JOURNAL OF FINANCIAL AND QUANTITATIVE ANALYSIS Vol. 58, No. 2, Mar. 2023, pp. 574–614

doi:10.1017/S0022109022000187

Shareholder Litigation Risk and Firms' Choice of External Growth

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Abstract

We provide novel evidence showing that shareholder litigation risk influences firms' choices of external growth strategies. Using staggered adoption of universal demand (UD) laws, we find that firms under the threat of litigation tend to choose corporate alliances over mergers and acquisitions (M&As). This finding supports the view that alliances offer a low-risk and low-cost alternative to M&As for firms facing litigation risk. Moreover, alliance performance improves after the passage of UD laws, suggesting that firms can make better deal selections under reduced litigation threats. Overall, we establish an unexplored link between litigation risk and firms' choices of boundary-expanding transactions.

I. Introduction

Corporate alliances and mergers and acquisitions (M&As) have been viewed as alternative strategies for external growth that expand firms' boundaries (e.g., Mathews and Robinson (2008), Robinson (2008), and McCann, Reuer, and Lahiri (2016)).[1] In a recent survey, about half of the CEOs who responded said they plan to form a new alliance deal to enhance their corporate performance and growth, whereas 4 out of 10 plan to make a new acquisition.[2] Even though firms have

We thank Christopher Baum, Andriy Bodnaruk (the referee), Mark Clatworthy, Eliezer Fich, Jarrad Harford (the editor), Tuan Ho, A. Can Inci, Andrew Karolyi, Elisabeth Kempf, Hyunseob Kim, Kirak Kim, Alberto Manconi, Kasper Meisner Nielsen, Manuela Pedio, and Silvina Rubio, and the conference and seminar participants at the 2019 Financial Management Association (FMA) Annual Meeting, the 2019 European Financial Management Association (EFMA) Annual Meeting, the 2019 Young Finance Scholars conference, and the University of Bristol for their insightful comments and suggestions. All errors are our own.

[1]Corporate alliances typically refer to strategic alliances or joint ventures (Bodnaruk, Massa, and Simonov (2013)). Strategic alliances involve an agreement between 2 or more partners to pursue a set of agreed-upon objectives, although each partner remains an independent organization. Different from strategic alliances, firms engaging in joint ventures create a new entity with partners sharing equity.

[2]"Strategic Alliances: A Real Alternative to M&A?" KPMG Report (2017).

increasingly relied on corporate alliances as an external growth strategy, our understanding of firms' motives for alliance formation, their choices between alliances and M&As, and the valuation effects of alliances remain quite limited. Prior studies argue that under certain conditions, alliances are likely to be preferred to acquisitions (e.g., Balakrishnan and Koza (1993), Yin and Shanley (2008), and Bodnaruk, Manconi, and Massa (2016)). For instance, if an acquisition deal involves high risk or integration problems, or requires considerable financing, firms are likely to choose an alliance rather than an acquisition.

In this article, we examine how a particular kind of risk, shareholder litigation risk, influences firms' decisions about external growth strategies (i.e., decisions to engage in alliances and M&As). Legal challenges, in particular shareholder litigation, are one of the major risks related to M&As (Krishnan, Masulis, and Thomas (2012), Chu and Zhao (2021)).[3] Similarly, alliances may also involve litigation risks, but those risks are relatively lower than M&A-related risks as the scope for shareholder wealth destruction is generally much lower in alliances.[4] In contrast to M&As, alliances allow firms to put less capital at risk and rely on partners' financial and knowledge capital (e.g., Balakrishnan and Koza (1993), Reuer and Tong (2005)). In this study, we attempt to answer the following questions: How does the risk of shareholder litigation influence firms' choice of external growth strategies, that is, alliances vs. M&As? What are the implications for shareholder wealth if firms choose alliances rather than M&As to expand their boundaries under shareholder litigation threats?

Shareholder lawsuits can be costly for managers and their companies (e.g., Erickson (2010)). For example, shareholder lawsuits can lead to direct pecuniary loss and reputational damages.[5] Directors may also experience social shame as a result of being named in shareholder litigation (Cox (1999)). Motivated by risk aversion and reputational concerns, managers may have incentives to play it safe (e.g., Holmstrom (1999), Gormley and Matsa (2016), and Lin, Liu, and Manso (2021)). Therefore, when there is a threat of shareholder lawsuits, managers may be prone to making less risky decisions on corporate investments. Lin et al. (2021) and Chu and Zhao (2021) support the view that threats of shareholder litigation can distort managers' incentives and reduce their desire to pursue risky projects. Moreover, the threat of shareholder litigation can influence firms' financing decisions. For instance, Arena and Julio (2015) and Nguyen, Phan, and Sun (2018) show that firms accumulate more cash when they face an increased litigation risk. They find that as firms anticipate settlement and other costs related to possible future litigation, they increase their demand for precautionary cash holdings and reduce capital expenditures (e.g., corporate investments and takeovers).

[3]Shareholders can file class action and derivative lawsuits related to M&A deals. Audit Analytics shows that in the United States between 2000 and 2018, there were around 10,000 litigation cases in the M&A, which cover various causes such as a breach of security law, accounting malpractice, and director misbehavior. In addition, see "Shareholder Litigation Involving Acquisitions of Public Companies," Cornerstone Research (2018).

[4]Unlike the case of M&A litigation, Audit Analytics does not disclose alliance-related litigation as a separate category.

[5]Houston, Lin, and Xie (2018) discuss why directors' and officers' liability insurance fails to insulate them from the negative effects of derivative lawsuits.

Building on prior literature, in this article, we argue that the threat of litigation can influence a firm's choice of external growth strategies. In particular, we expect that firms choose alliances rather than M&As as their strategy for external growth when they face increased litigation threats. Two mutually nonexclusive mechanisms can drive this choice of alliances over M&As.

The first mechanism involves managers taking a risk-averse approach to external growth in the face of litigation threats. As previously mentioned, previous studies suggest that M&As involve a high risk of litigation. For instance, M&A deals may involve valuation uncertainty, information asymmetry, and unexpected integration costs, which could lead to deal inefficiency and failure and invite litigation (e.g., Krishnan et al. (2012), Chu and Zhao (2021)). M&A-related litigation may also result from managers engaging in self-serving acquisitions (e.g., empire-building acquisitions) that destroy shareholder value. Moeller, Schlingemann, and Stulz (2005), among others, show that M&As can lead to large-scale destruction of shareholder wealth, which could trigger shareholder claims for compensation.

Alliances may also involve some deal risk.[6] These risks may arise from contract-related problems (Lerner and Malmendier (2010)), moral hazard, and free-riding behavior (Campbell, Ederer, and Spinnewijn (2014)). These may invite potential litigation.[7] However, as previously discussed, the litigation risk of alliances tends to be lower than that of M&As; in the latter, there is far greater scope for the destruction of shareholder wealth due to the larger injection of financial resources required. Given that managers typically become more risk averse when facing litigation threats (e.g., Lin et al. (2021), Chu and Zhao (2021)), we expect they will be more likely to choose a strategy for external growth that involves relatively low litigation risk. Thus, we argue that managerial risk aversion under the threat of litigation can drive firms to choose alliances over M&As.

The second mechanism involves firms' conservative liquidity policies when facing the threat of litigation. Alliances require relatively fewer financial resources than M&As, as firms can partly rely on their partners' capital and spread risks across their alliance partners (e.g., Lerner, Shane, and Tsai (2003), Reuer and Tong (2005)). For instance, alliance partners may pool their resources, giving them access to the assets of other firms with less capital involvement and lower transaction costs (e.g., Balakrishnan and Koza (1993)).

Consistent with this view, previous research shows that alliances may be preferred over M&As when external financing is limited. Firms can rely on their alliance partners for some financial resources, which may help to relax their

[6]Failures can arise from a lack of commitment of resources from partners, a lack or underestimation of necessary capital, cultural differences, and clashes of personalities ("Unwinding Technology Obligations when Strategic Alliances Falter', *The Wall Street Journal*, Jan. 28, 2014).

[7]There is some anecdotal evidence of alliance-related failures triggering shareholder litigation. For instance, shareholders of Coca-Cola Co. filed a derivative lawsuit and alleged that members of the board breached their fiduciary duties to shareholders through their gross mismanagement including their involvement in misreporting by a water company that was a joint venture owned by Coca-Cola Co. and Swiss-based Nestle SA (see 'Coca-Cola Faces Purported Holder Derivative Suit', Dow Jones News wires, Aug. 5, 2004). Moreover, see "3 Areas of Litigation Risk in Joint Ventures" at https://www.mayerbrown.com/en/news/2014/10/3-areas-of-litigation-risk-in-joint-ventures.

financial constraints (e.g., Lerner et al. (2003)). Previous studies suggest that firms tend to increase their cash reserves as a precautionary measure under litigation threats, which further restrict firms' investments (Arena and Julio (2015), Nguyen et al. (2018)). Therefore, we assume managers will choose alliances over M&As when facing litigation threats since alliances offer them the option to expand their boundaries while relying on less cash.

To test these predictions, we exploit the unexpected changes in regulatory rules related to shareholders' ability to file derivative lawsuits against management. Specifically, we use the staggered passage of state-level universal demand (UD) laws in the United States as a source of exogenous shocks to litigation risk (e.g., Appel (2019)). UD laws impose a "UD" requirement. That is, shareholders must seek board approval prior to initiating derivative litigation. Hence, since derivative lawsuits typically name the directors as defendants, boards rarely grant this approval (Davis (2008), Appel (2019)). Therefore, the adoption of UD laws significantly increases the burden on shareholders attempting to file a derivative lawsuit and reduces the threat of derivative litigation alleging a breach of fiduciary duty by directors and officers (D&Os).

For our empirical analysis, we use the difference-in-difference (DID) approach for a sample of U.S. public firms over the period of 1984–2010. Our baseline DID results show that, following the passage of UD laws, firms are more likely to choose acquisitions over alliances. This finding supports our prediction that litigation threats play a significant role in determining firms' decisions on external growth strategies; alliances may provide a low-risk and low-cost choice for managers preferring to take less risky projects and maintain financial slack in anticipation of litigation-related costs. Thus, following the passage of UD laws, a reduced litigation risk alters firm preferences toward pursuing a project via an M&A rather than an alliance.

We conduct a battery of additional tests to ensure that our baseline DID results are robust. For instance, we examine the dynamic effect of exogenous shocks and use propensity score matching (PSM) and Heckman 2-stage model to reduce endogeneity concerns. In addition, we control other legislation, merger waves, and corporate governance to reduce potential concerns of confounding effects.

Moreover, we carry out several cross-sectional tests to clarify which mechanisms (managerial risk aversion and/or conservative liquidity policy) are in play. We first test whether managerial risk-taking incentives influence how firms select deals after the adoption of UD laws. Managers become more risk averse and select less risky deals when facing potential litigation threats. Therefore, we predict that firms with less managerial risk-taking incentives are more likely to be affected by the reduced litigation risks and thus likely to take more risks in their deal selection after UD-law adoptions. Using CEO option compensation and CEO compensation vega as proxies for managerial risk-taking incentives, we find that the impact of UD laws on firms' choice of M&As over alliances is significantly stronger for firms with low CEO risk-taking incentives. This finding supports our prediction based on the managerial risk-aversion mechanism.

As for the conservative liquidity policy mechanism, we expect that when facing potential litigation threats, firms with limited access to external funding will have a greater incentive to favor deals requiring fewer financial resources; they prefer to maintain their cash reserves. Our empirical results support this prediction.

We use Kaplan and Zingales' (KZ) (1997) index, Standard & Poor's investment rating, firm size, and dividend payout as financial constraint proxies and find that financially constrained firms are more likely to be affected by the adoption of UD laws when selecting M&As over alliances. We, therefore, provide evidence that both mechanisms are relevant.[8]

Given that firms may prefer alliances to M&As in expanding their boundaries under shareholder litigation threats, it is important to explore the implications of this choice for shareholder wealth. Therefore, as a next step, we examine the impact of litigation threats on the performance of alliances. Our empirical results show that the cumulative abnormal returns (CARs) of alliance participants around the deal announcement date significantly increase if firms' incorporation states have passed UD laws.[9] We also find that alliance partners experience better long-term performance under reduced litigation threats. This finding suggests that as managers become less concerned about shareholder litigation and have more financial resources (due to less conservative liquidity management), they can improve their deal selection.

Our article makes two primary contributions to the literature. First, our findings extend the literature on shareholder litigation. A growing body of research investigates how the threat of shareholder litigation influences various aspects of corporate-policy decision-making, including corporate cash holdings (Arena and Julio (2015), Nguyen et al. (2018)), corporate innovation (Lin et al. (2021)), cost of capital (Houston et al. (2018), Ni and Yin (2018)), capital structure (Nguyen, Phan, and Lee (2020)), the performance of acquisitions (Chung, Kim, Rabarison, and Wu (2020), Chu and Zhao (2021)), CEO compensation (Donelson and Yust (2014)), and board structure (Ferris, Jandik, Lawless, and Makhija (2007)). To the best of our knowledge, this is the first study to explore the impact of litigation threats on the choice between alliances and M&As as external growth strategies. Our findings shed light on how litigation threats can influence firms' strategies for external expansion. Notably, our results provide strong support for the view that an increased litigation risk shifts a firm's choice of external growth strategy from M&As to alliances.

Second, our study extends the literature on corporate alliances, including strategic alliances and joint ventures (e.g., Chan, Kensinger, and Keown (1997), Boone and Ivanov (2012), Bodnaruk et al. (2013), and Cao, Chordia, and Lin (2016)). Although alliances are viewed as an important way of changing firm boundaries, there is limited evidence concerning which factors determine the valuation effects of such alliances. We fill this gap in the literature by showing that shareholder litigation threats can be an important factor in determining shareholder wealth effects of alliances. We provide novel evidence showing that shareholder litigation

[8]We also consider firm's decisions on organic growth in Section V.B and find that firms tend to choose alliance and M&A deals over organic growth when litigation threats are reduced. In addition, we examine the firm's decisions on the type of M&A deals in Section V.C. We find that the reduced litigation risk after the adoption of UD laws could encourage firms to make riskier M&A deals (e.g., by making horizontal acquisitions and acquiring targets from high-tech industries) and larger M&A deals by using more internal financial resources.

[9]In a similar vein, Chu and Zhao (2021) report improved M&A performance after the passage of UD laws.

risks influence firms' decisions on forming corporate alliances and the performance of alliance partners. Our results show that alliance deals formed in the post-UD-law period perform better than those in the pre-UD-law period; in the latter, some alliance deals may be chosen as a substitute for M&As because of litigation threats.

The remainder of the article is organized as follows: Section II includes background information on derivative lawsuits and UD laws. Section III describes the sample and empirical methodology. Empirical results are presented in Section IV. Additional test results are discussed in Section V. Section VI presents the empirical results of corporate alliance performance, whereas Section VII presents our conclusion.

II. Institutional Background

D&Os of public firms are required to exhibit prudent judgment and refrain from self-serving conduct. Their fiduciary duties include duties of care and loyalty to the firm's shareholders. However, the separation of ownership and control can lead to agency problems and a breach of these duties. Shareholders have the right to file class-action and derivative lawsuits to mitigate potential agency problems (e.g., Erickson (2010), Erickson (2017)). Class-action lawsuits are filed by a group of shareholders on behalf of a subset of stakeholders whose interests are damaged, and those stakeholders may be entitled to monetary compensation. By contrast, derivative lawsuits are filed by shareholders on behalf of a corporation against D&Os who violate their fiduciary duties through illicit actions such as engaging in illegal activities, self-dealing, or mishandling information. The actual plaintiff is the corporation rather than shareholders, and it is the corporation that is entitled to any resultant compensation.

Shareholders are required to formally make a demand on the board to initiate a derivative lawsuit. The board then decides whether to reject the demand or take remedial action against the wrongdoers. However, because derivative lawsuits ultimately target the board members as defendants, the board *almost inevitably* rejects the demand for litigation (Appel (2019)). Furthermore, courts will generally invoke the business judgment rule and, following the board's decision, dismiss the suit; the underlying logic is that directors are best placed to make decisions, and courts will thus defer to them if their decision is made in good faith, with reasonable care, and in the honest belief that it is in the company's best interests.

However, since the lawsuit might be rejected to cover a truth, courts have developed the futility exception. This allows shareholders to bypass the demand on the board of directors if they can prove that it cannot make fair decisions because some of its members are involved in wrongdoing (Kinney (1994)). Shareholders typically prefer to argue that the demand is futile since the courts usually dismiss the demand that the board has already refused (Appel (2019)). The futility of making this demand means that shareholders can bring lawsuits against wrongdoers with few limitations and obstacles.

Since the futility exception increased the onerous process of derivative lawsuits, the American Bar Association eliminated its application and added the UD requirement to the Model Business Corporation Act (MBCA). UD laws require that all shareholder plaintiffs first make a demand on the board of directors and require

the board itself to file the initial lawsuit. Since most lawsuits tend to be rejected by the board, the UD laws present significant hurdles for shareholders filing derivative lawsuits against D&Os. Between 1989 and 2005, 23 U.S. states have implemented UD laws. The staggered adoption of these laws has made it more difficult for shareholders to file derivative lawsuits (e.g., Appel (2019)). As a result, fewer derivative lawsuits are filed in the states that have adopted UD laws (Davis (2008), Appel (2019)).

III. Sample Construction, Variable Definitions, and Summary Statistics

A. Sample Construction

We first collect completed M&A and corporate alliance (including strategic alliances and joint ventures) transactions announced between Jan. 1984 and Dec. 2010 from the Securities Data Company (SDC) Platinum database.[10] Since 23 U.S. states adopted UD laws between 1989 and 2005 (Table A1 in the Appendix shows the states and the corresponding effective year), we establish a 5-year window before and after the year of adoption to ensure our sample period provides sufficient coverage of M&A and alliance transactions.

Our M&A sample includes transactions in the SDC database valued more than $100 million and classified as "mergers" or "acquisitions of majority interests." We require that the acquirer owns less than 50% of the target's shares prior to the announcement and 100% of the shares afterward. Acquirers must be publicly traded on the AMEX, NYSE, or NASDAQ, and the transaction value must be no less than 5% of the acquirer's market value 2 months before the announcement date.[11] The final M&A sample consists of 3,607 transactions, which includes 2,059 unique acquiring firms.

For the alliance sample, we require that deals take place in the United States and involve at least one U.S. public firm (listed on AMEX, NYSE, or NASDAQ).[12] To eliminate small-size alliance deals and ensure comparability between alliance and M&A transactions, we also require the total assets of the U.S. participant to be more than $100 million.[13] In the end, we have 13,597 alliances deals and 3,006 unique alliance participants.

Lastly, for firms that have completed at least one M&A or alliance deal during the sample period, we extract their stock market data from the Center for Research in Security Prices (CRSP) database and their financial data from the Compustat Annual File. We collect information on the historical state of incorporation from the

[10]Previous studies (e.g., Bodnaruk et al. (2013), Fich, Starks and Yore (2014)) also use the SDC database to extract data for alliances (i.e., joint ventures and strategic alliances).

[11]We focus on large M&A deals since they are more likely to attract shareholder litigation given the potential for massive value destruction (see, e.g., Krishnan et al. (2012), Chu and Zhao (2021)).

[12]SDC reports the "alliance nation" which indicates the location of the alliance activities. We exclude alliance deals that take place in more than 1 country.

[13]Previous studies have shown that litigation risk increases with firm size (e.g., Kim and Skinner (2012)) and the incentives of plaintiffs' attorneys to file lawsuits are correlated with firm size due to the potentially large settlements (Cox and Thomas (2006)).

SEC 10-K filings to identify whether a firm was incorporated in a state with a UD law in place in a given year.[14] Having excluded firms incorporated in foreign countries and those in the utilities (SIC codes 4900–4999) and financial services (SIC codes 6000–6999) industries, we obtain a final sample of 39,386 firm-year observations.[15] Table A2 in the Appendix summarizes the sample selection criteria and the corresponding number of remaining observations.

B. Variable Definitions

The primary variable of interest in our study is UD_LAW, which is a dummy variable that equals 1 if a firm is incorporated in a state with a UD law in place in year *t*, and 0 otherwise. Following prior studies, we use various macro-, industry-, and firm-level characteristics as control variables. Rate spread (RATE_SPREAD) is a measure for market liquidity, which is the annual interest rate spread between Moody's seasoned Baa corporate bonds and Federal Funds Rate (e.g., Garfinkel and Hankins (2011)). We control for industry-level economic shocks (ECONOMIC_SHOCK), which are measured by the first principal component of 7 shock variables: profitability, asset turnover, R&D, capital expenditures, employee growth, return on assets (ROA), and sales growth, for each of the 48 Fama–French industries (see Harford (2005), Garfinkel and Hankins (2011), and Bonaime, Gulen, and Ion (2018)).

Rhodes-Kropf, Robinson, and Viswanathan (2005) find that market overvaluation can lead to merger waves. Since high Tobin's *Q* and high past returns may be measures for high market valuation, we control for industry-median Tobin's *Q* (INDUSTRY_Q) and industry-median 36-month cumulative returns (INDUSTRY_RETURN) for each of the 48 Fama–French industries as proxies for industry-level valuation. Furthermore, we follow Harford (2005) and Bonaime et al. (2018) and control for industry volatility (INDUSTRY_VOLATILITY), measured as the industry-year median of the volatility of the preceding 36-month returns.

Following Bodnaruk et al. (2013) and Bonaime et al. (2018), we use several firm-specific control variables in our regressions: the natural logarithm of total assets (ln(ASSETS)), book-to-market value of equity ratio (BOOK_TO_MARKET), research and development expenditures to total sales ratio (R&D_TO_SALES), cash plus short-term investments to total assets ratio (CASH_HOLDINGS), capital expenditures to total assets ratio (CAPITAL_EXPENDITURES), annual sales growth (SALES_GROWTH), operating income before depreciation to average book value of common equity ratio (RETURN_ON_EQUITY), long-term and current debt to total assets ratio (LEVERAGE), past 12-month cumulative returns

[14]One limitation with the Compustat database is that it provides only the most recent information about the state of incorporation but notes historical information. This may introduce measurement errors when matching firms with states based on their state of incorporation. Firms' historical states of incorporation are provided by Bill McDonald (source: https://sraf.nd.edu/data/augmented-10-x-header-data/). If the historical information is missing for a given year, we use the first available information after that year to replace the missing value.

[15]We exclude utilities and financials firms because they are subject to additional regulation and reporting requirements.

(COMPOUND_RETURNS), and price per share at the fiscal year-end to earnings per share ratio (PRICE_TO_EARNINGS). The macro-, industry-, and firm-level control variables are lagged by 1 year, and all continuous variables are winsorized at the 1st and 99th percentiles. Table A3 in the Appendix provides a detailed description of all variables used in our analysis.

C. Summary Statistics

Table 1 reports the summary statistics of the main dependent variables (the number of M&As and the number of alliances) and other control variables. We observe that, on average, firms in our sample make more corporate alliance deals (0.359) than M&A (0.055) deals each year.[16] The summary statistics of firm-specific variables (e.g., average ln(ASSETS) and BOOK_TO_MARKET) are comparable to those reported by Bodnaruk et al. (2013) and Bonaime et al. (2018). In addition, on average, firms experience considerable sales growth (18.6%) and compounded returns (18.7%) over the sample period. These are similar to those reported in Bonaime et al. (2018) (in which the average sales growth is 18.8% and the average value of past returns is 17.4%).

TABLE 1

Summary Statistics

Table 1 reports the summary statistics of the main variables used in our analyses. MA_NUMBER (ALLIANCE_NUMBER) is the annual number of acquisitions (alliances) by each firm. UD_LAW is a dummy variable that equals 1 if the firm's incorporation state has a universal demand law in place in year *t*, and 0 otherwise. RATE_SPREAD is the annual interest rate spread in percentage between Moody's seasoned Baa corporate bonds and the Federal Funds. ECONOMIC_SHOCKS is the first principal component of economic shock to each industry, estimated using profitability, asset turnover, R&D, Capex, employee growth, ROA, and sales growth. INDUSTRY_Q is the annual median of Tobin's *Q* for each of the Fama–French 48 industries. INDUSTRY_RETURN (INDUSTRY_VOLATILITY) is the median of firm-level 36-month cumulative returns (volatility) for each of the Fama–French 48 industries. ln(ASSETS) is the natural logarithm of the book value of total assets. BOOK_TO_MARKET is the book value of equity divided by the market value of equity. R&D_TO_SALES is the R&D expenditure divided by total sales. CASH_HOLDINGS is cash plus short-term investments divided by total assets. CAPITAL_EXPENDITURES is the capital expenditure divided by total assets. SALES_GROWTH is the yearly growth of annual total sales. RETURN_ON_EQUITY is the operating income before depreciation divided by the average book value of common equity. LEVERAGE is the sum of long-term debt and current debt divided by total assets. COMPOUND_RETURNS is the firm's past-12-month cumulative returns. PRICE_TO_EARNINGS is the ratio of stock price to the earnings per share. All the continuous control variables are winsorized at the 1st and 99th percentiles.

Variables	Obs.	Mean	SD	P25	P50	P75
MA_NUMBER	39,386	0.055	0.243	0.000	0.000	0.000
ALLIANCE_NUMBER	39,386	0.359	1.712	0.000	0.000	0.000
UD_LAW	39,386	0.089	0.285	0.000	0.000	0.000
RATE_SPREAD	39,386	3.622	1.547	2.364	3.586	4.908
ECONOMIC_SHOCKS	39,386	0.679	2.208	−0.819	0.025	1.369
INDUSTRY_Q	39,386	1.326	0.539	0.968	1.159	1.513
INDUSTRY_RETURN	39,386	0.157	0.373	−0.092	0.114	0.396
INDUSTRY_VOLATILITY	39,386	0.137	0.039	0.110	0.129	0.156
ln(ASSETS)	39,386	6.435	1.726	5.198	6.334	7.581
BOOK_TO_MARKET	39,386	0.531	0.527	0.263	0.450	0.715
R&D_TO_SALES	39,386	0.080	0.257	0.000	0.004	0.059
CASH_HOLDINGS	39,386	0.153	0.183	0.023	0.076	0.214
CAPITAL_EXPENDITURES	39,386	0.065	0.060	0.026	0.048	0.083
SALES_GROWTH	39,386	0.186	0.429	0.000	0.098	0.246
RETURN_ON_EQUITY	39,386	0.304	0.541	0.154	0.307	0.452
LEVERAGE	39,386	0.244	0.211	0.066	0.217	0.359
COMPOUND_RETURNS	39,386	0.187	0.642	−0.190	0.085	0.403
PRICE_TO_EARNINGS	39,386	16.318	50.907	−0.200	14.717	23.844

[16]Since we have a restriction on the firm size of alliance partners, the average number of alliances a firm forms in a year is relatively low when compared to the firms studied in Bodnaruk et al. (2013).

IV. Research Design and Empirical Results

A. UD Laws and Firms' External Expansion

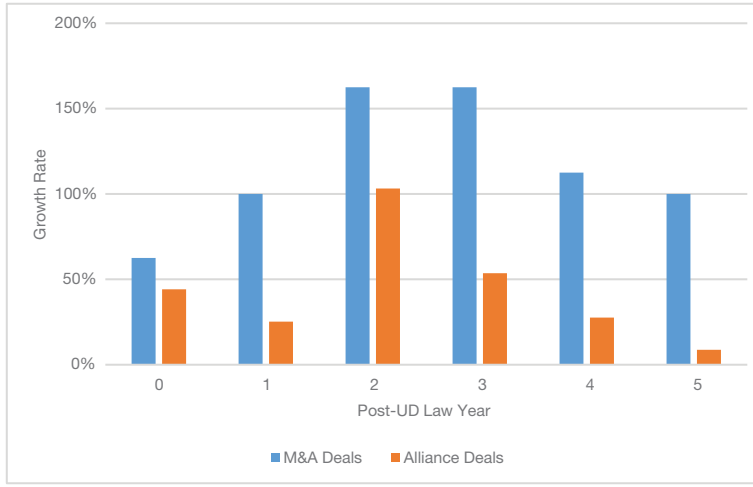
To explore the impact of shareholder litigation risk on firms' external expansion choices, we first examine whether an exogenous shock to shareholder litigation risk (the adoption of UD laws) influences external expansion strategies via alliances or acquisitions.[17] To begin, we draw a graph showing the change in deal numbers following UD-law adoption (year 0). The annual growth rate of deal activities is measured as the ratio of the annual number of takeovers or alliances in the post-UD-law period to the average number of deals from year −3 to year −1 in the pre-UD-law period. Figure 1 shows that the number of M&As and alliances increases significantly following the adoption of UD laws. In particular, the annual number of M&As more than doubles in the post-UD-law period compared to the pre-UD-law period, whereas alliance activities increase by approximately 50%. This preliminary analysis reveals a sharp but asymmetric change in the number of M&As against the number of alliances in response to the passage of UD laws.

To capture the stand-alone impact on deal activities of reduced litigation, we take advantage of the quasi-natural experiment of the staggered adoption of UD laws using the DID-regression framework. Specifically, as a first step, we estimate the following baseline regression model:

FIGURE 1

M&A and Alliance Activities After the Adoption of UD Laws

Figure 1 shows the growth of merger and acquisition (M&A) and alliance activities after the adoption of universal demand (UD) laws (year 0). The annual growth rate is calculated by comparing the number of deals in a given year with the average number of deals over the 3-year period before the UD-law adoption (year −3 to year −1). The construction of the M&A and alliance samples is described in Table A2 in the Appendix.



[17]We also test whether the adoption of UD laws leads to a reduction in the number of derivative litigation cases. The regression results indicate a significant drop in the number of derivative litigation cases after the passage of UD laws. For brevity, we do not tabulate these results.

$$\text{DEALS}_{i,t} = \beta_0 + \beta_1 \text{UD\_LAW}_{s,t} + \text{CONTROLS} + \text{FEs} + \varepsilon, \tag{1}$$

where i, s, and t represent the firm, state of incorporation, and year, respectively. The dependent variable, DEALS, captures the number of M&A deals, ln(1 + MA), and the number of alliance deals, ln(1 + ALLIANCE), made by a firm per annum (defined, following Bodnaruk et al. (2013), as the natural logarithm of 1 plus the annual number of deals). $\text{UD\_LAW}_{s,t}$ is a dummy variable that equals 1 if the state of incorporation s of the firm i has already passed the UD law in a given year t, and 0 otherwise. CONTROLS is a vector of macro-, industry-, and firm-level variables. FEs are year, state, and industry fixed effects, which capture the time-varying differences across years for both treatment and control groups and state- and industry-level variations. We cluster standard errors at the state of incorporation and year level to account for potential correlations in unobserved variables that affect different firms within the same state-year group.

Table 2 shows the results of Tobit regressions examining the effect of UD-law adoption on firms' expansion activities via forming corporate alliances or making acquisitions. The coefficients on UD_LAW are positive and statistically significant across all specifications, suggesting that firms' engagement in alliance and M&A deals increases following the passage of UD laws. In addition, the coefficient estimates on UD_LAW show that the adoption of UD laws increases the number of alliance and acquisition activities by approximately 15.3% (= exp(0.142) − 1, coefficient 0.142) and 35.5% (= exp(0.304) − 1, coefficient 0.304), respectively. These results further indicate that, following the adoption of UD laws, the increase in acquisition activities is disproportionally greater than the increase in alliance activities, supporting the pattern shown in Figure 1. We also rerun the baseline regressions using Poisson and logit models as robustness checks. The results are consistent with the baseline findings and reported in Table A4 in the Appendix. In summary, the positive coefficients on UD_LAW indicate that the reduction of litigation threats after the UD-law adoption facilitates the external expansion of firms through alliances and M&As.

The coefficients on the control variables are mostly in line with those documented in prior related studies (e.g., Bodnaruk et al. (2013), Bonaime et al. (2018)). For example, we find that firms with larger size, more cash holdings, higher sales growth rate, lower book-to-market ratio, or lower leverage tend to engage in more alliances and M&A deals. We also observe that some firm-specific characteristics have the opposite effect on the number of alliances and acquisitions. For instance, R&D and capital expenditures have a negative impact on M&A activities (e.g., Li, Qiu, and Wang (2019)) but are positively associated with alliance activities. In addition, we find that firms with a higher industry-median Tobin's Q are more (less) likely to form corporate alliances (M&As). However, firms with higher industry-median past returns or volatility tend to be more active in conducting acquisitions.

Thus far, our findings reveal an interesting phenomenon: a sharp increase in M&A activities compared to alliances following the adoption of UD laws. To investigate our main research question – how litigation threats influence firms' selection of alliances or M&As – we employ the following Tobit regression model:

TABLE 2

UD Laws and Deal Activities

Table 2 reports the results of Tobit regressions testing the effect of universal demand (UD)-law adoption on firms' alliance and merger and acquisition (M&A) activities. The dependent variable in columns 1 and 2 is the natural logarithm of 1 plus the number of alliance deals made by a firm each year, whereas in columns 3 and 4, it is the natural logarithm of 1 plus the number of M&A deals made by a firm each year. UD_LAW is a dummy variable that equals 1 if the alliance participant's state of incorporation has a UD law in place in year *t*, and 0 otherwise. Variable definitions are provided in Table A3 in the Appendix. All regressions control for the state, industry, and year fixed effects. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	ln(1 + ALLIANCE)		ln(1 + MA)	
	1	2	3	4
UD_LAW	0.166**	0.142**	0.295***	0.304***
	(2.31)	(2.07)	(2.71)	(2.86)
RATE_SPREAD		0.048		0.044
		(1.63)		(1.45)
ECONOMIC_SHOCKS		−0.000		−0.002
		(−0.01)		(−0.15)
INDUSTRY_Q		0.319***		−0.086*
		(9.84)		(−1.89)
INDUSTRY_RETURN		−0.220***		0.112*
		(−4.87)		(1.83)
INDUSTRY_VOLATILITY		−0.987		6.283**
		(−0.38)		(2.28)
ln(ASSETS)		0.396***		0.170***
		(28.86)		(14.35)
BOOK_TO_MARKET		−0.045*		−0.165***
		(−1.83)		(−5.09)
R&D_TO_SALES		0.146***		−0.216**
		(3.47)		(−2.05)
CASH_HOLDINGS		0.562***		0.287**
		(7.69)		(2.36)
CAPITAL_EXPENDITURES		1.275***		−0.600**
		(7.03)		(−2.26)
SALES_GROWTH		0.139***		0.315***
		(4.96)		(10.71)
RETURN_ON_EQUITY		0.004		0.072**
		(0.18)		(2.56)
LEVERAGE		−0.427***		−0.326***
		(−7.09)		(−3.78)
COMPOUND_RETURNS		0.012		0.184***
		(0.53)		(6.40)
PRICE_TO_EARNINGS		0.000*		0.000
		(1.94)		(1.55)
CONSTANT	−4.735***	−7.042***	1.462***	−2.351***
	(−5.06)	(−7.72)	(102.80)	(−2.82)
State FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
No. of obs.	39,386	39,386	39,386	39,386
Pseudo-R^2	0.080	0.162	0.028	0.057

$$(2)\quad \frac{\mathrm{MA}}{(\mathrm{MA}+\mathrm{ALLIANCES})_{i,t}} = \beta_0 + \beta_1 \mathrm{UD\_LAW}_{s,t} + \mathrm{CONTROLS} + \mathrm{FEs} + \varepsilon.$$

Our sample consists of firms that have made at least one alliance or M&A in any given year. Following Bodnaruk et al. (2016), as the dependent variable, we use $\mathrm{MA}/(\mathrm{MA}+\mathrm{ALLIANCES})$, defined as the ratio of the number of M&A deals to the sum of M&A and alliance deals in a given year. We include the same set of control

variables and fixed effects as in equation (1). Standard errors are clustered at the state of incorporation and year level. Table 3 reports the regression results.

The coefficients on UD_LAW shown in columns 1 and 2 of Table 3 are both positive and statistically significant at the 5% significance level. These results suggest that firms engage in more M&A than alliance deals when litigation threats are reduced due to the passage of UD laws. Columns 3 and 4 report the estimation

TABLE 3

UD Laws and Firms' Choice Between Alliances and M&As

Table 3 reports the results of regressions testing the effect of universal demand (UD)-law adoption on firms' choice between alliances and mergers and acquisitions (M&As). The sample includes firms that have made at least one alliance or M&A over our sample period. The dependent variable of the Tobit regressions shown in columns 1 and 2 is MA/(MA + ALLIANCE), which is the ratio of the number of M&A deals to the total number of M&A and alliance deals made by a firm in a given year. The dependent variable of the logit regression shown in columns 3 and 4 is M&A_DUMMY, which equals 1 if a firm completed an M&A deal in a given year, and 0 otherwise. UD_LAW is a dummy variable that equals 1 if the alliance participant's state of incorporation has a UD law in place in year *t*, and 0 otherwise. Variable definitions are provided in Table A3 in the Appendix. All regressions control for the state, industry, and year fixed effects. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	MA/(MA + ALLIANCE)		M&A_DUMMY	
	1	2	3	4
UD_LAW	0.238**	0.243**	0.371*	0.389**
	(2.14)	(2.22)	(1.92)	(1.96)
RATE_SPREAD		0.004		0.009
		(0.11)		(0.13)
ECONOMIC_SHOCKS		0.006		0.019
		(0.38)		(0.62)
INDUSTRY_Q		−0.323***		−0.508***
		(−7.76)		(−6.57)
INDUSTRY_RETURN		0.291***		0.511***
		(3.71)		(3.46)
INDUSTRY_VOLATILITY		5.424*		7.162
		(1.71)		(1.29)
ln(ASSETS)		−0.099***		−0.134***
		(−9.45)		(−7.32)
BOOK_TO_MARKET		−0.187***		−0.348***
		(−3.72)		(−4.17)
R&D_TO_SALES		−0.357***		−0.623***
		(−2.85)		(−2.76)
CASH_HOLDINGS		−0.124		−0.201
		(−0.86)		(−0.84)
CAPITAL_EXPENDITURES		−1.300***		−2.168***
		(−4.76)		(−4.52)
SALES_GROWTH		0.154***		0.297***
		(4.53)		(4.74)
RETURN_ON_EQUITY		0.050*		0.089*
		(1.66)		(1.68)
LEVERAGE		0.025		0.004
		(0.28)		(0.03)
COMPOUND_RETURNS		0.161***		0.289***
		(5.81)		(6.01)
PRICE_TO_EARNINGS		0.000		0.000
		(0.23)		(0.67)
CONSTANT	2.166***	2.653***	3.709***	5.071***
	(20.91)	(14.47)	(6.25)	(8.33)
State FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
No. of obs.	8,101	8,101	8,076	8,076
Pseudo-R^2	0.068	0.091	0.081	0.108

results for a logit model where the dependent variable is a dummy that equals 1 if a firm has made one or more M&A deals in a given year, and 0 otherwise. The results show that the adoption of UD laws significantly increases the likelihood of firms engaging in M&As rather than alliances. In particular, after the adoption of a UD law, the odds of selecting M&As rather than alliances are higher, by around 48% (= exp(0.389) − 1, coefficient 0.389). The results concerning the impact of firm-specific characteristics on deal selection are comparable with the extant literature (e.g., Bodnaruk et al. (2016)).

Overall, our results support our prediction that the reduced litigation risk following the adoption of UD laws induces firms to engage in more takeover than alliance deals. Our findings suggest that managers tend to take up riskier and more costly expansion strategies, in this case, M&As, following the passage of UD laws as they become less risk averse and the constraints on firms' ability to commit financial resources to M&As are attenuated.

B. Robustness Checks

1. Dynamic Effects and Propensity Score Matching

Our DID results so far suggest a positive and significant effect of UD-law adoption on firms' expansion activities (alliances and M&As) and the choice of external growth strategies. We conduct several robustness tests to demonstrate the validity of our baseline results. First, we use a dynamic model as the DID approach relies on the assumption that, in the absence of treatment, the difference between the treatment and control groups is constant over time (parallel trend). Thus, we test whether there is any pretreatment trend of increasing expansion activities and the preference for M&As before UD-law adoption, which should exclude the possibility that the difference between the treatment and control groups in terms of deal activities already exists before the treatment effect.

To test this assumption, we include in our regression model 4 UD-law dummies capturing different time periods: UD(−1), UD(0), UD(+1), and UD(2+). For example, UD(+1) equals 1 if the firm-year observation is within 1 year of the UD-law adoption in the firm's state of incorporation, and 0 otherwise. UD(2+) equals 1 if the firm-year observation is 2 or more years after the adoption of the UD law, and 0 otherwise. Thus, the dynamic DID specification is as follows:

$$(3) \qquad Y_{i,t} = \beta_0 + \beta_1 \mathrm{UD}_{st}^{-1} + \beta_2 \mathrm{UD}_{st}^{0} + \beta_3 \mathrm{UD}_{st}^{+1} + \beta_4 \mathrm{UD}_{st}^{2+} + \mathrm{CONTROLS} + \varepsilon,$$

where the dependent and control variables are the same as those in the baseline models (equations (1) and (2)). If the adoption of UD laws is exogenous, the dummy variables indicating the year preceding the adoption of UD laws should have no effect on expansion activities.

Table 4 shows the results of dynamic effect regressions, where columns 1 and 2 show the dynamic effect of UD laws on the number of alliances and M&A deals, and column 3 shows the dynamic effect on the choice between these deals. The coefficient on UD(−1) is small and statistically insignificant in all regression models. As for the post-UD-law dummies, our results indicate that the causal effects of UD-law adoption on alliance activities concentrate in the period after 2 years

TABLE 4

Dynamic Effect of UD-Law Adoption on Deal Activities and Firms' Choice Between Alliances and M&As

Table 4 reports estimation results for the dynamic effect of universal demand (UD)-law adoption on firms' alliance or merger and acquisition (M&A) activities in columns 1 and 2, respectively, and firms' choice between alliances and M&As in column 3. ln(1 + ALLIANCE) and ln(1 + MA) are the natural logarithm of 1 plus the number of alliances and M&A deals made by a firm each year, respectively. MA/(MA + ALLIANCE) is the ratio of the number of M&A deals to the total number of M&A and alliance deals made by a firm in a given year. UD(−1), UD(0), UD(+1), and UD(2+) equa1 1 if the firm-year observation is in the year before, in the year of, in the year after, and in the 2 or more years after the adoption of the UD law, and 0 otherwise, respectively. Variable definitions are provided in Table A3 in the Appendix. All regressions control for the state, industry, and year fixed effects. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable		
	ln(1 + ALLIANCE)	ln(1 + MA)	MA/(MA + ALLIANCE)
	1	2	3
UD(−1)	−0.056	0.236	0.255
	(−0.41)	(1.25)	(1.64)
UD(0)	0.202*	0.312	0.087
	(1.75)	(1.18)	(0.39)
UD(+1)	−0.021	0.415***	0.415***
	(−0.18)	(3.09)	(2.92)
UD(2+)	0.147*	0.330***	0.293**
	(1.83)	(2.65)	(2.28)
CONTROLS	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes
No. of. obs.	39,386	39,386	8,101
Pseudo-R^2	0.162	0.057	0.091

following the passage of UD laws. Furthermore, the coefficients on UD(+1) and UD(2+) are both positively significant for ln(1 + MA) and MA/(MA+ ALLIANCES). This supports our baseline finding that the passage of UD laws has a more pronounced effect on M&As than alliances.

Next, we explore the possibility of there being omitted variables. Some may argue that the increase in deal activities of the firms treated is driven by some omitted variables that are also correlated with the adoption of UD laws. For instance, firms that conduct alliance and M&A deals in states that have passed UD laws may be fundamentally different from other firms in our sample. The omitted firm characteristics could drive the positive relationship between UD laws and expansion activities. To address this concern, we use a cohort-based PSM to select firms from states with UD laws (treatment group) and states without UD laws (control group), based on firm characteristics (e.g., Gormley and Matsa (2011), Ni and Yin (2018)).[18]

We first construct a cohort for each adoption of UD laws and keep only 5 years before and after the event.[19] Within each cohort, we use PSM to select comparable

[18]UD-law states include states that eventually passed the UD law. Non-UD-law states refer to states that have never passed such a law.

[19]The adoption of UD laws is staggered over time, and some firms in the control group at the beginning of the sample could be in the treatment group near the end of the sample period. For example, Florida passed their UD law in 1990. The Florida cohort covers the period of 1985–1995. All firms incorporated in Florida are in the treatment group, and other alliance firms from states that have never adopted UD laws are in the control group. Using the cohort-based PSM approach addresses this concern.

firms from the treatment and control groups based on a number of ex ante firm characteristics that show significant impacts on deal activities in our baseline model, including firm size, book-to-market ratio, R&D to sales ratio, cash holdings, capital expenditures, sales growth, and leverage. Using logit regressions with the previously mentioned variables, we match each treatment firm to a control firm (without replacement) within each cohort by requiring the propensity scores to be no more than 1% apart. Finally, we stack the matched firms from each cohort to obtain the final PSM sample. Ultimately, there are 2,350 observations in the treatment group and 2,350 in the control group.

Table 5 reports the PSM results. In Panel A, we test whether our matching procedure is successful. That is, the means of the matched variables should not be significantly different between the treatment and control groups after the matching procedures. The results indicate that treatment and control firms are comparable, and the matched sample is reliable. Panel B shows the regression results for the cohort-based PSM sample. The statistically significant coefficients on the UD-law dummy imply that the observed positive effect on expansion activities of the

TABLE 5

Propensity Score Matching for Deal Activities and Firms' Choice Between Alliances and M&As

Table 5 shows the impact of universal demand (UD) laws on the firm's deal activities by using a propensity score matching approach based on the cohort samples. Panel A reports results of post-match diagnostic tests, whereas Panel B reports the regression results. We first use logit regressions to estimate the probability of being a treated firm on ln(ASSETS), BOOK_TO_MARKET, R&D_TO_SALES, CASH_HOLDINGS, CAPITAL_EXPENDITURES, SALES_GROWTH, and LEVERAGE. We then match each treatment firm to a control firm (without replacement) within each cohort and require the propensity scores for each matched pair to be within 1% of each other. We finally stack the matched firms from each cohort together to get the propensity-score-matched sample. UD_LAW is a dummy variable that equals 1 if the alliance participant's state of incorporation has a UD law in place in year *t*, and 0 otherwise. ln(1 + ALLIANCE) and ln(1 + MA) are the natural logarithm of 1 plus the number of alliances or merger and acquisition (M&A) deals made by a firm each year. MA/(MA + ALLIANCE) is the ratio of the number of M&A deals to the total number of M&A and alliance deals made by a firm in a given year. Variable definitions are provided in Table A3 in the Appendix. All regressions control for the state, industry, and year fixed effects. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Post-Matching Diagnostic Test

	Treated		Control			
	Mean	Obs.	Mean	Obs.	*t*-Value	*p*-Value
ln(ASSETS)	6.069	2,350	6.031	2,350	0.812	0.417
BOOK_TO_MARKET	0.547	2,350	0.567	2,350	−1.408	0.159
R&D_TO_SALES	0.044	2,350	0.044	2,350	−0.069	0.945
CASH_HOLDINGS	0.122	2,350	0.120	2,350	0.449	0.654
CAPITAL_EXPENDITURES	0.072	2,350	0.071	2,350	0.410	0.682
SALES_GROWTH	0.174	2,350	0.163	2,350	1.112	0.266
LEVERAGE	0.233	2,350	0.228	2,350	0.900	0.368

Panel B. PSM Matched Sample

	Dependent Variable		
	ln(1 + ALLIANCE)	ln(1 + MA)	MA/(MA + ALLIANCE)
	1	2	3
UD_LAW	0.145***	0.288***	0.182***
	(8.12)	(9.83)	(6.62)
CONTROLS	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes
No. of. obs.	4,700	4,700	925
Pseudo-R^2	0.131	0.131	0.141

reduced risk of derivative lawsuits is not driven by observable differences in firm characteristics.[20]

2. Heckman Selection Model

A further concern stems from potential sample selection bias. In particular, we assume that firms' decisions on external growth involve a 2-stage process: First, a firm decides whether to expand organically (internally) or nonorganically (externally). Those firms that choose to expand externally, in the second stage, decide which type of nonorganic growth strategies to pursue (i.e., alliances or M&As). Therefore, the first stage introduces a selection bias in the second stage, leading to a nonrandom sampling of firms.[21]

To address this sample selection issue, we employ a 2-stage Heckman selection model (Heckman, 1979). We use 2 different identifying variables in our Heckman tests. First, following Bodnaruk et al. (2016), we use industry-level labor unionization (INDUSTRY_UNIONIZATION) as our identifying variable, which represents the fraction of unionized workers in each industry (3-digit SIC code).[22] Labor unionization captures the degree of operating flexibility because a high level of labor unionization is associated with high friction in the adjustment of labor inputs (e.g., Chen, Kacperczyk, and Ortiz-Molina (2011)). For instance, labor unions may provide employment protection and strong labor rights, increasing firing costs.

Unionization could, therefore, impede restructuring activities such as takeovers due to high labor-restructuring costs (e.g., Dessaint, Golubov, and Volpin (2017)). External growth might involve more complex labor restructuring than organic growth.[23] We thus conjecture that firms with low levels of labor unionization are more likely to engage in external expansion than organic growth; they might experience relatively lower labor adjustment costs than firms with high levels of unionization. However, labor unionization might not have an impact on the choice between M&As and alliances as both of these external expansion strategies involve relatively more complex labor adjustment processes than pursuing organic growth.

Second, we use firms' total similarity in the product market (TOTAL_SIMILARITY), as measured by Hoberg and Phillips (2016), as an identifying variable in our Heckman selection model. This variable is calculated as the sum of pairwise product similarities between the given firm and all other firms each year.[24] Hoberg and Phillips (2010) find that firms that are more broadly similar to all

[20]We further examine whether the positive relationship between the adoption of UD laws and expansion activities is driven by some unobserved shocks around the time of the laws' adoption. We construct a placebo variable by randomly assigning a pseudo-event year during the pre-UD-law adoption period among the UD-law states (Nguyen et al., 2020). The statistically insignificant placebo variable suggests that false shocks do not have any impact on expansion activities.

[21]We appreciate the anonymous referee sharing this insight and suggestion.

[22]Industry-level labor-unionization data by year obtained from www.unionstats.com. We thank Hirsch and Macpherson (2003) for providing the data for industry-level labor unionization.

[23]Firms engaging in external expansion deals might have different corporate cultures with different attitudes toward labor unions (e.g., Sarkar and Charlwood (2014)) that might create further friction in labor adjustments following the completion of a deal.

[24]We thank Hoberg and Phillips (2016) for providing the data of firms' product similarity.

others in the economy are more likely to make transactions with other firms, since such firms have greater opportunities for pairings that can generate product-market synergies derived from asset complementarities. Therefore, we conjecture that firms with a higher degree of total similarity in the product market are more likely to undertake external expansion rather than grow organically. Yet, it is unlikely that product similarity could influence the choice between M&As and alliances since both strategies involve interfirm interactions in the product market that could be facilitated by product similarities.

In the first-stage estimation, we perform a probit regression on each identifying variable, where the dependent variable equals 1 if a firm engages in at least one alliance or M&A deal in a given year, and 0 otherwise. We then include the selection correction parameter (the inverse Mills ratio), derived from the first-stage estimation, in our second-stage Tobit analysis.

Table 6 shows the regression results of the Heckman selection model. In column 1, we find that the coefficient of the identifying variable, INDUSTRY_UNIONZATION, is negative and statistically significant, suggesting that high levels of labor unionization could impede external expansion. This finding is consistent with our expectation concerning the impact of labor unionization on firms' first-stage decisions. In column 2, we include the inverse Mills ratio in our regression. We observe that the coefficient of UD_LAW is still positive and statistically significant.

In column 3 of Table 6, we find that firms' total similarity in the product market is positively associated with the likelihood of their engaging in external expansion. This is consistent with our conjecture that firms with greater similarity in a product market are more likely to engage in external growth deals. The coefficient of UD_LAW in the second stage shown in column 4 remains positive and statistically significant after Heckman correction. Overall, our results are robust to selection bias.

3. Additional Test on Sampling

We adopt additional measures and tests to further ensure the robustness of our results. First, we use a $(-5, +5)$ window relative to the effective year of UD-law adoption to construct a cohort sample. This method of sampling can address problems potentially arising from the unbalanced distribution of observations in the treatment and control groups due to staggered UD-law adoptions.[25] Second, we restrict our sample to firms located in states that have passed UD laws over the sample period to capture pre- and post-UD effects. Third, we conduct tests using firms that existed prior to 1989 to rule out the new-entry effect.[26] Fourth, we run additional tests excluding firms incorporated in Delaware or the Ninth Circuit states. A large proportion of firms are incorporated in Delaware, and it is important to ensure our results are not driven by only 1 state. Furthermore, the Ninth Circuit

[25]For example, the first states to adopt UD laws were Georgia and Michigan, in 1989. For these states, the numbers of years before and after the passage of UD laws are 5 and 21, respectively. This problem is more prominent for early- and late-passage states.

[26]The adoption of UD laws could be beneficial to businesses. Thus, the motives of potential new entrants may present endogeneity concerns.

TABLE 6

Heckman Selection Model: Deal Selection

Table 6 shows the results of the 2-step Heckman selection model on firms' choice between alliances and mergers and acquisitions (M&As). The identifying variables used in the first stage are industry-level labor unionization (INDUSTRY_UNIONIZATION) and similarity between the given firm and all other firms in the product market in the given year (TOTAL_SIMILARITY). Columns 1 and 3 present the results for the first-stage equation by using the probit model, where the dependent variable is an indicator which equals to 1 if a firm makes at least one alliance or M&A deal in a given year, and 0 otherwise. Columns 2 and 4 report the second-stage estimation results, where the dependent variable is MA/(MA + ALLIANCE), which is the ratio of the number of M&A deals to the total number of M&A and alliance deals made by a firm in a given year. Variable definitions are provided in Table A3 in the Appendix. All regressions control for the state, industry, and year fixed effects. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable			
	First Stage: =1 If Alliances or M&A	Second Stage: MA/(MA + ALLIANCE)	First Stage: =1 If Alliances or M&A	Second Stage: MA/(MA + ALLIANCE)
	1	2	3	4
INDUSTRY_UNIONIZATION	−0.008***			
	(−8.23)			
TOTAL_SIMILARITY			0.013***	
			(5.16)	
UD_LAW	0.150***	0.239**	0.151**	0.278*
	(2.71)	(2.06)	(2.47)	(1.91)
RATE_SPREAD	0.054**	−0.016	0.062***	−0.041
	(2.36)	(−0.37)	(3.02)	(−0.96)
ECONOMIC_SHOCKS	0.009	−0.006	0.003	−0.011
	(0.93)	(−0.36)	(0.36)	(−0.66)
INDUSTRY_Q	0.111***	−0.344***	0.173***	−0.427***
	(4.36)	(−6.59)	(7.18)	(−7.09)
INDUSTRY_RETURN	−0.047*	0.298***	−0.100***	0.336***
	(−1.71)	(3.93)	(−2.93)	(3.49)
INDUSTRY_VOLATILITY	0.425	5.272*	0.083	4.801
	(0.22)	(1.66)	(0.04)	(1.45)
ln(ASSETS)	0.295***	−0.165***	0.274***	−0.339***
	(28.68)	(−3.36)	(22.02)	(−4.69)
BOOK_TO_MARKET	−0.041**	−0.094**	−0.070***	−0.068
	(−2.17)	(−2.24)	(−3.28)	(−1.27)
R&D_TO_SALES	0.069*	−0.316***	−0.018	−0.292***
	(1.85)	(−2.84)	(−0.48)	(−2.93)
CASH_HOLDINGS	0.370***	−0.179	0.256***	−0.513***
	(6.50)	(−1.07)	(4.43)	(−2.98)
CAPITAL_EXPENDITURES	0.669***	−1.484***	0.600***	−1.822***
	(4.43)	(−4.94)	(3.63)	(−4.84)
SALES_GROWTH	0.159***	0.140***	0.158***	0.029
	(6.98)	(3.58)	(7.23)	(0.49)
RETURN_ON_EQUITY	0.010	0.040	0.018	0.031
	(0.57)	(1.34)	(1.17)	(1.13)
LEVERAGE	−0.325***	0.087	−0.369***	0.322**
	(−6.77)	(0.82)	(−8.71)	(2.40)
COMPOUND_RETURNS	0.057***	0.156***	0.043***	0.134***
	(3.74)	(4.97)	(2.61)	(4.63)
PRICE_TO_EARNINGS	0.000**	−0.000	0.000**	−0.000
	(2.30)	(−0.48)	(2.36)	(−0.31)
INVERSE_MILLS_RATIO		−0.313		−1.208***
		(−1.29)		(−3.37)
Constant	−3.629***	3.737***	−3.240***	5.025***
	(−4.56)	(4.20)	(−4.07)	(4.45)
Year, state, and industry FEs	Yes	Yes	Yes	Yes
No. of obs.	37,159	7,657	33,179	7,426
Pseudo-R^2	0.152	0.091	0.137	0.081

TABLE 7

Robustness Tests on Firms' Choice Between Alliances and M&As

Table 7 reports the results of Tobit regressions testing the effect of universal demand (UD)-law adoption on the firms' alliance and merger and acquisition (M&A) activities using different samples. We start with the regression of deal activities. Columns 1 and 2 show the regression results for alliances and M&As, respectively, while column 3 shows the results for firms' choices between alliances and M&As. "Cohort sample with (−5, +5) years" indicates that the sample is selected based on the cohort method of Gormley and Matsa (2011), which retains only firm-year observations between 5 years prior and, 5 years following the adoption of a UD law. "UD-law states" indicates that firms are from the states which eventually passed a UD law. "Firms exist before 1989 and no reincorporation" indicates that firms that have records in Compustat before 1989 are used, and also such firms have not changed their state of incorporation. 1989 is the year when the first state adopted a UD law. "Exclude Delaware" indicates that firms from Delaware are excluded. "Exclude Ninth Circuit" indicates that firms from states in the Ninth Circuit are excluded. "MBCA" indicates that the control firms are only incorporated in states that closely follow the rule of the Model Business Corporation Act (MBCA). ln(1 + ALLIANCE) and ln(1 + MA) are the natural logarithm of 1 plus the number of alliances or M&A deals made by a firm each year. MA/(MA + ALLIANCE) is the ratio of the number of M&A deals to the total number of M&A and alliance deals made by a firm in a given year. Control variables and fixed effects are the same as those in the baseline model in Table 2. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable		
	ln(1 + ALLIANCE)	ln(1 + MA)	MA/(MA + ALLIANCE)
	1	2	3
Baseline specification	0.142**	0.304***	0.243**
	(2.07)	(2.86)	(2.22)
Sample Selection Criteria			
Cohort sample with (−5, +5) years	0.132*	0.414***	0.323***
	(1.80)	(3.95)	(2.88)
UD-law states	0.131***	0.393***	0.340***
	(6.88)	(12.48)	(11.58)
Firms exist before 1989 and no reincorporation	0.167**	0.408***	0.229***
	(2.19)	(19.39)	(10.96)
Exclude Delaware	0.197***	0.359***	0.233*
	(14.09)	(2.94)	(1.92)
Exclude Ninth Circuit	0.131*	0.296***	0.218**
	(1.90)	(2.80)	(2.01)
MBCA	0.133***	0.395***	0.318**
	(7.55)	(3.00)	(2.49)

Court of Appeals rulings restricts shareholders' rights to file class-action litigation.[27] Fifth, many states closely followed the MBCA ruling, and some of those states have adopted a version of UD laws from the MBCA. To address concerns about spurious correlation, we only use the alliance firms incorporated in such states in the control group to highlight the effects of UD laws rather than the MBCA.[28] We report the results of these robustness tests in Table 7. Overall, the results are robust to all these exercises.

C. Further Analyses

In this section, we consider whether the preference for M&As over alliances after the adoption of UD laws might be due to other confounding effects that might bias our results. For instance, firms might have incentives when responding to

[27]Chung et al. (2020) examine the impact of reduced shareholder litigation rights on corporate acquisitions by using Ninth Circuit Court of Appeals rulings as exogenous shocks.

[28]The firms incorporated in AL, CO, IL, KY, MD, NM, ND, OR, SC, TN, and WA are in the control group (Appel (2019)).

economic shocks to conduct aggregate clustering of merger activities, leading to merger waves. Therefore, industry-level merger waves might influence the selection of M&As or alliances. To this end, we compute the industry merger wave variables from 1980 to 2010 following the wave definition in Harford (2005).[29] Thus, we allow each industry to have only one merger wave per decade and include only those waves with at least 10 mergers. In total, we have 76 merger waves over the period of 1980–2010, where there are 12 industries with merger waves in 1 decade, 14 industries with merger waves in 2 decades, and 12 industries with waves in all 3 decades.

Based on our definition, a firm in a given year is within the industry-wave period if that year is between the year the firm's industry wave started and the year at the end of that wave. IN_WAVE is the dummy variable that equals 1 if in a given year the firm observation is within the industry-wave period, and 0 otherwise. Columns 1, 4, and 7 of Table 8 show that the coefficient of UD_LAW remains positive and statistically significant. Furthermore, the positive coefficient of the IN_WAVE dummy (t-value = 1.80) in column 4 indicates that firms engage in more M&A deals if they are experiencing an industry merger wave.

In addition, we construct 2 variables, PRE_WAVE and POST_WAVE, to differentiate the pre-wave and post-wave periods for a firm in a given year. PRE_WAVE (POST_WAVE) is the dummy variable, which equals 1 if the firm in a given year is before (after) the start (end) year of the firm's industry wave in that wave decade (e.g., a wave during the decade of 1980–1990). The impact of UD laws is still significant and positive after including the PRE_WAVE and POST_WAVE dummy variables, and firms also tend to conduct fewer M&A deals if they are in the pre-wave period.

Additional confounding effects may arise as a result of other laws and regulations influencing firms' deal activities during our sample period. In order to address this concern, we control for control share acquisition, poison pill, business combination, fair price, and directors' duties laws (Karpoff and Wittry (2018)). The results reported in Table A5 in the Appendix show that the UD_LAW dummy continues to have a significantly positive effect on deal activities and on the selection of M&As over alliances after controlling for those laws.

We also consider that corporate governance might be affected by the adoption of UD laws, and firms' expansion activities could also be influenced by the quality of governance (e.g., Masulis, Wang, and Xie (2007), Bodnaruk et al. (2013)). Therefore, we control the impact of corporate governance as a robustness check. We use institutional ownership, the ratio of independent directors on the board, and the governance index (G-index) as the proxies for corporate governance.[30]

[29]We use the following criteria to select M&A deals for wave calculation: i) Acquirer is a publicly owned U.S. firm; ii) Acquirer gained control over the target company (i.e., it had a minority stake of less than 50% before the deal and a majority stake of 51% or more after the deal); iii) Deal value as reported by the SDC is at least 50 million; and iv) Deal was completed.

[30]Institutional ownership data are collected from the Thomson Reuters Institutional (13f) Holdings database. Independent director data are collected from the Institutional Shareholder Service (ISS) database and the BoardEx database, and we replace the missing value with 0. The G-index data are collected from the ISS database (Risk Metrics), which is available from 1990 to 2018.

TABLE 8

Effect of UD Laws: Control for Merger Waves

Table 8 reports the results of regressions testing the effect of universal demand-law adoption on firms' alliance and M&A activities by controlling industry merger waves. Following Harford's (2005) method, we calculate 76 merger waves in 3 decades from 1980 to 2010. We use the following criteria to select merger and acquisition (M&A) deals for wave calculation: i) Acquirers are publicly traded firms in the US; ii) Acquirers gain control over the target company (i.e., they have a minority stake of less than 50% before the transaction, and a majority stake of 51% or more following the transaction); iii) Deal values as reported by the SDC are at least 50 million; and iv) All deals are completed. After the wave calculation, we allow each industry to have only one merge wave per decade and consider only waves consisting of at least 10 mergers. We obtain 76 merger waves in the period 1980 to 2010; there are 12 industries with merger waves in 1 decade, 14 industries with merger waves in 2 decades, and 12 industries with waves in all 3 decades. IN_WAVE is a dummy variable, which equals 1 if the firm in a given year is within the industry-wave period (i.e., that year is between the start year of the firm's industry wave and the end year of the firm's industry wave). PRE_WAVE (POST_WAVE) is a dummy variable, which equals 1 if the firm in a given year is before (after) the start(end) year of the firm's industry wave in that wave decade. ln(1 + ALLIANCE) and ln(1 + MA) are the natural logarithm of 1 plus the number of alliances or M&A deals made by a firm each year. MA/(MA + ALLIANCE) is the ratio of the number of M&A deals to the total number of M&A and alliance deals made by a firm in a given year. Variable definitions are provided in Table A3 in the Appendix. All regressions control for the state, industry, and year fixed effects. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable								
	ln(1 + ALLIANCE)			ln(1 + MA)			MA/(MA + ALLIANCE)		
	1	2	3	4	5	6	7	8	9
UD_LAW	0.142**	0.141**	0.142**	0.302***	0.298***	0.304***	0.241**	0.238**	0.243**
	(2.07)	(2.06)	(2.08)	(2.84)	(2.82)	(2.86)	(2.19)	(2.18)	(2.22)
IN_WAVE	−0.014			0.076*			0.056		
	(−0.43)			(1.80)			(1.23)		
PRE_WAVE		−0.015			−0.233***			−0.186***	
		(−0.36)			(−4.14)			(−3.19)	
POST_WAVE			−0.057			−0.023			0.001
			(−1.24)			(−0.57)			(0.02)
CONTROLS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of. obs.	39,386	39,386	39,386	39,386	39,386	39,386	8,101	8,101	8,101
Pseudo-R^2	0.162	0.162	0.162	0.057	0.058	0.057	0.091	0.092	0.091

Table 9 presents the estimation results. Overall, our results remain the same when we control for corporate governance proxies in our regression model.[31]

V. Mechanisms, Organic Growth, and Firm Risk-Seeking

A. Cross-Sectional Analyses

The results presented in Section IV support the view that shareholder litigation risk has a causal effect on the choice between alliances and M&As. In this section, we conduct some cross-sectional tests to pin down the mechanisms driving the causal effect of the passage of UD laws on this choice.

We consider potential mechanisms and first examine whether managerial risk-taking incentives influence the choice between alliances and M&As when firms face litigation threats. As discussed, managers tend to take on less risky projects

[31] We further address endogeneity concerns regarding the adoption of UD laws. Following Bourveau, Luo, and Wang (2018), we regress the UD_LAW dummy on various firm fundamental variables that are aggregated at the state-year level. Our analysis indicates that none of the state-year firm fundamentals are statistically significant, suggesting that the adoption of UD laws is not endogenous to the aggregate state-year-level business environment. For brevity, we do not tabulate these results.

TABLE 9

Effect of UD Laws: Control for Corporate Governance

Table 9 reports the results of regressions testing the effect of universal demand-law adoption on firms' alliance and merger and acquisition (M&A) activities by controlling corporate governance. INS_OWNERSHIP is the year-end fraction of shares owned by institutional investors. IND_DIRECTOR is the percentage of independent directors on the board. G_INDEX is the governance index. All regressions control for the state, industry, and year fixed effects. ln(1 + ALLIANCE) and ln(1 + MA) are the natural logarithm of 1 plus the number of alliances or M&A deals made by a firm each year. MA/(MA + ALLIANCE) is the ratio of the number of M&A deals to the total number of M&A and alliance deals made by a firm in a given year. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable								
	ln(1 + ALLIANCE)			ln(1 + MA)			MA/(MA + ALLIANCE)		
	1	2	3	4	5	6	7	8	9
UD_LAW	0.139**	0.148**	0.009	0.322***	0.304***	0.163***	0.265**	0.238**	0.187***
	(2.03)	(2.15)	(0.09)	(2.98)	(2.86)	(6.58)	(2.32)	(2.16)	(7.29)
INS_OWNERSHIP	0.001			0.604***			0.537***		
	(0.02)			(6.04)			(5.09)		
IND_DIRECTOR		−0.177***			0.007			0.121*	
		(−3.97)			(0.11)			(1.83)	
G_INDEX			−0.017***			0.021***			0.025***
			(−2.90)			(16.90)			(19.58)
CONTROLS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	39,277	39,386	13,664	39,277	39,386	13,664	8,099	8,101	3,795
Pseudo-R^2	0.163	0.163	0.158	0.060	0.057	0.042	0.095	0.091	0.081

when they face high levels of litigation risk. We predict that the impact of the passage of UD laws will be more pronounced for firms with low managerial risk-taking incentives, as the reduced litigation threats after the adoption of UD laws could encourage such firms to take more risks. We use the percentage of CEO options in total compensation and CEO vega, which is measured as the sensitivity of CEO wealth to stock return volatility, as measures of CEO risk-taking incentives (e.g., Coles, Daniel, and Naveen (2006)).[32] Detailed definitions of these variables are summarized in Table A3 in the Appendix.

We classify firms into high (low) risk-taking incentive groups depending on whether the firm's CEO incentives are above (below) the sample yearly median value of the measures of risk-taking incentives. Panel A of Table 10 reports estimation results, including interaction terms with CEO risk-taking incentive measures. The significantly negative coefficients of the interaction terms suggest that the impact of UD law on firms' choice between M&As and alliances is more pronounced for firms with low CEO risk-taking incentives. This finding provides support for one of the mechanisms through which litigation risk can affect firms' deal selection; that is, managers are risk averse and select less risky deals under the threat of litigation.

Next, based on the other mechanism about conservative liquidity policy under litigation threats, we examine whether financial constraints influence firms' choice between M&As and alliances when they face litigation threats. Financially

[32]CEOs' compensation data are collected from the Execucomp database. We thank Coles et al. (2006) for the compensation vega of CEOs.

TABLE 10

The Impact of CEO Risk-Taking Incentives and Financial Constraints on Firms' Choice Between M&As and Alliances

Table 10 reports the results of regressions of firms' choices between alliance and merger and acquisition (M&A) deals considering CEO risk-taking incentives and financial constraints. The dependent variable is MA/(MA + ALLIANCE), which is the ratio of the number of M&A deals to the total number of M&A and alliance deals made by a firm in a given year. Panel A shows the regression results, including the interaction term between the dummy variables for CEO risk-taking incentives and a universal demand (UD) law in the regression models. OPTION_PERCENTAGE and VEGA are dummy variables equal to 1 for firms with high CEO risk-taking incentives and 0 otherwise. Panel B shows the regression results, including the interaction term between the dummy variables of financial constraints and UD law in the regression models. KZ_INDEX, INVESTMENT_GRADE, FIRM_SIZE, and DIVIDEND are dummy variables indicating whether a firm is financially constrained or unconstrained. Dummy variables equal 1 if the proxy value is higher than the median value of the whole sample by year, and 0 otherwise. All regressions control for the state, industry, and year fixed effects. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. CEO Incentives

	Dependent Variable: MA/(MA + ALLIANCE)	
	OPTION_PERCENTAGE	VEGA
PROXY × UD_LAW	−0.715**	−0.675*
	(−2.11)	(−1.66)
UD_LAW	0.585**	0.617**
	(2.32)	(2.21)
PROXY	−0.161	1.208
	(−0.17)	(1.12)
CONTROLS	Yes	Yes
Year, state, and industry FEs	Yes	Yes
No. of. obs.	4,138	4,138
Pseudo-R^2	0.097	0.092

Panel B. Financial Constraints

	Dependent Variable: MA/(MA + ALLIANCE)			
	KZ_INDEX	INVESTMENT_GRADE	FIRM_SIZE	DIVIDEND
PROXY × UD_LAW	0.364*	−0.421*	−0.487**	−0.379*
	(1.72)	(−1.69)	(−1.98)	(−1.68)
UD_LAW	0.085	0.430***	0.467***	0.445***
	(0.57)	(2.94)	(2.81)	(2.63)
PROXY	0.041	1.952***	2.781***	1.882***
	(0.06)	(2.85)	(3.99)	(3.22)
CONTROLS	Yes	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes	Yes
No. of. obs.	8,083	8,101	8,101	8,101
Pseudo-R^2	0.103	0.111	0.109	0.107

constrained firms are more likely to accumulate cash as a precautionary measure when they anticipate adverse shocks (e.g., shareholder litigation; Arena and Julio (2015), Nguyen et al. (2018)). As alliance deals require fewer financial resources than M&A deals, constrained firms may prefer alliances to maintain financial slack while facing the threat of litigation. Prior studies also show that alliances can help alleviate the financial constraints of partner firms (e.g., Lerner et al. (2003)). Therefore, we predict that the impact of litigation threats on the choice between alliances and M&As could be more pronounced for financially constrained firms. As a result, such firms are more likely to tilt their choices toward M&As once the litigation threats are reduced after the adoption of UD laws.

For our empirical analysis, we use four measures (the KZ Index, Standard & Poor's investment rating, firm size, and dividend payout) to classify firms into financially constrained and unconstrained groups. The financially constrained (unconstrained) group includes firms with KZ Index values higher (lower) than the median

value of the KZ Index of our sample by year. The same procedure applies to firm size, where financially constrained firms are those with a smaller firm size than the median value of the sample by year. Firms with noninvestment-grade (investment-grade) ratings are classified as financially constrained (unconstrained).[33] Furthermore, firms with no dividend payout are classified as financially constrained (e.g., Gormley and Matsa (2011)). Panel B of Table 10 reports the estimation results, including interaction terms with financial constraint variables. We find that the coefficients of interaction terms between financial constraint measures and UD_LAW are statistically significant with the expected sign, indicating that the impact of UD law on firms' choice between M&As and alliances is more pronounced for financially constrained firms. This provides evidence of an alternative mechanism for the causal effect of UD laws: the impact of limited financial resources due to the higher precautionary cash holdings under litigation threats.[34]

B. UD Laws and Organic Growth

In this section, we also consider decisions on organic (or internal) growth as an alternative to growth through M&As and alliances. As prior studies argue, organic growth offers various advantages over these external growth strategies. For instance, organic growth can help firms mitigate the costs of integration and cooperation with outside partners and realize production internalization (e.g., Bodnaruk et al. (2013)).

We examine firms' choices between organic growth and external growth after the adoption of UD laws.[35] Following Bodnaruk et al. (2013), we use the natural logarithm of 1 plus the ratio of the number of alliances to capital expenditures as a measure of firms' choices of alliances over organic growth (ln(1 + (ALLIANCE/CAPEX))). In a similar vein, we use the natural logarithm of 1 plus the ratio of the number of M&As to capital expenditures as a measure of firms' choices of M&As over organic growth (ln(1 + (MA/CAPEX))). Table 11 presents our Tobit estimation results. The coefficient for UD_LAW is positive and statistically significant, indicating that firms tend to choose alliances and M&As over internal growth once litigation threats are reduced after the adoption of UD laws.[36]

[33]Erel, Julio, Kim, and Weisbach (2012) suggest that firms with low bond ratings are more likely to face financial constraints. We define firms as investment-grade firms if they have ever issued at least one investment-grade public bond during the sample period based on S&P ratings. We define firms as noninvestment-grade firms as those that did not issue investment-grade public bonds during the sample period based on S&P ratings.

[34]We also conduct additional tests using a series of different subsample tests with various cutoff values based on these proxies, and our results remain the same. For brevity, we do not tabulate these results.

[35]We also run a logit regression, where the dependent variable is defined as a dummy variable that equals 1 if the firm chooses external growth (M&As and/or alliance deals), and 0 otherwise. Our results show that the adoption of UD laws increases the likelihood of firms engaging in external growth strategies. For brevity, we do not tabulate these results.

[36]We further conduct a multinomial regression by dividing the firms into 3 groups, those with external growth, internal growth, and no growth (Mantecon (2016)). The internal growth group consists of firms whose capital expenditure growth rate is above the median of industry growth, but these firms do not engage in alliances or M&As in a given year. The no growth group consists of firms that do not engage in any growth alternatives (i.e., alliances, M&As, or internal growth) in a given year. Our

TABLE 11

UD Laws, Organic Growth, and Deal Activities

Table 11 reports the results of Tobit regressions of firms' choice between alliances (and/or mergers and acquisitions (M&As)) and organic growth, measured as capital expenditure. The dependent variable in columns 1 and 2 is ln(1 + (ALLIANCE/CAPEX)), which is the natural logarithm of 1 plus the ratio of the number of alliances to capital expenditures. The dependent variable in columns 3 and 4 is ln(1 + (MA/CAPEX)), which is the natural logarithm of 1 plus the ratio of the number of M&A to capital expenditure. All regressions control for the state, industry, and year fixed effects. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable			
	Alliances vs. Organic Growth		M&As vs. Organic Growth	
	1	2	3	4
UD_LAW	0.026**	0.028**	0.053***	0.057***
	(2.19)	(2.19)	(2.72)	(2.89)
RATE_SPREAD		0.006		0.005
		(1.16)		(0.79)
ECONOMIC_SHOCKS		−0.000		−0.001
		(−0.18)		(−0.24)
INDUSTRY_Q		0.052***		−0.014
		(8.11)		(−1.48)
INDUSTRY_RETURN		−0.039***		0.018
		(−6.00)		(1.55)
INDUSTRY_VOLATILITY		−0.488		1.230**
		(−1.00)		(2.57)
ln(ASSETS)		0.039***		0.018***
		(22.16)		(7.94)
BOOK_TO_MARKET		−0.001		−0.024***
		(−0.12)		(−3.47)
R&D_TO_SALES		0.036***		−0.026
		(2.91)		(−1.12)
CASH_HOLDINGS		0.113***		0.050*
		(6.71)		(1.71)
CAPITAL_EXPENDITURES		−0.185***		−0.295***
		(−5.23)		(−5.25)
SALES_GROWTH		0.030***		0.058***
		(4.30)		(8.96)
RETURN_ON_EQUITY		−0.003		0.013***
		(−0.68)		(2.80)
LEVERAGE		−0.053***		−0.062***
		(−4.64)		(−3.46)
COMPOUND_RETURNS		0.005		0.033***
		(1.17)		(5.75)
PRICE_TO_EARNINGS		0.000**		0.000
		(2.04)		(1.37)
Constant	−0.712***	−1.002***	−0.209	−0.341**
	(−4.53)	(−5.94)	(−1.29)	(−2.14)
State FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
No. of. obs.	39,386	39,386	39,386	39,386
Pseudo-R^2	0.153	0.217	0.043	0.075

C. Risk-Taking in M&A Deals

The adoption of UD laws encourages managers to become less risk averse when they decide on their external expansion strategies; that is, they tend to do more M&As than alliances once litigation threats are reduced. In this section, we further

untabulated results indicate that the adoption of UD law could significantly increase the firm's likelihood of choosing external growth over internal growth.

TABLE 12

UD Law and M&A Types

Table 12 shows the impact of universal demand (UD)-law adoption on the likelihood of firms making risky merger and acquisition deals. The dependent variable of the logit regression shown in column 1 is an indicator variable (HORIZONTAL_DEAL) that equals 1 if the acquirer and the target come from industries with the same 2-digit SIC code, and 0 otherwise. The dependent variable of the logit regression shown in column 2 is an indicator variable (HIGH_TECH_TARGET) that equals 1 if the target belongs to a high-tech industry (SIC codes 283, 357, 361, 362, 366, 367, 382, 384, 386, and 387), and 0 otherwise. The dependent variable of the OLS regression shown in column 3 is RELATIVE_DEAL_SIZE, which is calculated as the deal value over the acquirer's market value in the 2 months prior to the deal announcement. The dependent variable of the logit regression shown in column 4 is an indicator variable (INTERNAL_CORPORATE_FUNDS) that equals 1 if the acquirer finances the transaction partly from its own resources, and 0 otherwise. We include the same firm characteristics as control variables as in the baseline model in Table 2. All regressions control for the state, industry, and year fixed effects. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable			
	HORIZONTAL_DEAL	HIGH_TECH_TARGET	RELATIVE_DEAL_SIZE	INTERNAL_CORPORATE_FUNDS
	1	2	3	4
UD_LAW	0.980***	1.060**	0.181**	0.704**
	(3.40)	(2.01)	(2.33)	(2.31)
CONTROLS	Yes	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes	Yes
No. of obs.	2,060	1,758	2,077	1,984
Adj. (pseudo) R^2	0.06	0.262	0.116	0.109

investigate whether weakened litigation threats encourage firms to engage in high-risk M&A deals. Previous studies show that diversifying acquisitions could help managers reduce firms' risk (e.g., Gormley and Matsa (2016), Ni and Yin (2018)). Furthermore, as compared to diversifying acquisitions, horizontal acquisitions involve relatively higher risk. Prior research also shows that acquisitions in high-tech industries involve greater uncertainties and risks for the bidders as it is costly to assess the quality of a firm's technological resources and prospects (e.g., Huang, Officer, and Powell (2016)). By using our M&A sample, we test the impact of the adoption of UD laws on the likelihood of making horizontal deals and acquiring high-tech targets. Table 12 presents the regression results. The positive coefficients in columns 1 and 2 of Table 12 show that the adoption of UD laws can significantly induce more risky acquisitions.

Considering that a reduced threat of litigation helps firms release more internal resources and encourages managers to take on more risk, we test whether firms engage in M&As with larger deal sizes after the passage of UD laws. We use the relative deal size measured as deal value over the acquirer's market value in the 2 months prior to the deal as the dependent variable. Column 3 of Table 12 shows that the adoption of UD laws can lead to a significant increase in M&A deal size. Furthermore, we examine the financial resources used in M&A transactions. The dependent variable in column 4 is a dummy variable, which equals 1 if the acquirers finance the transaction using some portion of internal corporate funds, and 0 otherwise. The positive coefficient of UD_LAW in column 4 shows that the adoption of UD laws significantly increases the likelihood of financing M&A deals using internal financing. Overall, the results in Table 12 show that the reduced litigation risk after the adoption of UD laws encourages managers to take more risk in M&A deals and use internal financing. This finding further supports the argument that

managers take a less risk-averse approach in deal selection when they face reduced litigation threats.

VI. UD Laws and Corporate Alliance Performance

So far, our findings provide support for the view that alliances offer a low-risk and low-cost alternative to M&As as firms face litigation risk. Next, we ask whether firms can improve their deal selection once litigation threats are reduced. For this purpose, we examine alliance performance following the adoption of UD laws.

Table 13 shows the regression results for alliance-announcement performance. The dependent variable is the 3-day CAR of the alliance participants around the alliance-announcement date, estimated using the market model and equal-weighted CRSP index returns. As reported in columns 1 and 2 of Table 13, the coefficients for UD law are positive and statistically significant, suggesting that investors respond more positively to alliances formed by firms incorporated in states that have adopted UD laws. Specifically, we find that those alliance partners incorporated in states that have passed UD laws experience a 0.7% higher CAR, which translates into an average gain of shareholder value of around $134 million. Moreover, we also find that alliances involving technology transfer lead to higher announcement CARs for alliance partners. However, the market reacts negatively if the alliance activities happen in high-tech industries. Firm size and pre-alliance compound returns are also negatively associated with CAR.

Overall, the positive impact of UD laws on the immediate market abnormal returns is statistically and economically meaningful, which shows that alliances perform better in the post-UD-law period. This suggests that as managers become less concerned about shareholder litigation and have more financial resources (due to less conservative liquidity management) under reduced litigation threats, they can improve their selection of alliance deals rather than using alliances as substitutes for M&As. Our results on alliance performance highlight the value-destroying impact of litigation threats on expansion activities.

We also conduct several robustness tests for alliance performance. Columns 3 and 4 of Table 13 show that there is no pretreatment trend of improving announcement performance before UD-law adoption when we add 4 UD-law dummies to capture different time periods.

We also examine how alliance performance changes in the long term after the adoption of UD laws. We use ROA and buy-and-hold abnormal returns (BHAR) over 1, 2, and 3 years following the formation of corporate alliances to measure long-term operating performance and stock performance. Panel A of Table 14 shows that the coefficients on UD_LAW are positive and highly significant in all models, ranging from 3.325% for ROA1 to 10.233% for ROA3. Panel B shows that the UD_LAW dummy is positive for all 12-, 24-, and 36-month BHAR, which are all significant at the 1% level. In particular, the long-term (36-month) post-alliance stock performance is 30% higher for corporate alliances formed in states that have adopted UD laws. Overall, the boosting effect on the short- and long-term performance of the alliance participants of UD laws indicates that firms tend to improve their alliance choices after the reduction of shareholder litigation risk. We conduct several robustness tests, including PSM, changing sample criteria, and the

TABLE 13

UD-Law Adoption and the Alliance Announcement Returns

Table 13 reports the results of regressions testing the effect of universal demand (UD)-law adoption on the announcement returns of alliance participants. The dependent variable is the 3-day cumulative abnormal returns (CARs) of the alliance participants around the announcement date of alliances, estimated using the market model and equal-weighted CRSP index return. UD_LAW is a dummy variable that equals 1 if the alliance participant's incorporation state has a UD law in place in year *t*, and 0 otherwise. UD(−1), UD(0), UD(+1), and UD(2+), equals 1 if the alliance deal happened in 1 year before, in the year of, in 1 year after, and in 2 or more years, respectively, after the adoption of the UD law, and 0 otherwise. All regressions control for the state, industry, and year fixed effects. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: CAR			
	1	2	3	4
UD_LAW	0.696**	0.706**		
	(2.35)	(2.32)		
UD(−1)			−0.430	−0.468
			(−0.53)	(−0.57)
UD(0)			0.341	0.230
			(0.58)	(0.41)
UD(+1)			0.140	0.166
			(0.27)	(0.31)
UD(2+)			0.844**	0.882**
			(2.27)	(2.26)
TECHNOLOGY_TRANSFER		0.142*		0.141*
		(1.89)		(1.87)
HORIZONTAL_ALLIANCE		−0.119***		−0.117***
		(−2.73)		(−2.76)
ALLIANCE_INDUSTRY		0.037		0.036
		(0.35)		(0.35)
HIGH_TECHNOLOGY		−0.117**		−0.119**
		(−2.44)		(−2.43)
ln(ASSETS)		−0.182***		−0.183***
		(−6.52)		(−6.65)
BOOK_TO_MARKET		0.910***		0.905***
		(7.69)		(7.57)
R&D_TO_SALES		1.363***		1.365***
		(14.77)		(14.68)
CASH_HOLDINGS		0.002		0.001
		(0.01)		(0.01)
CAPITAL_EXPENDITURES		−0.509		−0.515
		(−1.12)		(−1.12)
SALES_GROWTH		0.193***		0.192***
		(2.78)		(2.79)
RETURN_ON_EQUITY		−0.039		−0.041
		(−0.39)		(−0.42)
LEVERAGE		0.846***		0.857***
		(2.97)		(2.97)
COMPOUND_RETURNS		−0.199***		−0.198***
		(−4.19)		(−4.18)
PRICE_TO_EARNINGS		0.001		0.001
		(1.32)		(1.32)
CONSTANT	−4.859***	−4.826***	−4.858***	−4.818***
	(−25.75)	(−16.47)	(−25.53)	(−16.61)
Year, state, and industry FEs	Yes	Yes	Yes	Yes
No. of obs.	14,952	14,952	14,952	14,952
Adj. R^2	0.006	0.017	0.006	0.017

TABLE 14

UD-Law Adoption and Long-Term Performance

Table 14 reports the results of regressions testing the effect of universal demand (UD)-law adoption on alliance participants' long-term operating and stock performance. Panel A shows long-term operating performance results by using the return on assets (ROA) of alliance participants. ROA_1, ROA_2, and ROA_3 are the cumulative ROA of alliance participants over 1, 2, and 3 years in the post-alliance period. Panel B reports the regression results of the effect of UD laws on alliance participants' long-term buy-and-hold abnormal returns (BHAR) over 12, 24, and 36 months following corporate alliances. BHAR is calculated based on the difference between buy-and-hold returns of alliance firms and the characteristic-based matched portfolios, where firms in matched portfolios are selected on the basis of their market size and book-to-market ratio. The main explanatory variable is UD_LAW, which is a dummy variable that equals 1 if the participant's state of incorporation has previously passed UD laws. Control variables, which include deal-specific and firm-specific characteristics, are the same as those employed in Table 13. All regressions control for the state, industry, and year fixed effects. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Return on Assets (ROA)

	Dependent Variable		
	ROA_1	ROA_2	ROA_3
	1	2	3
UD_LAW	3.325***	6.440***	10.233***
	(5.25)	(5.16)	(5.60)
CONTROLS	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes
No. of obs.	13,886	13,265	12,565
Adj. R^2	0.407	0.402	0.383

Panel B. Buy-and-Hold Abnormal Returns (BHAR)

	Dependent Variable		
	$BHAR_1$	$BHAR_2$	$BHAR_3$
	1	2	3
UD_LAW	11.911***	18.692***	30.064***
	(3.90)	(4.29)	(5.14)
CONTROLS	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes
No. of. obs.	11,439	10,712	10,070
Adj. R^2	0.042	0.064	0.069

Heckman selection model.[37] The results are reported in Tables A6–A8 in the Appendix. Overall, our results remain unaffected.[38]

VII. Conclusion

In this article, we examine the impact of shareholder litigation risk on firms' decisions to expand their boundaries through M&As and alliances. Using the staggered adoption of UD laws in 23 U.S. states as exogenous shocks to derivative-lawsuit risk, we find that the reduced risk after UD-law adoption not only encourages firms to engage in more M&As and alliances, but also significantly tilts

[37]In the Heckman test for alliance performance, in the first stage, we use macro-, industry-, and firm-level variables as explanatory variables and do not include an identifying variable. This approach is commonly used by previous studies examining deal performance (e.g., Fich et al. (2014), Chu and Zhao (2021). See Li and Prabhala (2007) for more details.

[38]Following Bodnaruk et al. (2013), we differentiate between dominant and junior partners in alliance deals. We find that dominant partners, especially those engaging in high-risk deals, experience higher market reactions around alliance announcement dates after the adoption of UD laws. We report the results in Table A9 in the Appendix.

firms toward choosing M&As. Notably, our results suggest that firms substitute alliances for M&As as an external expansion strategy when facing high litigation risks. This finding is consistent with the view that managers become more risk averse and choose less risky deals under litigation threats while maintaining financial slack in anticipation of litigation-related costs. In addition, we find that alliances formed during the post-UD-law period have higher alliance announcement returns and improved long-term performance. This finding is evidence that firms can improve their deal selection and make better alliance choices once litigation threats are reduced.

Appendix

TABLE A1

Adoption of Universal Demand Laws

Table A1 reports in chronological order the staggered adoption of universal demand laws by 23 U.S. states between 1989 and 2005.

Adoption Year	State	Citation
1989	GA	Georgia Code Ann. § 14-2-742
	MI	Michigan Comp. Laws Ann. § 450.1493a
1990	FL	Florida Stat. Ann. § 607.07401
1991	WI	Wisconsin Stat. Ann. § 180.742
1992	MT	Montana Code. Ann. § 35-1-543
	VA	Texas Bus. Org. Code. Ann. 607.07401
	UT	Utah Code. Ann. § 16-10a-740(3)
1993	NH	New Hampshire Rev. Stat. Ann. § 293-A:7.42
	MS	Mississippi Code Ann. § 79-4-7.42
1995	NC	North Carolina Gen. Stat. § 55-7-42
1996	AZ	Arizona Rev. Stat. Ann. § 10-742
	NE	Nebraska Rev. Stat. § 21-2072
1997	CT	Connecticut Gen. Stat. Ann. § 33-722
	ME	Maine Rev. Stat. Ann. 13-C, § 753
	PA	Cuker v. Mikalauskas (547 Pennsylvania. 600, 692 A.2d 1042)
	TX	Texas Bus. Org. Code. Ann. 607.07401
	WY	Wyoming Stat. § 17-16-742
1998	ID	Idaho Code § 30-1-742
2001	HI	Hawaii Rev. Stat. § 414-173
2003	IA	Iowa Code Ann. § 490.742
2004	MA	Massachusetts Gen. Laws. Ann. Ch. 156D, § 7.42
2005	RI	Rhode Island Gen. Laws. § 7-1.2-710©
	SD	South Dakota Codified Laws 47-1A-742

TABLE A2
Sample Selection Criteria

Table A2 reports the sample selection criteria and the number of merger and acquisition (M&A) deals (Panel A) and alliance deals (Panel B), and the number of firm-year observations in the main sample (Panel C). Panel C matches the firms that have alliances or complete M&As during the sample period with the public firms recorded in Compustat.

Selection Criteria	Number
Panel A. M&A Deals	
1. All M&A deals classified as "mergers" or "acquisition of majority interests" in the SDC announced between 1984 and 2010.	42,924
2. M&A deals are defined as "completed."	33,381
3. Acquirers own less than 50% of the target prior to the announcement and end up with 100% after the completion	31,380
4. Acquirers are publicly traded firms in the United States.	20,735
5. Merge with CRSP and Compustat, and keep firms that issue common shares listed on the AMEX, NYSE, or NASDAQ.	15,462
6. Exclude the deals if the deal with transaction value is lower than 100 million and less than 5% of the acquirer's market value in 2 months prior to the deal announcement	3,607
(the number of unique acquiring firms).	(2,059)
Panel B. Corporate Alliance Deals	
1. All U.S. alliance deals announced between 1984 and 2010.	47,533
2. Alliance deals are defined as "completed."	36,746
3. Alliance deals consist of at least 1 U.S. firm, whereas the alliance deals that have activities in more than 1 nation are excluded.	32,507
4. Merge with CRSP and Compustat, and keep firms that issue common shares listed on the AMEX, NYSE, or NASDAQ.	18,820
5. Alliance firms are equal to or more than $100 million	13,597
(the number of unique participant firms).	(3,006)
Panel C. Panel Data of Firms that Completed at Least One Deal (M&A or Alliance) During the Sample Period	
1. Firm-year observations between 1984 and 2010 (based on 3,867 unique firms that have done at least one M&A or alliance deal during the sample period).	104,409
2. Merge with lagged Compustat firm-year records.	61,744
3. Incorporate with SEC 10-K fillings and exclude the firms that are incorporated in foreign countries.	61,176
4. Excluding utilities (SIC codes 4900–4999) and financial firms (SIC codes 6000–6999).	48,774
5. Excluding observations with incomplete control variables.	39,386

TABLE A3

Variable Definitions

Main Variable of Interest

UD_LAW: Dummy variable that equals 1 if an alliance participant's state of incorporation has a universal demand law in place in year t, and 0 otherwise.

Dependent Variables

ln(1 + MA): Natural logarithm of 1 plus the number of merger and acquisition (M&A) deals made by a firm in a given year. Source: SDC.

ln(1 + ALLIANCE): Natural logarithm of 1 plus the number of alliance deals in which a firm is involved in a given year. Source: SDC.

MA/(MA + ALLIANCE): Ratio of the number of M&A deals to the total number of M&A and alliance deals made by a firm in a given year. Source: SDC.

ln(1 + (ALLIANCE/CAPEX)): Natural logarithm of 1 plus the ratio of the number of alliances to capital expenditures. Source: SDC, Compustat.

ln(1 + (MA/CAPEX)): Natural logarithm of 1 plus the ratio of the number of M&A to capital expenditure. Source: SDC, Compustat.

CARs: Cumulative abnormal returns from −1 day to +1 day of the announcement date of corporate alliances, estimated using the market model and the equal-weighted CRSP index. The market model parameters are estimated using the return data for the period of (−46, −245) prior to the alliance-announcement date. CARs are measured in percentage. Source: CRSP.

ROA: Cumulative returns on assets of alliance firms over 1, 2, or 3 years after the corporate alliance. For instance, ROA_3 is the cumulative returns on assets over 3 years after the corporate alliance, which is calculated as the sum of the first-, second-, and third-year returns on assets in the post-alliance period. ROA is calculated as operating income before depreciation divided by the average of total assets over a fiscal year. ROA is measured in percentage. Source: Compustat.

BHAR: Buy-and-hold abnormal returns of alliance firms over 12, 24, or 36 months after a corporate alliance. Following Barber and Lyon (1997) and Kothari and Warner (1997), BHAR is calculated as the differences of buy-and-hold returns between alliance firms and the characteristic-based matched portfolio that is constructed based on firm size and the book-to-market ratio. BHAR is measured in percentage. Source: CRSP.

Macroeconomic Variables

RATE_SPREAD: Annual interest rate spread in percentage between Moody's seasoned Baa corporate bonds and the Federal Funds Rate. Source: Federal Reserve Bank of St. Louis.

Industry Characteristics

ECONOMIC_SHOCK: The first principal component from economic shocks to each industry. The shocks are calculated for each industry using the following 7 firm-level indicators: net income to sales, sales to assets, R&D to assets, capital expenditures to assets, employment growth (annual percentage change), return on assets, and sale growth (annual percentage change). For each industry in each year, we take the industry median of the absolute annual change in each of 7 indicators. The industries are classified following the Fama–French (1997) 48-industry classification system. See Harford (2005). Source: Compustat.

INDUSTRY_Q: Median value of the annual Tobin's Q for each industry in each year. Industries are classified following the Fama–French (1997) 48-industry classification system. Source: Compustat.

INDUSTRY_RETURN: Annual median of firm-level 36-month cumulative returns for each industry in each year. The 36-month cumulative returns are calculated using the firm's performance over the 36 months leading up to the last month of the fiscal year-end. Source: CRSP.

INDUSTRY_VOLATILITY: Annual median of firm-level 36-month return volatility for each industry in each year. For each year, we calculate the volatility of each firm's 36-month returns leading up to the last month of the fiscal year. Source: CRSP.

IN_WAVE: Dummy variable that equals 1 if the firm in a given year is within the industry-wave period (i.e., the year is between the start year of the firm's industry wave and the end year of the firm's industry wave). Source: SDC.

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TABLE A3 (continued)

Variable Definitions

PRE_WAVE: Dummy variable that equals 1 if the firm in a given year is before the start year of the firm's industry wave in that wave decade. Source: SDC.

POST_WAVE: Dummy variable that equals 1 if the firm in a given year is after the end year of the firm's industry wave in that wave decade. Source: SDC.

Deal Characteristics

TECHNOLOGY_TRANSFER: Dummy variable that equals 1 if 1 alliance participant transfers technology to another participant or to the alliance, and 0 otherwise. Source: SDC.

HORIZONTAL_ALLIANCE: Dummy variable that equals 1 if all participants of a given alliance have the same 2-digit SIC codes, and 0 otherwise. Source: SDC.

ALLIANCE_INDUSTRY: Dummy variable that equals 1 if a given participant and the alliance has the same 2-digit SIC code, and 0 otherwise. Source: SDC.

HIGH_TECHNOLOGY: Dummy variable that equals 1 if the alliance belongs to a high-tech industry (SIC codes 283, 357, 361, 362, 366, 367, 382, 384, 386, and 387), and 0 otherwise. Source: SDC.

PRIVATE_PARTNER: Dummy variable that equals 1 if the alliance partner is not a public firm, and 0 otherwise. Source: SDC.

CROSS_INDUSTRY: Dummy variable that equals 1 if all participants of a given alliance have different 2-digit SIC codes, and 0 otherwise. Source: SDC.

JUNIOR_HIGH_TECH: Dummy variable that equals 1 if the junior participant belongs to a high-tech industry (SIC codes 283, 357, 361, 362, 366, 367, 382, 384, 386, and 387), and 0 otherwise. Source: SDC.

GEOGRAPHIC_DISTANCE: Geographical distance (in kilometers) between the business address of 2 alliance participants. The latitude and longitude data are collected from firms' 10-K reports on SEC Edgar. The distance of the two points is computed using the Haversine method. Source: SEC.

HORIZONTAL_DEAL: Dummy variable that equals 1 if the acquirer and the target come from industries with the same 2-digit SIC code, and 0 otherwise. Source: SDC.

HIGH_TECH_TARGET: Dummy variable that equals 1 if the target belongs to a high-tech industry (SIC codes 283, 357, 361, 362, 366, 367, 382, 384, 386, and 387), and 0 otherwise. Source: SDC.

RELATIVE_DEAL_SIZE: Ratio of M&A deal value to the acquirer's market value in the 2 months prior to the deal announcement. Source: SDC.

INTERNAL_CORPORATE_FUNDS: Dummy variable that equals 1 if the acquirer financed some portion of the transaction from its own resources, and 0 otherwise Source: SDC.

Firm Characteristics

ln(ASSETS): Natural logarithm of the book value of total assets. Source: Compustat.

BOOK_TO_MARKET: Book value of equity divided by market value of equity. Source: Compustat.

R&D_TO_SALES: R&D expenditures divided by total sales, where missing R&D is set to 0. Source: Compustat.

CASH_HOLDINGS: Cash plus short-term investments divided by total assets. Source: Compustat.

CAPITAL_EXPENDITURES: Capital expenditures divided by total assets. Source: Compustat.

SALES_GROWTH: Year-on-year growth of annual total sales. Source: Compustat.

RETURN_ON_EQUITY: Operating income before depreciation divided by the average book value of common equity for a fiscal year. Source: Compustat.

LEVERAGE: Sum of long-term debt and current debt divided by total assets. Source: Compustat.

COMPOUND_RETURNS: The 12-month cumulative returns calculated using the 12 months leading up to the last month of the firm's fiscal year-end. Source: CRSP.

PRICE_TO_EARNINGS: Stock price at the fiscal year-end divided by earnings per share. Source: Compustat.

INDUSTRY_UNIONIZATION: Industry-level unionization is the percentage of employed workers in a firm's industry covered by unions in collective bargaining agreements with employers. Source: Hirsch and Macpherson (2003).

TOTAL_SIMILARITY: Firm's total similarity in the product market, measured as the sum of the pairwise product similarities between a firm and all other firms in the given year. Source: Hoberg and Phillips (2016).

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TABLE A3 (continued)

Variable Definitions

KZ_INDEX: Dummy variable that equals 1 if KZ' (1997) index is higher than the yearly median value of the sample, and 0 otherwise. Following Bakke and Whited (2010), we exclude Q (i.e., market-to-book ratio) when computing the KZ Index. KZ Index = − 1.001909 × ((income before extraordinary items + depreciation and amortization)/(lagged property, plant, and equipment)) + 3.139193 × ((long-term debt + debt in current liabilities)/(long-term debt + debt in current liabilities + stockholders' equity)) − 39.36780 × ((common share dividend + preferred share dividend)/lagged property, plant and equipment) − 1.314759 × (cash and short-term investments/lagged property, plant, and equipment). Source: Compustat.

INVESTMENT_GRADE: Dummy variable that equals 1 if the firms are investment-grade borrowers, and 0 otherwise. Investment-grade borrowers are defined as firms that issued at least one investment-grade public bond during the sample period based on S&P ratings. Investment-grade ratings include BBB−, BBB, BBB+, A−, A, A+, AA−, AA, AA+, and AAA. Source: S&P Credit Ratings.

FIRM_SIZE: Dummy variable that equals 1 if the firm's total assets are higher than the yearly median value of the sample, and 0 otherwise. Source: Compustat.

DIVIDEND: Dummy variable that equals 1 if there is a dividend payout on common shares in a given year, and 0 otherwise. Source: Compustat.

OPTION_PERCENTAGE: Dummy variable that equals 1 if the percentage of CEO compensation that is option compensation in a given year is higher than the yearly median value of the sample, and 0 otherwise. The options compensation percentage is calculated as the Black–Scholes value of the options granted divided by the total compensation in a given year. Source: Execucomp.

VEGA: Dummy variable that equals 1 if CEO compensation vega in a given year is higher than the yearly median value of the sample, and 0 otherwise. CEO's compensation vega is the sensitivity of CEO's wealth to stock return volatility. Source: Coles et al. (2006).

MARKET_TO_BOOK: Market value of equity divided by book value of equity. Source: Compustat.

TOBINS'Q: Ratio of market value of assets to book value of assets. The market value of assets = (close price at fiscal annual end × common shares outstanding) + short-term debt + long-term debt + preferred stock − deferred taxed and investment tax credit. Source: Compustat.

MARKET_VALUE: Natural logarithm of the market value of assets, where market value of assets = (close price of fiscal year-end × common shares outstanding) + short-term debt + long-term debt + preferred stock − deferred taxed and investment tax credit. Source: Compustat.

PROFIT_MARGIN: Operating income before depreciation divided by total sales. Source: Compustat.

INS_OWNERSHIP: Year-end fraction of shares outstanding owned by institutional fund managers. Source: Institutional (13f) Holdings.

IND_DIRECTOR: Percentage of independent directors on the board in a given year, where missing values are set to 0. Source: ISS database (Risk Metrics), BoardEx.

G_INDEX: Firm's governance index in a given year, available from 1990 to 2018. Source: ISS database (Risk Metrics).

TABLE A4

UD Laws and Deal Activities: Alternative Regression Approaches

Table A4 reports the results of Poisson and logit regressions testing the effect of universal demand (UD)-law adoption on the alliance and merger and acquisition (M&A) activities. In Panel A, the dependent variables are the natural logarithm of 1 plus the number of alliance or M&A deals made by a firm in each year. In Panel B, the dependent variables are dummy variables that equal 1 if a firm made at least one alliance deal or M&A deal in a given year, and 0 otherwise. UD_LAW is a dummy variable that equals 1 if the alliance participant's state of incorporation has a UD law in place in year *t*, and 0 otherwise. All regressions control for the state, industry, and year fixed effects. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Poisson Regressions

	Dependent Variable			
	ALLIANCE_NUMBER	MA_NUMBER	ALLIANCE_NUMBER	MA_NUMBER
	1	2	3	4
UD_LAW	0.201**	0.228**	0.394**	0.413**
	(2.22)	(2.33)	(2.32)	(2.46)
CONTROLS	No	Yes	No	Yes
Year, state, and industry FEs	Yes	Yes	Yes	Yes
No. of obs.	39,386	39,386	39,386	39,386
χ^2	9,123.66	12,923.95	22,745.53	24,043.29

Panel B. Logit Regressions

	Dependent Variable			
	ALLIANCE_LIKELIHOOD		MA_LIKELIHOOD	
	1	2	3	4
UD_LAW	0.166*	0.172*	0.440**	0.468***
	(1.72)	(1.70)	(2.51)	(2.68)
CONTROLS	No	Yes	No	Yes
Year, state, and industry FEs	Yes	Yes	Yes	Yes
No. of obs.	39,385	39,385	39,154	39,154
Pseudo-R^2	0.093	0.184	0.030	0.062

TABLE A5

Effect of UD Laws on Deal Activities: Confounding Effects

Table A5 reports the regression results of the effect of the adoption of a universal demand (UD) law on firms' expansion activities by controlling the confounding effects from other laws and regulations. UD_LAW, CS_LAW, PP_LAW, BC_LAW, FP_LAW, and DD_LAW are a series of dummy variables that equal 1 if the firm's incorporation state has UD laws, control share acquisition laws, poison pill laws, business combination laws, fair price laws, or directors' duties laws in place in year *t*, and 0 otherwise. All regressions control for the state, industry, and year fixed effects. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state and year level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable								
	ln(1 + ALLIANCE)			ln(1 + MA)			MA/(MA + ALLIANCE)		
	1	2	3	4	5	6	7	8	9
UD_LAW	0.123*	0.150**	0.122*	0.294***	0.252**	0.282**	0.306***	0.222**	0.303**
	(1.71)	(2.16)	(1.66)	(2.58)	(2.26)	(2.38)	(2.59)	(1.98)	(2.53)
CS_LAW	0.157		0.179	0.038		0.011	−0.305*		−0.338*
	(1.16)		(1.34)	(0.23)		(0.06)	(−1.66)		(−1.77)
PP_LAW		−0.034	0.054		0.224*	0.332**		0.147	0.172
		(−0.37)	(0.46)		(1.84)	(2.25)		(1.05)	(0.98)
BC_LAW			0.137			−0.052			−0.152
			(1.38)			(−0.35)			(−1.03)
FP_LAW			−0.021			−0.054			−0.017
			(−0.17)			(−0.41)			(−0.11)
DD_LAW			−0.153			−0.191			−0.013
			(−1.50)			(−1.51)			(−0.08)
CONTROLS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	39,386	39,386	39,386	39,386	39,386	39,386	8,101	8,101	8,101
Pseudo-R^2	0.162	0.162	0.162	0.057	0.057	0.057	0.091	0.091	0.091

TABLE A6

Propensity Score Matching on Alliance Performance

Table A6 reports the results of regressions testing the effect of universal demand (UD)-law adoption on alliance participants' short-term announcement returns and long-term operating and stock performance by using a propensity score matching (PSM) approach. Panel A reports results of post-match diagnostic tests, and Panel B reports the regression results for the cohort-based PSM sample. UD_LAW is a dummy variable that equals 1 if the alliance participant's incorporation state has a UD law in place in year *t*, and 0 otherwise. CAR in column 1 measures the 3-day cumulative abnormal returns of alliance partners around the announcement date. ROA_3 in column 2 is the cumulative returns on assets of the alliance participant over 3 years in the post-alliance period. $BHAR_3$ in column 3 is the buy-and-hold abnormal returns over 36 months following the corporate alliance announcement. Control variables and fixed effects are the same as the ones in the baseline model in Table 13. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Post-Matching Diagnostic Test

	Treated		Control			
	Mean	Obs.	Mean	Obs.	*t*-Value	*p*-Value
MARKET_VALUE	19.657	549	19.327	549	1.156	0.248
PROFIT_MARGIN	0.114	549	0.083	549	0.789	0.430
LEVERAGE	0.237	549	0.225	549	0.980	0.327
MARKET_TO_BOOK	3.641	549	2.896	549	0.951	0.342
R&D_TO_SALES	0.079	549	0.063	549	1.512	0.131

Panel B. PSM Matched Sample

	Dependent Variable		
	CAR	ROA_3	$BHAR_3$
	1	2	3
UD_LAW	1.181***	0.057**	0.266***
	(3.52)	(2.55)	(3.80)
CONTROLS	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes
No. of obs.	1,098	878	824
Adj. R^2	0.028	0.292	0.099

TABLE A7

Robustness Tests for Alliance Performance

Table A7 reports the results of regressions testing the effect of universal demand (UD)-law adoption on announcement returns of alliance participants using different samples and methods. "Using value-weighted CRSP index" indicates that the 3-day cumulative abnormal returns (CARs) of the alliance participants around the announcement date of alliances are estimated using the market model and value-weighted CRSP index return. "Using market-adjusted model" indicates that the 3-day CARs of the alliance participants around the announcement date of alliances are estimated using the market-adjusted model and equal-weighted CRSP index return. "Cohort sample with (−5, +5) years" indicates that the sample is selected based on the cohort method of Gormley and Matsa (2011), which keeps only firm-year observations between 5 years prior to and 5 years after the adoption of a UD law. "UD-law states" indicates that firms are from states that eventually passed a UD law. "Firms exist before 1989 and no reincorporation" indicates that firms that have records in Compustat before 1989 are used, and also such firms have not changed their state of incorporation. 1989 is the year when the first state adopted a UD law. "Exclude Delaware" indicates that firms from Delaware are excluded. "Exclude Ninth Circuit" indicates that firms from states in the Ninth Circuit are excluded. "MBCA" indicates that the control firms are incorporated in states that closely follow the rule of the Model Business Corporation Act (MBCA). Control variables and fixed effects are the same as the ones in the baseline model in Table 13. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: CAR			
	UD_LAW	*t*-Stats.	Adj. R^2	No. of Obs.
Baseline specification	0.706**	2.32	0.017	14,952
Estimation Methods				
Using value-weighted CRSP index	0.675*	1.93	0.014	14,952
Using market-adjusted model	0.766**	2.41	0.020	14,952
Sample Selection Criteria				
Cohort sample with (−5, +5) years	1.224***	4.74	0.017	14,132
UD-law states	0.748**	2.23	0.032	1,394
Firms exist before 1989, and no reincorporation	0.688**	2.70	0.011	10,959
Exclude Delaware	0.876***	2.80	0.028	4,847
Exclude Ninth Circuit	0.691**	2.27	0.018	13,386
MBCA	0.715**	2.23	0.030	2,182

TABLE A8

Heckman Selection Model: Alliance Performance

Table A8 shows the results of Heckman 2-step estimation on alliance participants' short-term announcement returns. Column 1 reports the estimation results for the first-stage selection equation using a probit model, where the dependent variable is 1 if the firm had alliances in a given year, and 0 otherwise. Column 2 reports the estimation results for the second-stage equation, where the dependent variable, CAR, is the 3-day cumulative abnormal returns of the alliance participants around the alliance-announcement date. CAR is estimated using the market model and the equal-weighted CRSP index return. All regressions control for the state, industry, and year fixed effects. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable	
	First Stage: Dummy Variable = 1 If the Firm Made an Alliance Deal in a Given Year	*Second Stage:* Alliance CAR
	1	2
RATE_SPREAD	0.034 (1.44)	
ECONOMIC_SHOCKS	−0.004 (−0.43)	
INDUSTRY_Q	0.265*** (10.12)	
INDUSTRY_RETURN	−0.182*** (−5.06)	
INDUSTRY_VOLATILITY	0.264 (0.13)	
UD_LAW	0.093* (1.66)	0.533* (1.72)
ln(ASSETS)	0.298*** (28.54)	−0.037 (−0.87)
BOOK_TO_MARKET	−0.033* (−1.68)	0.934*** (7.58)
R&D_TO_SALES	0.108*** (3.05)	1.276*** (11.68)
CASH_HOLDINGS	0.405*** (6.40)	0.526*** (3.03)
CAPITAL_EXPENDITURES	0.905*** (6.29)	0.066 (0.13)
SALES_GROWTH	0.099*** (4.21)	0.506*** (8.61)
RETURN_ON_EQUITY	−0.003 (−0.19)	−0.096 (−0.88)
LEVERAGE	−0.315*** (−6.27)	0.666* (1.96)
COMPOUND_RETURNS	0.003 (0.16)	−0.181*** (−3.59)
PRICE_TO_EARNINGS	0.000* (1.82)	0.001 (0.81)
TECHNOLOGY_TRANSFER		0.180** (2.12)
HORIZONTAL_ALLIANCE		−0.106** (−2.33)
ALLIANCE_INDUSTRY		0.023 (0.21)
HIGH_TECHNOLOGY		−0.120*** (−2.76)
INVERSE_MILLS_RATIO		0.638*** (3.12)
CONSTANT	−5.344*** (−6.44)	−10.115*** (−12.12)
State FE	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
No. of obs.	39,385	14,195
Adj. (pseudo) R^2	0.181	0.018

TABLE A9

Dominant Partners and Deal Attributes

Table A9 shows the impact of a universal demand (UD) law on the different alliance participants and risk attributes. Alliances are limited to deals with only 2 partners. The dominant partner is a public firm with the largest book value of assets among all partners in each alliance deal, whereas other partners are defined as junior partners. Panel A shows the results for the short- and long-term alliance performance for dominant and junior partners, respectively. Penal B shows the impact of UD laws on the short-term alliance performance for deals with different risk attributes. The proxies for deal-risk attributes include PRIVATE_PARTNER, CROSS_INDUSTRY, JUNIOR_HIGH_TECH, and GEOGRAPHIC_DISTANCE. All regressions control for the state, industry, and year fixed effects. Variable definitions are provided in Table A3 in the Appendix. Standard errors are clustered at the state level, and robust *t*-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Alliance Performance of Dominant and Junior Partner

	Dependent Variable					
	CAR		ROA_3		$BHAR_3$	
	Dominant	Junior	Dominant	Junior	Dominant	Junior
UD_LAW	0.796**	0.317	0.111***	0.031	0.366***	0.205
	(2.58)	(0.18)	(4.38)	(0.37)	(4.73)	(1.08)
TECHNOLOGY_TRANSFER	0.129	0.404*	0.039***	0.010	0.079**	−0.130**
	(1.67)	(2.02)	(2.82)	(0.86)	(2.46)	(−2.54)
HORIZONTAL_ALLIANCE	−0.146**	0.137	0.009*	−0.052**	−0.021	−0.151
	(−2.30)	(1.31)	(1.88)	(−2.24)	(−0.95)	(−1.14)
ALLIANCE_INDUSTRY	−0.091	0.239	0.003	0.005	−0.041	0.076
	(−0.85)	(0.63)	(0.50)	(0.67)	(−1.13)	(1.37)
HIGH_TECHNOLOGY	0.076	−0.666***	0.025*	0.009	0.138***	−0.059
	(1.22)	(−4.43)	(1.72)	(0.34)	(5.60)	(−1.21)
ln(ASSETS)	−0.091***	−0.340***	0.013*	0.040***	−0.009	0.006
	(−4.66)	(−10.40)	(1.78)	(3.98)	(−0.61)	(0.33)
BOOK_TO_MARKET	1.030***	0.267	−0.249***	−0.219***	0.061	−0.292
	(5.82)	(1.18)	(−13.43)	(−9.03)	(0.67)	(−1.59)
R&D_TO_SALES	0.683***	2.234***	−0.580***	−0.414***	−0.029	0.063
	(4.77)	(5.77)	(−32.36)	(−23.98)	(−0.34)	(1.14)
CASH_HOLDINGS	−0.045	−0.305	−0.012	0.004	0.069	−0.405*
	(−0.22)	(−0.44)	(−0.43)	(0.13)	(0.75)	(−1.81)
CAPITAL_EXPENDITURES	−0.111	−2.451	1.030***	0.540***	1.579***	2.686***
	(−0.20)	(−1.56)	(15.11)	(9.57)	(4.28)	(4.50)
SALES_GROWTH	0.305***	0.001	−0.048***	−0.021*	0.067	0.032**
	(3.62)	(0.01)	(−6.35)	(−1.77)	(1.48)	(2.09)
RETURN_ON_EQUITY	0.062	−0.399***	0.126***	0.138***	0.076	−0.154**
	(0.72)	(−3.51)	(3.67)	(5.35)	(1.62)	(−2.08)
LEVERAGE	0.079	2.468***	−0.234***	−0.170***	0.029	−0.023
	(0.24)	(4.97)	(−9.99)	(−6.78)	(0.16)	(−0.15)
COMPOUND_RETURNS	−0.143**	−0.365***	0.013	−0.012***	−0.040***	−0.132***
	(−2.05)	(−6.75)	(1.44)	(−3.86)	(−2.82)	(−3.19)
PRICE_TO_EARNINGS	0.002***	−0.000	0.000	0.000	−0.000	0.001**
	(3.07)	(−0.07)	(0.66)	(1.40)	(−0.66)	(2.05)
CONSTANT	−3.445***	−1.647	0.409***	0.729***	−0.779***	−0.604*
	(−4.13)	(−0.71)	(7.99)	(5.67)	(−3.90)	(−2.01)
Year, state, and industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	9,638	2,133	8,114	1,687	6,449	1,436
Adj. R^2	0.010	0.033	0.391	0.387	0.069	0.050

Panel B. Deal Risk

	Dependent Variable: CAR			
	PRIVATE_PARTNER	CROSS_INDUSTRY	JUNIOR_HIGH_TECH	GEOGRAPHIC_DISTANCE
PROXY × UD_LAW	1.930**	0.537	1.328*	0.001**
	(2.59)	(0.63)	(1.76)	(2.69)
UD_LAW	−0.410	0.440	0.828**	−1.599
	(−0.67)	(0.60)	(2.06)	(−1.17)
PROXY	−1.635	−1.919***	−2.520	0.006**
	(−1.29)	(−0.89)	(−0.60)	(2.40)
CONTROLS	Yes	Yes	Yes	Yes
Year, state, and industry FEs	Yes	Yes	Yes	Yes
No. of obs.	9,638	9,638	9,638	2,486
Adj. R^2	0.030	0.026	0.026	0.010

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