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# Reprint of: Third-party auditor liability risk and trade credit policies

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## ABSTRACT

We investigate the effect of Third-Party Auditor Liability (TPAL) risk on firms' trade credit policies. Exploiting the staggered state-level changes to TPAL in the US as a quasi-natural experiment, we find that firms in states with a higher risk of TPAL increase their use of trade credit. This relationship is more pronounced for firms with a more enhanced information environment, those with greater financial constraints, and those whose auditors are more exposed to litigation risk. Overall, our findings provide evidence of how TPAL affects firms' short-term financing needs.

## 1. Introduction

The risk of Third-Party Auditor Liability (TPAL) arises when auditors face legal action for negligence in their professional duties. As auditors play a vital role in ensuring the credibility of corporate financial statements, any increase in the risk of TPAL is likely to influence auditors' conduct, resulting in enhanced audit quality and, consequently, improved financial reporting for client firms (Anantharaman et al., 2016). Indeed Al-Hadi et al. (2022) find that heightened TPAL is associated with a reduction in financial restatements, implying an improvement in financial reporting quality. A growing literature examines the effect of the auditor legal environment on various firm outcomes such as capital structure dynamics (Boasiako et al., 2022a), access to private debt (Chy et al., 2021) and investment policies (Boasiako et al., 2022b). While these studies predominantly show that the state-level auditor legal environment has important implications for corporate policies that are mainly of long-term nature, empirically, there is limited evidence regarding the influence of auditor litigation risk on short-term corporate outcomes.

In this study, we fill this gap by employing a sample of US firms to investigate whether TPAL impacts firms' trade credit policies. We

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focus on trade credits because they represent the largest and predominant source of obtaining short-term financing for firms in the US (Barrot, 2016; Petersen & Rajan, 1997). Barrot (2016), for example, finds that accounts payables on the balance sheet of US non-financial companies were 3 times more than bank loans and 15 times more than commercial papers. A recent study by Garcia-Marin et al. (2019) reports that outstanding trade credits of non-financial US firms in 2019 amounted to approximately \$4.5 trillion, constituting 21% of US GDP. While trade credit offers advantages to the receiving company, it may expose providing firms to financial strain, particularly when dealing with customers exhibiting poor financial reporting practices.

We hypothesise that the resultant enhancement in audit and financial reporting quality due to increased TPAL should facilitate the mitigation of information risks that firms face with their suppliers, thereby allowing them to obtain more trade credit. Additionally, heightened TPAL may serve as a form of insurance for firms' suppliers, increasing the likelihood of recovering losses from the auditors of their customers who are subject to higher TPAL. Therefore, in the presence of increased TPAL, firms obtain more trade credit as suppliers are likely to be more inclined to assume the risks associated with providing increased trade credits.

To empirically test our hypotheses, we exploit variations in TPAL in US States as an exogenous shock. This approach allows us to isolate changes in TPAL that are independent of other factors that may also affect trade credits. Our assessment of TPAL across states relies on rulings in precedent-setting cases that contribute to an increase in TPAL. Three primary standards guide US state courts, operating under common law, in ruling on cases related to auditor liability. The first is the Privity standard which requires one to be a party to a contract to assert and enforce any rights. Due to the limited number of third parties capable of establishing such a relationship with auditors, this standard is considered highly restrictive. The second is the Restatement standard, which allows third-party users of financial statements, certified by auditors, to sue if they are deemed intended beneficiaries of the information. The third is the Foreseeability standard, which extends the opportunity to all third parties who suffer losses from using financial reports certified by auditors to sue for auditor negligence.

In our empirical setup, an increase in TPAL arises at the state-level when state courts shift from the application of a more restrictive standard to a more expansive one (eg. from Privity to Restatement or from Restatement to Foreseeability). During our sample period, twenty-two US States increase TPAL whilst two states decrease it. This provides us with a Difference-in-Differences (DiD) framework where we compare the trade credits of firms in states with TPAL shocks relative to firms in states with no changes to TPAL. Since courts do not necessarily seek to alter firms' financing decisions through their rulings, any changes in TPAL can be regarded as an exogenous shock, allowing us to examine the impact of TPAL on trade credits.

We find a positive and significant relationship between TPAL and firms' use of trade credits, implying that firms located in states with increases in TPAL obtain more trade credit compared to firms in states with no change to TPAL. Consistent with our main hypothesis, we confirm the financial reporting channel through which TPAL shocks impact trade credit. In our cross-sectional analyses, we investigate the impact of firms' information environment, financial constraints, and the litigation exposure of their auditors. Concerning the firms' information environment, we posit that a reduction in information asymmetry, facilitated by an improved information environment, leads to a decrease in the costs incurred by a firm's suppliers when obtaining information about the firm's creditworthiness. Regarding financial constraints, we hypothesise that in the presence of TPAL, which fosters improved financial reporting and reduced information asymmetry, financially constrained firms are more likely to secure trade credit from their suppliers. In terms of the litigation exposure of firms' auditors, our hypothesis suggests that auditors facing higher ex-ante litigation risk are more inclined to enhance their audit quality in an environment characterised by high TPAL, which subjects them to increased scrutiny. Consistent with our expectations, we find that the positive impact of TPAL on trade credit is more pronounced for firms with an enhanced information environment, those facing financial constraints, and firms whose auditors are more susceptible to litigation.

We carry out several robustness checks to validate our identification strategy. First, we implement a falsification test similar to that used by Cornaggia et al. (2015). This involves randomly assigning firms to the various states and subsequently randomizing the assignment of states across different years of state court rulings. This procedure preserves the actual distribution of years of the auditor legal liability shocks but disrupts the correct assignment of the states to respective years of TPAL shocks. Consequently, any unobservable shock occurring at approximately the same time as the TPAL shocks will remain within the testing framework potentially yielding statistically significant coefficients of the randomized TPAL variable. Conversely, if trade credits are not influenced by such unobservable shocks, our randomly assigned TPAL variable should yield statistically insignificant results. Our findings from this analysis indicate that factors other than TPAL do not drive our results. Secondly, we employ a dynamic model to ensure that increases in trade credits occur not before but only in the years of or after the change to TPAL. Thirdly, we adopt a neighbouring state research design similar to that of Nguyen and Qiu (2022) to rule out the possibility of our results being driven by local economic conditions. Fourthly, we exclude firms that change their state of location during our sample period and find consistent results with our baseline. Our findings also remain robust to the use of different estimation techniques, alternative measures of trade credit, controlling for the passage of confounding law, and the use of different windows around the TPAL shocks.

Our study contributes to a growing literature that examines the implications of the auditor legal environment for various corporate outcomes, particularly financing behavior (Chy et al., 2021; Boasiako et al., 2022a). For example, Chy et al. (2021) finds that an increase in the risk of auditor liability increases firms' access to private bank loans, underscoring the market consequences of auditor litigation risk. However, we differ from this strand of studies by examining trade credit, which emanates from relationships in the product market. Unlike bank loans which are typically longer-term and secured by collateral, trade credits are the predominant source of firms' unsecured short-term financing (Petersen & Rajan, 1997) and help to provide financing for firms that are unable to access the capital market (Biais & Gollier, 1997; Petersen & Rajan, 1997; Wu et al., 2014). Moreover, information asymmetry between banks and firms can impede the financing of firms' activities. Trade credits address this issue by incorporating the private information held by suppliers about their customers into the lending relationship. Furthermore, the information used by suppliers in monitoring and controlling repayment differ from those used by banks due to the distinct nature of the credit and the lower cost associated with

obtaining information from the product market (Biais & Gollier, 1997; Petersen & Rajan, 1997).

Furthermore, we contribute to the literature on trade credits by demonstrating how firms' use of trade credit change in response to exogenous shocks to their auditor legal environment. Previous studies exploring the determinants of trade credit policies have mainly focused on firm-level factors (Biais & Gollier, 1997; Burkart & Ellingsen, 2004; Cao et al., 2022; Khoo et al., 2023; Petersen & Rajan, 1997; Zhou & Li, 2023) or cross-country variations (El Ghouli & Zheng, 2016; Levine et al., 2018; Li et al., 2021). More recently, a few studies have delved into external factors—though not exclusively at the country level—that influence trade credits. For example, Wu et al. (2014) find that Chinese firms in regions with higher levels of social trust obtain more trade credits from their suppliers and also offer more trade credits to their customers. Chod et al. (2019) find that firms gain access to more trade credits as a result of increased competition amongst their suppliers whilst Gyimah et al. (2020) show that firms' use of trade credits is influenced by the trade credit policies of their peers. We complement this literature by providing evidence that the auditor legal environment of firms' state of location significantly affects their trade credit policies.

The rest of the paper proceeds as follows: In Section 2, we provide an overview of third-party auditor liability risk. We develop our hypotheses in Section 3 and present our research design in Section 4. We present our empirical results in Section 5. We carry out robustness checks in Section 6 and conclude in Section 7.

## 2. Overview of third-party auditor liability

Third-party auditor liability at the state level in the United States is governed by common law, where judgments rendered by state courts establish precedents for future decisions in similar cases (Anantharaman et al., 2016). The determination of TPAL generally revolves around three standards. The first standard is Privity, which requires evidence of a contractual relationship between auditors and third parties before auditors can be held liable for ordinary negligence. As such, it is considered a highly restrictive standard that shields auditors from liability as establishing a contractual relationship is often challenging for third parties. The second is the Restatement standard, which is arguably now the most popular among the three. Under this standard, auditors can be held liable for any losses suffered by third parties as a result of relying on information supplied by the auditor if they belonged to a group of people for whose use the information was provided by the auditor (Anantharaman et al., 2016). The third is the Foreseeability standard. This requires auditors to have a duty to all parties that they can reasonably foresee as relying on the information provided. Thus, the application of this standard expands TPAL to include parties who may not have been the direct beneficiaries of the information provided by the auditor, but are entitled to sue for losses if the auditor should have reasonably foreseen their reliance on the information.

The above suggests that the risk of auditors' liabilities to third parties increases with the application of a more expansive principle. For example, auditor liability risk is higher in states where courts apply the Foreseeability standard compared to states that apply the Restatement standard or Privity standard. This overview of auditor liability informs the construction of our TPAL variable, which we detail in Section 4.2. The jurisdictions where cases against auditors can be heard could be the firm's state of location, the of the audit head office or state of audit engagement office (Anantharaman et al., 2016; Chy et al., 2021). We are, however, constrained by the lack of data on audit engagement office or audit head office. Therefore, in the spirit of Anantharaman et al. (2016), we measure TPAL based on firms' state of location in our analyses.<sup>1</sup>

## 3. Prior literature and hypotheses

Legal actions against auditors due to negligence lead to significant financial and reputational consequences for auditors. In order to avoid these repercussions, auditors are more inclined to enhance their oversight of clients' financial reporting processes, ultimately improving the quality of financial reporting. Chy et al. (2021) argue that the risk of auditor litigation contributes to an enhancement in financial reporting quality.

Previous studies find a positive relationship between financial reporting quality and the ability to access trade credit (El Ghouli & Zheng, 2016; Li et al., 2021). Consequently, it can be argued that suppliers, dealing with a risky client base, possess strong motivations to demand high-quality financial reporting from their clients. For instance, Hope et al. (2017) posit that U.S. suppliers insist on high-quality financial reporting from their customers. In a related study, García-Teruel and Sánchez-Ballesta (2014) argue that suppliers prefer customers with high reporting quality and low information risk, making them more likely to extend trade credit to such customers.

The relationship between firms and their suppliers can be affected by the level of information asymmetry. Adverse selection arises when clients lack prior knowledge of the quality of goods they intend to purchase. In such instances, sellers extend trade credit to ensure the quality of the products. However, the extension of trade credit increases the risk of buyer default, leading to the moral hazard phenomenon. In situations where increased auditor litigation risk enhances financial reporting quality, superior financial statements become valuable tools for suppliers in evaluating a firm's future cash flows and assessing its risk. This improved financial reporting quality helps mitigate information asymmetries and moral hazard effects on trade credit.

Bowen et al. (1995) argue that suppliers use accounting information to establish trade conditions, including factors such as pricing, payment terms, and credit limits. Similarly, Hui et al. (2012) argue that suppliers depend on accounting information to assess

<sup>1</sup> If firms change their state of location to a state with a higher auditor liability regime, we account for this as an increase in TPAL. Conversely, if firms move to a state with lower state-level auditor liability regime, we account for it as a decrease in TPAL.

customers' ability to fulfill short-term trading obligations. Ng et al. (1999) also show that buyer financial information reduces suppliers' concerns about non-payment. Enhanced financial reporting quality enables suppliers to identify potential defaulters and make informed decisions about extending credit. Moreover, direct interactions between firms and their suppliers provide an advantage in overcoming information asymmetry, thereby reducing the risk of future customer defaults. By visiting customer sites, reviewing order frequency and quantity, and observing payment behavior, suppliers can gather information about customers' financial health (Petersen & Rajan, 1997). Additionally, in the event of customer default, suppliers can mitigate risk by halting goods delivery or recovering supplied goods.

Beyond these risk-mitigating mechanisms, a higher level of auditor litigation risk serves as insurance for suppliers by offering options for recovering losses in case of an audit failure. Prior research suggests that financial statement users perceive auditors as providing a form of insurance (Baber et al., 1995; Dye, 1993). When suppliers rely on inadequately audited financial statements from a bankrupt client, a shift from a low to a high legal liability regime simplifies the process for suppliers to recoup financial losses. Specifically, suppliers can directly pursue legal action against auditors for losses resulting from audit failures. This insurance provides suppliers with additional avenues for recovering receivables in the event of an audit failure.

In summary, the expected improved financial reporting quality and reduced information asymmetry due to greater auditor litigation risk could provide suppliers with more useful financial information which should better aid them in screening customers' ability to generate cash flows to finance their trade credits. Moreover, suppliers can mitigate future default risk of customers by suing auditors for losses that result from audit failures. Hence, we test the hypothesis that:

**Hypothesis 1.** Firms in states with higher risk of TPAL use more trade credit.

Asymmetric information between suppliers and firms has the potential to impede the financing of trade credit. We posit that an information-rich environment, characterised by more precise and valuable information, can mitigate, at least partially, market frictions stemming from information asymmetry. Previous studies suggest that an enhanced information environment can reduce the external finance costs by addressing adverse selection issues associated with information asymmetry (Francis, LaFond, et al., 2005; Healy & Palepu, 2001; Verrecchia, 2001). In a high-information setting, the expected reduction in information asymmetry is likely to decrease the costs for suppliers in obtaining creditworthiness information. Consequently, the acquired information could provide suppliers with more valuable financial insights, thereby improving their ability to evaluate customers' capacity to generate cash flows for trade credit financing. Furthermore, in a high-information environment, the anticipated enhancements in financial reporting quality resulting from increased auditor litigation are more likely to be noticeable for firms. This, in turn, increases the likelihood of suppliers evaluating the firms' ability to repay their trade credit. Hence, our second hypothesis is as follows:

**Hypothesis 2.** The effect of TPAL on trade credit is greater for firms with an enhanced information environment.

The quantity of trade credit extended by sellers to buyers tends to increase with the creditworthiness of the buyer (Frank & Maksimovic, 1980). Osinubi (2020) demonstrates that when a company faces financial constraints, there is a general reduction in the credit it secures from both financial markets and trade customers. This decline may stem from apprehensions regarding the creditworthiness of the financially constrained firm. Despite the challenging financial conditions, extending trade credit proves beneficial for suppliers in establishing enduring relationships with customers. Such relationships not only ensure sustained sales to the buyer but also diminish the costs associated with information gathering and evaluation (Osinubi, 1980). Under TPAL regimes, the improved financial reporting allows suppliers to make well-informed decisions and extend credit more confidently. Notably, suppliers have the option to legally hold auditors accountable for losses resulting from audit failures, and this insurance becomes particularly vital in dealings with financially constrained firms. It serves as an additional avenue for suppliers to recover receivables in the event of an audit failure concerning such financially constrained entities. Based on this, we hypothesise that:

**Hypothesis 3.** The effect of TPAL on trade credit is stronger for firms that are more financially constrained.

Audit firms face varying levels of exposure to litigation risk. Prior literature argues that bigger audit firms are perceived to be at a higher risk of facing litigation, due to the belief that they possess greater financial resources (Anantharaman et al., 2016; Chy & Hope, 2021). Given the potentially higher stakes in terms of both reputation and financial costs for larger audit firms, an increased risk associated with TPAL is likely to incentivize these firms to deliver audits of higher quality, aligning with their esteemed brand name and reputation (Simunic & Stein, 1996). Therefore, we hypothesise that:

**Hypothesis 4.** The effect of TPAL on trade credit is stronger for firms whose auditors are more exposed to litigation risk.

## 4. Research design

### 4.1. Data and sample

Our sample consists of US publicly listed firms drawn from Compustat and spanning the period 1960 to 2005. The first case of TPAL in our sample occurs in 1969 and the last in 1995.<sup>2</sup> Our sample period therefore contains 9 years of data before the first case of TPAL

<sup>2</sup> We rely on Chy and Hope (2021) who suggest that the first shock to state auditor liability occurred in 1969.

and 10 years of data after the last case.<sup>3</sup> We exclude utility (SIC code 4900–4999) and financial (SIC code 6000–6999) firms. We also exclude firms with missing observations for key variables. This process yields a total of 82,773 firm-year observations. To mitigate the effect of outliers, we winsorise all continuous variables at the top and bottom 1%.

## 4.2. Variables

### 4.2.1. TPAL measure

We construct our TPAL measure using rulings by state courts in precedent-setting cases that address auditor legal liability. Relying on [Chy and Hope \(2021\)](#) and [Chy et al. \(2021\)](#), we create a list of these precedent-setting cases. Using the dates when rulings on these cases were delivered, we construct an indicator variable for whether state courts expand auditor legal liability to third parties in any given year. In twenty two states, courts expand auditor legal liability to third parties. Thus, we set TPAL to be equal to 0 in all years before the date of the precedent-setting case, and equal to 1 for the year of the case and afterwards. Two states decrease auditor legal liability during our sample period. For one of these two states, the decrease is mainly a reversal of a previous increase in auditor legal liability. Thus, the value of TPAL reverts to 0 for when a subsequent court decision reverses the state's position regarding auditor legal liability or takes the value of 0 when there is a decrease in TPAL. TPAL remains 0 for firms in the states that do not change auditors' litigation risk during the sample period. This implies that our TPAL dummy incorporates both positive and negative shocks to the auditor legal environment. In [Appendix A](#), we provide a list of the twenty two precedent-setting cases in which state courts expand auditor legal liability and the two cases in which state courts decrease auditor legal liability.

### 4.2.2. Trade credit measure

We construct our trade credit measure, AP/AT, using the ratio of Accounts Payable to Total Assets, ([Fisman & Love, 2003](#); [Giannetti et al., 2011](#); [Gyimah et al., 2020](#); [Lin & Chou, 2015](#); [Liu et al., 2016](#); [Petersen & Rajan, 1997](#); [Wu et al., 2014](#)). In robustness tests, we check the sensitivity of our results to alternative ways of constructing our trade credit measure.

### 4.2.3. Control variables

Consistent with the literature, ([Gyimah et al., 2020](#); [Kong et al., 2020](#); [Liu et al., 2016](#)), we control for potential firm-level determinants of trade credit. Specifically we control for firm size (SIZE), firm age (AGE), growth in sales (SALES GROWTH), cash holdings (CASH), profitability (PROFITABILITY), asset tangibility (TANGIBILITY) and asset turnover (ASSET TURNOVER). These variables are defined in [Appendix B](#).

## 4.3. Model specification

To test the impact of TPAL on trade credit, we estimate the following Difference-in-Differences model:

$$TC_{i,s,t} = \alpha + \beta TPAL_{s,t} + \gamma X_{i,s,t} + \theta_s + \rho_j + \delta_t + \epsilon_{i,s,t} \quad (1)$$

Where  $TC_{i,s,t}$  is the trade credit of firm  $i$  in state  $s$  in year  $t$ , which we compute as the ratio of Accounts Payable to Total Assets (AP/AT). TPAL is an indicator variable that moves from 0 to 1 for firms when (and after) their states of location increase third-party auditor legal liability. It changes from 1 to 0 when (and after) states reduce auditor legal liability to third parties and takes the value of 0 for firms in states that do not change auditors' legal liability during the sample period.  $X_{i,s,t}$  is a vector of control variables which we define in [Appendix B](#).  $\theta_s$ ,  $\rho_j$ ,  $\delta_t$  denote state, industry and year fixed effects respectively.

## 4.4. Summary statistics

Columns 1–4 of [Table 1](#) present summary statistics of variables for the full sample. The mean AP/AT value suggests that firms' accounts payables represent about 9.80% of total assets. Both the mean and standard deviation of AP/AT are similar to those of [Gyimah et al. \(2020\)](#), who also use a sample of US firms, albeit for a different period. Summary statistics of the other variables are largely consistent with those reported in prior studies ([Anantharaman et al., 2016](#); [Gyimah et al., 2020](#); [Chy et al., 2021](#)). For instance, the mean value of SIZE and AGE are 4.9 and 2.6 respectively, compared to 4.3 and 2.3 respectively in [Chy et al. \(2021\)](#). The mean value of CASH (0.12) and PROFITABILITY (0.15) are comparable to those reported in [Gyimah et al. \(2020\)](#), that is, 0.15 and 0.11, respectively.

In columns 5–7, we present disaggregated summary statistics to enhance the granularity of our sample description. Column 5 reports the mean values of all variables for firms within the high TPAL regime while Column 6 shows those within the low TPAL regime. In Column 7, we show the differences in means between both sets of firms. The data shows that treatment firms in high TPAL regimes have higher trade credits compared with those in low TPAL regimes, with this difference being statistically significant. We consider this to be indicative of a positive effect of high TPAL on trade credit.

<sup>3</sup> The results hold for different windows around the change to TPAL, which we present as a robustness test.

**Table 1**

## Summary statistics

This table provides summary statistics for the variables used in our analyses. The sample period is from 1960 to 2005. All variables are defined in Appendix A. \*\*\*, \*\* and \* denote statistical significance at the 1% 5% and 10% levels respectively.

| Variables      | Full Sample |       |       |        | High TPAL | Low TPAL | Difference    |
|----------------|-------------|-------|-------|--------|-----------|----------|---------------|
|                | N           | Mean  | SD    | Median | Mean      | Mean     | High-Low TPAL |
|                | (1)         | (2)   | (3)   | (4)    | (5)       | (6)      | (7)           |
| AP/AT          | 82,773      | 0.098 | 0.078 | 0.078  | 0.100     | 0.097    | 0.003***      |
| SIZE           | 82,773      | 4.908 | 1.903 | 4.744  | 5.002     | 4.869    | 0.132***      |
| AGE            | 82,773      | 2.644 | 0.598 | 2.639  | 2.696     | 2.623    | 0.074***      |
| SALES GROWTH   | 82,773      | 0.246 | 2.731 | 0.112  | 0.265     | 0.238    | 0.027         |
| CASH           | 82,773      | 0.120 | 0.144 | 0.064  | 0.113     | 0.122    | −0.009***     |
| PROFITABILITY  | 82,773      | 0.152 | 0.102 | 0.150  | 0.154     | 0.151    | 0.003***      |
| TANGIBILITY    | 82,773      | 0.939 | 0.115 | 0.995  | 0.930     | 0.943    | −0.013***     |
| ASSET TURNOVER | 82,773      | 1.466 | 0.835 | 1.322  | 1.490     | 1.455    | 0.035***      |

## 5. Empirical results

### 5.1. Baseline results

The univariate results in Table 1 show that treatment firms increase their use of trade credit in the high TPAL regime compared to those in the low TPAL regime. This is predictive of a positive relationship between third-party auditor litigation risk and short-term financing. We continue our analysis with a multivariate approach.

Table 2 shows estimation results from our baseline regressions. In Column 1, we present a parsimonious model with only TPAL, state and year fixed effects. In Column 2 we add our time-varying controls, while in Column 3, we include industry fixed effects. Across all three columns, the coefficients associated with TPAL are positive and statistically significant, implying that an increase in third-party auditor litigation risk has a positive and significant impact on firms' use of trade credit. Specifically, the coefficients associated with TPAL in Columns (1), (2) and (3) are 0.006, 0.005, and 0.005, respectively. We use the results in Column 3 to gauge the economic importance of the relationship between Auditor litigation risk and trade credit. This coefficient translates to a 5.1 (0.005/0.098) percentage point increase in trade credit (AP/AT) relative to the sample mean. The coefficient estimates of the control variables are generally consistent with previous studies. Overall, the baseline regression results support our main hypothesis that improved

**Table 2**

## TPAL and trade credits

This table reports regressions results of the impact of Third Party Auditor Liability (TPAL) on trade credit. The dependent variable is Accounts Payable scaled by Total Assets. TPAL is an indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties; it moves from one to zero when (and after) states reduce auditor legal liability to third parties, and remains zero for the states that do not change auditors' litigation risk during the sample period. All continuous variables are winsorized at the 1% level. Standard errors, adjusted for firm-level clustering are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% respectively.

|                    | Dependent variable: AP/AT |                      |                      |
|--------------------|---------------------------|----------------------|----------------------|
|                    | (1)                       | (2)                  | (3)                  |
| TPAL               | 0.008***<br>(0.002)       | 0.005***<br>(0.002)  | 0.005***<br>(0.002)  |
| SIZE               |                           | 0.002***<br>(0.000)  | 0.001***<br>(0.000)  |
| AGE                |                           | −0.007***<br>(0.001) | −0.006***<br>(0.001) |
| SALES GROWTH       |                           | 0.000*<br>(0.000)    | 0.000*<br>(0.000)    |
| CASH               |                           | −0.063***<br>(0.005) | −0.058***<br>(0.005) |
| PROFITABILITY      |                           | −0.143***<br>(0.006) | −0.140***<br>(0.006) |
| TANGIBILITY        |                           | 0.056***<br>(0.005)  | 0.046***<br>(0.005)  |
| ASSET TURNOVER     |                           | 0.050***<br>(0.001)  | 0.048***<br>(0.002)  |
| STATE FE           | Yes                       | Yes                  | Yes                  |
| YEAR FE            | Yes                       | Yes                  | Yes                  |
| INDUSTRY FE        | No                        | No                   | Yes                  |
| N                  | 82,773                    | 82,773               | 82,773               |
| Adj R <sup>2</sup> | 0.019                     | 0.338                | 0.348                |

financial reporting quality, emanating from increased TPAL at the state level, enables firms to obtain more trade credits from their suppliers.

### 5.2. Mechanism

We empirically test the mechanism through which TPAL affects trade credit by employing a path analysis (Wright, 1934). This allows us to model TPAL as having both a direct effect on trade credit and an indirect effect through a mediating variable. As already mentioned, studies like Al-Hadi et al. (2022) find that TPAL improves financial reporting quality. Similarly, Elemes and Filip (2022) also show that improved financial reporting quality of firms leads to increased use of trade credits. This mainly stems from the fact that improved financial reporting quality allows outsiders such as suppliers to more easily assess and analyse risk. Thus, we use financial reporting quality as our mediating variable in the path analysis. To measure financial reporting quality, we focus on firms' accruals earnings management activities by relying on proxies that are well established in the literature, i.e., the Jones Model (Jones, 1991) and the Modified Jones Model (Dechow et al., 1995). We estimate the Jones Model (JM) by computing the absolute value of the residuals from regressing total accruals on change in revenue and value of property, plant, and equipment, with all variables scaled by total assets. Accrual earnings management from the Modified Jones Model (MJM) is computed by estimating the absolute value of the residuals from regressing total accruals on the difference between change in revenue and change in account receivables, and value of property, plant, and equipment, with all variables scaled by total assets. In both cases, higher values of discretionary accruals indicate lower financial reporting quality.

To conduct our path analysis, we follow Landsman et al. (2012) and Pevzner et al. (2015) and estimate a structural equation model to capture both the direct effect of TPAL on trade credit and the indirect effect of TPAL on trade credit through financial reporting quality. This entails a regression of trade credit on TPAL and financial reporting quality as well as regressions of financial reporting quality on TPAL. We maintain the same control variables as most of them are also used as controls in previous studies (e.g. Le et al., 2021). Table 3 presents the results from the analysis. In column 1, where we measure financial reporting quality using the Jones Model, we observe that TPAL has a significant indirect effect on trade credit. The coefficients of TPAL on financial reporting quality are negative and statistically significant, implying that TPAL leads to a reduction in discretionary accruals. The coefficients of financial reporting quality are also negative and statistically significant implying that a reduction in discretionary accruals (improvement in financial reporting quality) leads to more use of trade credit. Both coefficients give rise to an indirect co-efficient of 0.0002 which is significant at the 1% level. We also observe that TPAL has a direct effect on trade credit that is positive and significant at the 1% level with a co-efficient of 0.0034. The results follow a similar pattern when we measure financial reporting quality using the Modified Jones Model. Overall, the results from Table 3 show that TPAL does not only affect trade credit through its effect on improved financial reporting quality, but it also affects it directly.

### 5.3. Cross-sectional analyses

In this section, we conduct cross-sectional analyses to enhance our understanding of how TPAL influences trade credit. Firstly, we consider the role of firms' information environment. Asymmetric information between suppliers and firms can hinder the financing of trade credit. Previous research indicates that an improved information environment can decrease the cost of external finance by addressing adverse selection issues associated with information asymmetry (Francis, Khurana, & Pereira, 2005; Healy & Palepu, 2001; Verrecchia, 2001). In a high information environment, the reduced information asymmetry is anticipated to lower the cost for suppliers to obtain information about creditworthiness. Consequently, the information acquired could offer suppliers more valuable financial insights, enhancing their ability to assess customers' capacity to generate cash flows for trade credit financing. Additionally, if firms operate in a high information environment, the anticipated improvements in financial reporting quality due to increased auditor litigation is more likely to be evident. This, in turn, makes suppliers more likely to evaluate the ability of firms to repay their trade credit. Hence, we expect the impact on TPAL on trade credit to be more pronounced for firms operating in enhanced information environments. Our proxy for firms' information environment is based on analyst coverage as prior research shows that information asymmetry problems can be mitigated by analyst coverage (Bowen et al., 2008; Chan & Chan, 2014). We create an indicator variable, HIGH ANALYST COVERAGE, which takes the value of 1 if the number of analysts following a company is greater than its Fama and French industry year median. We then interact this with our TPAL measure. In Column 1 of Table (4) we observe that the effect on TPAL on trade credit is more pronounced in for firms operating in high information environments.

Next, we examine the role of financial constraints. Frank and Maksimovic (1980) posit that trade credits is positively correlated with the creditworthiness of buyers. Osinubi (2020) show that when a company encounters financial constraints, there is a general decline in the credit it obtains from trade suppliers and financial markets, potentially stemming from concerns about the creditworthiness of the financially constrained firm. Despite the financial constraints conditions, extending trade credit helps suppliers to develop long-lasting relations with customers. These relations not only ensure ongoing sales for the buyer but also lower the expenses associated with gathering and assessing information (Osinubi, 1980). With the improved financial reporting under TPAL regimes, suppliers can make informed decisions and offer credit. Considering that suppliers have the option to legally pursue auditors for losses stemming from audit failures, this insurance becomes particularly crucial when dealing with financially constrained firms. It serves as an additional recourse for suppliers to recover receivables in the event of an audit failure for such financially constrained firms. We measure financial constraints using the KZ Index of Kaplan and Zingales (1997). We create an indicator variable, HIGH KZ INDEX, which takes the value of 1 if a firm's KZ index is above its Fama and French industry year median value, and interact this with our TPAL measure. The results from this analysis are presented in Column 2 of Table 4. We observe that the effect of TPAL on trade credit is more

**Table 3****Mechanisms**

This table reports results from the analysis that explores the channels by which TPAL may lead to an increase in trade credit. TPAL is an indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties; it moves from one to zero when (and after) states reduce auditor legal liability to third parties and remains zero for the states that do not change auditors' litigation risk during the sample period. FRQ stands for Financial Reporting Quality, measured as the absolute value of discretionary accruals estimated from either the Jones Model (JM) or the Modified Jones Model (MJM). All continuous variables are winsorized at the 1% level. Standard errors, adjusted for firm-level clustering are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% respectively.

|                         | Path = FRQ<br>JM<br>(1) | Path = FRQ<br>MJM<br>(2) |
|-------------------------|-------------------------|--------------------------|
| <b>DIRECT PATH</b>      |                         |                          |
| P[TPAL, AP/AT]          | 0.0034***<br>(0.0007)   | 0.0033***<br>(0.0007)    |
| <b>MEDIATED PATH</b>    |                         |                          |
| A. P[TPAL, PATH]        | -0.0022***<br>(0.0008)  | -0.0023***<br>(0.0009)   |
| B. P[PATH, AP/AT]       | -0.1095***<br>(0.0031)  | -0.1139***<br>(0.0003)   |
| INDIRECT EFFECT (A X B) | 0.0002***<br>(0.0000)   | 0.0003***<br>(0.0001)    |
| STATE FE                | Yes                     | Yes                      |
| YEAR FE                 | Yes                     | Yes                      |
| INDUSTRY FE             | Yes                     | Yes                      |
| N                       | 71,583                  | 71,583                   |
| Overall goodness of fit | 0.4149                  | 0.4172                   |

pronounced for financially constrained firms.

Finally, we explore the effect of firms' auditors' exposure to litigation risk. Larger audit firms face a greater risk of litigation due to the perception that they possess more financial resources [Anantharaman et al. \(2016\)](#); [Chy and Hope \(2021\)](#). Since larger audit firms potentially have more to lose in terms of reputation and financial cost, enhanced TPAL risk can be expected to provide such firms a greater incentive to provide higher quality audits consistent with their brand name and reputation ([Simunic & Stein, 1996](#)). We therefore hypothesise that the effect of TPAL on trade credit would be greater for firms whose auditors are more exposed to litigation risk. Following [Chy and Hope \(2021\)](#), we measure auditors' exposure to litigation risk using an indicator variable BIG N. We set this to 1 if a firm is audited by one of the big audit firms and 0 for if audited by other firms.<sup>4</sup> We interact BIG N with TPAL and report the results in Column 3 of [Table 4](#). We find that the effect of TPAL on trade credit is more pronounced for firms whose auditors are more prone to litigation risk.

#### 5.4. Separate positive and negative shocks

As mentioned previously, our construction of TPAL combines both positive and negative shocks to auditor liability. This is because twenty-two states expand auditor liability while two states decreased it during our sample period. In this analysis, we disentangle the effects of positive and negative shocks. In the spirit of [Chy et al. \(2021\)](#), we create two variables, POSITIVE TPAL SHOCK and NEGATIVE TPAL SHOCK to capture positive and negative shocks, respectively.

For POSITIVE TPAL SHOCK, the treatment group comprises firms located in states that increase auditor liability whilst the control group is made up of firms that do not change auditor liability. We then exclude firms in the two states that reduce auditor liability (California and New Jersey). Hence, POSITIVE TPAL SHOCK is set to 1 for firms in states that increase auditor liability and 0 for firms in states that do not change auditor liability. To create NEGATIVE TPAL SHOCK, we drop firms located in the twenty-two states that expand auditor liability. Thus, our treatment group includes firms located in California and New Jersey whilst the control group consists of firms in states that do not change auditor liability. NEGATIVE TPAL SHOCK is set to 1 for firms in California (from 1992) and

<sup>4</sup> The list of these firms, as identified by [Chy and Hope \(2021\)](#), include Arthur Andersen, Arthur Young and Co., Coopers and Lybrand, Ernst and Whinney, Deloitte Haskins and Sells, Peat Marwick Mitchell/KPMG, Price Waterhouse and Touche Ross. It also includes their subsequent mergers.

**Table 4**

Cross-sectional analyses

This table reports results from the cross-sectional analyses. The dependent variable is AP/AT which is Accounts Payable scaled by Total Assets. TPAL is an indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties; it moves from one to zero when (and after) states reduce auditor legal liability to third parties and remains zero for the states that do not change auditors' litigation risk during the sample period. All continuous variables are winsorized at the 1% level. Standard errors, adjusted for firm-level clustering are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% respectively.

|                              | Dependent variable: AP/AT |                      |                     |
|------------------------------|---------------------------|----------------------|---------------------|
|                              | Information               | Financial            | Litigation          |
|                              | Environment               | Constraints          | Exposure            |
|                              | (1)                       | (2)                  | (3)                 |
| TPAL x HIGH ANALYST COVERAGE | 0.003**<br>(0.001)        |                      |                     |
| TPAL x HIGH KZ INDEX         |                           | 0.002*<br>(0.001)    |                     |
| TPAL x BIG N                 |                           |                      | 0.008***<br>(0.002) |
| TPAL                         | 0.002<br>(0.001)          | −0.004<br>(0.001)    | 0.003*<br>(0.002)   |
| HIGH ANALYST COVERAGE        | 0.004***<br>(0.001)       |                      |                     |
| HIGH KZ INDEX                |                           | −0.002***<br>(0.001) |                     |
| BIG N                        |                           |                      | 0.011***<br>(0.001) |
| CONTROLS                     | Yes                       | Yes                  | Yes                 |
| STATE FE                     | Yes                       | Yes                  | Yes                 |
| YEAR FE                      | Yes                       | Yes                  | Yes                 |
| INDUSTRY FE                  | Yes                       | Yes                  | Yes                 |
| N                            | 71,068                    | 82,773               | 75,300              |
| Adj R <sup>2</sup>           | 0.346                     | 0.349                | 0.348               |

New Jersey (from 1995) and 0, otherwise. For our analysis of negative shocks, we use a sample period from 1982 (ten years before the shock in California) to 2005 (ten years after the shock in New Jersey).<sup>5</sup>

Column 1 of Table 5 shows regression results for positive shocks and column 2 shows those for negative shocks. The coefficient estimate of POSITIVE TPAL SHOCK is positive and statistically significant, implying that increases in TPAL facilitate firms' access to trade credits. The coefficient of NEGATIVE TPAL SHOCK is negative but not statistically significant, suggesting that a decrease in TPAL does not reduce trade credits. However, we provide a caveat for this. For the state of New Jersey, the reduction in TPAL in 1995 represents a reversal of a previous increase in TPAL that occurred in 1983. Hence, the negative shock to TPAL occurs as a change for the first time only in one state, i.e. California. It is therefore possible that this limited number of states with negative TPAL shocks may be influencing the significance of our results. Thus, we do not completely rule out the fact that the effect of trade credit is symmetric. An increase in auditor litigation risk facilitates treated firms' access to trade credit, while a decrease in TPAL potentially has the opposite effect.

## 6. Robustness checks

### 6.1. Validating our identification strategy

Our first set of robustness tests aims to address four potential concerns about our identification strategy. Firstly, we perform a placebo test to ensure that our documented effect on trade credit is indeed attributable to the TPAL shocks in the affected states. Secondly, we confirm the parallel trends assumption by checking for the dynamic effects of TPAL on trade credit. Thirdly, we employ a neighbouring state research design to rule out the potential effect of unobserved local economic conditions. Finally, we exclude firms that change their state of location. Since these four analyses relate to a common theme, we present the results in one Table, i.e. Table 6. For brevity, we do not report the coefficients of the firm-level control variables.

#### 6.1.1. Placebo test

It is possible that our baseline results in Table 2 are driven by omitted variables that also coincide with changes to third-party auditor liability. We do not consider this likely because the rulings on auditor legal liability occur at different points in time leading to multiple shocks. Nonetheless, we address this concern more directly by employing a falsification test quite similar to that used in

<sup>5</sup> We obtain similar results using different number of years before the shock in California and after the shock in New Jersey.

**Table 5**

Separate positive and negative shocks

This table reports regressions results of the separate impact of positive and negative shocks to (TPAL). The dependent variable is Accounts Payable scaled by Total Assets. TPAL is an indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties; it moves from one to zero when (and after) states reduce auditor legal liability to third parties, and remains zero for the states that do not change auditors' litigation risk during the sample period. All continuous variables are winsorized at the 1% level. Standard errors, adjusted for firm-level clustering are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% respectively.

|                     | Dependent variable: AP/AT |                      |
|---------------------|---------------------------|----------------------|
|                     | (1)                       | (2)                  |
| POSITIVE TPAL SHOCK | 0.006***<br>(0.002)       |                      |
| NEGATIVE TPAL SHOCK |                           | −0.002<br>(0.003)    |
| SIZE                | 0.001***<br>(0.000)       | 0.002***<br>(0.001)  |
| AGE                 | −0.006***<br>(0.001)      | −0.004***<br>(0.002) |
| SALES GROWTH        | 0.000*<br>(0.000)         | 0.000<br>(0.000)     |
| CASH                | −0.053***<br>(0.006)      | −0.057***<br>(0.004) |
| PROFITABILITY       | −0.146***<br>(0.007)      | −0.133***<br>(0.007) |
| TANGIBILITY         | 0.042***<br>(0.005)       | 0.047***<br>(0.006)  |
| ASSET TURNOVER      | 0.048***<br>(0.002)       | 0.052***<br>(0.002)  |
| STATE FE            | Yes                       | Yes                  |
| YEAR FE             | Yes                       | Yes                  |
| INDUSTRY FE         | Yes                       | Yes                  |
| N                   | 68,215                    | 37,207               |
| Adj R <sup>2</sup>  | 0.341                     | 0.344                |

Cornaggia et al. (2015). Firstly, for each year, we randomly assign firms to the various states. We then randomly assign the states to the distribution of years of the various precedent-setting state court rulings. This preserves the actual distribution of the years of the TPAL shocks but changes the correct assignment of the states to the actual shock years. Hence, any unobservable shock that occurs at approximately the same time as the TPAL shocks would remain in the baseline testing framework and, hence, drive the trade credit results. On the other hand, if no such unobservable shocks exist, the incorrect assignments of the firms and states to the third-party auditor liability shock years should lead to statistically insignificant coefficient estimates of the TPAL measure. We present the results for this analysis in Panel A of Table 6. As can be seen from the table, the TPAL co-efficient are statistically insignificant after the random assignment, implying that the relationship between TPAL and trade credit is indeed attributable to the actual shocks to TPAL.

### 6.1.2. Dynamic effects

We next test the parallel trends assumption of our DiD regression by employing a dynamic model. Since we attribute changes in trade credit to TPAL, we should expect no significant differences in the level of trade credits between treatment firms and control firms in the periods prior to the TPAL shocks. Following He (2018) and Nguyen et al. (2020), we construct several variables that capture various time periods before and after the TPAL shocks. Specifically, we create  $TPAL^{-2}$ ,  $TPAL^{-1}$ ,  $TPAL^0$ ,  $TPAL^{+1}$ , and  $TPAL^{+2}$ , which take the value of one during two-year prior to, one-year prior to, current year, one-year post to, and two-year after the increase in auditor litigation risk in the state, respectively, and zero otherwise. Panel B of Table 6 reports the results from our analysis to confirm the parallel trends assumption. We find that the coefficients of  $TPAL^{-2}$  and  $TPAL^{-1}$  are not statistically significant. This implies that there is no effect of TPAL on trade credits before the shocks to TPAL. Coefficient estimates of  $TPAL^{+2}$  are positive and statistically significant. These results suggest that the increase in firm trade credit is related to auditor litigation risk rather than due to time trends.

### 6.1.3. Neighbouring states

It is also possible that unobserved economic local conditions that are correlated with TPAL and trade credit may be driving our results. To rule out this concern, we follow Nguyen and Qiu (2022) and implement a neighbouring state research design by selecting control firms from only states that are contiguous to the treatment states. The rationale for this analysis is that both treatment firms and control firms in contiguous states are likely to be affected by similar local conditions (Nguyen & Qiu, 2022). If this is the case, our baseline results should weaken and render our identification problematic. On the other hand, if our results are not driven by any unobserved local economic conditions, we should continue to find consistent results with our baseline model. We reconstruct our sample such that it includes firms in the TPAL states and only firms located in the non-TPAL states that are contiguous to at least one

**Table 6**

## Validating identification strategy

This table reports regressions results of tests conducted to validate our identification strategy. The dependent variable is AP/ATAccounts Payable scaled by Total Assets. TPALis an indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties; it moves from one to zero when (and after) states reduce auditor legal liability to third parties, and remains zero for the states that do not change auditors' litigation risk during the sample period. All continuous variables are winsorized at the 1% level. Standard errors, adjusted for firm-level clustering are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% respectively.

| Panel A: Placebo test                                  | Dependent variable: AP/AT |                     |                     |
|--------------------------------------------------------|---------------------------|---------------------|---------------------|
|                                                        | (1)                       | (2)                 | (3)                 |
| TPAL(RANDOM)                                           | −0.000<br>(0.001)         | −0.001<br>(0.001)   | −0.001<br>(0.001)   |
| CONTROLS                                               | No                        | Yes                 | Yes                 |
| STATE FE                                               | Yes                       | Yes                 | Yes                 |
| YEAR FE                                                | Yes                       | Yes                 | Yes                 |
| INDUSTRY FE                                            | No                        | No                  | Yes                 |
| N                                                      | 82,773                    | 82,773              | 82,773              |
| Adj $R^2$                                              | 0.018                     | 0.337               | 0.348               |
| Panel B: Dynamic effects                               |                           |                     |                     |
| TPAL <sup>−2</sup>                                     | 0.005<br>(0.004)          | −0.000<br>(0.003)   | −0.001<br>(0.003)   |
| TPAL <sup>−1</sup>                                     | 0.005<br>(0.004)          | 0.000<br>(0.003)    | −0.000<br>(0.003)   |
| TPAL <sup>0</sup>                                      | 0.008**<br>(0.004)        | 0.005*<br>(0.003)   | 0.004<br>(0.003)    |
| TPAL <sup>+1</sup>                                     | 0.009**<br>(0.004)        | 0.005*<br>(0.003)   | 0.005<br>(0.003)    |
| TPAL <sup>2+</sup>                                     | 0.012***<br>(0.003)       | 0.006**<br>(0.003)  | 0.005*<br>(0.003)   |
| CONTROLS                                               | No                        | Yes                 | Yes                 |
| STATE FE                                               | Yes                       | Yes                 | Yes                 |
| YEAR FE                                                | Yes                       | Yes                 | Yes                 |
| INDUSTRY FE                                            | No                        | No                  | Yes                 |
| N                                                      | 82,773                    | 82,773              | 82,773              |
| Adj $R^2$                                              | 0.019                     | 0.338               | 0.348               |
| Panel C: Neighbouring states                           |                           |                     |                     |
| TPAL                                                   | 0.008***<br>(0.002)       | 0.005***<br>(0.002) | 0.004**<br>(0.002)  |
| CONTROLS                                               | No                        | Yes                 | Yes                 |
| STATE FE                                               | Yes                       | Yes                 | Yes                 |
| YEAR FE                                                | Yes                       | Yes                 | Yes                 |
| INDUSTRY FE                                            | No                        | No                  | Yes                 |
| N                                                      | 52,982                    | 52,982              | 52,982              |
| Adj $R^2$                                              | 0.017                     | 0.368               | 0.381               |
| Panel D: Excluding firms that change state of location |                           |                     |                     |
| TPAL                                                   | 0.008***<br>(0.002)       | 0.006***<br>(0.002) | 0.005***<br>(0.002) |
| CONTROLS                                               | No                        | Yes                 | Yes                 |
| STATE FE                                               | Yes                       | Yes                 | Yes                 |
| YEAR FE                                                | Yes                       | Yes                 | Yes                 |
| INDUSTRY FE                                            | No                        | No                  | Yes                 |
| N                                                      | 69,099                    | 69,099              | 69,099              |
| Adj $R^2$                                              | 0.020                     | 0.336               | 0.348               |

TPAL state. Similar to [Chy and Hope \(2021\)](#), we exclude firms in Hawaii since it has no contiguous neighbouring states. We then reestimate our baseline regression and present the results in Panel C of [Table 6](#). As can be seen from the Table, co-efficient estimates of TPAL remain positive and statistically significant.

#### 6.1.4. Excluding firms that change state of location

As previously mentioned, our construction of the TPAL measure is designed to capture situations when firms change their state of location. When firms move from a treatment state to a control state our TPAL dummy in respect of that firm changes from 1 to 0 and vice versa. However, as a robustness test, we drop all firms that change their state of location during our sample period and rerun the baseline model. The results of this analysis are presented in Panel D of [Table 6](#). Again, for brevity and to conserve space, we suppress

**Table 7**

Excluding firms in Delaware and controlling for confounding law

This table reports regressions results of the impact of Third Party Auditor Liability (TPAL) on trade credit with the exclusion of firms in Delaware and the years after the passage of the Private Securities Litigation Reform Act (PSLRA). The dependent variable is AP/AT which is Accounts Payable scaled by Total Assets. TPAL is an indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties; it moves from one to zero when (and after) states reduce auditor legal liability to third parties, and remains zero for the states that do not change auditors' litigation risk during the sample period. All continuous variables are winsorized at the 1% level. Standard errors, adjusted for firm-level clustering are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% respectively.

|                    | Dependent variable: AP/AT |                      |
|--------------------|---------------------------|----------------------|
|                    | No Delaware               | Before PSLRA         |
|                    | (1)                       | (2)                  |
| TPAL               | 0.005***<br>(0.002)       | 0.004**<br>(0.002)   |
| SIZE               | 0.001***<br>(0.000)       | 0.001<br>(0.000)     |
| AGE                | -0.006***<br>(0.001)      | -0.008***<br>(0.001) |
| SALES GROWTH       | 0.000*<br>(0.000)         | 0.001**<br>(0.000)   |
| CASH               | -0.058***<br>(0.005)      | -0.058***<br>(0.006) |
| PROFITABILITY      | -0.140***<br>(0.006)      | -0.144***<br>(0.007) |
| TANGIBILITY        | 0.046***<br>(0.005)       | 0.038***<br>(0.007)  |
| ASSET TURNOVER     | 0.048***<br>(0.002)       | 0.046***<br>(0.002)  |
| STATE FE           | Yes                       | Yes                  |
| YEAR FE            | Yes                       | Yes                  |
| INDUSTRY FE        | Yes                       | Yes                  |
| N                  | 82,457                    | 56,457               |
| Adj R <sup>2</sup> | 0.348                     | 0.345                |

the coefficients of the control variables. We continue to find evidence in support of our main hypothesis as TPAL remains positive and statistically significant.

## 6.2. Excluding firms in Delaware and controlling for confounding law

We also examine whether our results still hold when we exclude firms in Delaware and control for confounding law, notably the Private Securities Litigation Reform Act (PSLRA) of 1995. The state of Delaware is attractive for firms to incorporate due to its corporate-friendly laws and tax structure (Daines, 2001). Although firms' state of incorporation may be different from their state of location, we attempt to address this concern more directly by excluding firms located in Delaware. On the other hand, the PSRLA created a more enabling environment for institutional investors to serve as lead plaintiffs in securities class actions. It is therefore possible that the existence of such confounding law could potentially bias our results. To address this concern, we drop all firm-year observations after 1995. In column 1 of Table 7, we continue to find evidence in support of the main findings after dropping firms in Delaware. The co-efficient estimate of TPAL remains positive and statistically significant.<sup>6</sup> In Column 2 of the table, we also observe that our results still hold when we drop observations after 1995 to address the concern of the PSRLA.

## 6.3. Alternative estimation methods

We employ other estimation methods to confirm that our results are not driven by the choice of model. Firstly, we use an entropy balancing estimation technique following previous studies (Freier et al., 2015; Jiang et al., 2018; Boasiako & Keefe, 2021; Boasiako et al., 2022b; Tawiah & Keefe, 2022). It is possible that firms in our treatment group could be inherently different from those in the control group. The entropy balancing technique helps to address this concern by creating balanced samples between the treatment and control groups. It involves a re-weighting approach that directly introduces a balance of covariates into the weight function of the sample units (Hainmueller, 2012). Such a recalibration of the unit weights addresses any issues of systematic and random inequalities.

<sup>6</sup> The marginal drop in the number of observations in Column 1 of the table indeed confirms that many firms in our sample are located outside of Delaware even though they may be incorporated there.

**Table 8**

## Alternative estimation methods

This table reports regressions results of the impact of Third Party Auditor Liability (TPAL) on trade credits using alternative estimation methods. The dependent variable is AP/AT which is Accounts Payable scaled by Total Assets. TPAL is an indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties; it moves from one to zero when (and after) states reduce auditor legal liability to third parties and remains zero for the states that do not change auditors' litigation risk during the sample period. All continuous variables are winsorized at the 1% level. Standard errors, adjusted for firm-level clustering are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% respectively.

|                    | Dependent variable: AP/AT |                      |                      |
|--------------------|---------------------------|----------------------|----------------------|
|                    | Entropy                   | Firm Fixed           | OLS with             |
|                    | balancing                 | Effects              | Industry x Year FEs  |
|                    | (1)                       | (2)                  | (3)                  |
| TPAL               | 0.006***<br>(0.001)       | 0.003**<br>(0.001)   | 0.005***<br>(0.002)  |
| SIZE               | 0.002***<br>(0.000)       | 0.001<br>(0.001)     | 0.001***<br>(0.000)  |
| AGE                | -0.008***<br>(0.001)      | -0.011***<br>(0.002) | -0.006***<br>(0.001) |
| SALES GROWTH       | 0.000*<br>(0.000)         | 0.000<br>(0.000)     | 0.000**<br>(0.000)   |
| CASH               | -0.050***<br>(0.004)      | -0.055***<br>(0.003) | -0.058***<br>(0.005) |
| PROFITABILITY      | -0.146***<br>(0.004)      | -0.078***<br>(0.005) | -0.141***<br>(0.006) |
| TANGIBILITY        | 0.051***<br>(0.003)       | 0.024***<br>(0.004)  | 0.045***<br>(0.005)  |
| ASSET TURNOVER     | 0.048***<br>(0.001)       | 0.047***<br>(0.002)  | 0.048***<br>(0.002)  |
| STATE FE           | Yes                       | No                   | Yes                  |
| YEAR FE            | Yes                       | Yes                  | Yes                  |
| INDUSTRY FE        | Yes                       | No                   | Yes                  |
| INDUSTRY x YEAR FE | No                        | No                   | Yes                  |
| FIRM FE            | No                        | Yes                  | No                   |
| N                  | 82,773                    | 82,773               | 82,773               |
| Adj R <sup>2</sup> | 0.334                     | 0.183                | 0.350                |

In contrast to other pre-processing methods such as nearest neighbour matching where units are either discarded or matched, the re-weighting scheme in entropy balancing reweights units to achieve balance, whilst keeping the weights close to the base weights to avoid information loss, thereby retaining efficiency. We use the mean, variance, and skewness moments of the control variables to achieve balance between the treatment and the control group. Secondly, it is also possible that other unobserved time-invariant heterogeneity may be driving our results. Therefore, as another robustness test, we employ a fixed effects model to account for all time-invariant heterogeneity. Finally, it is also possible that customer-supplier relationships are affected by industry-level time-variant shocks. We, therefore, re-estimate our baseline OLS model to include Industry x Time fixed effects. In Column 1 of Table 8, we present the results from estimating the entropy balance regression. In Column 2, we show results from the fixed effects model whilst in Column 3, we present the results from the OLS estimations that include Industry x Year fixed effects. Across all three specifications, our main results continue to hold.

#### 6.4. Alternative measures of trade credit

We check for the sensitivity of our results to the measure of trade credit used by employing alternative scaled measures of accounts payables. We scale accounts payable by Sales, Market Value (MV) and the lagged value of Total Assets (AT<sub>t-1</sub>). The results of these estimations are presented in Table 9. As can be seen from the table, our inferences still hold.

#### 6.5. Restricted event window

As mentioned in our empirical design, the first auditor liability case in our sample occurs in 1969 and the last occurs in 1995. Our sample period however ends in 2005. Thus, our TPAL measure takes the value of 1 for several years in respect of firms located in states where the change in auditor liability occurred earliest. For example, for firms located in North Dakota, where the expansion to auditor liability occurs in 1974, the TPAL measure takes a value of 1 for a period of 32 years (from and including 1974 to 2005), assuming such firms do not change states throughout the sample period. It may therefore be argued that our TPAL dummy could be capturing other factors throughout these years in addition to an increase in auditor litigation risk. Although, we believe such factors (if any) will be accounted for by our inclusion of year-fixed effects, we address this concern differently by using restricted event windows. For each company in our treatment group, we restrict the number of years for the analysis to an equal number of years before and after the

**Table 9**

## Alternative measures of trade credit

This table reports regressions results of the impact of Third Party Auditor Liability (TPAL) on trade credits using alternative measures of trade credit. TPAL is an indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties; it moves from one to zero when (and after) states reduce auditor legal liability to third parties and remains zero for the states that do not change auditors' litigation risk during the sample period. All continuous variables are winsorized at the 1% level. Standard errors, adjusted for firm-level clustering are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% respectively.

|                    | AP/SALES<br>(1)      | AP/MV<br>(2)         | AP/AT <sub>t-1</sub><br>(3) |
|--------------------|----------------------|----------------------|-----------------------------|
| TPAL               | 0.002**<br>(0.001)   | 0.004***<br>(0.001)  | 0.006***<br>(0.002)         |
| SIZE               | 0.000<br>(0.000)     | -0.000<br>(0.000)    | 0.004***<br>(0.001)         |
| AGE                | -0.006***<br>(0.001) | -0.001<br>(0.001)    | -0.019***<br>(0.002)        |
| SALES GROWTH       | 0.000**<br>(0.000)   | 0.000<br>(0.000)     | 0.017***<br>(0.006)         |
| CASH               | -0.037***<br>(0.004) | -0.068***<br>(0.004) | -0.062***<br>(0.006)        |
| PROFITABILITY      | -0.133***<br>(0.004) | -0.217***<br>(0.006) | -0.120***<br>(0.008)        |
| TANGIBILITY        | 0.039***<br>(0.004)  | 0.035***<br>(0.004)  | 0.024***<br>(0.008)         |
| ASSET TURNOVER     | -0.011***<br>(0.001) | 0.041***<br>(0.001)  | 0.051***<br>(0.002)         |
| STATE FE           | Yes                  | Yes                  | Yes                         |
| YEAR FE            | Yes                  | Yes                  | Yes                         |
| INDUSTRY FE        | Yes                  | Yes                  | Yes                         |
| N                  | 82,707               | 82,773               | 82,773                      |
| Adj R <sup>2</sup> | 0.192                | 0.397                | 0.230                       |

**Table 10**

## Equal number of years before and after the shock

This table reports regressions results of the impact of Third Party Auditor Liability (TPAL) by restricting the sample to an equal number of years before and after the shock in each state. The dependent variable is AP/AT which is Accounts Payable scaled by Total Assets. TPAL is an indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties; it moves from one to zero when (and after) states reduce auditor legal liability to third parties, and remains zero for the states that do not change auditors' litigation risk during the sample period. All continuous variables are winsorized at the 1% level. Standard errors, adjusted for firm-level clustering are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% respectively.

|                    | Dependent variable: AP/AT |                      |                      |
|--------------------|---------------------------|----------------------|----------------------|
|                    | -3,+3<br>(1)              | -5,+5<br>(2)         | -7,+7<br>(3)         |
| TPAL               | 0.005***<br>(0.002)       | 0.005***<br>(0.002)  | 0.005***<br>(0.002)  |
| SIZE               | 0.001**<br>(0.001)        | 0.001**<br>(0.000)   | 0.001**<br>(0.000)   |
| AGE                | -0.004***<br>(0.001)      | -0.005***<br>(0.001) | -0.005***<br>(0.001) |
| SALES GROWTH       | 0.000<br>(0.000)          | 0.000<br>(0.000)     | 0.000<br>(0.000)     |
| CASH               | -0.050***<br>(0.005)      | -0.049***<br>(0.006) | -0.049***<br>(0.006) |
| PROFITABILITY      | -0.128***<br>(0.007)      | -0.130***<br>(0.007) | -0.132***<br>(0.006) |
| TANGIBILITY        | 0.036***<br>(0.005)       | 0.038***<br>(0.005)  | 0.038***<br>(0.005)  |
| ASSET TURNOVER     | 0.050***<br>(0.002)       | 0.050***<br>(0.002)  | 0.049***<br>(0.002)  |
| STATE FE           | Yes                       | Yes                  | Yes                  |
| YEAR FE            | Yes                       | Yes                  | Yes                  |
| INDUSTRY FE        | Yes                       | Yes                  | Yes                  |
| N                  | 59,450                    | 64,201               | 68,899               |
| Adj R <sup>2</sup> | 0.347                     | 0.345                | 0.344                |

change in auditor liability in the state of location. We use three windows. The first is for three years before and after the change in TPAL ( $-3, +3$ ). The second is for five years before and after the change in TPAL ( $-5, +5$ ) and the third is for seven years before and after the change in TPAL ( $-7, +7$ ). Firms in the control group remain in the sample from the beginning of the shortest window (i.e 3 years before the first case) to the end of the longest window (i.e 7 years after the last case). We then re-estimate our baseline model and present the results in [Table 10](#). The coefficient estimates of TPAL continue to remain positive and statistically significant across all specifications. Thus, our main results are not driven by factors that may be associated with the use of unequal number of years before and after the change in TPAL.

## 7. Conclusion

We examine the impact of Third Party Auditor Liability (TPAL) on firms' short-term financing by exploiting the staggered change to TPAL in US states as a quasi-natural experiment. Using trade credits as our measure of short-term financing, we find that an increase in TPAL is associated with an increase in trade credits. Our findings are consistent with the view that improved financial reporting quality, facilitated by increased TPAL, makes it more favorable for firms to obtain trade credit. Our results also show that the effect of TPAL on trade credit is more pronounced for firms operating in higher information environments, those with financial constraints, and those whose auditors are more prone to litigation exposure. Overall, our study shows that the firm-level implications of TPAL are not limited to only long-term outcomes as documented in studies so far, but also matter in the short-term. In addition to contributing to the extant literature on the effects of TPAL and the determinants of trade credit, our study also has policy implications. As [Chy et al. \(2021\)](#) argues, there is an ongoing policy debate around the optimal level of liability that should be placed on auditors. It is not yet clear whether limits to auditor liability will harm or help financial markets. Hence, a critical mass of empirical studies is imperative to shape this debate and arrive at more informed conclusions. The findings from our study offer valuable insights by shedding light on the effect of risk to auditor liability on firms' short-term financing policy.

## Data availability

Data will be made available on request.

## Appendices.

### A Changes in TPAL

This table lists the auditor legal liability shocks for the sample period from 1973 to 2005 used to measure changes in auditor litigation risk. The list is compiled based [Chy et al. \(2021\)](#) and [Chy and Hope \(2021\)](#).

| State | Year | Liability | Court Rulings                                                                                       |
|-------|------|-----------|-----------------------------------------------------------------------------------------------------|
| IA    | 1969 | Increase  |                                                                                                     |
| HI    | 1983 | Increase  | Matter of Hawaii Corp., 567 F. Supp. 609 (D. Haw. 1983).                                            |
| ND    | 1974 | Increase  | Bunge Corporation v. Eide, 372 F. Supp. 1058 (D.N.D. 1974).                                         |
| MN    | 1976 | Increase  | Bonhiver v. Graff, 248 N.W.2d 291, 311 Minn. 111 (1976).                                            |
| PA    | 1978 | Increase  | Sharp v. Coopers and Lybrand, 457 F. Supp. 879 (E.D. Pa. 1978).                                     |
| NE    | 1979 | Increase  | Seedkem, Inc. v. Safranek, 466 F. Supp. 340 (D. Neb. 1979).                                         |
| KY    | 1981 | Increase  | Ingram Industries, Inc. v. Nowicki, 527 F. Supp. 683 (E.D. Ky. 1981).                               |
| NH    | 1982 | Increase  | Spherex, Inc. v. Alexander Grant and Co., 122 N.H. 898, 451 A.2d 1308 (1982).                       |
| OH    | 1982 | Increase  | Haddon View Inv. Co. v. C. and L., 70 Ohio St. 2d 154, 436 N.E.2d 212, 24 O.O.3d 268 (1982).        |
| NJ    | 1983 | Increase  | Rosenblum v. Adler, 461 A.2d 138, 93 N.J. 324, 93 N.H. 324 (1983).                                  |
| WI    | 1983 | Increase  | Citizens State Bank v. Timm, Schmidt and Co., 335 N.W.2d 361, 113 Wis. 2d 376, 113 Wis. 361 (1983). |
| MS    | 1987 | Increase  | Touche Ross and Co. v. Commercial Union Ins. Co., 514 So. 2d 315 (Miss. 1987).                      |
| GA    | 1987 | Increase  | Badische Corp. v. Caylor, 356 S.E.2d 198, 257 Ga. 131 (1987).                                       |
| NC    | 1988 | Increase  | Raritan River Steel v. Cherry, Bekaert, and Holland, 367 S.E.2d 609, 322 N.C. 200 (1988).           |
| MI    | 1989 | Increase  | Law Office of Stockler v. Rose, 436 N.W.2d 70, 174 Mich. App. 14 (Ct. App. 1989).                   |
| WV    | 1989 | Increase  | First Nat. Bank of Bluefield v. Crawford, 386 S.E.2d 310 (W. Va. 1989).                             |
| LA    | 1990 | Increase  | First Nat. Bank of Commerce v. Monco Agency Inc., 911 F.2d 1053 (5th Cir. 1990).                    |
| FL    | 1990 | Increase  | First Fla. Bank, NA v. Max Mitchell and Co., 558 So. 2d 9 (Fla. 1990).                              |
| MT    | 1990 | Increase  | Thayer v. Hicks, 793 P.2d 784, 243 Mont. 138 (1990).                                                |
| TN    | 1991 | Increase  | Bethlehem Steel Corp. v. Ernst and Whinney, 822 S.W.2d 592 (Tenn. 1991).                            |
| CA    | 1992 | Decrease  | Bily v. Arthur Young and Co., 834 P.2d 745, 3 Cal. 4th 370, 11 Cal. Rptr. 2d 51 (1992).             |
| MO    | 1993 | Increase  | MidAmerican Bank and Trust Co. v. Harrison, 851 S.W.2d 563 (Mo. Ct. App. 1993).                     |
| AL    | 1994 | Increase  | Boykin v. Arthur Andersen and Co., 639 So. 2d 504 (Ala. 1994).                                      |
| NJ    | 1995 | Decrease  | Accountant Liability Act                                                                            |

## B Variable definitions

This table provides the definition of the key variables used. Accounting data are from Compustat. State-level GDP data are from U.S. Bureau of Economic Analysis.

| Variable      | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AP/AT         | The ratio of accounts payable to total assets                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| TPAL          | Indicator variable that moves from zero to one when (and after) states expand auditor legal liability to third parties (e.g., from Privy to Restatement or Foreseeability); it moves from one to zero when (and after) states reduce auditor legal liability to third parties (e.g., from Foreseeability to Restatement or Privy). It remains zero for the states that do not change auditors' litigation risk during the sample period, thus combining both positive and negative shocks. |
| SIZE          | The logarithm of total assets(AT)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| AGE           | Logarithm of the number of years a firm has been listed in the merged CRSP/Compustat database                                                                                                                                                                                                                                                                                                                                                                                              |
| SALES GROWTH  | The difference between sales in year t and year t-1 scaled by sales in year t-1                                                                                                                                                                                                                                                                                                                                                                                                            |
| CASH          | The ratio of cash and short-term investments to total assets                                                                                                                                                                                                                                                                                                                                                                                                                               |
| PROFITABILITY | Ratio of operating income before depreciation (OIBDP) to total book assets (AT)                                                                                                                                                                                                                                                                                                                                                                                                            |
| TANGIBILITY   | The ratio of gross property, plant, and equipment (PPEGT) to total book assets (AT)                                                                                                                                                                                                                                                                                                                                                                                                        |
| ASSET         | The ratio of sales to Total assets in each year                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| TURNOVER      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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