ESSAYS ON CORPORATE GOVERNANCE

by

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(Under the Direction of Stuart Gillan and Annette Poulsen)

ABSTRACT

The essays study the value effects and the determinants of a recent corporate governance innovation – the usage of low threshold poison pills to protect net operating loss carryforwards. The first chapter uses a Delaware court case as a quasi-natural experiment to study the value effects of these pills. While these pills are specifically designed to protect a firm's valuable assets, we find more negative market reaction for firms that are more likely to use these pills. These effects are magnified when management is more likely to be entrenched. The second chapter studies the voting behavior of firms that adopt these pills. While shareholder votes are mandatory for many issues, boards can unilaterally adopt these pills without shareholder approval. However, about half of the firms that adopt these pills sought for a shareholder vote. Overall, the likelihood of a vote is significantly higher for firms with better governance in place. Conditional upon a vote, shareholder support is greater in firms that have better accounting performance and higher institutional ownership concentration. We do not find a significant difference in accounting performance, or in the probabilities of bankruptcy, acquisition, and CEO turnover between voting and non-voting firms during the five years following the adoption of these pills.

INDEX WORDS: Corporate governance, antitakeover measures, poison pills, net operating losses

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DEDICATION

For my parents.

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CHAPTER 1

THE VALUE EFFECTS OF POISON PILLS: EVIDENCE FROM A QUASI-NATURAL EXPERIMENT

1.1. Introduction

Although poison pills, or shareholder rights plans, have been studied extensively in the literature, evidence of their effect on shareholder value remains mixed.[1] Poison pills can provide a barrier to the market for corporate control, allowing managers to focus their time and effort on long-term shareholder value creation rather than on fighting a hostile bid. Additionally, in the event of a takeover attempt, pills afford management bargaining power when negotiating with potential bidders, thus potentially yielding a higher offer and enhanced shareholder value.[2] Detractors of poison pills, however, argue that such powerful anti-takeover provisions are entrenching as they shield managers from potential takeover and any resulting job loss, thus managers may simply enjoy the "quiet life" at shareholders' expense.[3]

Since the financial crisis of 2008, there has been a governance innovation in the form of the net operating loss poison pill (henceforth NOLP). Of note, NOLPs have an unconventionally

[1] A poison pill, more formally known as a shareholder rights plan, is an anti-takeover provision which limits outside equity ownership to a pre-specified threshold, typically 15% to 20% of shares outstanding. If a shareholder's ownership crosses the threshold, absent explicit board approval, then all other shareholders are given an option to purchase newly issued shares at a steep discount. This process dilutes the ownership and value of the shareholder triggering the pill, thus "poisoning" them economically. As such, poison pills are a virulent defense mechanism against shareholders accumulating large blocks of shares as a precursor for taking control of a firm.

[2] See, for example, Laffont and Tirole 1988; Johnson, Karpoff, Yi, 2015; Cremers, Guernsey, Litov, Sepe 2018 Stulz 1988; Comment and Schwert 1995; Gordon 2002; Heron and Lie 2006.

[3] See, for example, Manne 1965; Jarrell and Poulsen 1986; Jarrell, Brickley, Netter 1988; Walkling and Malatesta 1988; Ryngaert 1988; Karpoff and Malatesta 1989; Bebchuk, Coates 2000, Subramanian 2002; Bebchuk, Cohen, Ferrell 2009; Sikes, Tian, Wilson 2014; Holmström 1979; Bertrand and Mullainathan 2003.

low trigger threshold of 5%. The stated rationale for this trigger stems from Section 382 of the Internal Revenue Code that restricts the use of net operating loss carryforwards when a large ownership change, often involving 5% shareholders, takes place over a specified window.[4] That is, loss firms that have accrued deferred tax assets (henceforth NOL DTAs), that cannot currently be taken advantage of, can lose those benefits depending on the extent to which the firm's ownership structure changes.[5,6]

While NOLPs arguably protect deferred tax assets, the potential for managerial entrenchment is of concern given that NOL firms are, by definition, poor performers. As boards can adopt pills at will and without shareholder approval, the value effects of NOLPs are important not only for firms that adopt them, but more generally for firms that have significant deferred tax assets. Of note, Denis and McKeon (2018) report that the percentage of firms with negative operating cash flows in the Compustat universe increased from 6% in 1960 to nearly 30% in 2016 and that the average number of consecutive loss years has increased from 1.3 in 1970 to 4.0 by 2016.

As with any analysis of poison pills, there are potential endogeneity concerns if one focuses only on adopting firms. To address this issue, we use a 2010 Delaware court case as a quasi-natural experiment that potentially affected the voracity of NOLPs and thus the value potential adopters.[7] Of note, there was substantial uncertainty as to the validity of the NOLP. Specifically, it was unclear whether having such a low trigger threshold could be justified by the argued necessity to protect NOL DTAs. Ultimately the Court decided in favor of the NOLP, and its low threshold,

[4] The rule is quite complex, however a general guide is that Section 382 takes effect when the sum of cumulative ownership changes across all 5% shareholders exceeds 50 percentage points over a three-year period.
[5] According to Sikes, Tian, and Wilson (2014), a Section 382 trigger would destroy 93% of the value of federal net operating loss carryforwards for their sample.
[6] For tax purposes, a firm can carry back its losses for two years or carry them forward for up to twenty years. Due to time value of money, most firms carry back their losses first and carry forward the remaining losses.
[7] *Selectica, Inc. v. Versata Enterprises, Inc., et al* No. 4241-VCN, 2010 WL 703062 (Del. Ch. Feb. 26, 2010).

thus setting a precedent for their use. Moreover, some observers questioned whether the decision might have broader ramifications in that it could be used to "…justify lower-threshold poison pills and more extreme takeover defenses in other contexts."[8]

Of course, given the specific nature of the pill, firms with NOL DTA should be more likely to adopt NOLPs and thus be more affected by the court decision. As a result, we first examine the wealth effects of NOLPs by studying market reactions on the court decision date conditioned on the variation in NOL DTA across firms. In particular, we focus on announcement returns around the decision date for firms with high NOL DTA relative to those with zero or low NOL DTA. If the market perceives NOLPs to be value-enhancing (reducing), we would expect to find a more (less) positive market reaction for the high NOL DTA firms.

Furthermore, we would expect differential market reactions for firms that have different governance and ownership structures, particularly if such characteristics are potentially associated with managerial entrenchment. We exploit cross-sectional variation in ownership structure (measured by aggregate institutional ownership, institutional ownership concentration, and the presence of activist shareholders) and governance (measured by board independence, presence of classified board, presence of both classified board and poison pill, and whether a firm is a family/founder firm) to further shed light on the value effects of NOLPs.

Our results are supportive of the managerial entrenchment view. Firms with high NOL DTA experienced approximately one percentage point more negative cumulative abnormal returns (CARs) relative to those with low NOL DTA over the [-1, +1] window surrounding the court decision. This market response is economically significant, especially when we compare our

[8] https://dealbook.nytimes.com/2010/03/02/delaware-broadens-standards-for-poison-pills/

results to those of Sikes, Wilson, and Tian (2014), who find a CAR of -2.44% for a sample of 62 actual NOLP adoptions.

With regard to ownership structure we find that, among high NOL DTA firms, the market reaction remains negative, but less so, if a firm has higher institutional ownership. Conditional upon a firm having high NOL DTA, a one standard deviation increase in institutional ownership is associated with a 97 basis point increase in CAR. However, we do not find evidence that the negative reaction is attenuated if a firm has greater institutional ownership concentration. Moreover, we find no evidence of differential market reactions in the presence of activist shareholders.

We investigate other aspects of corporate governance and find that among high NOL DTA firms, firms with greater board independence had less negative CARs (91 basis points for those with a one-standard deviation higher independence). However, we find no significant difference in abnormal returns for firms that have a classified board or a poison pill, relative to those that do not. Finally, among high NOL DTA firms, we find no evidence of differential market reactions in firms for which the CEO or the chair is a founder of the firm, or if the firm has family ties that play a key role in both ownership and board membership.

To conclude our analyses we explore the extent to which NOL DTA firms are more likely to adopt NOLPs following the court decision. Our findings suggest that that high NOL DTA firms are more than three times more likely to adopt NOLPs relative to low NOL DTA firms.

1.2. Background of the Delaware Court Case: *Selectica, Inc. v. Versata Enterprises, Inc., et al.*

Selectica, Inc., recorded nine consecutive years of losses following its initial public offering in 2000. By March 2009 the firm had a market capitalization of roughly $23 million and

an estimated $160 million in cumulative net operating losses – thus, most of Selectica's assets were in the form of NOL DTA. Trilogy, a competitor of Selectica, and its parent company Versata, accumulated 5.2% of Selectica's common shares and filed a Schedule 13D on November 13, 2008.[9] Selectica's advisors counseled the firm's board that an Internal Revenue Code "Section 382 ownership change" could take place, which would put the firm's tax loss carryforwards at risk.[10] In order to limit the likelihood of such an ownership change, on November 16, 2008, Selectica amended its poison pill by lowering the trigger threshold from 15% to 4.99%.[11]

Trilogy subsequently bought additional Selectica shares and deliberately crossed the specified pill threshold. After repeatedly requesting but failing to reach a standstill agreement with Trilogy, on December 21, 2008, Selectica filed suit in the Delaware Court of Chancery to seek assurance that the NOLP was valid and enforceable. In the first pill triggering in decades, Selectica's board implemented the NOLP on January 2, 2009, diluting Trilogy's ownership stake from 6.7% to 3.3%.[12] Trilogy filed a countersuit claiming that such a low trigger threshold and the resulting dilution were unlawful. Given Selectica's unbroken history of losses, Trilogy argued that the grounds for the trigger threshold were unreasonable because Selectica would likely never be profitable enough to use its NOL DTA. Indeed, for accounting purposes, Selectica itself had determined that it was more likely than not that they would be unable to utilize its carryforwards.[13]

[9] A shareholder with a block of 5% or more of shares outstanding are required to file a Schedule 13D with the Securities and Exchange Commission if the shareholder has intentions to influence the management. If no such intentions exist, the shareholder can file a shorter Schedule 13G.

[10] As mentioned in footnote 4, Section 382 goes into effect when the sum of cumulative ownership changes across all 5% shareholders exceeds 50 percentage points over a three-year period. This number was at 40% for Selectica at the time.

[11] As Selectica amended the pill, the firm grandfathered existing 5% owners and permitted them to acquire up to an additional 0.5% without triggering the amended pill.

[12] Additionally, Selectica's board "reloaded" the NOLP, essentially adopting a new NOLP with the same parameters that would be in effect going forward.

[13] https://www.sec.gov/Archives/edgar/data/1090908/000119312509146022/0001193125-09-146022-index.htm

There was considerable uncertainty with regards to the possible outcome of the case.[14] As noted by the New York Times Deal Professor:

> *Delaware courts are usually quite fast; the lack of an opinion here likely means that the judge is waiting and hoping for a settlement since he does not like the opinion he is going to issue. Is it because it takes a too hard a line on poison pills? Or perhaps Delaware could finally lay out in this case the circumstances when it will pull a poison pill and what is an appropriate threshold.*

Thus, we use the court decision date as an exogenous shock to information as to firms' ability to adopt NOLPs and provide insulation from the market for corporate control. Specifically, on February 26, 2010, the Delaware Court of Chancery approved the NOLP and the dilution, although the judge opined that the potential for Selectica to realize value from the NOL DTA may have been dubious.[15] The decision had implications for loss firms in general as it set a precedent for adopting an NOLP, even if NOL DTA were unlikely to be realized, and as noted in the introduction, some questioned the extent to which the decision might have broader effects.[16]

1.3. Data

The initial sample comprises firms at the intersection of Center for Research in Security Prices (CRSP) and Compustat on the event date, February 26th, 2010. We use daily CRSP return data to calculate Fama-French 3 factor model cumulative abnormal returns (CARs) around the court decision date.[17,18] Next, we collect firm-level financial data from Compustat for the most

[14] https://dealbook.nytimes.com/2010/02/03/on-the-uses-and-misuses-of-poison-pills/
[15] No. 4241-VCN, 2010 WL 703062 (Del. Ch. Feb. 26, 2010). In the memorandum, Vice Chancellor Noble stated "…granting judicial sanction to low-threshold poison pills for the purpose of protecting NOLs guarantees the somewhat unpalatable outcome of acquiescing to the expansion of the universe of reasonable takeover defenses in order to protect assets of questionable, even dubious, value."
[16] Versata appealed the decision and ultimately the Supreme court reaffirmed the validity of NOLPs on October 4, 2010. However, by this time there was a general consensus with regards to the decision and therefore, the Supreme court decision did not provide a resolution of uncertainty. For this reason, we focus on the Chancery court decision date, February 26, 2010.
[17] We find qualitatively similar results using CARs from other models.
[18] As the decision was made on the afternoon of a Friday, we include returns from the following Monday when we calculate CARs for [-1, +1] window.

recent fiscal year prior to the event date. As the key event date is in February 2010, for most firms, financial statement data is for fiscal year 2008. However, if the 10-K filing date is earlier than the event date, we use data from fiscal year 2009. *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged assets; *Leverage* is the sum of long-term and current debt scaled by total assets. We also collect data on the state of incorporation for each firm from the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) database, available from the Securities and Exchange Commission website. Using this data, we create an indicator variable, *Delaware*, that equals 1 if a firm is incorporated in Delaware and zero otherwise. We require a firm to be incorporated in the U.S. to be included in our sample.

The key explanatory variable of interest, deferred tax assets associated with net operating losses (*NOL DTA*), is hand-collected from 10-K filings. For normalization purposes, this variable is scaled by contemporaneous market capitalization.[19] We sort firms based on NOL DTA, and create an indicator variable, *High*, that takes a value of one if a firm has NOL DTA within the top quintile of the distribution.[20] Although tax-loss carryforward data is available in Compustat (*data item 52*), we refrain from using this variable for two reasons. First, prior literature (e.g. Mills, Newberry, and Novack 2003; Wagner, Zeckhauser, and Ziegler 2018) has expressed concerns about the quality of this data.[21] More importantly, this variable is a combined total of state and federal gross tax loss carryforwards. This is problematic because the same gross amount of tax-loss carryforwards can be of drastically different values for a firm due to differences in state and

[19] We find qualitatively similar results for other normalization methods. For instance, our NOL DTA measure has a correlation of 41.96% when scaled by long term liabilities and 13.74% when scaled by total assets.
[20] We find qualitatively similar results for other definitions of High (e.g. deciles or quartiles).
[21] From our inspection of this data, we also find significant errors for many firms.

federal tax rates.[22] Because Compustat only reports the combined value of tax-unaffected federal and state-level loss carryforwards, it would be impossible to calculate the total amount of tax-affected NOL DTA for a firm using this data.

We collect quarterly institutional ownership data from the Thomson Reuters 13(f) holdings database and compute the percentage of shares held by all institutional investors (*Inst. Ownership %*). From this data source, we also measure institutional ownership concentration by calculating the Herfindahl-Hirschman Index (*Inst. Ownership HHI*).[23] Board independence data (*Board Indep. %*) are from Morgan Stanley Capital International (MSCI) and Capital IQ. We also collect data on whether the firm is a founder or family firm (*Founder or Family Firm*) from MSCI. Finally, we also collect data on actual NOLP adoptions from Factset's SharkRepellent database.

As underperforming firms are likely targets of pressure from external shareholders, including activist hedge funds, NOLPs might further detract from shareholder value by chilling hedge fund activism.[24] Thus, we also collect a list of hedge fund activists from SharkRepellent. When a blockholder acquires more than 5% of shares outstanding of a particular firm, she must file a Schedule 13G if she does not have an intention to influence the managers of the firm. If the blockholder has an intention to influence the management or holds more than 20% of shares outstanding, she must file a more comprehensive Schedule 13D. Using the list of hedge fund activists from SharkRepellent, we retrieve all Schedule 13D filings and their corresponding

[22] As an illustration, if firm A has federal-level loss carryforward of $100 million and faces a federal tax rate of 21%, then the tax-affected value NOL DTA for firm A would be $21 million. On the other hand, if firm B has a state-level loss carryforward of $100 million and faces a state tax rate of 5%, then the tax-affected value of NOL DTA for firm B would be $5 million.

[23] We calculate institutional ownership HHI of all institutional investors. We find robust results using institutional ownership HHI of top five institutional investors.

[24] A number of papers document that hedge fund activism is associated with increased shareholder value, for example, Brav, Jiang, Partnoy, Thomas 2008; Klein and Zur 2009; Clifford 2008; Brav, Jiang, Kim 2009; Bebchuk, Brav, Jiang 2015; Cohen and Gillan 2019.

amendments from the EDGAR database.[25] We define an activist to be present at a firm if a hedge fund activist had filed a Schedule 13D and continued to hold more than 5% of the firm's outstanding shares on the event date.

Table 1.1 reports our sample selection process. We begin with 6,505 firms that appear in CRSP and Compustat on our event date, February 26, 2010. We eliminate 2,422 firms that are not incorporated within the United States. We also eliminate 723 firms that have a potentially confounding concurrent event. Panel B of Table 1.1 details the types and frequencies of concurrent events. Next, we eliminate 332 firms that have missing data. Our final sample comprises of 3,028 firm-level observations.

Table 1.2 reports summary statistics for our final sample. The mean (median) of NOL DTA scaled by market capitalization is 11.08% (0.18%) and the standard deviation for this variable is 53.82%. Because this variable is highly skewed, we focus on an indicator variable, *High,* that equals one if a firm has NOL DTA within the top quintile of the distribution of *NOL DTA* (605 firms), and zero otherwise (2,423 firms).

In Table 1.3, we report summary statistics for the two subsamples, *High = 1* and *High = 0*. Most importantly, we find significantly lower CARs for high NOL DTA firms (-1.56% vs. -0.68%; significant at the 1% level), which shows early evidence of support for the managerial entrenchment hypothesis. First, we find firms in the *High = 1* subsample have substantially smaller market capitalization. The difference in means ($2,127.47 million) is statistically significant at the 1% level. Not surprisingly, high NOL DTA firms have lower ROA (-6.7% vs. 7.8%; significant at the 1% level). Moreover, high NOL DTA firms tend to have higher leverage (22.91% vs. 19.22%)

[25] While SharkRepellent has data on hedge fund activist interventions, this data is not comprehensive because it fails to include campaigns on firms that are no longer active (e.g. acquired or bankrupt firms). Hence, we opt to garner data from Schedule 13D filings and their corresponding amendments instead.

and have lower aggregate institutional ownership (49.57% vs. 54.82%), but greater institutional ownership concentration (0.0304 vs. 0.0256). All of the differences in means are statistically significant at the 1% level.

Consistent with prior literature that hedge fund activists tend to target poorly performing firms (e.g. Brav, Jiang, Partnoy, Thomas 2008), we find that high NOL DTA firms are more likely to have an activist present. We find that 10.74% of firms included in the High = 1 subsample (65 firms) have a hedge fund activist 13D presence, while 4.62% of High = 0 firms (112 firms) have an activist 13D filer. This difference is significant at the 1% level. Finally, we find that high NOL DTA firms are more likely to have both classified board and poison pill in place (9.42% vs. 5.78%; significant at the 1% level).

Panel A of Table 1.4 reports the correlation of ownership and governance variables for the full sample. We find that institutional ownership and board independence has a high correlation. We further report conditional correlations for High = 1 and High = 0 subsamples in Panels B and C.

1.4. Empirical Methodology and Results

1.4.1. Firm-level Cross-sectional Analysis

The key objective of this paper is to explore the value effects of poison pills – specifically net operating loss poison pills (NOLPs) that have an unconventionally low 4.99% trigger threshold. Proponents of NOLPs argue that they should be value-enhancing, as they are designed to protect a firm's valuable tax assets. On the other hand, by impeding the market for corporate control, NOLPs could entrench management and thus have a value-destroying effect. While ultimately this is an empirical question, more generally a clear-cut answer on the value effects of these pills has been elusive, largely due to endogeneity concerns.

We attempt to overcome sample selection and endogeneity concerns by using a Delaware court ruling as a quasi-exogenous shock to the voracity of NOLPs that we expect to affect different firms differently. Specifically, on February 26th, 2010, the Delaware Chancery Court upheld the use of these pills. We analyze the event returns of firms with different amounts of deferred tax asset attributable to net operating losses (NOL DTAs).

More specifically, we run a series of cross-sectional analyses of CARs around the event date to investigate the value effects of NOLPs. If the market perceives NOLPs to be value-enhancing, then the firms with high NOL DTAs, or those that can readily adopt low threshold NOLPs as a defensive measure, should have more positive announcement returns than low or zero NOL DTA firms. On the other hand, if the market perceives NOLPs to be value-destroying, then these high NOL DTA firms should have more negative CARs. More explicitly, we estimate the following model:

$$CAR_i = \alpha + \beta_1 * High_i + \Gamma * Controls_i + \varepsilon_i$$

In the model, we also include a set of controls, industry fixed effects based on 2-digit SIC codes, and cluster standard errors at the industry level based on 2-digit SIC codes.[26]

Our coefficient of interest in the above specification is β_1. We would expect β_1 to be positive (negative) if the market perceives NOLPs to have a value-enhancing (value-destroying) effect. To test for the existence of a differential market reaction between firms that are incorporated in Delaware and those in other states, we estimate the model:

$$CAR_i = \alpha + \beta_1 * High_i + \beta_2 * (High * Delaware)_i + \beta_3 * Delaware_i + \Gamma * Controls_i + \varepsilon_i$$

[26] As a robustness test, we also use a generalized least squares model instead of an ordinary least squares model. We find qualitatively similar results.

We would expect β_2 to be positive if the market perceives the court decision to be a good news only for high NOL DTA firms incorporated in Delaware.

Table 1.5 reports the results of this analysis. Columns 1 and 2 report the results from the baseline model, and columns 3 and 4 report the results from the interaction model. In columns 1 and 3, we do not include any controls. Columns 2 and 4 include size, book-to-market, ROA, leverage, and industry fixed effects. In all specifications, we find a significant negative coefficient on *High*, and an insignificant coefficient on the *High*Delaware* interaction term. This suggests that, on average, the market perceives the court decision upholding the use of NOLPs as value-destroying for high NOL DTA firms. In columns 3 and 4, the insignificant coefficient on the *High*Delaware* interaction term suggests that there was no significant difference in market reaction between high NOL Delaware firms and high NOL non-Delaware firms.[27] Given the historical pattern of other states mimicking Delaware corporate law, we interpret the lack of significance as the market anticipating the court decision to affect firms more broadly, regardless of a firm's state of incorporation.

1.4.2. Cross-sectional Analysis Across Ownership Structure

In this section we examine the extent to which value effects vary with different measures of firm ownership structure.

1.4.2.1. Cross-sectional Analysis Across Institutional Ownership

Prior literature has documented ample evidence of institutional investors taking a role as monitors of the management (e.g. Maug 1998; Gillan and Starks 2000; Gillan and Starks 2003). If

[27] We realize that there is a heterogeneity in the degree to which states follow Delaware corporate law. For instance, some states do not allow federal NOL deductions for state tax purposes. Moreover, it's not clear whether a judge from a particular state would sanction the use of NOLPs. We plan to investigate this question in the near future.

managers are monitored more closely and less prone to entrenchment, conditional upon a firm having high NOL DTA, firms with greater institutional ownership should have relatively higher CARs. For this analysis, we regress event date CARs on *High*, aggregate institutional ownership, and an interaction term between the two variables. More specifically, we estimate the following equation:

$$CAR_i = \alpha + \beta_1 * High_i + \beta_2 * (High * \ Inst\ Ownership\ \%)_i + \beta_3 * Inst\ Ownership\ \%_i + \Gamma * Controls_i + \varepsilon_i$$

Our coefficients of interest are β_1 and β_2. β_1 can be interpreted as the size of market reaction for all high NOL DTA firms. A positive value for β_2 would be consistent with institutional investor monitoring mitigating potential managerial entrenchment associated with NOLPs.

Table 1.6 reports the results. In column 1, we estimate the model without any controls. In column 2 we include a set of control variables. In column 3 we further add industry fixed effects and cluster standard errors at the 2-digit SIC industry level. In all specifications, we continue to find a significant negative coefficient on the *High* indicator variable. In column 3, the coefficient on *High* suggests that high NOL DTA firms had 2.40 percentage point lower excess returns relative to low NOL DTA firms. This coefficient is statistically significant at the 1% level.

Moreover, we find a significant positive coefficient on *High*Inst.Ownership%* suggesting that the negative market reaction for high NOL DTA firms was attenuated if the firm had higher aggregate institutional ownership. The economic magnitude is large. In column 3, a high NOL DTA firm has 3.06% * 31.69% = 97 basis point higher CAR for a one standard deviation increase

in institutional ownership.[28] The coefficient on the interaction term *High*Inst.Ownership%* is significant at the 1% level in all specifications.

In untabulated results, we augment the model with the indicator variable *Delaware* and find no significance for the *High*Inst.Ownership%*Delaware* triple interaction term.[29] Together with the earlier results, this suggests that high NOL DTA firms with greater institutional ownership had less negative CARs irrespective of where they are incorporated. Further, the lack of significance on both the triple interaction term and the *High*Delaware* interaction term suggests no evidence of differential CARs between Delaware high NOL DTA firms and non-Delaware high NOL DTA firms. This result is consistent with our main findings in Table 1.5, where we find a lack of significance on the *High*Delaware* interaction term. Taken together, these results support the view that the market anticipates other states to follow Delaware corporate law, and that NOLP availability would have overall negative effects on shareholder value, albeit an effect that is mitigated if management is monitored more closely.

1.4.2.2. Cross-sectional Analysis Across Institutional Ownership Concentration

Next, we study market reactions on the event date for high NOL DTA firms after stratifying firms based on institutional ownership concentration. We hypothesize that greater institutional ownership concentration would mitigate entrenchment effects since large equityholders have greater economic incentives to monitor the management (Grossman and Hart 1980; Shleifer and Vishny 1986; Gillan and Starks 2003). For this analysis, we regress event date *CAR* on *High*, institutional ownership Herfindahl-Hirschman Index (*Inst. Ownership HHI*), and an interaction term between the two regressors. More specifically, we estimate the following model:

[28] 31.69% is the standard deviation of institutional ownership in Table 1.2.
[29] Results are available upon request.

$$CAR_i = \alpha + \beta_1 * High_i + \beta_2 * (High * Inst.\ Ownership\ HHI)_i + \beta_3$$
$$* Inst.Ownership\ HHI_i + \ \Gamma * Controls_i + \varepsilon_i$$

Our coefficients of interest in the above equation are β_1 and β_2. β_1 is the differential market reaction for all high NOL DTA firms. β_2 is the difference in differences in CARs for ownership concentration, between treatment and control samples.

Table 1.7 reports the results for this analysis. Column 1 reports results for our baseline specification where we omit control variables. In column 2, we add control variables and further add industry fixed effects in column 3. In the last column, we additionally cluster standard errors at the industry level. In all specifications, we continue to find a significant negative coefficient on *High*. However, we find no evidence that of significance for the *High*Inst.OwnershipHHI* interaction term.

1.4.2.3. Cross-sectional Analysis Across Presence of Hedge Fund Activists

Prior work suggests the presence of shareholder activists is associated with increased firm value, thus one might expect high NOL DTA firms with a hedge fund activist presence to be negatively affected by the outcome of the court case as the decision potentially impedes activism. To explore this issue we regress *CAR* on *High*, *Activist*, and a term that interacts the two regressors. Specifically, we estimate the following model:

$$CAR_i = \alpha + \beta_1 * High_i + \beta_2 * (High * \ Activist)_i + \beta_3 * Activist_i + \ \Gamma * Controls_i + \varepsilon_i$$

Our coefficients of interest are β_1 and β_2. β_1 is the size of differential market reaction for all high NOL DTA firms, relative to low NOL DTA firms. β_2 is the difference in market reaction between high NOL DTA firms with hedge fund activist presence and high NOL DTA firms without such interventions.

Table 1.8 reports the results. Column 1 reports the results for the baseline model without any control variables or fixed effects. Columns 2 includes control variables, and column 3 additionally includes industry fixed effects. While we continue to find a significant negative coefficient on the *High* indicator variable, we find no evidence of a significant difference in CAR between high NOL DTA firms that have a hedge fund activist presence and those that do not. An important caveat is that this is likely a low powered test in that the sample of NOLP firms with an activist present in the *High* category is small at only 65 observations.

1.4.3. Cross-sectional Analysis Across Governance Variables

In previous sections, we find that high NOL DTA firms had a negative market reaction to the court decision setting a precedent for NOLPs. To test whether this negative market reaction is associated with potential managerial entrenchment, we conduct further analyses using cross-sectional heterogeneity in various governance variables. Among high NOL DTA firms, those with stronger governance should be less prone to managerial entrenchment, and thus should have higher announcement CARs. We use the following variables: percentage of independent board members, whether a firm is a founder or family firm, whether a firm has a classified board, and whether a firm has the combination of a classified board and a poison pill in place.

1.4.3.1. Board Independence

In this subsection, we investigate the degree of potential managerial entrenchment using cross-sectional heterogeneity in the percentage of independent board members. As the decisions of adopting and dismantling a poison pill are made by board members, the composition of the board is critical. Independent board members should help alleviate entrenchment concerns, because they have no clear incentives to keep a close relationship with the key executives of the

firm. To conduct this test, we use a similar specification to that in the previous subsection; we regress *CAR* on *High*, *Board Indep. %*, and the interaction term between the two right-hand-side variables. More specifically, we estimate the following model:

$$CAR_i = \alpha + \beta_1 * High_i + \beta_2 * (High * \ Board\ Indep.\%)_i + \ \beta_3 * Board\ Indep.\%_i + \Gamma * Controls_i + \varepsilon_i$$

Our coefficients of interest in this model are β_1 and β_2. Again, β_1 can be interpreted as the size of market reaction for all high NOL DTA firms. β_2 estimates the difference in CARs attributable to board independence between the treated and control samples.

Table 1.9 reports the results of this analysis. In column 1, we estimate the model without any controls. In column 2, we add control variables but no industry fixed effects. In column 3, we additionally include 2-digit SIC industry fixed effects. Our results suggest that while high NOL DTA firms have negative CARs on the court decision, this effect is attenuated if a firm has greater board independence. Throughout all specifications, we find a significant negative coefficient on *High* and a significant positive coefficient on *High*BoardIndep.%*. In column 3, relative to control sample firms, high NOL DTA firms have an additional 91 basis points (3.19% * 28.63% = 91) more positive CARs for a one-standard deviation increase in *Board Indep. %*.[30] In an untabulated result, when we augment the model with indicator variable *Delaware*, we find a statistically insignificant coefficient on the *High*BoardIndep.%*Delaware* triple interaction term. This result provides additional evidence that the court decision had pervasive effects for firms incorporated in Delaware and elsewhere.

[30] 29.01% is the standard deviation of Board Indep. % in Table 1.2.

1.4.3.2. Founder and Family Firms

In this subsection, we study whether high NOL DTA founder/family firms had differential market reactions on the announcement date. Theoretically, the court decision could impact founder/family firms in two different ways. First, because founders and family members are often large shareholders, greater incentive alignment between shareholders and management could attenuate potential entrenchment effects (Anderson and Reeb 2003, Claessens, Djankov, Fan, Lang 2002). On the other hand, managerial entrenchment could be even larger in these firms if NOLPs give the founder and family members the power to profit at the expense of outside shareholders (Pérez-González 2006, Anderson, Duru, Reeb 2009). To conduct this analysis, we regress *CAR* on *High*, *Founder or Family Firm*, and the interaction term between the regressors. More specifically, we estimate the following model:

$$CAR_i = \alpha + \beta_1 * High_i + \beta_2 * (High * \ Founder\ or\ Family\ Firm)_i$$
$$+ \beta_3 * Founder\ or\ Family\ Firm_i + \Gamma * Controls_i + \varepsilon_i$$

Our coefficients of interest are β_1 and β_2. We interpret β_1 as the differential market reaction for all high NOL DTA firms, relative to low NOL DTA firms. β_2 is the difference in market reaction between high NOL DTA founder/family firms and high NOL DTA firms that are not founder/family firms. Table 1.10 reports the results of this analysis. Of note, we continue to find a significant negative coefficient on the *High* indicator variable. However, We find no evidence of significance on the *High* * *Founder or Family Firm* interaction term, which suggests that there were no differential market reactions for founder/family firms relative to other sample firms. Furthermore, in untabulated results, when we augment the model with indicator variable *Delaware*, we find an insignificant coefficient on the *High*FounderorFamilyFirm*Delaware* triple interaction term.

1.4.3.3. Existence of Classified Board

Next, we examine market reactions around the court decision date after stratifying the sample using a dummy variable that indicates whether a firm has a classified board in place. Because the decisions to adopt and dismantle a poison pill are made by board members, a potential bidder who has failed to reach a negotiation with the firm may attempt to replace a majority of board members with those who have a favorable view on the acquisition. If NOLPs provide additional entrenchment to the management, among high NOL firms, firms with a classified board should have more negative market returns. On the other hand, if NOLPs provide protection of NOL DTAs that are threatened by potential acquisitions, then we would expect to find higher CARs on the court decision date. To conduct this analysis, we regress *CAR* on *High*, *Classified Board*, and an interaction term of the two regressors:

$$CAR_i = \alpha + \beta_1 * High_i + \beta_2 * (High * \ Classified\ Board)_i + \ \beta_3 * Classified\ Board_i + \Gamma * Controls_i + \varepsilon_i$$

Table 1.11 reports the results of this analysis. In columns 1 and 3 we find a significant negative coefficient on *High*. However, in all specifications, find no evidence of significance on *High*ClassifiedBoard*, which suggests no difference in CARs between NOL firms with and without classified boards.

1.4.3.4. Existence of Classified Board and a Poison Pill

Next, we test whether high NOL firms that have both a classified board and a standard poison pill in place experience differential market returns. Ex ante, it is not clear whether these firms would have a differential market reaction. On the one hand it has been suggested that poison pills significantly enhance the antitakeover power of classified boards, as external shareholders must gain board control to remove the pill (Bebchuk and Cohen 2005). As these firms have

significant protection from a hostile takeover, entrenched managers could abuse NOLPs and thus expropriate wealth from shareholders. On the other hand, as boards can adopt poison pills without shareholder approval, all firms effectively have a "shadow pill" in place (Coates 2000). If the market prices the "shadow pill" then we would not expect to find a significantly different market reaction for firms that already have a classified board and poison pill in place. To conduct this analysis, we construct an indicator variable (*CB_PP*) that takes a value of one if a firm has both a classified board and poison pill in place on the event date, and estimate the following model:

$$CAR_i = \alpha + \beta_1 * High_i + \beta_2 * (High * CB\_PP)_i + \beta_3 * CB\_PP_i + \Gamma * Controls_i + \varepsilon_i$$

Table 1.12 reports the results of this analysis. Column 1 reports the results from the baseline model where we omit control variables and fixed effects. In column 2, we add a set of control variables. We further add industry fixed effects and cluster standard errors at the 2-digit SIC industry level in column 3. we find a significant negative coefficient on *High* and an insignificant coefficient on *High***CB_PP*. This result suggests that while high NOL DTA firms had a negative market reaction, we find no evidence of differential market reactions for those that had a poison pill and a classified board in place on the event date.

1.4.3.5. Ownership/Governance Index

Next, we create an ordinal variable, *Index*, consisting of ownership and governance variables. We begin with a value of 0 for all firms. We increase *Index* by 1 if a firm has (a) institutional ownership greater than the median value, (b) a hedge fund activist presence, (c) board independence greater than the median value, (d) does not have a classified board, and (e) does not have a poison pill. We report the distribution of Index in Panel A of Table 1.13. In Panel B, we test the hypothesis that managerial entrenchment effect associated with NOLP will

be smaller for firms that have higher *Index* value. To conduct this analysis, we estimate the following model:

$$CAR_i = \alpha + \beta_1 * High_i + \beta_2 * (High * Index)_i + \beta_3 * Index_i + \Gamma * Controls_i + \varepsilon_i$$

We report the baseline model estimations in column 1. In column 2, we add a set of control variables and further add industry fixed effects and clustered standard errors in column 3. Throughout all specifications, we find a significant negative coefficient on *High* and a positively significant coefficient on *High*Index* interaction term, which is consistent with the hypothesis that managerial entrenchment effects are attenuated if a firm has ownership and governance structures that are associated with increased monitoring of a firm's management. In untabulated results, we augment the model with *Delaware* indicator variable and find an insignificant coefficient on *High*Index*Delaware* triple interaction term.

1.4.4. Future Adoption of NOLPs

In our last empirical test, we examine whether high NOL DTA firms are more likely to adopt NOLP or conventional poison pills, relative to low NOL DTA firms. In particular, by investigating whether high NOL DTA firms are more likely to adopt NOLP, we test our assumption that the probability of adopting NOLP increases for high NOL DTA firms. To conduct this test, we estimate a linear probability model, with a set of controls and industry fixed effects to account for potential heterogeneity across industries. More specifically, we estimate the following models:

$$Adopt\ NOLP\ next\ 5\ years_i = \alpha + \beta_1 * High_i + \Gamma * Controls_i + \varepsilon_i$$

$$Adopt\ NOLP\ next\ 5\ years_i = \alpha + \beta_1 * High_i + \beta_2 * (High *\ Delaware)_i$$
$$+ \beta_3 * Delaware + \Gamma * Controls_i + \varepsilon_i$$

Our coefficients of interest are β_1 and β_2. If high NOL DTA firms are more likely to adopt NOLPs within five years of the court decision, then we would expect β_1 to be positive. Furthermore, given that the court decision was made in Delaware, β_2 provides information as to whether Delaware high NOL DTA firms are more likely to adopt NOLPs in the future than non-Delaware high NOL DTA firms.

Table 1.14 reports the results. Columns 1 and 2 estimate the first model, and test whether high NOL DTA firms are more likely to adopt NOLPs. Columns 3 and 4 estimate the interaction model and test for a difference in probability of adoption between high NOL DTA Delaware and non-Delaware firms. In columns 1 and 3, we do not include any controls. In columns 2 and 4, we include a set of control variables and industry fixed effects. Throughout all specifications, we find a significant positive coefficient on *High*, suggesting that firms with high NOL DTA are indeed more likely to adopt NOLP following the court decision. On the other hand, we find no significance for the (*High * Delaware)* interaction term, suggesting a lack of difference in the probability of future NOLP adoptions between Delaware high NOL DTA firms and non-Delaware high NOL DTA firms. This result is consistent with our previous results, and the evidence that many states mimic Delaware business law. The previous result of no difference in CARs between non-Delaware high NOL DTA firms and Delaware high NOL DTA firms is consistent with the hypothesis of the market anticipating firms incorporated outside of Delaware to be just as likely to adopt NOLPs as those incorporated in Delaware.

1.5. Conclusion

We use the resolution of a Delaware court case as an exogenous shock to firms' ability to adopt low threshold poison pills to investigate the shareholder value effects of this antitakeover measure. We find evidence that these poison pills are, on average, value-destroying. More specifically, we find negative market reactions to the court decision for firms with high net operating loss deferred tax assets (NOL DTAs), which are most affected by the outcome of the court case. We find even more negative market reactions for firms with potentially low managerial monitoring. Among high NOL DTA firms, we find no difference in market reactions between firms that are incorporated in Delaware and those that are incorporated outside of Delaware. Consistent with the historical pattern of other states mimicking Delaware corporate law, this result suggests that the market anticipates the court decision to have a broader effect, even on firms incorporated outside of Delaware.

The negative wealth effects are somewhat mitigated, but remain negative, if the loss firm has higher institutional ownership or greater board independence. Additionally, we find that negative effects are concentrated in high NOL DTA founder/family firms. Among high NOL DTA firms, we find weak evidence of significantly different market reactions for firms with a hedge fund activist presence, relative to those that are not involved in such interventions. Finally, we find that high NOL DTA firms are more likely to adopt NOLP within five years of the court decision.

Table 1.1: Sample Construction

Panel A. Sample Construction Process	
Steps	N
Firms with available CRSP and Compustat data on Feb 26, 2010	6505
Drop if not incorporated within United States	4083
Drop if concurrent events take place	3360
Drop if any variable is missing	3212
Drop if B/M is negative	3082

Panel B. List of Concurrent Events	
Concurrent Event Type	N
Seeking to Sell/Divest	4
Seeking Acquisitions/Investments	52
Seeking Financing/Partners	1
Delayed SEC Filings	4
Delistings	3
Discontinued Operations/Downsizings	14
Strategic Alliances	19
Lawsuits & Legal Issues	49
Corporate Guidance - Lowered	9
Corporate Guidance - Raised	9
Announcements of Earnings	333
Corporate Guidance - New/Confirmed	173
Business Expansions	46
Business Reorganizations	5
Debt Financing Related	23
Restatements of Operating Results	3
Dividend Increases	17
Dividend Decreases	1
Earnings Calls	127
Guidance/Update Calls	4
M&A Calls	5
Ticker Changes	1
Auditor Going Concern Doubts	4
Delayed Earnings Announcements	1
Considering Multiple Strategic Alternatives	5
M&A Rumors and Discussions	8
Impairments/Write Offs	28

Index Constituent Drops	7
M&A Transaction Announcements	34
Private Placements	8
Follow-on Equity Offerings	11
Fixed Income Offerings	29
Index Constituent Adds	30
Special/Extraordinary Shareholders Meetings	2
Executive Changes - CEO	15
Executive Changes - CFO	16
Spin-Off/Split-Off	1
Auditor Changes	5
Potential Buyback	1
Activist Letter to Target	1
Communication (Letter etc) to Employees by Target	1
Dividend Cancellation	1
Dividend Initiation	1
Preferred Dividend	6
Announcement of Operating Results	1
Buyback Transaction Announcements	23
Buyback Transaction Cancellations	1
Total	1158
Number of Unique Firms	723

Table 1.2: Summary Statistics – Full Sample

The following table reports the summary statistics for the full sample. *CAR* is cumulative abnormal return over [-1, +1] window around the event date; *NOL DTA* is deferred tax assets associated with net operating losses scaled by contemporaneous total assets; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Delaware* is an indicator variable that equals 1 if a firm is incorporated in Delaware; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets; *Inst. Ownership %* is percentage of equity owned by institutional owners; *Activist* is an indicator variable that equals 1 if a firm has a hedge fund activist Schedule 13D presence; # *Inst. Blockholders* is the number of institutional owners have a 5% block of shares; *Adopt NOLP next 5 years* is an indicator variable that equals 1 if a firm adopts a net operating loss poison pill within 5 years following the event date; *Board Indep. %* is the percentage of board members who are independent; *Founder or Family Firm* is an indicator variable that equals 1 if the CEO or Chairman is a founder of the company or the firm has family ties that play a key role in both ownership and board membership.

Variable	Mean	SD	p25	Median	p75	N
CAR	-0.0086	0.0506	-0.0295	-0.0079	0.0112	3028
NOL	0.1108	0.5382	0.0000	0.0018	0.0371	3028
MV	2347.52	10233.10	67.54	281.38	1257.84	3028
BM	0.9111	1.1519	0.3463	0.6353	1.0820	3028
ROA	0.0489	0.6157	0.0013	0.0665	0.1348	3028
Leverage	0.1996	0.2366	0.0158	0.1367	0.2948	3028
Inst. Ownership %	0.5377	0.3169	0.2421	0.5698	0.8281	3028
Inst. Ownership HHI	0.0266	0.0395	0.0083	0.0203	0.0338	3028
Board Indep. %	0.5835	0.2863	0.5000	0.6667	0.8000	3028
High (Dummy)	0.1998					3028
Classified Board (Dummy)	0.2213					3028
CB_PP (Dummy)	0.0651					3028
Founder/Family (Dummy)	0.2401					3028
Activist (Dummy)	0.0585					3028

Table 1.3: Summary Statistics for High = 1 vs. High = 0

The following table reports the summary statistics of the *High = 1* and *High = 0* subsamples. *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution. *CAR* is cumulative abnormal return over [-1, +1] window around the event date; *NOL DTA* is deferred tax assets associated with net operating losses scaled by contemporaneous total assets; *Delaware* is an indicator variable that equals 1 if a firm is incorporated in Delaware; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets; *Inst. Ownership %* is percentage of equity owned by institutional owners; *Activist* is an indicator variable that equals 1 if a firm has a hedge fund activist Schedule 13D presence; # *Inst. Blockholders* is the number of institutional owners have a 5% block of shares; *Adopt NOLP next 5 years* is an indicator variable that equals 1 if a firm adopts a net operating loss poison pill within 5 years following the event date; *Board Indep. %* is the percentage of board members who are independent; *Founder or Family Firm* is an indicator variable that equals 1 if the CEO or Chairman is a founder of the company or the firm has family ties that play a key role in both ownership and board membership. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Variable	High = 1 Sample, Mean	High = 1 Sample, SD	High = 1 Sample, N	High = 0 Sample, Mean	High = 0 Sample, SD	High = 0 Sample, N	Mean Diff.	
CAR	-0.0156	0.0543	605	-0.0068	0.0494	2423	-0.0088	***
NOL	0.5269	1.1110	605	0.0069	0.0134	2423	0.5200	***
MV	645.13	2311.06	605	2772.5941	11341.83	2423	-2127.47	***
BM	0.8896	1.1050	605	0.9165	1.1635	2423	-0.0268	
ROA	-0.0672	0.4813	605	0.0779	0.6418	2423	-0.1451	***
Leverage	0.2291	0.2664	605	0.1922	0.2280	2423	0.0369	***
Inst. Ownership %	0.4957	0.2987	605	0.5482	0.3204	2423	-0.0525	***
Inst. Ownership HHI	0.0304	0.0385	605	0.0256	0.0397	2423	0.0047	***
Board Indep. %	0.5668	0.2854	605	0.5877	0.2864	2423	-0.0209	
Classified Board	0.2281		605	0.2196		2423	0.0085	
CB_PP	0.0942		605	0.0578		2423	0.0364	***
Founder or Family	0.2479		605	0.2381		2423	0.0098	
Activist	0.1074		605	0.0462		2423	0.0612	***

Table 1.4: Correlation of Ownership and Governance Variables

Panel A: Full Sample

	IO %	IO HHI	Activist	Bd. Indep %	Founder/Family	Classified Board
Inst. Ownership %						
Inst. Ownership HHI	0.4144					
Activist	0.0055	0.0561				
Bd. Indep. %	0.5938	0.1138	0.0026			
Founder or Family	0.0598	0.0149	-0.0181	0.0551		
Classified Board	-0.0990	-0.0389	0.0164	-0.0853	-0.0240	
CB_PP	0.0078	-0.0098	0.0028	0.0159	-0.0072	0.4949

Panel B: High = 1 Subsample

	IO %	IO HHI	Activist	Bd. Indep %	Founder/Family	Classified Board
Inst. Ownership %						
Inst. Ownership HHI	0.5110					
Activist	0.0841	0.1388				
Bd. Indep. %	0.5401	0.1168	0.0173			
Founder or Family	0.0654	-0.0212	-0.0138	0.0588		
Classified Board	-0.0550	-0.0638	-0.0105	-0.0748	0.0072	
CB_PP	0.0230	-0.0172	-0.0205	0.0484	0.0114	0.5933

Panel C: High = 0 Subsample

	IO %	IO HHI	Activist	Bd. Indep %	Founder/Family	Classified Board
Inst. Ownership %						
Inst. Ownership HHI	0.3983					
Activist	-0.0117	0.0214				
Bd. Indep. %	0.6060	0.1150	0.0015			
Founder or Family	0.0594	0.0233	-0.0216	0.0545		
Classified Board	-0.1091	-0.0333	0.0257	-0.0877	-0.0320	
CB_PP	0.0086	-0.0114	0.0045	0.0082	-0.0139	0.4669

Table 1.5: Firm-level Cross-sectional Analysis

The following table estimates the regression equations:
$CAR = \alpha + \beta_1 * \text{High} + \Gamma * \text{Controls} + \varepsilon$.
$CAR = \alpha + \beta_1 * \text{High} + \beta_2 * (\text{High} * \text{Delaware}) + \beta_3 * \text{Delaware} + \Gamma * \text{Controls} + \varepsilon$.

CAR is cumulative abnormal return over [-1, +1] window around the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Delaware* is an indicator variable that equals 1 if a firm is incorporated in Delaware; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent Variable	Cumulative Abnormal Returns [-1, +1]			
	(1)	(2)	(3)	(4)
High	-0.0088***	-0.0087***	-0.0079**	-0.0087**
	(-3.819)	(-3.450)	(-2.045)	(-2.596)
*High * Delaware*			-0.0027	-0.0004
			(-0.554)	(-0.065)
Delaware			0.0066***	0.0026
			(3.207)	(1.316)
Ln(MV)		0.0023***		0.0022***
		(2.913)		(2.700)
BM		0.0001		0.0001
		(0.135)		(0.124)
ROA		0.0007		0.0007
		(0.424)		(0.446)
Leverage		0.0035		0.0032
		(0.628)		(0.560)
Constant	-0.0068***	-0.0205***	-0.0103***	-0.0214***
	(-6.657)	(-4.285)	(-6.897)	(-4.863)
Observations	3,028	3,028	3,028	3,028
Adjusted R-squared	0.004	0.016	0.007	0.015
Fixed Effects	None	Industry	None	Industry
Cluster	None	Industry	None	Industry

Table 1.6: Event Date Returns and Institutional Ownership

The following table estimates the regression equation:
$CAR = \alpha + \beta_1 * High + \beta_2 * (High * Inst.\ Ownership\ \%) + \beta_3 * Inst.\ Ownership\ \% + \Gamma * Controls + \varepsilon$.
CAR is cumulative abnormal return over [-1, +1] window around the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Inst. Ownership %* is percentage of equity owned by institutional owners; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent Variable	Cumulative Abnormal Returns [-1, +1]		
	(1)	(2)	(3)
High	-0.0206***	-0.0195***	-0.0240***
	(-4.619)	(-4.373)	(-4.162)
*High * Inst. Ownership %*	0.0242***	0.0269***	0.0306***
	(3.195)	(3.555)	(3.617)
Inst. Ownership %	0.0030	-0.0141***	-0.0185**
	(0.948)	(-3.317)	(-2.607)
Ln(MV)		0.0036***	0.0037***
		(5.443)	(6.695)
BM		-0.0010	0.0002
		(-1.184)	(0.216)
ROA		0.0001	0.0006
		(0.085)	(0.382)
Leverage		0.0007	0.0033
		(0.173)	(0.592)
Constant	-0.0085***	-0.0193***	-0.0188***
	(-4.185)	(-5.446)	(-4.167)
Observations	3,028	3,028	3,028
Adjusted R-squared	0.009	0.020	0.023
Fixed Effects	None	None	Industry
Cluster	None	None	Industry

Table 1.7: Event Date Returns and Institutional Ownership Concentration

The following table estimates the regression equation:
$CAR = \alpha + \beta_1 * \text{High} + \beta_2 * (\text{High} * \text{Inst. Ownership HHI}) + \beta_3 * \text{Inst. Ownership HHI} + \Gamma * \text{Controls} + \varepsilon$.
CAR is cumulative abnormal return over [-1, +1] window around the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Inst. Ownership HHI* is the Herfindahl-Hirschman Index of institutional ownership; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent Variable	Cumulative Abnormal Returns [-1, +1]		
	(1)	(2)	(3)
High	-0.0103***	-0.0078***	-0.0105***
	(-3.562)	(-2.654)	(-3.497)
*High * Inst. Ownership HHI*	0.0539	0.0523	0.0659
	(0.909)	(0.885)	(1.544)
Inst. Ownership HHI	-0.0240	-0.0456*	-0.0463*
	(-0.927)	(-1.751)	(-1.704)
Ln(MV)		0.0026***	0.0023***
		(5.253)	(3.061)
BM		-0.0008	0.0001
		(-0.961)	(0.150)
ROA		0.0002	0.0007
		(0.141)	(0.405)
Leverage		0.0018	0.0040
		(0.474)	(0.716)
Constant	-0.0062***	-0.0206***	-0.0199***
	(-5.086)	(-5.941)	(-4.088)
Observations	3,028	3,028	3,028
Adjusted R-squared	0.004	0.015	0.016
Fixed Effects	None	None	Industry
Cluster	None	None	Industry

Table 1.8: Event Date Returns and Hedge Fund Activists

The following table estimates the regression equation:
$CAR = \alpha + \beta_1 * High + \beta_2 * (High * Activist) + \beta_3 * Activist + \Gamma * Controls + \varepsilon$.

CAR is cumulative abnormal return over [-1, +1] window around the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Activist* is an indicator variable that equals 1 if a firm has a hedge fund activist Schedule 13D presence; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent Variable	Cumulative Abnormal Returns [-1, +1]		
	(1)	(2)	(3)
High	-0.0097***	-0.0073***	-0.0096***
	(-4.008)	(-2.971)	(-4.037)
*High * Activist*	0.0128	0.0107	0.0105
	(1.559)	(1.305)	(1.463)
Activist	-0.0077	-0.0054	-0.0052
	(-1.573)	(-1.103)	(-0.863)
Ln(MV)		0.0025***	0.0022***
		(5.012)	(2.913)
BM		-0.0008	0.0001
		(-0.935)	(0.143)
ROA		0.0002	0.0007
		(0.140)	(0.415)
Leverage		0.0013	0.0034
		(0.338)	(0.620)
Constant	-0.0065***	-0.0207***	-0.0201***
	(-6.165)	(-5.944)	(-4.315)
Observations	3,028	3,028	3,028
Adjusted R-squared	0.005	0.015	0.016
Fixed Effects	None	None	Industry
Cluster	None	None	Industry

Table 1.9: Event Date Returns and Board Independence

The following table estimates the regression equation:
$CAR = \alpha + \beta_1 * High + \beta_2 * (High * Board\ Indep.\ \%) + \beta_3 * Board\ Indep.\ \% + \Gamma * Controls + \varepsilon.$

CAR is cumulative abnormal return over [-1, +1] window around the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Board Indep. %* is the percentage of board members who are independent; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent Variable	Cumulative Abnormal Returns [-1, +1]		
	(1)	(2)	(3)
High	-0.0244***	-0.0239***	-0.0266***
	(-4.778)	(-4.682)	(-3.806)
*High * Board Indep. %*	0.0277***	0.0315***	0.0319***
	(3.456)	(3.936)	(3.105)
Board Indep. %	0.0003	-0.0141***	-0.0139***
	(0.081)	(-3.303)	(-2.796)
Ln(MV)		0.0033***	0.0030***
		(5.488)	(4.631)
BM		-0.0009	0.0002
		(-1.014)	(0.177)
ROA		-0.0001	0.0003
		(-0.095)	(0.214)
Leverage		0.0008	0.0031
		(0.199)	(0.535)
Constant	-0.0070***	-0.0171***	-0.0166***
	(-2.995)	(-4.793)	(-3.413)
Observations	3,028	3,028	3,028
Adjusted R-squared	0.009	0.020	0.021
Fixed Effects	None	None	Industry
Cluster	None	None	Industry

Table 1.10: Event Date Returns and Founder/Family Firms

The following table estimates the regression equation:
$CAR = \alpha + \beta_1 * \text{High} + \beta_2 * (\text{High} * \text{Founder or Family}) + \beta_3 * \text{Founder or Family} + \Gamma * \text{Controls} + \varepsilon$.

CAR is cumulative abnormal return over [-1, +1] window around the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Founder or Family Firm* is an indicator variable that equals 1 if the CEO or Chairman is a founder of the company or the firm has family ties that play a key role in both ownership and board membership; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent Variable	Cumulative Abnormal Returns [-1, +1]		
	(1)	(2)	(3)
High	-0.0076***	-0.0054**	-0.0079***
	(-2.872)	(-2.015)	(-3.079)
*High * Founder or Family*	-0.0048	-0.0042	-0.0036
	(-0.897)	(-0.788)	(-0.732)
Founder or Family	0.0015	0.0004	0.0006
	(0.610)	(0.149)	(0.366)
Ln(MV)		0.0025***	0.0023***
		(5.117)	(2.937)
BM		-0.0008	0.0001
		(-0.902)	(0.152)
ROA		0.0002	0.0007
		(0.152)	(0.432)
Leverage		0.0013	0.0035
		(0.347)	(0.631)
Constant	-0.0072***	-0.0214***	-0.0207***
	(-6.108)	(-6.112)	(-4.181)
Observations	3,028	3,028	3,028
Adjusted R-squared	0.004	0.015	0.015
Fixed Effects	None	None	Industry
Cluster	None	None	Industry

Table 1.11: Event Date Returns and Presence of Classified Board

The following table estimates the regression equation:
$CAR = \alpha + \beta_1 * \text{High} + \beta_2 * (\text{High} * \text{Classified Board}) + \beta_3 * \text{Classified Board} + \Gamma * \text{Controls} + \varepsilon$.

CAR is cumulative abnormal return over [-1, +1] window around the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Classified Board* is an indicator variable that equals 1 if a firm has a classified board on the event date; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent Variable	Cumulative Abnormal Returns [-1, +1]		
	(1)	(2)	(3)
High	-0.0097***	-0.0069***	-0.0094***
	(-3.739)	(-2.603)	(-2.914)
High * Classified Board	0.0042	0.0024	0.0028
	(0.761)	(0.445)	(0.511)
Classified Board	0.0041*	0.0062**	0.0062
	(1.657)	(2.508)	(1.647)
Ln(MV)		0.0026***	0.0024***
		(5.357)	(3.269)
BM		-0.0009	0.0001
		(-1.003)	(0.110)
ROA		0.0005	0.0009
		(0.303)	(0.542)
Leverage		0.0017	0.0037
		(0.437)	(0.648)
Constant	-0.0077***	-0.0234***	-0.0225***
	(-6.661)	(-6.597)	(-5.049)
Observations	3,028	3,028	3,028
Adjusted R-squared	0.006	0.017	0.018
Fixed Effects	None	None	Industry
Cluster	None	None	Industry

Table 1.12: Event Date Returns and Presence of Classified Board and Poison Pill

The following table estimates the regression equations:
$CAR = \alpha + \beta_1 * \text{High} + \beta_2 * (\text{High} * \text{CB\_PP}) + \beta_3 * \text{CB\_PP} + \Gamma * \text{Controls} + \varepsilon$

CAR is cumulative abnormal return over [-1, +1] window around the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *CB_PP* is an indicator variable that equals 1 if a firm has a classified board and a poison pill on the event date; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent Variable	Cumulative Abnormal Returns [-1, +1]		
	(1)	(2)	(3)
High	-0.0097***	-0.0073***	-0.0097***
	(-4.032)	(-2.980)	(-3.625)
*High * CB_PP*	0.0095	0.0086	0.0101
	(1.148)	(1.043)	(1.510)
CB_PP	0.0007	0.0010	-0.0004
	(0.156)	(0.230)	(-0.128)
Ln(MV)		0.0025***	0.0022***
		(5.106)	(2.931)
BM		-0.0008	0.0001
		(-0.895)	(0.147)
ROA		0.0002	0.0007
		(0.163)	(0.427)
Leverage		0.0014	0.0036
		(0.359)	(0.642)
Constant	-0.0069***	-0.0213***	-0.0205***
	(-6.500)	(-6.138)	(-4.377)
Observations	3,028	3,028	3,028
Adjusted R-squared	0.005	0.015	0.016
Fixed Effects	None	None	Industry
Cluster	None	None	Industry

Table 1.13: Event Date Returns and Ownership/Governance Index

Panel A reports the distribution of the variable *Index* across full sample. *Index* is a variable that ranges from 0 to 5 depending upon a firm's ownership and governance structure. We begin with a value of 0. We increase *Index* by 1 if a firm has (a) institutional ownership greater than the median value, (b) a hedge fund activist presence, (c) board independence greater than the median value, (d) does not have a classified board, and (e) does not have a poison pill.

Panel B estimates the following regression equations:
$CAR = \alpha + \beta_1 * \text{High} + \beta_2 * (\text{High} * \text{Index}) + \beta_3 * \text{Index} + \Gamma * \text{Controls} + \varepsilon$

CAR is cumulative abnormal return over [-1, +1] window around the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Delaware* is an indicator variable that equals 1 if a firm is incorporated in Delaware; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Panel A. Frequency of *Index*

Index	Frequency
0	70
1	362
2	1047
3	919
4	599
5	31

Panel B. Regression Estimation

Dependent Variable	CAR [-1, +1]		
	(1)	(2)	(3)
High	-0.0175***	-0.0180***	-0.0206***
	(-3.020)	(-3.123)	(-3.569)
*High * Index*	0.0036	0.0049**	0.0049***
	(1.642)	(2.240)	(2.717)
Index	-0.0009	-0.0047***	-0.0046***
	(-0.862)	(-4.190)	(-2.842)
Ln(MV)		0.0036***	0.0032***
		(6.348)	(4.940)
BM		-0.0008	0.0002
		(-0.936)	(0.220)
ROA		0.0002	0.0006
		(0.153)	(0.406)
Leverage		0.0009	0.0031
		(0.220)	(0.539)
Constant	-0.0046*	-0.0149***	-0.0143**
	(-1.651)	(-3.959)	(-2.371)
Observations	3,028	3,028	3,028
Adjusted R-squared	0.005	0.020	0.020
Industry FE	None	None	Industry
Cluster	None	None	Industry

Table 1.14: Probability of Future NOLP Adoptions

The following table estimates the regression equations:
$Adopt\ NOLP\ next\ 5\ years = \alpha + \beta_1 * High + \Gamma * Controls + \varepsilon$
$Adopt\ NOLP\ next\ 5\ years = \alpha + \beta_1 * High + \beta_2 * (High * Delaware) + \beta_3 * Delaware + \Gamma * Controls + \varepsilon.$

Adopt NOLP next 5 years is an indicator variable that equals 1 if a firm adopts a net operating loss poison pill within 5 years following the event date; *High* is an indicator variable that equals 1 if a firm has *NOL DTA* within the top quintile of the distribution; *Delaware* is an indicator variable that equals 1 if a firm is incorporated in Delaware; *Ln(MV)* is the natural log of market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets. Industry fixed effects are defined as 2-digit SIC codes. ***, **, * report statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent Variable	Adopt NOLP next 5 years					
	(1)	(2)	(3)	(4)	(5)	(6)
High	0.0198***	0.0184***	0.0191***	0.0172*	0.0159*	0.0149*
	(3.741)	(3.363)	(3.354)	(1.930)	(1.773)	(1.708)
*High * Delaware*				0.0049	0.0041	0.0067
				(0.444)	(0.372)	(0.590)
Delaware				-0.0046	-0.0018	-0.0018
				(-0.976)	(-0.369)	(-0.359)
Board Indep. %		0.0093	0.0096		0.0092	0.0095
		(1.021)	(1.049)		(1.010)	(1.031)
Founder or Family		-0.0021	-0.0011		-0.0020	-0.0011
		(-0.412)	(-0.220)		(-0.402)	(-0.218)
Classified Board		-0.0057	-0.0050		-0.0057	-0.0049
		(-0.968)	(-0.828)		(-0.962)	(-0.809)
CB_PP		0.0107	0.0116		0.0107	0.0114
		(1.080)	(1.153)		(1.079)	(1.137)
Ln(MV)		-0.0011	-0.0009		-0.0011	-0.0008
		(-0.802)	(-0.616)		(-0.758)	(-0.585)
BM		0.0090***	0.0074***		0.0090***	0.0074***
		(4.564)	(3.412)		(4.533)	(3.430)
ROA		-0.0018	-0.0009		-0.0018	-0.0009
		(-0.505)	(-0.262)		(-0.509)	(-0.261)
Leverage		0.0085	0.0125		0.0086	0.0126
		(0.943)	(1.281)		(0.955)	(1.293)
Constant	0.0099***	0.0024	0.0009	0.0124***	0.0030	0.0017
	(4.177)	(0.284)	(0.110)	(3.566)	(0.360)	(0.196)
Observations	3,028	3,028	3,028	3,028	3,028	3,028
Adjusted R-squared	0.004	0.011	0.020	0.004	0.010	0.020
Industry FE	No	No	Yes	No	No	Yes

CHAPTER 2

WHO ASKS FOR SHAREHOLDER VOTES?

EVIDENCE FROM LOW THRESHOLD POISON PILLS

2.1. Introduction

Since the 2008 recession, many firms have generated significant net operating losses and accrued deferred tax assets. Internal Revenue Service rules place these assets at risk if a certain ownership changes take place at the firm.[31] To prevent a devaluation of these assets, many firms have adopted net operating loss poison pills (henceforth "NOLPs"), which typically have a low trigger threshold of 4.99%. NOLPs precludes such devaluation by preventing the formation of new 5% blockholders, while grandfathering and limiting additional ownership changes of existing 5% shareholders.[32]

NOLP adoptions are relatively new governance innovation and thus allow for an investigation of issues related to firm decision to adopt antitakeover measures. Of note, all firms can adopt poison pills (including NOLPs) at will any time and thus have a "shadow pill" at hand. NOLPs are unique in that about half of the adopting firms have sought shareholder ratification of these pills after the adoption. While NOLPs are designed to protect a firm's valuable tax assets, many firms have been concerned about potential managerial entrenchment effects and thus

[31] The rule is quite complex, however a general guide is that Section 382 of the Internal Revenue Code takes effect when the sum of cumulative ownership changes across all 5% shareholders exceeds 50 percentage points over a three-year period.

[32] If a blockholder holds more shares than the specified threshold before the adoption of a poison pill, the board "grandfathers" these shareholders; that is, it allows these blockholders to hold their current positions, but prohibits them from acquiring additional shares.

deferred this decision to shareholders. This unique situation allows an investigation of the choice to put this antitakeover provision to a shareholder vote, and the extent to which shareholders support the adoption.

If a vote is held and shareholders approve the NOLP, then the rational expectations hypothesis would predict that the benefits of NOLPs must be greater than the potential entrenchment effects for these firms. In other words, the existence of voting firms and non-voting firms within the universe of NOLP adopting firms creates a useful laboratory to test the cross-sectional variation in the value implications of NOLPs.

To study these issues we examine three research questions. First, among NOLP adopting firms, we explore which firms are more likely to put the decision to a vote. Second, among voting firms, we analyze which firms are more likely to receive support from shareholders. Finally, we study whether the long term outcome effects of NOLPs differ between voting and non-voting firms.

Among NOLP adopters, we find that a firm is significantly more likely to seek shareholder ratification if the firm has a larger market capitalization or uses less leverage. Furthermore, a firm is more likely to vote if a firm has higher institutional ownership, greater board independence, or a more convex CEO compensation structure. Overall, these results suggest that a firm is more likely to vote if a firm has better corporate governance in place.

To address the second research question which analyzes which firms are more likely to receive support conditional upon a vote, we estimate a series of cross-sectional models where the percentage of votes in favor of the NOLP are regressed on various accounting, governance, and ownership variables. We find that a firm is more likely to receive support if a firm has higher ROA. Moreover, we find that firms with more institutional ownership get less voting support. We also

find that firms with greater institutional ownership concentration and more convex CEO compensation structure are more likely to receive support in favor of adopting NOLPs. We do not find evidence that NOLPs with a sunset provision receive greater shareholder support.

Our last series of tests analyzes the performance of voting and non-voting firms prior and subsequent to each NOLP adoption. Using a difference-in-differences model, we find no evidence of differential operating performance between voting firms and non-voting firms during the five years following the NOLP adoption. Moreover, we find that the probability of bankruptcy, acquisition, and CEO turnover are similar between the two subsamples during the five years following NOLP adoption. Overall, the results suggest that non-voting firms perform just as well as voting firms, despite the lack of a shareholder approval.

2.2. Literature Review

Prior literature has found mixed evidence regarding the value effects of poison pills. Many studies (e.g. Ryngaert 1988; Walkling and Malatesta 1988; Bebchuk, Coates, Subramanian 2002; Bebchuk, Cohen, Ferrell 2009) have found a negative market reaction to poison pill adoptions and suggest that poison pills could destroy a firm's value by entrenching the managers, who are shielded from job losses associated with hostile takeovers. Other papers, on the other hand, propose that poison pills can increase a firm's bargaining power while negotiating over takeover premium by prohibiting hostile takeovers (e.g. Stulz 1988; Comment and Schwert 1995; Gordon 2002). Brickley, Coles, and Terry (1994) find a positive market reaction to poison pill adoptions when the board has a majority of outside directors, and a negative market reaction if directors are mostly insiders. Other proponents of poison pills suggest that they allow the management to focus on creating long-term shareholder value, rather than wasting resources on fighting a hostile bid (e.g. Laffont and Tirole 1988; Johnson, Karpoff, Yi, 2015; Cremers, Guernsey, Litov, Sepe 2018).

A few recent studies have investigated the announcement returns on NOLP adoptions. Sikes, Tian, and Wilson (2014) conduct an event study on 62 NOLP adoptions spanning from 2000 to 2012 and find a significantly negative market reaction. Boulton and Nixon (2017) also find similar results using a sample of 53 NOLP adoptions between 1998 and 2011. They also find a negative market reaction around the Delaware court decision validating NOLPs for 20 firms that have an active NOLP. Schepker, Oh, and Patel (2018) also find a negative market reaction around 40 NOLP adoption announcement dates spanning from 2002 to 2011. Overall, these results are consistent with the hypothesis that NOLPs entrench managers and destroy shareholder value.

We highlight some key differences in this study with the papers mentioned above. First, by including recent years in the sample, we substantially increase the sample size to 301 observations. Furthermore, we focus on the voting aspect of NOLPs; while firms are not required to hold a vote to adopt an NOLP, many firms opt to ask for shareholder approval for good governance. Finally, we focus on the determinants of votes and shareholder support, and test whether such results can lead to a cross-sectional variation in the value effects of NOLPs.

2.3. Data

We begin with an initial sample which comprises of 334 NOLP adoptions by 241 unique firms available from Factset and Capital IQ. We verify each of these adoptions using press releases, 8-K, 8-A, or 10-Q filings. Using these data sources, we also collect data on the expiration dates of the poison pill, and whether the pill includes a sunset provision stating that the pill would automatically expire within three years.

Next, we collect the amount of NOL DTAs each firm has prior to the pill adoption and if applicable, before voting dates from 10-K filings. We drop 9 observations for which we cannot verify the amount of NOL DTAs. Moreover, we additionally collect other firm-level financial data

from Compustat for the most recent fiscal years prior to the adoption date and voting date. We define *Ln(MV)* as the natural log of market capitalization; *BM* is book-to-market ratio; *ROA* is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged assets; *Leverage* is the sum of long-term and current debt scaled by total assets. We drop 24 observations for which these variables are unavailable.

Furthermore, we collect quarterly institutional ownership data from the Thomson Reuters 13(f) holdings database and compute the percentage of shares held by institutional investors (*Inst. Ownership %*). From this source, we also collect the number of institutional blockholders who own 5% or greater of shares outstanding (*# Inst. Blockholders*), and construct a measure of ownership concentration (*Inst. Ownership HHI*) using a Herfindahl-Hirschman Index for the largest XX institutional owners.

We also collect data on Board independence data (*Board Indep. %*) from MSCI and Capital IQ. We also collect CEO total compensation (*CEO Compensation*) and the ratio of salary to total compensation (*Salary to Total Compensation*) from MSCI.

The final sample consists of 301 observations, of which 143 firms have voted on the adoptions of NOLPs. All variables are winsorized at the 1st and 99th percentiles to reduce the effects of outliers. Panel A of Table 2.1 reports the frequency of NOLP adoptions and votes by year. We find that while NOLPs existed in earlier years, most of the adoptions took place following the 2008 recession. In other words, the usage of NOLPs has increased dramatically during the past decade as firms generated significant tax losses. Coincident with the more recent use of NOLPs, all of the votes took place in 2009 or later. Panel B reports the frequency of NOLP adoptions and votes sorted by Fama-French 12 industries. We find that NOLP adoptions are concentrated in financial

and business equipment industries. The ratio of voting firms to adopting firms are relatively similar across industries, with firms in the energy industry less likely to vote relative to other industries.

Table 2.2 Panel A reports the summary statistics on the timing of votes. Of note, the vast majority of voting firms (135 of 143) hold a vote subsequent to adoption. That is, the board members of these firms adopt the NOLP first and then subsequently seek shareholder approval of the NOLP. If the NOLP fails to get shareholder approval, the pill expires either immediately following the vote or at a pre-specified date (usually 1 year from adoption). The mean (median) gap between the adoption date and the voting date is 228 (182) days. While the majority of the votes take place at the annual meeting immediately following the adoption, the 95th percentile (433 days) and 99th percentile (1,965 days) suggest that some votes take a considerable time after the adoption.

Panel B reports the summary statistics for all variables immediately prior to the adoption date. As expected, NOLP adopters have significantly high NOL DTA – the mean (median) value of NOL DTA is 91% (18%) of total assets.[33] The mean (median) market capitalization is $1,965 ($134) million.[34] The wide distribution of market capitalization suggests that NOLP adoptions are not restricted to smaller firms. Indeed, some very large firms such as Citigroup, American International Group, and Ford Motor Company have adopted NOLPs. Not surprisingly, firms tend to be relatively unprofitable before NOLP adoption; the mean (median) value for ROA is -2.3% (1.4%).

Panel C reports summary statistics for all variables immediately prior to the voting date. In general, firms that put the NOLP to a vote receive overwhelming support from shareholders. Out

[33] Some observations have a value of greater than 1 because a firm must report its total asset value that excludes NOL DTAs if the firm believes the chances of utilizing NOL DTAs to be less than 50%

[34] We use the natural log of market capitalization in the following analyses but report the unlogged values for summary statistics.

of 143 voting firms, we were able to collect voting data for 132 observations: mean and median votes in favor were 88.8% and 91.6%, respectively.[35] Furthermore, relative to the full sample, voting firms have smaller NOL DTAs (77% vs. 94%) and larger market capitalization ($3.1 billion vs. $2.0 billion). Voting firms have greater board independence (65% vs. 57%), higher institutional ownership (46% vs. 40%), and lower salary to total compensation ratio (36% vs. 40%).

2.4. Results

2.4.1. Univariate Tests

The key objectives of this paper are to determine (i) among adopters, which firms are more likely to seek shareholder approval, (ii) among firms that do seek shareholder approval, how shareholder support varies with firm characteristics, and (iii) study whether there are differential long term effects between voters and non-voting firms. As an initial test, we begin with a series of two sample t-tests of variables prior to NOLP adoption. We stratify the full sample into two groups – those that put the NOLPs to a vote and those that do not.

Table 2.3 reports the results of this analysis. While the economic magnitude of difference in NOL DTAs (scaled by contemporaneous assets) between the two groups is large (77% for voters vs. 109% for non-voters), this difference is not statistically significant. We find that larger firms are more likely to seek shareholder ratification of the NOLP adoption. This difference in market capitalization is significant at the 1% level. While we do not find a statistically significant difference in book-to-market ratio or ROA, we find that voting firms in general use less leverage relative to non-voting firms (significant difference at the 5% level).

[35] We were unable to collect voting data for 11 firms, two of which did not receive shareholder approval. Furthermore, 13 additional firms withdrew from voting due to acquisition (2 firms), liquidation (1 firm), or an unspecified reason (10 firms).

Moreover, we find that voting firms have greater board independence than non-voting firms. Furthermore, managers of voting firms have lower salary to total compensation ratio. That is, arguably, managers of non-voting firms have greater incentive to entrench themselves and enjoy the "quiet life" at the expense of shareholders. However, the managers of voting firms have greater total compensation, which is consistent with the result that voting firms are in general larger than non-voting firms. Finally, we find that NOLPs that go to a vote are more likely to have a sunset provision which causes the pill to expire automatically within three years.

With regards to ownership structure, we find a significant difference in aggregate institutional ownership between the two subsamples; voting firms in general have greater aggregate institutional ownership (46% vs. 35%), and this difference is significant at the 1% level. This result is consistent with the hypothesis that managers of firms with greater institutional ownership are more pressured to put the NOLP adoption to a vote. There is no statistically significant difference in number of institutional blockholders or institutional ownership HHI.

2.4.2. Probit Model – Likelihood of putting NOLP adoption to a vote

Next, we turn to a probit analysis with a set of controls to test which firms are more likely to seek shareholder approval. Of note, we highlight that a standard probit analysis may suffer from sample selection bias, as votes (or the lack of) are observable only if a firm adopts NOLPs. To address this concern, we use a Heckman (1976, 1979) correction approach which involves a two-stage estimation process. In the first stage, we use out of sample data (i.e. all firms with appropriate data, regardless of whether a firm adopts the NOLP) and estimate the likelihood of adopting NOLP. In the second stage, we estimate a probit model using the fitted values from the first stage as one of the control variables. Specifically, we estimate the following specification:

$$Vote = \alpha + \beta * X + \Gamma * Controls + \varepsilon$$

where *Vote* is an indicator variable that takes a value of one if a firm puts the ratification decision to a vote and zero otherwise. *X* is an element from the set of governance, ownership, and CEO compensation variables. Control variables include the estimated probability of adopting NOLP, NOL DTAs prior to adoption, the natural logarithm of the firm's market capitalization. We do not include book-to-market ratio, ROA, and leverage since these variables are significantly different for financial firms, which make up a significant proportion of the sample. We do not include fixed effects since their presence in nonlinear models produce a bias (Greene 2003).

Table 2.4 reports the results of this analysis. The first and second columns report the coefficients and standard errors, respectively, and the last column reports the marginal probability induced by a one-standard deviation change in the values of the covariates from their respective sample averages. We do not find significant evidence of change in the likelihood of vote when there is a change in the amount of NOL DTA, book-to-market ratio, or ROA. Moreover, unlike the results reported in Table 2.3, we do not find evidence that market capitalization has a predictive power in estimating this likelihood. However, we find that firms with less leverage are more likely to put the ratification decision on a vote.

Furthermore, we find that firms that have greater board independence are more likely to put the decision of NOLP adoption to a vote. The marginal probability change associated with a one-standard deviation increase change is 7.7 percentage points, which is economically significant relative to the unconditional probability of 47.3%. We do not find evidence of predictive power for CEO compensation structure or measures of ownership structure.

2.4.3. Determinants of shareholder support of NOLPs

The analysis in this section addresses the second research question: among voting firms, what factors are associated with shareholder support? As in the previous section, a simple ordinary

least squares estimation would suffer from sample selection bias, since shareholder support is observable only if a firm votes. To address this issue, we include fitted values of probability of vote computed in the previous section. More specifically, we estimate the following ordinary least squares specification:

$$\%\, Votes\ in\ favor\ of\ NOLP = \alpha + \beta * X + \Gamma * Controls + \varepsilon$$

where *X* is an element from the set of governance, ownership, and CEO compensation variables. Control variables include the estimated probability of vote, the level of NOL DTA prior to adoption, the natural logarithm of the firm's market capitalization, the firm's book-to-market ratio, ROA, and leverage.

Table 2.5 reports the results of this model. We do not find market capitalization or book-to-market ratio to have an influence on the level of shareholder support. Moreover, somewhat surprisingly, the coefficient on the level of NOL DTAs is insignificant, suggesting that the magnitude of assets that need to be protected does not have an influence on the voting behavior of shareholders. we find a statistically significant coefficient on the firm's ROA throughout all specifications. This result is consistent with the hypothesis that shareholders care about current profitability and use that information to predict the likelihood of redeeming NOL DTAs in the future. Furthermore, we do not find significant evidence that leverage has an impact on how the votes turn out.

In columns 1 through 4, we include governance variables: board independence, CEO compensation salary bonus ratio, total amount of CEO compensation, and sunset provision. We find that a firm is more likely to receive shareholder support if a firm has greater board independence or has a sunset provision that automatically expires the pill in between one to three

years. Interestingly, we do not find such a result for sunset provisions that expire the pill within one year.

In columns 5 through 7, we include institutional ownership variables: # *Inst. Blockholders*, *Inst. Ownership %*, and *Inst. Ownership HHI*. We do not find a statistically significant coefficient on the first two variables. However, if institutional ownership is more concentrated, it is more likely to receive support of the NOLP. This result suggests that even amongst institutional owners, there is a disagreement in whether NOLP should be supported or not.

2.4.4. Long-Term Outcomes of NOLPs for Voting and Non-Voting Firms

In this subsection, we investigate whether there are differential long term outcomes of NOLPs for voting firms relative to non-voting firms. If shareholders approve the NOLP, then they must predict that the benefits of protecting the firm's NOL DTAs must be greater than the potential managerial entrenchment effects. Hence, we hypothesize that firms that have received shareholder approval must benefit more from NOLPs relative to other firms. In order to test this idea, we conduct a series of pooled regressions around the adoption date to study whether firms have differential (i) ROA, (ii) probability of bankruptcy, (iii) probability of being acquired, and (iv) probability of CEO turnover.

2.4.4.1. Sample

For this analysis, we restrict the sample to firms that have at least one year of data before and one year of data following the NOLP adoption. Moreover, for firms that are repeat NOLP adopters we restrict the analysis to the years around the first adoption to avoid any data overlap. We also require that firms have data for all control variables – size, book-to-market ratio, leverage, cash, institutional ownership, institutional ownership HHI, and whether or not the firm has a classified board. These requirements restrict the sample to 195 observations.

Note that, the data with regard to operating performance are unavailable during the five years for many firms, as they stop becoming public companies and delist for various reasons. Table 2.6 reports the availability of data for each year relative to the NOLP adoption year. Due to the nature of sample construction process, all firms have data available in years t-1, t, and t+1. However, as the window widens around the NOLP adoption, the data availability decreases.

2.4.4.2. Differential ROA

We begin studying investigating whether NOLPs have differential outcomes for voting firms and non-voting firms by studying operating performance during the years before and after each adoption. If NOLPs are indeed more value-enhancing for voting firms, then we would expect the ROAs to increase greater for the voting firms following the adoption.

Figure 2.1 graphs ROAs for voting and non-voting firms in each relative year. Following each adoption, we find that ROA increases for both voters and non-voters. However, it is difficult to make the conclusion that NOLPs increase shareholder value for adopters, as the data suffers from survivorship bias. Instead, we focus on the comparative performance for voters and non-voters, and from this first analysis, we do not find a difference in operating performance between the two groups.

Next, we use a regression analysis to study the evolution of operating performance of voting and non-voting firms. More specifically, we estimate the model:

$$ROA = \alpha + \sum_{t=-5}^{-1} \beta_{1t} * I_t + \sum_{t=1}^{5} \beta_{1t} * I_t + \sum_{t=-5}^{5} \beta_{2t} * (I_t * Vote) + \varepsilon$$

where I_t is an indicator variable for relative year t (for instance, for I_{-5}, a firm-year level observation would have a value of 1 if the relative year is five years prior to the adoption, zero

otherwise) and *Vote* is an indicator variable that takes a value of 1 if the firm asked for shareholder approval. The constant α can be interpreted as the ROA of non-voting firm in relative year 0.

The coefficients of interest in this analysis are β_{2t}, specifically for relative years +1 through +5. These coefficients can be interpreted as the differential ROA for voting firms in years t+1 through t+5, relative to non-voting firms. Table 2.7 reports the results of this analysis. Column 1 includes no fixed effects. In column 2, we add year fixed effects and further add industry (defined as 2-digit SIC codes) fixed effects in column 3. In all specifications we do not find a significant coefficient for $Vote*I_t$ for relative years +1 through +5, which suggests that there were no significant difference in ROA between voting and non-voting firms in the years following NOLP adoptions.

2.4.4.3. Probability of Bankruptcy

Next, we study the question: among NOLP adopting firms, is there a difference in the rate of bankruptcy between voting and non-voting firms? The lack of significance in ROAs following the NOLP adoption could be due to firms going bankrupt, which would in turn cause the data to suffer from survivorship bias. In other words, if voting firms are more likely to survive following the NOLP adoption, then it would be unreasonable to claim that there are no significant difference in performance between the two subsamples following the adoption.

We collect data on whether a firm goes bankrupt from Capital IQ and CRSP delisting codes. Next, we estimate the following probit model:

$$BankruptNext5years = \alpha + \beta * Vote + \Gamma * Controls + \varepsilon$$

where *BankruptNext5years* is an indicator variable that takes a value of 1 if a firm goes bankrupt within five years following the NOLP adoption, and *Vote* is an indicator variable that takes a value of 1 if a firm asks for an approval of the NOLP from shareholders. The coefficient

of interest in this model is β – we expect β to be negative (positive) if voting firms are less (more) likely to go bankrupt following NOLP adoptions.

Table 2.8 reports the results of this analysis. In the last two rows, we report the number of firms that went bankrupt within the 5 years following the NOLP adoption. From this first analysis, non-voting firms are generally more likely to file for bankruptcy; only 17% of firms that asked for shareholder approval filed for bankruptcy, whereas 27% of non-voting firms did so. In similar vein, when we control for various factors that could influence bankruptcy rate, we find a significant coefficient for *Vote* in the probit analysis, which suggests that voting firms are significantly less likely to go bankrupt within five years following the NOLP adoption.

2.4.4.4. Probability of Acquisition

Next, we study whether there is a difference in the probability of being acquired following NOLP adoptions between voting and non-voting firms. If an NOLP adopting firm deems that the probability of producing a profit and thereby redeeming its NOL DTAs is too low, then the firm may look for an acquirer instead of continuing its operations. Hence, if voting firms are more likely to redeem its NOL DTAs, one would expect to see the probability of being acquired to be lower. Using data from Thomson SDC Platinum, we estimate the following probit model to test this question:

$$AcquiredNext5years = \alpha + \beta * Vote + \Gamma * Controls + \varepsilon$$

The coefficient of interest is β. we expect β to be positive (negative) if voting firms are more (less) likely to be acquired.

Table 2.9 reports the results of this analysis. In the last two rows, we report the raw number of firms that were acquired for the two subsamples. 54% of voting firms were acquired and 51% of non-voting firms were acquired. Moreover, in the table, we report the coefficient, standard error,

and marginal probability of being acquired for one standard deviation change from the mean for each of the explanatory variables. As suggested by the lack of significant coefficient for *Vote*, we do not find evidence of differential probability of being acquired for voting firms and non-voting firms.

2.4.4.5. Probability of CEO Turnover

NOLP adopting firms are, by definition, poorly performing firms. Hence, the replacement of the CEO would be an important decision for the firm, especially if the poor performance stems from the bad management decisions of the CEO. Ex ante, it is not clear whether there would be a difference in the probability of CEO turnover between voting and non-voting firms. On the one hand, as voting firms exert better governance than non-voting firms, the probability of CEO turnover would be higher if the CEO is responsible for the past poor performance. However, if NOLPs are adopted in good faith and voting firms have belief that their managers can produce profits and thereby redeem NOL DTAs, then we expect CEO turnover to be lower for firms that ask for shareholder approval.

Using data from Execucomp and Capital IQ, we estimate a probit model to test whether there is a significant difference in the probability of a CEO turnover following NOLP adoptions. More specifically, we estimate the following model:

$$CEOTurnoverNext5years = \alpha + \beta * Vote + \Gamma * Controls + \varepsilon$$

The coefficient of interest is β. We expect β to be positive (negative) if voting firms are more (less) likely to have CEO turned over.

Table 2.10 reports the results of this analysis. As can be seen from the last two rows of the table, about half of the CEOs of NOLP adopting firms lose their jobs regardless of whether the firm had asked for an approval of the NOLP from the shareholders. In the table, we also report the

coefficients, standard errors, and marginal probability of CEO turnover that would result from a one standard deviation change of explanatory variables from the mean. We find an insignificant coefficient for *Vote*, which suggests that there are no differential probability in CEO turnover between voting firms and non-voting firms.

2.5. Conclusion

We estimate several models to find determinants of voters from a pool of firms that have adopted net operating loss poison pills (NOLPs). From the univariate analysis, we find that larger firms are more likely to ask for shareholder approval. Furthermore, we find that firms that generally have better corporate governance – those that use less leverage, firms that are not founder or family firms, those that have greater board independence, those that have higher institutional ownership, those whose manager's compensation structure is more convex – are more likely to vote for a ratification of NOLPs. We also find that firms are more likely to vote if NOLPs have a sunset provision which expires the pill when NOL DTAs are exhausted. From the multivariate probit analysis, we find that the probability of a vote is associated with leverage, board independence, institutional ownership concentration, CEO compensation structure, and sunset provision.

Furthermore, we test which firms are more likely to receive support from shareholders, conditional upon a firm holding a vote. We find that a firm's current profitability has a strong impact on the level of shareholder support, suggesting that shareholders value the likelihood of redeeming deferred tax assets associated with net operating losses (NOL DTAs). Furthermore, firms with greater institutional ownership concentration and those that have more convex CEO compensation structure are more likely to receive greater support.

Finally, we estimate various models to test whether there are differential value effects of NOLPs between firms that ask for a shareholder approval of the pill and non-voting firms. Using a difference-in-differences approach, we do not find a significant difference in ROA between the two subsamples during the five years following NOLP adoption. However, we find evidence that voting firms are significantly less likely to file bankruptcy within the five year period. Finally, we do not find evidence of significant difference between the two subsamples in the likelihood of being acquired or turning over the CEO. Overall, these results suggest a lack of difference in NOLP value effects between voting and non-voting firms.

Table 2.1: Frequency of Adoptions and Votes, sorted by year and industry

Panel A. Sorted by year

The following table reports the number of adoptions and votes that have taken place in each year.

Year	Adoptions	Votes
1998	1	0
1999	0	0
2000	1	0
2001	0	0
2002	3	0
2003	3	0
2004	1	0
2005	5	0
2006	5	0
2007	5	0
2008	10	0
2009	44	7
2010	22	15
2011	28	8
2012	17	13
2013	18	14
2014	25	11
2015	26	19
2016	40	17
2017	28	24
2018	19	15
Total	301	143

Panel B. Sorted by Fama-French 12 industry

The following table reports the number of adoptions and votes that have taken place in each industry.

Industry	Adoptions	Votes
1. Consumer Nondurables	2	0
2. Consumer Durables	8	4
3. Manufacturing	20	7
4. Energy	13	2
5. Chemicals	7	3
6. Business Equipments	65	37
7. Telecom	14	10
8. Utilities	1	0
9. Shops	18	7
10. Healthcare	21	10
11. Finance	80	40
12. Other	52	23
Total	301	143

Table 2.2: Summary Statistics

Panel A. Time gap between dates of adoption and votes

The following table reports the summary statistics of the time gap between the adoption and voting dates of NOLP adoptions. A positive time gap indicates that the vote has taken place following the adoption date.

	Frequency
Vote Before Adoption	8
Vote After Adoption	135
Total	143

Variable	Mean	SD	p1	p5	p25	Median	p75	p95	p99	N
Date Gap between Adopt Date and Vote Date	227.86	293.00	-284	0	84	182	294	433	1965	143

Panel B. Summary statistics prior to NOLP adoption

The following table reports the summary statistics for the full sample. *NOL DTA* is deferred tax assets associated with net operating losses scaled by contemporaneous total assets; *Market Value* is the market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets; *Board Indep. %* is the percentage of board members who are independent; *Salary to Total Compensation* is the ratio of salary to total wage of CEO; *Sunset Provision* is an indicator variable that takes a value of one if the pill automatically expires within three years; *Inst. Ownership %* is percentage of equity owned by institutional owners; *# Inst. Blockholders* is the number of blockholders who hold more than 5% of shares outstanding; *Inst. Ownership HHI* is the Herfindahl-Hirschman Index of institutional ownership.

Variable	Mean	SD	p25	Median	p75	N
NOL DTA @ Adopt	0.9422	1.9670	0.0328	0.1893	0.6646	301
Market Value @ Adopt ($millions)	1965.3969	8507.3505	30.6571	134.3194	531.8544	301
Total Assets @ Adopt ($millions)	18191.76	127475.05	69.08	428.66	3395.15	301
BM @ Adopt	0.3640	3.6578	0.2942	0.6927	1.2928	301
ROA @ Adopt	-0.0229	0.1661	-0.0669	0.0137	0.0781	301
Leverage @ Adopt	0.3107	0.3235	0.0540	0.1999	0.4863	301
Board Indep. % @ Adopt	0.5662	0.3234	0.4000	0.7000	0.8182	290
Salary to Total Compensation @ Adopt	0.4007	0.2901	0.1598	0.3326	0.5599	269
CEO Total Compensation @ Adopt ($thousands)	3135.75	4517.04	644.87	1455.50	3703.54	273
Sunset Provision	0.5980	0.4911	0	1	1	301
Inst. Ownership % @Adopt	0.4075	0.3584	0.0228	0.3877	0.7544	301
# Inst. Blockholders @ Adopt	1.7874	1.8515	0	1	3	301
Inst. Ownership HHI @ Adopt	0.2749	0.3357	0.0471	0.1091	0.3739	301

Panel C. Summary statistics prior to NOLP Vote

The following table reports the summary statistics for the voting firms. *NOL DTA* is deferred tax assets associated with net operating losses scaled by contemporaneous total assets; *Market Value* is the market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets; *Board Indep. %* is the percentage of board members who are independent; *Salary to Total Compensation* is the ratio of salary to total wage of CEO; *Sunset Provision* is an indicator variable that takes a value of one if the pill automatically expires within three years; *Inst. Ownership %* is percentage of equity owned by institutional owners; *# Inst. Blockholders* is the number of blockholders who hold more than 5% of shares outstanding; *Inst. Ownership HHI* is the Herfindahl-Hirschman Index of institutional ownership.

Variable	Mean	SD	p25	Median	p75	N
% Votes in favor of NOLP	0.8881	0.1018	0.8558	0.9156	0.9566	132
NOL DTA @ Vote	0.7687	1.4953	0.0549	0.2116	0.6491	143
Market Value @ Vote ($millions)	3054.56	12085.95	48.15	231.15	1091.07	143
Total Assets @ Vote ($millions)	29880.97	175527.73	88.19	523.59	4218.99	143
BM @ Vote	-0.4758	13.5444	0.3669	0.7045	1.1429	143
ROA @ Vote	0.0219	0.3896	-0.0590	0.0220	0.1025	143
Leverage @ Vote	0.2697	0.3030	0.0711	0.1786	0.3980	143
Board Indep. % @ Vote	0.6566	0.2733	0.5714	0.7500	0.8571	142
Salary to Total Compensation @ Vote	0.3612	0.2745	0.1544	0.2635	0.4856	133
CEO Total Compensation @ Vote ($thousands)	3515.17	4849.06	848.89	1990.42	4881.31	134
Sunset Provision	0.7483	0.4355	0	1	1	143
Inst. Ownership % @ Vote	0.4605	0.3611	0.0566	0.5170	0.7932	143
# Inst. Blockholders @ Vote	1.9371	1.8356	0	2	3	143
Inst. Ownership HHI @ Vote	0.2547	0.3079	0.0444	0.1076	0.3573	143

Table 2.3: Two Sample t-tests of Variables between Voting Firms and Non-voting Firms

The following table reports the summary statistics for the full sample. *NOL DTA* is deferred tax assets associated with net operating losses scaled by contemporaneous total assets; *Market Value* is the market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets; *Board Indep. %* is the percentage of board members who are independent; *# Inst. Blockholders* is the number of blockholders who hold more than 5% of shares outstanding; *Inst. Ownership %* is percentage of equity owned by institutional owners; *Inst. Ownership HHI* is the Herfindahl-Hirschman Index of institutional ownership; *Salary to Total Compensation* is the ratio of salary to total wage of CEO; *Sunset Provision* is an indicator variable that takes a value of one if the pill expires as soon as NOL DTAs are exhausted; *Founder or Family Firm* is an indicator variable that equals 1 if the CEO or Chairman is a founder of the company or the firm has family ties that play a key role in both ownership and board membership.

Variable	Voters, Mean	Voters, SD	Voters, N	Non-voters, Mean	Non-voters, SD	Non-voters, N	Mean Diff.	
NOL DTA @ Adopt	0.7775	1.4322	143	1.0912	2.3433	158	-0.3137	
Ln(MV) @ Adopt	5.4917	2.0640	143	4.5431	2.1120	158	0.9485	***
BM @ Adopt	0.5399	3.0150	143	0.2048	4.1583	158	0.3351	
ROA @ Adopt	-0.0106	0.1533	143	-0.0341	0.1766	158	0.0236	
Leverage @ Adopt	0.2609	0.2796	143	0.3558	0.3535	158	-0.0949	**
Board Indep. % @ Adopt	0.6453	0.2707	142	0.4903	0.3513	148	0.1550	***
Salary to Total Compensation @ Adopt	0.3697	0.2781	132	0.4306	0.2992	137	-0.0609	*
Ln(CEO Total Compensation @ Adopt)	14.4055	1.2255	133	13.9926	1.3295	140	0.4128	***
Sunset Provision	0.7483	0.4355	143	0.4620	0.5001	158	0.2862	***
Inst. Ownership % @ Adopt	0.4658	0.3659	143	0.3547	0.3442	158	0.1111	***
# Inst. Blockholders @ Adopt	1.9510	1.9222	143	1.6392	1.7782	158	0.3118	
Inst. Ownership HHI @ Adopt	0.2587	0.3131	143	0.2895	0.3554	158	-0.0309	

Table 2.4: Probit Determinants of Votes

The following table reports the results of a probit analysis that investigates the likelihood that a firm puts the NOLP to a shareholder vote. The dependent variable is an indicator variable that equals 1 if a firm seeks shareholder approval for the NOLP. *NOL DTA* is deferred tax assets associated with net operating losses scaled by contemporaneous total assets; *Ln(MV)* is the natural logarithm of market capitalization; *Board Indep. %* is the percentage of board members who are independent; *Salary to Total Compensation* is the ratio of salary to total wage of CEO; *Ln(Total CEO Compensation)* is the natural logarithm of total CEO pay; *Inst. Ownership %* is percentage of equity owned by institutional owners; *# Inst. Blockholders* is the number of blockholders who hold more than 5% of shares outstanding; *Inst. Ownership HHI* is the Herfindahl-Hirschman Index of institutional ownership; *P_hat(Adopt)* is the estimated probability of adopting NOLP.

Dependent Variable			
Indicator variable (vote)	Coefficient	Standard Error	Marginal Probability
NOL DTA @ Adopt	0.0114	0.049	0.43%
Ln(MV) @ Adopt	0.0889	0.066	3.33%
Board Indep. % @ Adopt	0.7977**	0.312	29.90%
Salary to Total Compensation @ Adopt	0.0786	0.474	2.95%
Ln(Total CEO Compensation) @ Adopt	-0.003	0.138	-0.11%
Inst. Ownership % @ Adopt	0.03630	0.553	1.36%
# Inst. Blockholders @ Adopt	-0.0055	0.085	-0.21%
Inst. Ownership HHI @ Adopt	0.1826	0.305	6.85%
P_hat(Adopt)	-2.1783	6.995	
Constant	-0.9390	2.026	
N	268		
Pseudo R2	7.58%		
Percent Voted	49.30%		

Table 2.5: Determinants of NOLP Shareholder Support

The following table reports the results of linear probability model that investigates the determinants of shareholder support. The dependent variable is an indicator variable that equals 1 if a firm has voted for the NOLP adoption. *NOL DTA* is deferred tax assets associated with net operating losses scaled by contemporaneous total assets; *Market Value* is the market capitalization; *BM* is the book-to-market ratio; *ROA* is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Leverage* is the sum of long-term and current debt scaled by total assets; *Board Indep. %* is the percentage of board members who are independent; *Sunset Provision* is an indicator variable that takes a value of one if the pill expires as soon as NOL DTAs are exhausted; *# Inst. Blockholders* is the number of blockholders who hold more than 5% of shares outstanding; *Inst. Ownership %* is percentage of equity owned by institutional owners; *Inst. Ownership HHI* is the Herfindahl-Hirschman Index of institutional ownership; *Salary to Total Compensation* is the ratio of salary to total wage of CEO; *Ln(Total CEO Compensation)* is the natural logarithm of total CEO pay.

Dependent Variable	% Votes in favor of NOLP						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Board Indep. % @ Vote	0.1154*						
	(1.698)						
Salary to Total Compensation		0.0490					
Ratio @ Vote		(1.150)					
Ln(CEO Total Compensation)			-0.0080				
@ Vote			(-1.281)				
Sunset Provision (1~3 years)				0.0540*			
				(1.763)			
Sunset Provision (<1 year)				0.0344			
				(0.760)			
# Inst. Blockholders @ Vote					-0.0060		
					(-1.020)		
Inst. Ownership % @ Vote						-0.0268	
						(-0.766)	

Inst. Ownership HHI @ Vote							0.1040**
							(2.426)
NOL @ Vote	0.0161**	0.0117	0.0110	0.0116	0.0106	0.0109	0.0053
	(2.162)	(1.638)	(1.522)	(1.631)	(1.447)	(1.469)	(0.702)
Ln(MV) @ Vote	0.0048	0.0055	0.0035	0.0013	0.0028	0.0038	0.0093
	(0.596)	(0.651)	(0.436)	(0.162)	(0.354)	(0.457)	(1.123)
BM @ Vote	-0.0006	-0.0007	-0.0007	-0.0009	-0.0006	-0.0007	-0.0008
	(-0.870)	(-1.020)	(-0.970)	(-1.260)	(-0.888)	(-0.966)	(-1.085)
ROA @ Vote	0.0468*	0.0531**	0.0445*	0.0490**	0.0495**	0.0502**	0.0531**
	(1.920)	(2.158)	(1.792)	(2.011)	(2.020)	(2.042)	(2.218)
Leverage @ Vote	-0.0488	-0.0055	-0.0022	-0.0163	-0.0073	-0.0055	-0.0274
	(-1.007)	(-0.134)	(-0.053)	(-0.391)	(-0.176)	(-0.133)	(-0.661)
P_hat(Vote)	-0.3242*	-0.1164	-0.1031	-0.1306	-0.1034	-0.1041	-0.1536
	(-1.840)	(-0.933)	(-0.828)	(-1.038)	(-0.827)	(-0.830)	(-1.248)
Constant	0.8687***	0.7943***	0.9289***	0.8272***	0.8398***	0.8350***	0.8068***
	(14.416)	(11.957)	(9.908)	(14.266)	(14.621)	(14.580)	(14.194)
Observations	123	123	123	123	123	123	123
Adjusted R-squared	0.052	0.037	0.040	0.046	0.034	0.030	0.079
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 2.6: Data Availability of Operating Performance by year relative to NOLP adoption

The following table reports the availability of operating performance data of 195 firms investigated for each relative year t. Year 0 is the year of NOLP adoption.

t	Frequency
-5	177
-4	182
-3	185
-2	192
-1	195
0	195
1	195
2	163
3	129
4	100
5	86

Table 2.7: Evolution of ROA for Voting and Non-voting Firms over Time

The following table estimates the regression equation:

$$ROA = \alpha + \sum_{t=-5}^{-1} \beta_{1t} * I_t + \sum_{t=1}^{5} \beta_{1t} * I_t + \sum_{t=-5}^{5} \beta_{2t} * (I_t * Vote) + \varepsilon$$

ROA is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; I_t is an indicator variable for relative year t (for instance, for I_{-5}, a firm-year level observation would take a value of 1 if the relative year is five years prior to the adoption, zero otherwise); *Vote* is an indicator variable that takes a value of 1 if a firm asked for shareholder approval.

Dependent Variable	ROA		
	(1)	(2)	(3)
*Vote * I_{-5}*	-0.0372	-0.0524*	-0.0449
	(-1.252)	(-1.740)	(-1.581)
*Vote * I_{-4}*	-0.0461	-0.0519*	-0.0462*
	(-1.585)	(-1.768)	(-1.670)
*Vote * I_{-3}*	-0.0160	-0.0194	-0.0124
	(-0.551)	(-0.665)	(-0.452)
*Vote * I_{-2}*	-0.0023	-0.0002	0.0041
	(-0.082)	(-0.008)	(0.154)
*Vote * I_{-1}*	-0.0362	-0.0343	-0.0299
	(-1.283)	(-1.213)	(-1.122)
*Vote * I_{0}*	-0.0156	-0.0060	-0.0023
	(-0.555)	(-0.214)	(-0.085)
*Vote * I_{+1}*	0.0050	0.0093	0.0163
	(0.176)	(0.330)	(0.617)
*Vote * I_{+2}*	-0.0235	-0.0252	-0.0146
	(-0.768)	(-0.826)	(-0.509)
*Vote * I_{+3}*	0.0107	0.0155	0.0259
	(0.311)	(0.450)	(0.801)
*Vote * I_{+4}*	0.0213	0.0304	0.0477
	(0.541)	(0.776)	(1.299)
*Vote * I_{+5}*	-0.0188	-0.0083	0.0050
	(-0.445)	(-0.197)	(0.127)
Constant	-0.0295	-0.0271	-0.0502
	(-1.613)	(-1.475)	(-0.264)
Observations	1,799	1,799	1,799
Adjusted R-squared	0.015	0.029	0.167
Relative Year Dummies	Yes	Yes	Yes
Year FE	No	Yes	Yes
Industry FE	No	No	Yes

Table 2.8: Probit Analysis of Probability of Bankruptcy for Voting and Non-Voting Firms

The following table reports the results of a probit analysis that investigates the probability of bankruptcy for voting and non-voting firms. The dependent variable is an indicator variable that equals 1 if a firm has filed for bankruptcy within five years subsequent to NOLP adoption. *Vote* is an indicator variable that takes a value of 1 if a firm asked for shareholder approval; *Ln(MV)* is the natural logarithm of market capitalization; *BM* is the book-to-market ratio; *Leverage* is the sum of long-term and current debt scaled by total assets; *ROA* is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Inst. Ownership %* is percentage of equity owned by institutional owners; *Inst. Ownership HHI* is the Herfindahl-Hirschman Index of institutional ownership; *Classified Board* is an indicator variable that equals 1 if a firm has a classified board.

Dependent Variable			
Indicator Variable (Bankrupt in Next 5 Years)	Coefficient	Standard Error	Marginal Probability
Vote	-0.4428*	0.241	-13.15%
Ln(MV)	0.0900	0.078	2.67%
Board Indep. %	0.0279	0.414	0.83%
Inst. Ownership %	0.3392	0.587	10.08%
# Inst. Blockholders	-0.0407	0.095	-1.21%
Inst. Ownership HHI	0.2430	0.464	7.22%
Classified Board	-0.2716	0.393	-8.07%
Sunset Provision (<1 year)	0.6247	0.401	18.56%
Sunset Provision (1~3 years)	0.3021	0.253	8.97%
Constant	-1.3217***	5.401	
N	195		
Pseudo R2	5.32%		
Bankrupt (Voters)	14/81 (17%)		
Bankrupt (Non-Voters)	30/113 (27%)		

Table 2.9: Probit Analysis of Probability of Being Acquired for Voting and Non-Voting Firms

The following table reports the results of a probit analysis that investigates the probability of bankruptcy for voting and non-voting firms. The dependent variable is an indicator variable that equals 1 if a firm has filed for bankruptcy within five years subsequent to NOLP adoption. *Vote* is an indicator variable that takes a value of 1 if a firm asked for shareholder approval; *Ln(MV)* is the natural logarithm of market capitalization; *BM* is the book-to-market ratio; *Leverage* is the sum of long-term and current debt scaled by total assets; *ROA* is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Inst. Ownership %* is percentage of equity owned by institutional owners; *Inst. Ownership HHI* is the Herfindahl-Hirschman Index of institutional ownership; *Classified Board* is an indicator variable that equals 1 if a firm has a classified board.

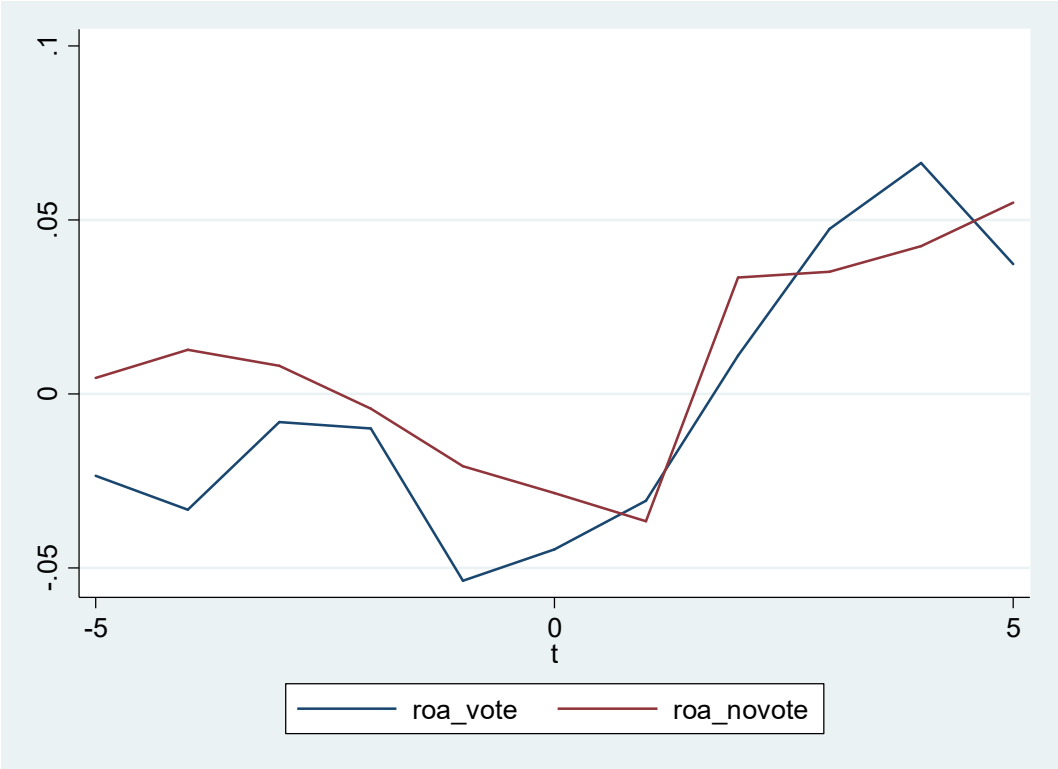
Dependent Variable			
Indicator Variable (Acquired in Next 5 Years)	Coefficient	Standard Error	Marginal Probability
Vote	-0.1758	(0.217)	-6.27%
Ln(MV)	0.0393	(0.072)	1.40%
Board Indep. %	0.4795	(0.375)	1.71%
Inst. Ownership %	0.9019	(0.569)	32.15%
# Inst. Blockholders	-0.1171	(0.090)	-4.18%
Inst. Ownership HHI	-0.1792	(0.414)	-6.39%
Classified Board	-0.4138	(0.360)	-14.75%
Sunset Provision (<1 year)	0.5927	(0.441)	21.13%
Sunset Provision (1~3 years)	-0.0308	(0.228)	-1.10%
Constant	-0.2173	(0.421)	
N	195		
Pseudo R2	7.91%		
Acquired (Voters)	44/82 (54%)		
Acquired (Non-Voters)	58/113 (51%)		

Table 2.10: Probit Analysis of Probability of CEO Turnover for Voting and Non-Voting Firms

The following table reports the results of a probit analysis that investigates the probability of bankruptcy for voting and non-voting firms. The dependent variable is an indicator variable that equals 1 if a firm has filed for bankruptcy within five years subsequent to NOLP adoption. *Vote* is an indicator variable that takes a value of 1 if a firm asked for shareholder approval; *Ln(MV)* is the natural logarithm of market capitalization; *BM* is the book-to-market ratio; *Leverage* is the sum of long-term and current debt scaled by total assets; *ROA* is earnings before interest, taxes, depreciation, and amortization (EBITDA) scaled by lagged total assets; *Inst. Ownership %* is percentage of equity owned by institutional owners; *Inst. Ownership HHI* is the Herfindahl-Hirschman Index of institutional ownership; *Classified Board* is an indicator variable that equals 1 if a firm has a classified board.

Dependent Variable			
Indicator Variable (Acquired in Next 5 Years)	Coefficient	Standard Error	Marginal Probability
Vote	0.4442	(0.280)	9.51%
Ln(MV)	-0.0236	(0.091)	-0.50%
Board Indep. %	-0.0114	(0.473)	-0.24%
Inst. Ownership %	0.6958	(0.686)	14.90%
# Inst. Blockholders	-0.2123*	(0.110)	-4.55%
Inst. Ownership HHI	-0.4869	(0.500)	-10.42%
Classified Board	-0.3034	(0.410)	-6.50%
Sunset Provision (<1 year)	-0.0103	(0.487)	-0.22%
Sunset Provision (1~3 years)	-0.3188	(0.292)	-6.83%
Constant	1.4908***	(0.540)	
N	195		
Pseudo R2	5.32%		
Acquired (Voters)	45/82 (55%)		
Acquired (Non-Voters)	57/113 (50%)		

Figure 2.1. Operating Performance (ROA) for Voting and Non-Voting Firms for each relative year



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