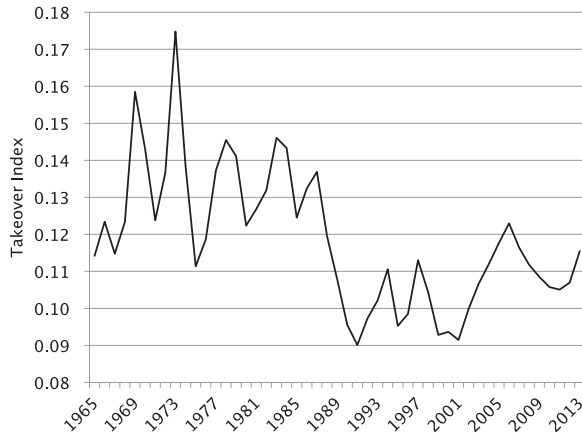


Fig. 4. Equal-weighted Takeover Index values by year.

further indicates significant variation between states and over time to identify the model. For example, the divergence of Connecticut and Nevada is evident around 1999–2000 after they ruled on Blasius in opposite directions. Overall, we believe this index serves as a more robust measure of exogenous changes in the threat of takeover and has substantial variation both cross-sectionally across states and in the time series over nearly five decades. To our knowledge, no tool like this is readily available to corporate governance researchers. The index and underlying data on legal variables are available on the author's web-site (<http://pages.uoregon.edu/smckeeon>).

Table 8 reports descriptive statistics on this index scaled by its standard deviation of 0.0925, by decade.

It also reports descriptive statistics for control variables used in subsequent tables, most of which come from Schwert (2000): return on equity (ROE), year-over-year sales growth, firm liquidity (current assets minus current liabilities, divided by total assets), long-term debt divided by book equity (D/E), and *Loss Dummy*, which equals one if the firm reports a net loss in the given fiscal year. The scaled Takeover Index has the highest mean in the 1960s, 1970s, and 1980s, when firms were most susceptible prior to the passage of the fair price laws. The 1990s and 2000s are lower, reflecting more state-level protection and lower rates of hostility in the market for corporate control.

4.3. Takeover susceptibility and firm value

In Table 9, we examine the correlation of firms' takeover susceptibility and firm value. The table reports results from regressing firms' log market-to-book (M/B) ratio, a proxy for firm value, on control variables and the Takeover Index as a proxy for firms' susceptibility to hostile takeover. All models include year fixed effects. We do not include firm fixed effects for reasons discussed in Zhou (2001). Because the index is slow-moving, firm fixed effects wash out the variation we seek to exploit and can fail to detect a relation when one exists. Cremers and Ferrell (2014) observe a similar non-result when using firm fixed effects with the G-Index in their study. Because the index represents largely exogenous changes to the takeover environment, it provides a cleaner test of the relation between this governance proxy and firm value than most other managerially controlled takeover defenses.

Columns 2 through 5 of Table 9 estimate the regression models on subsamples from 1965 to 1979, the 1980s,

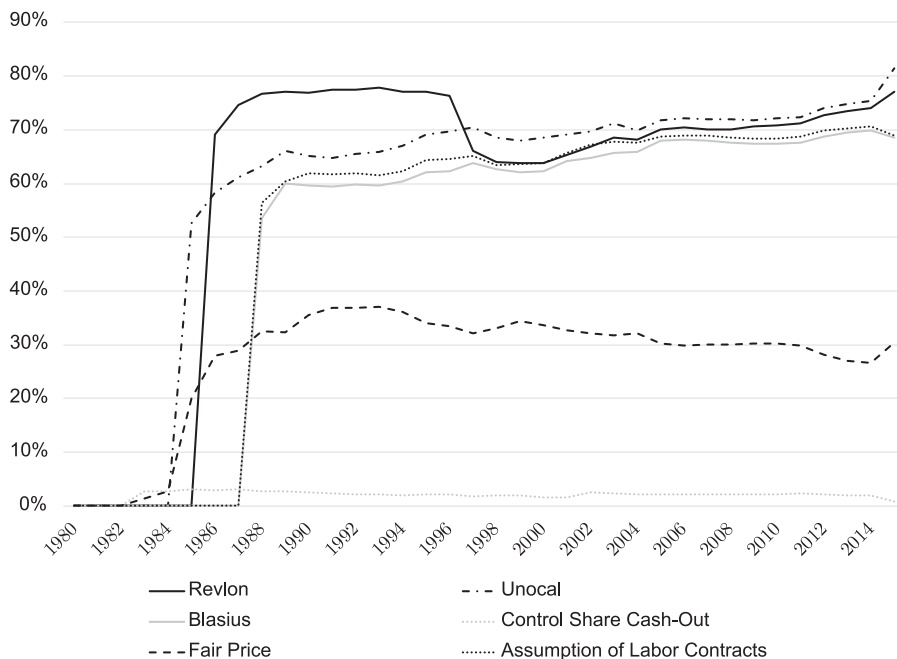


Fig. 5. Value-weighted percentage of firm covered by laws from Table 6, Column 15. Weighted by firms' total assets.

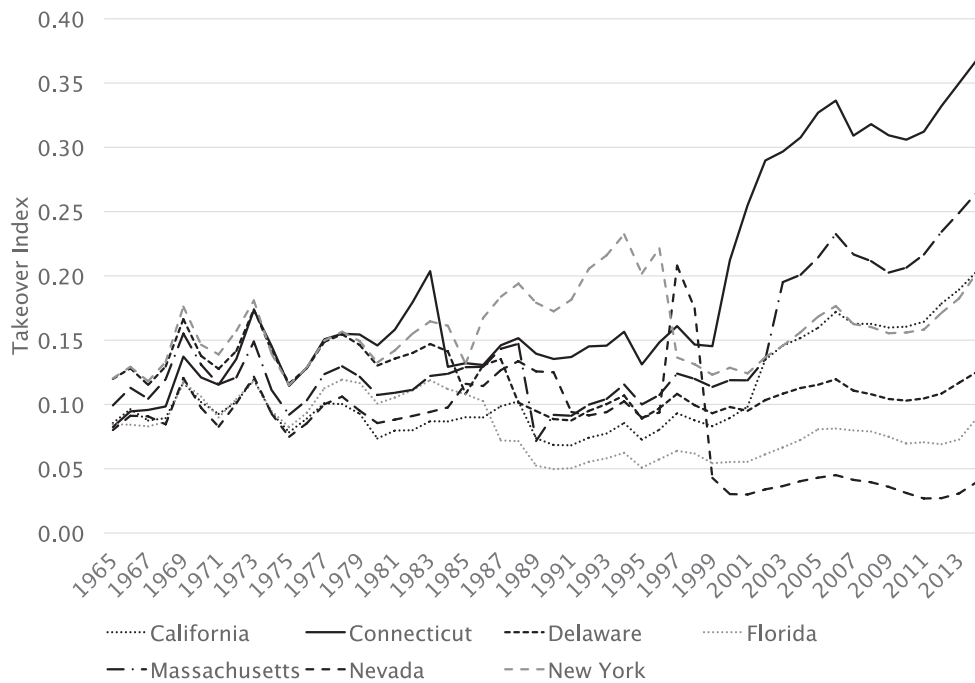


Fig. 6. Equal-weighted average Takeover Index values for selected states over the sample period.

Table 8

Descriptive statistics on Takeover Index and performance variables.

M/B is market value of equity divided by book value of equity. Takeover Index is the probability of hostile takeover using coefficients from Column 15 of Table 6 and scaled by its standard deviation of 0.0925. Age is firm age in years publicly traded. Assets is firm total assets (in Consumer Price Index-adjusted 2014 US dollars). Capital Liquidity is the spread between the commercial and industrial (C&I) loan rate and the federal funds rate. ROE is return on equity (net income divided by book value of equity). Sales Growth is $\ln(\text{sales}_t/\text{sales}_{t-1})$. Firm Liquidity is current assets minus current liabilities, divided by total assets. D/E is book value of long-term debt divided by book value of equity. Loss Dummy is an indicator that equals one if the firm has a net loss in the given fiscal year and zero otherwise.

Variable	Mean	Standard deviation	25th percentile	Median	75th percentile
<u>All years</u>					
M/B	2.28	1.83	1.01	1.71	2.94
Takeover Index	1.23	1.00	0.46	0.97	1.73
$\ln(\text{Assets})$	4.73	2.47	3.19	4.77	6.35
$\ln(\text{Age})$	2.08	1.07	1.39	2.20	2.89
Capital Liquidity	1.57	0.78	1.02	1.57	2.06
ROE	−1.0%	51.2%	−2.8%	9.2%	16.8%
Sales Growth	12.5%	45.7%	−0.5%	9.8%	22.3%
Firm Liquidity	29.4%	24.1%	11.9%	28.5%	45.4%
D/E	59.6%	106.7%	1.4%	24.4%	68.4%
Loss Dummy	0.28	0.45	0	0	1
<u>Subsets (scaled index)</u>					
Takeover Index, 1965–1979	1.449	0.881	0.736	1.290	2.117
Takeover Index, 1980–1989	1.389	1.216	0.486	1.064	2.012
Takeover Index, 1990–1999	1.083	0.957	0.383	0.769	1.493
Takeover Index, 2000–2014	1.172	0.917	0.473	0.966	1.586

1990s, and 2000–2014, respectively. Column 1 reports a strong and economically significant positive correlation between takeover susceptibility and firm value, indicating that firm value is increasing in its susceptibility to hostile takeover. Columns (2) through (5) indicate that the positive coefficient on the Takeover Index is consistent through all time periods and significantly different than zero in all but one period.

Our finding that firm value is related to hostile takeover susceptibility supports the theory of Manne (1965) and

the managerial entrenchment and quiet life hypothesis put forth by Bertrand and Mullainathan (1999). Our results are consistent with studies that show that legal environments in which managers are insulated from takeovers are associated with a negative impact on shareholder value. Examples of studies in this line of literature are Ryngaert and Netter (1988), Karpoff and Malatesta (1989), and Hackl and Testani (1988). The results also highlight the effect of takeover laws on the disciplinary market for corporate control and, ultimately, the trade-off between bar-

Table 9

Takeover susceptibility and firm value.

This table reports ordinary least squares regressions with log market-to-book value of equity (M/B) as the dependent variable. All variables are defined in Table 8. Year fixed effects and a constant are included in all models. Standard errors are clustered by firm and year, and p -values are reported with ..., ., and - representing statistical significance at the 1%, 5%, and 10% level, respectively.

Variable	All Years (1)	1965–1979 (2)	1980–1989 (3)	1990–1999 (4)	2000–2014 (5)
<i>Takeover Index</i>	0.022** (0.023)	0.091* (0.078)	0.006 (0.450)	0.051*** (0.001)	0.040** (0.013)
<i>Ln(Assets)</i>	0.047*** (0.000)	0.017 (0.273)	0.029*** (0.000)	0.066*** (0.000)	0.050*** (0.000)
<i>Ln(Age)</i>	−0.157*** (0.000)	−0.178*** (0.002)	−0.185*** (0.000)	−0.182*** (0.000)	−0.134*** (0.000)
<i>Capital Liquidity</i>	−0.014 (0.703)	0.119*** (0.000)	−0.088 (0.349)	−0.030 (0.572)	−0.205*** (0.009)
<i>ROE</i>	−0.051* (0.094)	2.263*** (0.000)	0.314*** (0.001)	−0.148*** (0.002)	−0.142*** (0.000)
<i>Sales Growth</i>	0.252*** (0.000)	0.551*** (0.000)	0.311*** (0.000)	0.252*** (0.000)	0.177*** (0.000)
<i>Firm Liquidity</i>	0.204*** (0.000)	−0.091 (0.241)	0.034 (0.530)	0.207*** (0.000)	0.354*** (0.000)
<i>D/E</i>	0.026*** (0.001)	0.016 (0.435)	0.043*** (0.000)	0.002 (0.869)	0.047*** (0.000)
<i>Loss Dummy</i>	−0.230*** (0.000)	0.306*** (0.000)	−0.130*** (0.000)	−0.201*** (0.000)	−0.295*** (0.000)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
<i>N</i>	129,963	22,372	25,430	36,886	45,275
<i>R</i> ²	18.55%	38.06%	14.65%	11.11%	13.40%

Table 10

Relation between Takeover Index and firm-specific governance indices.

This table reports ordinary least squares regressions with G-Index (Gompers et al., 2003) as the dependent variable in Columns 1 and 3 and E-Index (Bebchuk et al., 2009) as the dependent variable in Columns 2 and 4. All other variables are defined in Table 8. All models include an unreported constant. Standard errors are clustered by firm and year, and p -values are reported, with ..., ., and - representing statistical significance at the 1%, 5%, and 10% level, respectively. G-Index=Governance Index; E-Index=Entrenchment Index.

Variable	G-Index (1)	E-Index (2)	G-Index (3)	E-Index (4)
<i>Takeover Index</i>	−0.263** (0.014)	−0.236*** (0.000)	−0.056 (0.422)	−0.026 (0.632)
<i>Ln(Assets)</i>	0.108* (0.050)	−0.083** (0.011)	0.137** (0.016)	−0.004 (0.932)
<i>Ln(Age)</i>	1.506*** (0.000)	0.562*** (0.000)	1.366*** (0.000)	0.607*** (0.000)
<i>Capital Liquidity</i>	0.091 (0.566)	0.115 (0.413)	0.039 (0.760)	0.058 (0.510)
<i>ROE</i>	0.025 (0.831)	−0.008 (0.922)	−0.099 (0.248)	0.068 (0.106)
<i>Sales Growth</i>	−0.350*** (0.007)	−0.130* (0.076)	−0.125* (0.058)	−0.080 (0.114)
<i>Firm Liquidity</i>	−1.297*** (0.000)	−0.851*** (0.000)	−0.431** (0.035)	−0.411*** (0.002)
<i>D/E</i>	0.036 (0.407)	0.044 (0.121)	0.011 (0.670)	−0.022 (0.272)
<i>Loss Dummy</i>	0.032 (0.685)	−0.067* (0.099)	−0.068 (0.153)	−0.004 (0.922)
Firm fixed effects	No	No	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
<i>N</i>	7,540	5,582	7,540	5,582
<i>R</i> ²	13.35%	5.41%	92.85%	88.19%

gaining power and entrenchment with the resulting impact on firm valuation.

In Table 10, we examine the relation between the Takeover Index and indices that contain firm-specific mea-

sures of takeover defense such as the Governance Index (Gompers et al., 2003) and the Entrenchment Index (Bebchuk et al., 2009). We test whether firm defenses are related to external takeover susceptibility, in which *G-Index* and *E-Index* appear on the left-hand side of the model as the dependent variable.

In Column 1, the Takeover Index carries a negative and significant coefficient, suggesting that more susceptible firms also have fewer G-Index provisions. The G-Index includes several laws that are components of our Takeover Index, but the coding is opposite in sign: Higher values of the G-Index represent firms that are more insulated from market discipline, and higher values of our Takeover Index indicate greater susceptibility to takeovers. Thus, we could expect some mechanical negative relation between the G-Index and our Takeover Index. However, in Column 2, where the E-Index is the dependent variable, a similar coefficient is observed, even though the E-Index does not contain overlapping components with the Takeover Index. In Columns 3 and 4, when firm fixed effects are added to the model, the coefficients on the Takeover Index are not significantly different than zero. Firm fixed effects can be problematic when the variables in the model are slow-moving as is the case with these governance indices, because they can fail to detect a relation even when one exists.

Overall, we fail to find evidence of firms endogenously responding to the external takeover environment by altering firm-level defenses. A deep dive into the relation between firm-level defenses and exogenous factors is outside the scope of this study, and these results should be interpreted with caution. Further examination of the trade-off between firm choice and the legal environment is a potentially interesting avenue for future research.

Table 11

Takeover susceptibility and takeover premiums.

This table reports ordinary least squares regressions with *Takeover Premium* as the dependent variable. *Takeover Premium* is defined following Schwert (1996) as the cumulative abnormal return over the window [−63,126] around the acquisition announcement, estimated using the market model over [−316,−64]. All other variables are defined in the header for Table 8. All models include an unreported constant. Standard errors are clustered by firm and year, and *p*-values are reported, with ***, **, and * representing statistical significance at the 1%, 5%, and 10% level, respectively.

Variable	All years (1)	1970–1979 (2)	1980–1989 (3)	1990–1999 (4)	2000–2014 (5)
<i>Takeover Index</i>	−0.041*** (0.005)	−0.010 (0.795)	−0.005 (0.742)	−0.042*** (0.008)	−0.064** (0.033)
<i>Ln(Assets)</i>	−0.003 (0.748)	0.017 (0.434)	−0.018 (0.362)	0.004 (0.826)	0.002 (0.919)
<i>ROE</i>	−0.144** (0.011)	−0.082 (0.421)	−0.292 (0.175)	−0.073 (0.106)	−0.207** (0.023)
<i>Sales Growth</i>	−0.024 (0.608)	0.028 (0.912)	−0.032 (0.748)	−0.090*** (0.001)	0.018 (0.820)
<i>Firm Liquidity</i>	0.199*** (0.000)	0.109 (0.405)	−0.113 (0.190)	0.214** (0.019)	0.282*** (0.000)
<i>D/E</i>	0.033*** (0.006)	−0.035 (0.643)	0.039* (0.064)	0.033* (0.062)	0.033* (0.075)
<i>M/B</i>	−0.061*** (0.000)	−0.026 (0.383)	−0.058*** (0.010)	−0.060*** (0.000)	−0.068*** (0.001)
<i>N</i>	3,187	220	451	1,155	1,361
<i>R</i> ²	5.96%	1.93%	6.49%	5.64%	8.59%

4.4. Takeover susceptibility and takeover premiums

In Table 11, we report results from estimating the effect of hostile takeover susceptibility on observed takeover premiums in the full sample of M&A activity. We follow Schwert (2000) definition of takeover premium, that is, the cumulative abnormal return over the period 63 trading days prior to the announcement until 126 days after the announcement or deal completion, whichever comes first. Abnormal returns are estimated using the market model over the period [−316,−64] as in Schwert (2000).

Over the entire sample period, we find a negative relation between takeover premiums and takeover susceptibility, consistent with the bargaining power hypothesis (Stulz, 1988; Subramanian, 2003) in which takeover protections offer target firms a stronger negotiating position. However, when we estimate the model decade by decade, we find that the relation is not statistically significant in all time periods. In the early part of the sample, the coefficient is correctly signed, but we find no significant relation between premiums and legal protection. As protections increased broadly in later years and as firms were on average less susceptible, variation in premiums emerges. The negative relation is strongest in the 1990s and 2000–2014 periods, with a coefficient of −0.064 in the 2000s.

In the Internet Appendix, we decompose the premium into the Run-up period [−63,−1] and the Markup period [0,126], again following Schwert (2000). We find that both periods contribute to the significantly negative coefficient from Column 1 of Table 11, although the Markup period contributes a greater proportion. Overall, the results indicate that greater takeover protections are associated with enhanced premiums both pre-announcement and post-announcement in successful bids. Because most takeover negotiations begin behind closed

doors, the results are consistent with the bargaining power hypothesis.

Taken together, the results on firm value and takeover premiums suggest that agency costs dominate the overall shareholder wealth effects. Disciplinary takeovers affect a relatively small percentage of firms, so it is not surprising that the conditional positive impact on shareholder wealth in takeover negotiations due to increased premiums fails to subsume the negative entrenchment effect that could be much more widespread.

4.5. State of incorporation versus headquarters location

Many firms choose to incorporate in states other than the location of their headquarters. In results reported in the Internet Appendix, we find that Delaware dominates the market for corporate charters with 54.80% of incorporations, followed by New York with 5.11% and Nevada with 4.30%. However, only 0.28% of firms headquarter in Delaware during the sample period. Similarly, Nevada has only 1.18% of firm headquarters. The jurisdictions with the highest number of headquarters are California (16.47%), Texas (9.63%), and New York (9.13%). Headquarters are more heterogeneously dispersed than states of incorporation and the top ten headquarter states make up only 65.33% of headquarters compared with 81.75% for the top ten states for incorporations.

Table 12 reports changes in headquarters versus incorporations over time. The numbers show that more companies are opting to incorporate outside their jurisdiction of headquarters, primarily to Delaware. In 1965–1979, 35.86% of companies had the identical headquarters and incorporation state, a number that falls to 22.97% by 2000–2014. Among the 70.28% of companies that have differing headquarters and incorporation, Delaware dominates with 54.65% of all incorporations over the entire sample period. These figures show some level of firm choice in jurisdic-

Table 12

Incorporations and headquarters for sample period.

This table reports descriptive statistics on firm-years with identical versus different headquarters and incorporation state locations. Headquarters=($\neq$) Incorporation indicates those observations in which the headquarters is identical to (different from) the firm's jurisdiction of incorporation. Headquarters $\neq$ Incorporation (DE) [(NV, (Other))] indicates those observations in which the headquarters differs from the firm's jurisdiction of incorporation and the location of incorporation is Delaware (Nevada/Other).

	All	1965–1979	1980–1989	1990–1999	2000–2014
Headquarters = Incorporation	29.72%	35.86%	36.60%	29.90%	22.97%
Headquarters $\neq$ Incorporation	70.28%	64.14%	63.40%	70.10%	77.03%
Headquarters $\neq$ Incorporation (DE)	54.65%	47.26%	47.12%	55.37%	61.51%
Headquarters $\neq$ Incorporation (NV)	3.65%	1.23%	2.13%	2.40%	6.69%
Headquarters $\neq$ Incorporation (Other)	11.97%	15.65%	14.15%	12.33%	8.83%
Total N	213,938	31,184	42,832	66,267	73,655

tion, but that the vast number of companies still mostly select either their headquarters state or Delaware as their place of incorporation, consistent with [Daines \(2002\)](#).

Firms can respond to changes in takeover laws by reincorporating from one state to another. As a robustness check, [Table 13](#) examines the reincorporation of firms in the sample. For these purposes, we collect reincorporation data for the time period 1995 through 2014. We limit our analysis to these years because the incorporation data source remains constant, using SEC Analytics Suite data from firm Securities and Exchange Commission (SEC) filings. Panel A reports the number of reincorporations by year, which is the number of firms that reincorporate from one state to another. The number of reincorporations is a low 0.70% of the sample over the full time period. The highest number of reincorporations in any year occurs is 2000 with 1.58% of firms reincorporating, with a low of reincorporations at 0.09% of firms in 1995 and 1996. It thus appears that, similar to opt-out rates, reincorporation rates are low among firms.

In Panel B, we examine where firms reincorporate. The majority of reincorporations, 61.87%, are to Delaware, with Nevada being next at 12.43%. No other state has more than 4% of reincorporations over the applicable time period, suggesting that reincorporations are not motivated by takeover laws. Instead, the majority of firms apparently do so to bond to Delaware law, which has neither a markedly high nor low value in the Takeover Index.

Panel C further explores this question by examining whether firms tend to reincorporate to a state that is not their headquarters state. Approximately 18% of firms reincorporate to the state of their headquarters, with the bulk of the remainder going to Delaware (61.87%). Only 70 reincorporations, or 9.78% of reincorporations in the 20-year period, are to a state that is not either the headquarters of the firm, Delaware, or Nevada. In sum, it does not appear from the descriptive evidence that companies are responding to takeover laws by reincorporating to other states in search of stronger or weaker takeover laws.

Panel D examines changes in the level of takeover protection around reincorporation events to determine if increased antitakeover protection is a motivating factor in the relocation decision. We do so by measuring the average change in Takeover Index values (μ) from one year prior to reincorporation (in the old state) to one year after reincorporation (in the new state). We find that when

firms reincorporate, they generally do not experience a statistically significant change in the Takeover Index. This result also holds for non-Delaware reincorporations. One caveat to this test is that many firms reincorporated prior to 1995, and we do not measure changes in index values for these firms. Pre-1995 reincorporations could be motivated by factors that differ from those in more recent years. [Gormley and Matsa \(2016\)](#) note that about 6% of their sample appears to have been affected by reincorporations.

For robustness, we reestimate our main tests (unreported for brevity) using a sample consisting exclusively of firms that incorporate in the same state as their headquarters. We do so to assess the endogeneity of firm incorporation choices and their effect on our results. The results are qualitatively unchanged in these tests, lending support to the interpretation of this index as being largely exogenous.

Taken together, strong evidence does not seem to exist that firms reincorporate to more protective states to gain greater antitakeover protection, mitigating concerns of endogeneity along this dimension. The data show that, in general, firms do not consider takeover laws as a primary decision input during the incorporation or reincorporation choice. Instead, given that the majority of the firms are going to Delaware from their prior place of incorporation, we believe they are moving as part of a bonding to that state's law. The bulk of other incorporations are to a state's home jurisdiction, which can be for similar reasons. Both of these findings are consistent with [Daines \(2002\)](#). These results are also consistent with [Coates \(2001\)](#), who shows that law firm fixed effects tend to drive incorporation decisions across firms as opposed to managerial preferences for takeover defenses. As such, we believe concerns about this type of endogeneity are minimal. Nonetheless, the potential for future study exists regarding firms' endogenous responses to state law changes and the extent to which managers consider these factors in the incorporation and reincorporation decisions.

5. Conclusion

This study uses a data set of 17 different takeover laws and court decisions from 1965 through 2014 to measure the variation in takeover laws and their long-term impact on hostile activity through time. We also utilize a novel data set of M&A hostility back to 1965. We find that the general susceptibility to a hostile takeover peaked in

Table 13

Reincorporations.

Panel A reports the number and rate of reincorporations for each year from 1995 to 2014. Panel B reports the number of reincorporations by state (i.e., the jurisdiction the firm reincorporates to) during the time period. Panel C reports the number of reincorporations and whether it is to firms' state of headquarters or elsewhere. Reincorporation = headquarters is the number of reincorporations during the sample time period in which the firm reincorporates to the location of its headquarters. Reincorporation $\neq$ headquarters (to DE) [(to NV, (to Other))] is the number of reincorporations during the sample time period in which the firm reincorporates to Delaware (Nevada/Other), and Delaware (Nevada, Other) is not the firm headquarters. Panel D reports *t*-tests of the mean change in Takeover Index values (μ) from one year prior to reincorporation to one year after reincorporation, for all reincorporations and for reincorporations to states other than Delaware.

Panel A: Reincorporations by year (1995–2014)				
Year	Same incorporation	Reincorporation	Reincorporation (percent)	Total
1995	6,386	6	0.09	6,392
1996	6,819	6	0.09	6,825
1997	6,804	25	0.37	6,829
1998	6,525	49	0.75	6,574
1999	6,362	93	1.44	6,455
2000	6,059	97	1.58	6,156
2001	5,743	64	1.10	5,807
2002	5,456	40	0.73	5,496
2003	5,222	39	0.74	5,261
2004	5,065	31	0.61	5,096
2005	4,857	36	0.74	4,893
2006	4,766	34	0.71	4,800
2007	4,551	23	0.50	4,574
2008	4,328	18	0.41	4,346
2009	4,152	30	0.72	4,182
2010	4,042	28	0.69	4,070
2011	3,950	21	0.53	3,971
2012	3,964	12	0.30	3,976
2013	3,956	27	0.68	3,983
2014	2,853	37	1.28	2,890
Total	101,860	716	0.70	102,576

Panel B: Reincorporation states (1995–2014)		
State	N	Percent
Delaware	443	61.87
Nevada	89	12.43
Florida	25	3.49
California	17	2.37
Colorado	14	1.96
Texas	13	1.82
Maryland	9	1.26
Washington	8	1.12
Wisconsin	8	1.12
Other	90	12.57
Total	716	100.00

Panel C: Reincorporations outside of headquarters state (1995–2014)		
Relationship	N	Percent
Reincorporation = headquarters	127	17.74
Reincorporation $\neq$ headquarters (to DE)	443	61.87
Reincorporation $\neq$ headquarters (to NV)	76	10.61
Reincorporation $\neq$ headquarters (to Other)	70	9.78
Total	716	100.00

Panel D: <i>t</i> -tests of changes in Takeover Index values around reincorporations					
Change in Takeover Index (<i>t</i> -1 to <i>t</i> +1)	N	μ	σ	<i>t</i>	<i>p</i> -value
All reincorporations	507	0.0037	0.0031	1.20	0.233
All reincorporations other than to Delaware	171	0.0053	0.0055	0.96	0.338

1973 and has decreased somewhat since 1987. As a proportion of total M&A equal-weighted volume, hostile activity peaked in 1967 at 40% and has since declined to about 8.6% in 2014.

Many studies utilize BC laws to proxy for firms' exogenous governance environment, yet no studies have yet shown a robust relation between BC laws and hostile takeover rates. We do not find significant evidence that the passage of business combination laws was followed by a decline in the likelihood of firms being successfully taken over through hostile means. Moreover, we note that the value-weighted proportion of firms covered by these laws jumped from 0% pre-1983 to over 95% by 1990. Thus, the variation in firms' coverage by this proxy appears to be limited primarily to a brief window of time. The lack of variation in BC laws and our insignificant results raise questions about the use of BC laws as a proxy for governance. However, we cannot distinguish whether they truly have no effect or whether their effect is offset by other mechanisms and changes made by firms.

We conduct an empirical analysis of the full set of 17 takeover laws and cases. Our results imply that while many of the cases and pieces of legislation have influenced takeover activity, some of them have done so in a way that might not have been anticipated by the original drafters and many of these laws could have had limited effect given other structures already in place at the firm or macroeconomic level. We develop an index of takeover susceptibility using determinants from the legal environment as well as other plausibly exogenous variables such as aggregate capital liquidity and firm age. We make this index and underlying data publically available for use in future research on topics related to corporate governance.

We conclude by studying economic outcomes related to firms' takeover susceptibility. We find that firm value is increasing in takeover susceptibility, consistent with the incentive benefits of the disciplinary market for corporate control. However, conditional on a bid, we find that firms in more protective environments are associated with higher takeover premiums, consistent with the bargaining power hypothesis.

Overall, we conclude that our Takeover Index captures significant variation in both the cross section and time series relating to the disciplinary market for corporate control. It offers researchers a new tool for further analysis of the interaction between firms' external legal environment and corporate governance.

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