Increased Creditor Protection and Trade Credit: Evidence from India

Abstract

Trade credit provides customers the flexibility to procure goods from their suppliers without immediate cash payment, serving as a fundamental form of short-term financing. If creditors are granted increased legal protection when a customer defaults, does the availability of trade credit increase or decrease? This is an important consideration since creditor rights can influence both the supply and demand of credit. This paper investigates this conundrum by leveraging a recent bankruptcy reform in India which increased legal protection of creditors. In a difference-in-differences setting, I find an uptick in the trade credit usage of firms closer to default. This effect is concentrated in small firms with limited growth prospects, poor working capital management and operating in industries with less reliance on inputs from other industries. However, this increase in trade credit usage among the less efficient subset of distressed firms is not accompanied by an offset in their profitability. These results underscore the importance of strong creditor rights in sustaining financially vulnerable firms, essential for economic resilience in developing economies.

JEL classification: G32, G33, D22

Keywords: Bankruptcy law, Creditor rights protection, Trade credit, Distressed firms

1 Introduction

Trade credit allows customers to procure goods without immediate cash payment. It enables firms to maintain operations and fulfil orders even when they currently lack the funds to buy necessary supplies. Consequently, firms can allocate their available cash to other operational needs or investment opportunities, making trade credit an essential source of short-term financing worldwide (Petersen and Rajan, 1997; Deloof and Jegers, 1999). By offering trade credit, suppliers are able to attract new customers, retain the old ones and remain competitive. Trade credit does not require collateral or extensive credit checks, making it particularly valuable for firms with limited access to external financing, especially in countries with underdeveloped financial systems. However, extending more trade credit to such firms comes with increased risk. If a customer defaults, the significant potential losses from unpaid claims could threaten the supplier's financial stability. Thus, the inter-firm relationship plays a crucial role in transmitting liquidity shocks across the economy (Jacobson and von Schedvin, 2015). Since trade credit is unsecured, granting suppliers enforceable rights during a customer's bankruptcy could significantly affect the dynamics of supplier-creditor relationship and the availability of trade credit.

Previous studies (Ge et al., 2017; Costello, 2019) have shown that legislation granting reclamation rights to suppliers in the midst of a customer's bankruptcy proceedings leads to an increase in the amount of trade credit extended. This increase is attributed to the suppliers' enhanced ability to recover the value of goods if a customer goes bankrupt (Sautner and Vladimirov, 2018; Costello, 2019). This enhancement in collateral rights consequently lowered suppliers' lending standards, leading to more diversified and riskier portfolios (Ge

et al, 2017; Costello, 2019). This paper explores the impact on trade credit of a legislation that shifts from favouring debtors to favouring creditors in the event of a bankruptcy. It grants suppliers only initiation rights, while financial creditors receive both initiation and control rights. Initiation rights allow suppliers to start bankruptcy proceedings against a defaulting customer, whereas control rights enable financial creditors to assume control of the firm during bankruptcy, side-lining equity owners.

Creditor rights impact both the supply and demand for credit. On the supply side, robust creditor rights could lead to an increase in the supply of trade credit due to lower credit costs. These reduced costs result from better enforceability, higher expected recovery of dues, and mitigated moral hazard by customers (Davydenko and Franks, 2008; Vig, 2013). However, suppliers might be discouraged from supplying more trade credit due to the heightened risk of a run on the customer firm by financial creditors (Vig, 2013), who might prefer to recover debt by liquidating the firm. Nonetheless, suppliers have a vested interest in the ongoing viability of the customer beyond recovering uncollected accounts receivable (Ge et al, 2017). On the demand side, the customer's demand for trade credit increases due to enhanced debt capacity resulting from a higher expected liquidation value of the firm (Vig, 2013; Ponticelli and Alencar, 2016) — a phenomenon known as the income effect. Conversely, demand for trade credit may not increase due to amplified risk of bankruptcy and premature liquidation (Vig, 2013). The demand for trade credit could be further influenced by changes in the attractiveness of other types of debts (Costello, 2019). When there is a simultaneous change in the rights of different types of creditors, some sources of financing could be substituted by more lucrative forms of credit. The demand for trade credit would be high when the

cost of alternative funding is high (Atanasova and Wilson, 2003; Niskanen and Niskanen, 2006). Given these dynamics, this paper investigates the consequences of enhanced creditor protection on trade credit utilization.

This study leverages the implementation of India's new bankruptcy law, the Insolvency and Bankruptcy Code (IBC), enacted in December 2016. The IBC marked a significant transition from a debtor-in-possession framework to a creditor-in-control model. The new law establishes a consolidated framework aimed at expediting debt recovery, focusing particularly on the resolution of firms. Consequently, the firms most impacted by this law are those that are financially distressed but have potential for rehabilitation, rather than facing premature liquidation under the previous provisions. However, firms in extreme financial distress would likely continue towards liquidation under the new law, with minimal impact on financially stable entities (Ge et al, 2017; Sautner and Vladimirov, 2018; Bose et al., 2021). Employing a difference-in-differences approach, I categorize firms into two groups, employing the definition of 'sick industrial unit' from the law that was in effect before the IBC (Sick Industrial Companies Act). Those with accumulated losses equal to or exceeding the net worth are designated as distressed or the treated group. Given the negligible impact of the law on profitable entities, firms with a positive balance of accumulated profits in the sample period constitute the control group.

Since the above definition of a distressed firm could result in a delayed recognition of financial distress, I complement the analysis by using an alternate definition of firm distress - Altman's (1968) Z-score for emerging markets. The Z-score is used to measure the firm's anticipated default risk. Lower the score implies a higher probability of bankruptcy and vice

versa. Firms that exhibit a Z-score lower than 1.1 in this pre-treatment year are designated as part of the treated group. Firms with a Z-score greater than 2.6 in every financial year of the sample period are included in the control group. Analyzing data from 10,445 Indian public and private firms over 2013 to 2021, I find an uptick in trade credit utilization 22.6% for distressed firms relative to their financially stable counterparts subsequent to the introduction of the law. I also find an improvement in the gross profitability of distressed firms. These results hold across the two different definitions of financial distress.

The increase in trade credit usage, as measured by the ratio of accounts payable to COGS (Cost of Goods Sold), of the distressed firm could be attributed to an increase in supply due to increased willingness of the trade creditor to extend more credit in a pro-creditor environment. Alternatively, the demand of the distressed firm could have surged due to an increase in the debt capacity of the firm. However, the demand and supply effects cannot be disentangled as the information about the exact payment terms and customer-supplier relationships is unavailable. To further understand this, I undertake a heterogeneity analysis. The effect of the law is concentrated amongst smaller, mature distressed firms with low sales growth and poor working capital management. Aligned with the collateral theory of trade credit (Frank and Maksimovic, 2004; Costello, 2018), distressed firms in the wholesale and retail sector, which undergo minimal input transformation, receive more trade credit, simplifying collateral liquidation for suppliers.

Distressed firms that experience a bigger impact of the law on their trade credit usage do not drive the improvement in the gross profit margins. However, their gross profit margins have not worsened either. Therefore, there is evidence of some increase in the willingness

of trade creditors to extend more trade credit to the comparatively inefficient subset of distressed firms. Otherwise customers would have been charged a higher implicit cost of extending trade credit which would have hampered their gross profit margins. However,it is difficult to observe the change in demand of trade credit of the distressed firms. These results indicate that even when suppliers are endowed solely with initiation rights, if these rights exist within a pro-creditor framework, it results in a boost to the supply of trade credit. This increased credit supply is crucial for maintaining the competitiveness of distressed firms, allowing them to remain operational and financially viable.

I further show that the preliminary results are robust to alternative model specifications. These include utilizing Propensity Score Matching (PSM) to equate the control and treatment groups and employing the advanced synthetic difference-in-difference method (Arkhangelsky et al. 2021), which addresses concerns of unobserved correlation between treatment assignment and firm-level time trends.

The rest of the paper is organized as follows. Section 2 discusses the relevant literature that grounds this research. Section 3 provides a brief overview of the legal reforms governing bankruptcy with a focus on the IBC. Section 4 details the baseline empirical methodology. Section 5 details the heterogeneity analysis. Section 6 describes the data and Section 7 presents the results. Section 8 describes the robustness checks. Section 9 concludes.

2 Related Literature

Firstly, this paper builds on existing literature examining the influence of creditor protection on a firm's debt structure and performance. Previous studies, such as La Porta et al.

(1998), have established that stronger creditor rights can promote financial development. Additionally, Gianetti (2003) revealed a link between enhanced creditor rights and an uptick in leverage, coupled with a greater availability of long-term debt. Ponticelli and Alancar (2016) find that stronger secured creditor rights along with strict debt enforcement led to an increase in the use of secured loans, as well as an increase in investment and firm size. However, contrasting research suggests that stronger creditor rights negatively impact the firms in distress. Creditor-friendly regimes can introduce ex-post inefficiencies in the form of a bias towards liquidation (Aghion, Hart, and Moore, 1992). Vig (2013) observed a decrease in secured and total debt, as well as asset growth, following the fortification of secured creditor rights due to a securitization law in India. A pro-creditor bankruptcy code also leads to lower innovation (Acharya and Subramanian, 2009) and lower investment (Acharya, Amihud and Litov, 2009).

Interestingly, the effects of creditor rights on trade credit, a pivotal short-term financing source, remain largely uncharted. Costello (2018) utilized a difference-in-differences approach to demonstrate that enhancing suppliers' rights to the liquidation value of collateral, under the 2005 Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA), led to an increase in both the amount and duration of trade credit extended. This augmentation in collateral rights consequently lowered suppliers' lending standards, leading to more diversified and riskier portfolios. Using the same law, Ge et al (2017) find that suppliers who are more dependent on their near-insolvent customers increase their trade credit supply. Strong trade creditor rights accompanied with strict debt enforcement results in an increased access to trade credit for distressed firms (Sautner and Vladimirov, 2018). This research distinguishes

itself by focusing on the specific effects that initiation rights, when exclusively granted to trade creditors within a pro-creditor legal framework, have on trade credit dynamics. Unlike previous studies that concentrated on reclamation or participation rights, this study uniquely explores how these initiation rights influence the availability of trade credit to distressed firms.

Second the paper contributes to the extant literature on the importance of trade credit and which firms are more reliant on trade credit. Essentially, companies use trade credit to manage financial constraints (Schwartz 1974), particularly when they cannot access loans from banks (Petersen and Rajan 1997; Danielson and Scott 2004), or in places where the financial sector is not well-developed (Ge and Qiu 2007). It is also more common in industries where there is a high risk of moral hazard (Burkart, Ellingsen, and Giannetti, 2006). This can be attributed to suppliers having an information advantage over the banks. Suppliers can quickly and cost-effectively gauge a buyer's financial health through regular interactions and business transactions. Additionally, suppliers are often better positioned than banks to salvage the assets of a failing business because the supplier already has a network for selling its goods and understanding of the industry. Trade credit also serves as a substitute to bank credit in times of monetary policy contractions (Nilsen, 2002) or when there is an exogenous increase in the relative cost of short-term finance (Restrepo, Cardona Sosa, and Strahan, 2019). Beyond providing finance, trade creditors also constitute a pivotal component of the supply chain and, via inter-firm relationships, serve as a financial safety net for customers in distress (Cũnat, 2007). This study underscores the importance of trade credit in sustaining financially vulnerable firms, essential for economic resilience in developing economies.

Thirdly, this research adds to the burgeoning body of work exploring the influence of the Insolvency and Bankruptcy Code (IBC), 2016 on companies' financing and investment choices. Bose et al. (2021) find enhanced credit accessibility and a decline in credit costs for financially distressed firms following the law's enactment, resulting in performance improvements compared to their more stable counterparts. Ramesh et al. (2022) noted that for entities with highly concentrated holdings, the augmented creditor rights post-reform resulted in a marked decrease in borrowing, attributed to elevated debt costs, especially in secured and long-term debt. This shift had a ripple effect, diminishing investments for firms with substantial promoter ownership. Jose et al. (2020) documented a trend of deleveraging among companies post-legislation, as dependence on both short and long-term debt waned, although their study did not establish a causal link. Further, Jose and Borad (2021) deduced a debt redistribution phenomenon post-reform, signifying a debt shift from less efficient to more efficient firms, based on variations in liquidation value and ex ante marginal revenue product of capital (MRPK). My findings suggest that the new bankruptcy code has resulted in heightened trade credit usage by distressed companies, aiding them in navigating short-term liquidity challenges.

3 Bankruptcy Law in India: Background

Bankruptcy law in India has seen significant transformations. Initially governed by the Provincial Insolvency Act of 1920 and the Presidency Insolvency Act of 1909, these early laws were soon deemed insufficient for the growing complexities of insolvency cases.

A pivotal development was the enactment of the Sick Industrial Companies (Special Pro-

visions) Act, 1985 (SICA), aimed at addressing industrial sickness. However, SICA struggled with procedural delays and a limited scope, which excluded non-industrial entities and small-scale industries. It also led to an increase in strategic filings for bankruptcy to avoid pressure from creditors for repayment (Gormley, Gupta, and Jha, 2018). The introduction of the Debt Recovery Tribunals under the 'Recovery of Debt Due to Banks and Financial Institutions Act, 1993' marked a post-liberalization reform. These tribunals were established to expedite loan recoveries and alleviate corporate loan defaults. The tribunals succeeded in reducing delinquencies and the cost of credit declined on larger loans (Visaria, 2009). However, the credit supply to smaller borrowers declined (Lilienfeld-Toal, Mookherjee, and Visaria, 2012). The act's efficacy diminished as enforcement became constrained by judicial vacancies and extensive delays in the courts.

A major legislative shift towards a pro-creditor approach occurred with the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act (SARFAESI), 2002. This act significantly empowered secured creditors by allowing them to seize the assets securing the loan of defaulting borrowers without court intervention. Despite its intent to stream-line the resolution of non-performing assets, the SARFAESI Act encountered issues in its execution, particularly regarding asset seizure, legal challenges from borrowers, and concerns about transparency. In response to this act, total debt fell and liquidity hoarding increased (Vig, 2013). A significant disadvantage of the regime was the creation of a two-tier system: creditors, despite favouring the SARFAESI Act, were compelled to go through the Debt Recovery Tribunals (DRTs) whenever the available collateral did not fully cover the debtor's obligations (Bose et al, 2021; Jose and Borad, 2021).

3.1 IBC Law: An Overview

The Insolvency and Bankruptcy Code (IBC), introduced in India in December 2016, marked a significant shift in the country's approach to corporate insolvency. The new law aimed at addressing the mounting non-performing assets (NPAs) of financial institutions and facilitating speedier recoveries. It established a unified framework, distinct from previous reforms, by forming specialized bankruptcy courts throughout the nation. Before the introduction of IBC, the insolvency framework was geared towards allowing debt-laden firms the opportunity for revival, keeping the control within the hands of existing management. This debtor-centric approach often led to prolonged resolution times and inadequate focus on the needs and rights of creditors. The IBC, however, marks a paradigm shift to a 'creditor-in-control' model: in cases of unmet debt obligations, control of the defaulting firm passes to its creditors, thereby significantly enhancing their legal rights in the resolution process.

Historically, insolvency reforms primarily targeted the recovery of banks and certain financial institutions, leaving other creditor types, including unsecured ones, to navigate the civil courts. When these creditors resorted to district courts, they often faced prolonged delays and inefficient legal proceedings. This was further compounded by a massive backlog of cases, significantly hindering their ability to recover dues. The IBC broadened this scope, enabling both secured financial creditors (similar to the SARFAESI framework) and unsecured financial or operational creditors (like trade creditors or employees) to initiate bankruptcy proceedings against debtor firms for defaults exceeding Rs. 100,000 (approximately USD 1200). Consequently, the ability to initiate proceedings against defaulting customers in specialized bankruptcy courts under the IBC represents a substantial enhancement of rights of

the suppliers and other unsecured creditors.

The initiation of a case under the IBC then triggers the Corporate Insolvency Resolution Process (CIRP). This process involves the formation of a Committee of Creditors (CoC), which is essentially a group comprised of all financial creditors of the debtor firm. It lets the CoC assume control of the business operations, assisted by an Insolvency Professional (IP) appointed by the court. The IP is responsible for formulating resolution plans and debt restructuring strategies aimed at business revival. The CoC, using a weighted voting system based on the magnitude of debt held by each financial creditor, decides on the approval of these plans. The IBC envisions a time-bound process, mandating the completion of CIRP within 330 days. Should the CoC fail to approve a plan within this time frame, the debtor firm undergoes liquidation, with proceeds distributed in a specified order prioritizing insolvency resolution costs, secured creditors, employees, financial unsecured creditors, government debt and finally trade creditors.

A crucial aspect of the IBC is its emphasis on prioritizing resolution over liquidation. The introduction of a strict time-line is designed to expedite the resolution of financial distress, enabling debtor firms to potentially resume operations. Upon initiation of the insolvency process, a moratorium is imposed, shielding the debtor firm from legal actions, collection efforts, and asset dispossession, thus offering a window for operational and financial restructuring. It therefore aims to have better contract enforcement without destroying the value of the debtor firm (Jose and Borad, 2021).

The new law strengthens rights of all types of creditors. Suppliers and other unsecured creditors are granted initiation rights. Secured and unsecured financial creditors are also

granted control rights. There are two channels through which the creditor rights could have an impact on trade credit. The direct effect of the creditor-friendly law can affect the supply and demand of trade credit through the following mechanism. Since the law focuses on prompt resolution, this could prevent the erosion of asset values that occurred during prolonged insolvency proceedings under the earlier regime. The IBC creates a strong deterrent against delinquency by debtor firms as they could lose control over their business. Therefore, supply of trade credit could increase due to better enforceability of debt contracts, increased expected liquidation value of the assets and lower default likelihood on part of the debtor. However, suppliers may not extend more trade credit if they anticipate an increased risk of a run by the other creditors in a creditor-friendly environment (Vig, 2013). A run by financial creditors occurs when these creditors, anticipating potential default, rush to secure their positions. This can involve calling in loans, refusing to roll over credit, or demanding additional collateral. Such actions can precipitate a liquidity crisis for the debtor firm, making it even more difficult for the company to meet its unsecured obligations, such as those owed to trade creditors. The stronger creditor rights also have a direct effect on the demand of trade credit. The debt capacity increases due to higher expected liquidation value of the firm (Vig, 2013). This in turn increases the demand. However, customers may be reluctant to increase their demand for trade credit if they perceive a higher risk of bankruptcy.

The indirect channel affects the demand of trade credit by altering the costs and availability of other sources of finance. Bose et al. (2021) observed an improvement in the performance of distressed firms in the post-IBC period, attributed to lower debt financing

costs and increased credit availability. This change in bank credit availability influences trade credit usage, potentially supporting the substitution hypothesis, which posits that trade credit acts as an alternative to bank credit for firms with limited access to financial institutions (Meltzer, 1960; Deloof and Jegers, 1999). When bank credit becomes available and less costly, reliance of firms on trade credit may reduce. Conversely, trade credit and bank credit might also exhibit a complementary relationship (Ng et al., 1999; Alphonse et al., 2003) as trade credit serves as a signal for obtaining bank credit. In summary, the IBC represents a progressive reform in India's insolvency framework, impacting creditor rights, corporate debt structures, and the dynamics of trade credit.

4 Difference-in-differences Setting

Firms closer to bankruptcy are more likely to be affected by a change in the bankruptcy law (Gutiérrez et al, 2011; Ge et al, 2017; Sautner and Vladimirov, 2018). To categorize firms into the treated group, I employ the definition of a 'sick industrial unit' as defined in the SICA (Sick Industrial Companies Act) that prevailed prior to the introduction of the IBC law (Bose et al, 2021). Following the definition, the treated group consists of firms that have accumulated losses exceeding or equal to the net worth at the end of a financial year. In other words, a firm enters the treatment group when the accumulated losses $\geq$ net worth as of April 2015 - March 2016 (last pre-IBC financial year). However, redefining this group post-legislation change introduces substantial endogeneity concerns because changes in bankruptcy law are likely to directly influence the financial structure and balance sheet composition of firms closer to default.

Given that the bankruptcy law is likely to have minimal impact on financially stable firms, I have included firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021, in the control group. This ensures that the firms included in my control group are financially strong, as a positive balance of accumulated profits in each year would indicate that the firm is capable of absorbing any losses arising in that particular financial year. This condition ensures that firms from the control group do not enter the treated group later in the sample. This approach results in a total of 1,762 firms in the distressed group and 6,050 in the non-distressed group. Since the law came into effect in December 2016, I have omitted the financial year that began in April 2016 and concluded in March 2017 from consideration.

Since the above definition of defining treated firms results in delayed identification of financial distress, I have also employed an alternative strategy for identifying distressed and profitable firms. The Altman's (1968) Z-score for emerging markets is used to measure a firm's anticipated default risk in the pre-treatment year i.e., the financial year running from April 2015 to March 2016. Firms that exhibit a Z-score lower than 1.1 in this pre-treatment year are designated as part of the treated group. A Z-score that is lower than 1.1 means that the company is in financial distress and with a high probability of going bankrupt. On the other hand, a score of 2.6 and above means that the company is in a safe zone and is unlikely to file for bankruptcy. A score of between 1.1 and 2.6 means that the company is in a grey area and with a moderate chance of filing for bankruptcy. Therefore, firms with a Z-score greater than 2.6 in every financial year of the sample period are included in the control group, excluding those that fall within the Z-score 'grey zone' ($1.1 \leq$ Z-score ≤ 2.6). Utilizing this

identification method, I identified 1,036 firms as distressed and 7,828 as non-distressed. The Z-score method tends to be more conservative, labelling fewer companies as distressed and more as financially stable compared to the earlier method. About 77 firms (which represent 7% of those deemed distressed by the Z-score criteria) are not marked as distressed under the definition of the old bankruptcy law. Likewise, 135 firms (approximately 2% of the control group identified by the earlier criteria) do not achieve a Z-score higher than 2.6 in every year of the sample period. I consider both approaches and report results from both the methods of identification and assess whether the findings remain consistent across different sizes of treatment and control groups.

Having defined a distressed firm, I next analyse the impact of the new creditor-centric bankruptcy law on the trade credit used by distressed firms. Since the law has an impact on marginally distressed firms, which are now more likely to be reorganized rather than liquidated, the analysis focuses on the trade credit usage of the customers that are in financial distress. The difference-in-differences methodology is thus used to compare the amount of accounts payable used by the firms before and after the implementation of the IBC law for both treatment and control groups.

$$ap_{it} = \alpha + \beta IBC_t * Distress_i + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it} \tag{1}$$

where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March

2016. The dependent variable ap_{it} is the ratio of accounts payable to COGS for firm i in year t. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects and ϵ_{it} is the error term. The industry classification used is the two-digit National Industrial Classification (NIC). The industry-year fixed effects help to control for time-varying industry specific shocks that may be correlated with the trade credit usage of firms and the law. The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The coefficient of interest is β that measures the change in the accounts payable for the financially distressed firms post reform as compared to the financially stable firms. The regression is estimated using OLS and errors are clustered at the individual firm level.

Following prior studies, I include several firm-level, time-varying controls (X_{it}) that could influence the trade credit usage of a firm. Firstly, I control for the age and the size of the firm. Larger firms are offered more trade credit (Petersen and Rajan, 1997; Niskanen and Niskanen, 2006) due to better credit worthiness. Alternatively, smaller, younger firms could use more trade credit due to less access to financial institutions (Petersen and Rajan, 1997; Danielson and Scott, 2004). I also include tangibility (as measured by Net Plant, Property & Equipment divided by total assets) and leverage (total debt divided by total assets) to measure the credit constraints faced by the firm. Higher tangibility could imply a higher capacity to use these assets for financing and therefore less reliance on trade credit. Alternatively, more tangible assets could imply lesser liquid assets and therefore a need for short term trade credit. Meanwhile, total debt and trade credit could be substitutable (Meltzer, 1960; Deloof and Jegers, 1999). On the other hand, the two could be complementary (Ng et al., 1999;

Alphonse et al, 2003). Long term debt is needed to finance long-term assets (matching hypothesis) and is not substitutable with short term trade credit.To account for liquidity, the proportion of cash and bank balances to total assets is included. Large cash balances could lead to reduced need for trade credit. Conversely, large cash balances could be the result of increased accounts payable. Lastly, firms with greater profitability, as measured by EBDITA divided by total assets, may require less trade credit as higher profitability could serve as a source of internal financing and thereby reduce the reliance on external finance / trade credit (Niskanen and Niskanen, 2006).

4.1 Internal Validity

An important assumption for the difference-in differences methodology is that parallel trends should hold between the treatment and control groups. Provided that the shift in bankruptcy law has an influence on the trade credit utilization of closer to default firms, there should be no significant difference between the accounts payable of profitable and distressed firms. If the parallel trends assumption does not hold, it implies that there are other factors, besides the treatment, influencing the differences between the treated and control groups over time. This contamination can lead to biased estimates of the treatment effect (β). In order to test for parallel trends (absence of any confounding observables and unobservables that affect one of the groups differently than the other), I run the following regression in line with the literature:

$$ap_{it} = \alpha + \sum_{t=2014}^{t=2020} \beta_t IBC_t * Distress_i + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it} \tag{2}$$

The variables of interest are the coefficients corresponding to the interaction terms of the dummy variable with the indicator variable for each of the years in the sample period. The sample begins from April 2013 and ends in March 2021. Following prior literature, the first year April 2013-March 2014 is taken as the benchmark year (Ge et al, 2017). Therefore, there are two years in the pre-treatment period, April 2014-March 2015 and April 2015-March 2016 and four years in the post-treatment period from April 2017-March 2021 (after excluding the year in which the law took effect i.e. April 2016-March 2017).The rest of the variables are as defined in the baseline regression equation (1). For the parallel trends assumption to be validated, it is crucial that the coefficients of the interaction terms for the pre-treatment years are insignificant, indicating that there were no pre-existing differential trends between the groups that could confound the effects observed after the introduction of the treatment.Therefore, any difference in the trends of these groups after the reform can be attributed solely to the treatment and not to other external factors.

5 Heterogeneity Analysis

In this section, I examine how the reform impacts customers variably depending on their needs for working capital, opportunities for growth, and industry-specific dependence on inputs. Since the information at the contract level is not available, I cannot disaggregate the net effect of the law into demand driven or supply driven components. By analysing the distributional consequences of the reform, I partially discern whether the influence of the law stems from alterations in supply or modifications in demand.

5.1 Industry Dependence on Inputs

The collateral theory of trade credit states that inputs that have been transformed are difficult to reclaim and liquidate (Costello, 2018). Therefore, trade creditors are willing to offer more trade credit to wholesalers or retailers (Mateut, Mizen and Ziane, 2015). This holds only if there is strong legislation in place that supports the trade creditors' rights in bankruptcy (Costello, 2018). However, suppliers are granted only initiation rights in the new pro-creditor regime. Therefore, the supply to sectors that do not undertake extensive transformation of the suppliers' inputs should increase. Conversely, if the pro-creditor law is unable to increase the bargaining power of the suppliers due to weak enforcement and legal inefficiencies, then the supply may not increase.

In order to test this theory, I resort to the industry-wise input-output table for India from Asian Development Bank and compute the ratio of intermediate inputs used by an industry from different industries to the total output produced by that industry in the year 2016. This data is available at the two-digit NIC level. Industries with the ratio of inputs to output above the median are classified as input intensive industries (e.g. manufacturing) and those with the ratio being below the median are included as the less input intensive industries (e.g. Hotels and restaurants, wholesalers, etc.). I run the same OLS regression as above, augmented with the interaction of the $IBC_t * Distress_i$ variable with $LInp$ (less input intensive) and $HInp$ (highly input intensive), two dummies which capture the intensity of

input usage at the industry level k:

$$\begin{aligned} ap_{it} = \alpha + \beta_1 IBC_t * Distress_i * LInp_k + \beta_2 IBC_t * Distress_i * HInp_k + \\ \beta_3 IBC_t * LInp_k + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it} \end{aligned} \tag{3}$$

In this specification, β_1 measures the change in ap_{it} following the reform for financially distressed firms in less input intensive industries relative to the controls in less input intensive industries. β_2 measures the change in ap_{it} following the reform for financially distressed firms in highly input intensive industries relative to the controls in highly input intensive industries. β_3 measures the change in ap_{it} following the reform for firms in less input intensive industries relative to the firms in highly input intensive industries. If there is any heterogeneity based on the industry dependence on inputs, then the difference between $beta_1$ and $beta_2$ will be significant.

5.2 Working Capital Management

The gross working capital cycle is a critical metric that indicates the total time taken by a firm to convert its investments in inventory and other resources into cash flows from sales. Essentially, this cycle helps in assessing how long a company's cash is tied up in the working capital process. A longer gross working capital cycle suggests that a firm's cash is locked up for an extended period before turning into liquid assets, which can significantly impact the operational efficiency and cash flow dynamics of the business.

Firms with prolonged working capital cycles are often seen to have a greater need for financing. This need arises because these businesses must maintain their operational activities

and meet financial obligations while waiting longer for cash to be freed from their working capital. Consequently, they might rely more heavily on external financing options, such as bank loans or trade credit, to bridge the gap between cash outflows and inflows.

Moreover, a lengthy gross working capital cycle is typically indicative of inefficient working capital management. It may signal issues such as slow inventory turnover, extended credit terms given to customers, or inefficiencies in collecting receivables (longer debtor days or a larger receivables to sales ratio). Such inefficiencies can strain a company's financial health, potentially leading to increased borrowing costs and reduced profitability. Effective management of the working capital cycle is crucial as it not only helps in reducing financing costs but also enhances the company's return on investment by optimizing asset usage and improving cash flows.

Suppliers may increase their credit to distressed firms that have poor working capital management, such as those with longer gross working capital cycles and longer debtor days. Strong creditor laws could cause trade creditors to lower their lending standards (Ge et al, 2017; Costello, 2018). However, the possibility of liquidation could make suppliers less likely to extend credit to inefficient firms. Previously, before strict debt enforcement was in place, suppliers could have continued to give trade credit to financially weak firms hoping to avoid or delay liquidation, which might have seemed less favourable under favourable debtor laws (Kulkarni, 2017). Alternatively, it is also possible that suppliers might give trade credit to distressed companies that have shorter working capital cycles and better operational efficiency. In essence, while suppliers are willing to take on some risk, they could avoid taking excessive risk.

Firms with a longer gross working capital cycle may demand more trade credit after the law due to their need to finance working capital needs for a longer duration. Stronger creditor laws could relax the financial constraints for these firms by increasing their expected liquidation value. Conversely, distressed firms with relatively longer working capital cycles may cut back on their trade credit utilization as they face a bigger threat of being liquidated as compared to distressed firms with efficient working capital management. Additionally, the implementation of stronger creditor regulations might indirectly affect these demands. With a reduction in financial debt costs and improved access to credit, firms struggling with inefficient working capital management might find it easier to secure financing from banks, potentially diminishing their dependence on trade credit. Using a modification of the above regression equation to explore these dynamics further, I split the sample of firms based on the median gross working capital cycle in the financial year 2015-16.

$$\begin{aligned} ap_{it} = \alpha + \beta_1 IBC_t * Distress_i * LWC_i + \beta_2 IBC_t * Distress_i * SWC_i + \\ \beta_3 IBC_t * LWC_i + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it} \end{aligned} \tag{4}$$

In the specified model, LWC_i and SWC_i represent two binary variables that indicate whether a firm's gross working capital cycle is longer or shorter than the median across the sample in the pre-treatment financial year (April 2015-March 2016). As before, β_1 measures the change in ap_{it} following the reform for financially distressed firms with longer gross working capital cycle relative to the controls also experiencing similar cycles. β_2 quantifies the adjustment in ap_{it} post reform for financially distressed firms with shorter working capital cycles relative to the controls with similar cycles. β_3 measures the change in ap_{it} following

the reform for firms with longer gross working capital cycles relative to the firms with shorter working capital cycles. If there is any heterogeneity based on the length of the gross working capital cycle, then the difference between $beta_1$ and $beta_2$ will be significant.

Given that distressed firms extend more trade credit as a strategy to stay competitive and attract new customers, I further explore whether firms that depend more heavily on trade credit are also more likely to extend it.Longer debtors days or a higher receivables to sales ratio would indicate an increased need to short-term finance and also reflect inefficiencies related to collection. To investigate this, I also divide my sample based on median receivables to sales ratio of the sample in the pre-treatment financial year (April 2015-March 2016). I use the above specification and replace LWC_i (SWC_i) with $HRec_i$ ($LRec_i$), which identifies whether a firm's receivables are above (below) the sample's median.

5.3 Growth Opportunities

Larger and older firms are offered more trade credit primarily because of their higher credit worthiness (Petersen and Rajan, 1997). However, smaller and younger are likely to have less access to external finance but have more investment opportunities (Adelino et al, 2023). Following the reform, suppliers could be willing to extend more trade credit to distressed firms (Ge et al, 2017; Costello, 2018). However, they could minimize their risks by lending to their long time customers than younger firms as they know more about their older firms. On the other hand, offering more trade credit to younger and growing yet currently unprofitable firms could enable suppliers to secure future profitable business relationships (Petersen & Rajan, 1997).

Younger and emerging firms typically fail due to internal challenges, whereas established firms often struggle with intense competition and economic downturns (Kücher et al. 2020). As creditor rights are strengthened, banks might cut back on extending credit (such as evergreening loans) to older firms that are not profitable (Kulkarni, 2017). This could lead to an increased demand for trade credit among these firms. For younger firms, whether their demand for trade credit rises or falls could depend on whether the income effect outweighs the substitution effect and on their ability to access alternative sources of finance.To investigate if the reform impacts firms based on age, the sample is divided at the median age for the financial year April 2015-March 2016, using Old_i ($Young_i$) to indicate firms older (younger) than the median.

$$\begin{aligned} ap_{it} = &\alpha + \beta_1 IBC_t * Distress_i * Old_i + \beta_2 IBC_t * Distress_i * Young_i + \\ &\beta_3 IBC_t * Young_i + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it} \end{aligned} \tag{5}$$

In the data, firms below the median size of the sample tend to rely more on trade credit with an average payables to COGS ratio of 1.81 before the reform. Larger firms have an average payables to COGS ratio of 0.33. Post-reform, smaller unprofitable firms experiencing low sales growth may boost their demand for trade credit due to relaxed financial constraints and improved borrowing capacity. Nonetheless, a heightened risk of liquidation could cause smaller distressed firms with no sales growth to reduce their reliance on trade credit. Furthermore, with the strengthening of creditors' rights, these smaller entities might shift from using trade credit to taking out bank loans, which might become more accessible. To test whether the reform's impact differs by firm size and sales growth, the analysis first

divides the sample at the median firm size for the financial year April 2015-March 2016.

$$\begin{aligned} ap_{it} = &\alpha + \beta_1 IBC_t * Distress_i * Large_i + \beta_2 IBC_t * Distress_i * Small_i + \\ &\beta_3 IBC_t * Small_i + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it} \end{aligned} \tag{6}$$

I also analyse if varying sales growth results in heterogeneous effects of the law. I therefore replace $Large_i$ and $Small_i$ with $HSales_i$ and $LSales_i$ which are dummies that indicate whether a firm's sales growth is higher or lower than the sample median in the last pre-treatment year.

6 Data

The firm-level financial data was acquired from CMIE (Centre for Monitoring Indian Economy) Prowess spanning the financial years April 2013 to March 2021. This dataset features information on all listed companies and a substantial number of unlisted ones, sourced from the audited annual financial statements submitted to the Ministry of Corporate Affairs. I excluded a small fraction of firms with non-annual statements (approximately 13% of the firms) and those with a financial year differing from April to March (approximately 0.8% of the firms). Adhering to normal selection criteria, companies with missing information on accounts payable and those reporting negative values for sales, COGS (Cost of Goods Sold) and total assets were omitted. Furthermore, firms exhibiting gaps in financials during the sample period were excluded, yielding a balanced panel of 10,445 firms. To mitigate potential selection bias, I will examine the robustness of my results using an unbalanced panel, including firms with gaps in their statements and firms with missing financial state-

ments. Ensuring the results remain undistorted by outliers, aligning with common practice in literature, all the variables in the regression are winsorized at 1% (Shumway, 2001).

Table 2.1 presents the summary statistics for the variables used in the analysis across the entire sample, and separately for control and treated firms. The data show that profitable firms tend to be larger in size compared to distressed firms. On average, treated firms exhibit higher leverage, lower liquidity, and are generally younger compared to firms in the control group. Typically, treated firms report negative gross profitability, as indicated by the EBDITA to total assets ratio. In contrast, the control group's average gross profit margin is 11%. Treated firms are more dependent on trade credit compared to their financially stable counterparts. This reliance extends to both utilizing and providing more trade credit; distressed firms often offer more trade credit to stay competitive and attract new customers. Additionally, there is a marginally higher percentage of unlisted companies in the treated group than in the control group.

[INSERT TABLE 2.1 HERE]

7 Empirical Results

The Insolvency and Bankruptcy Code, enacted in 2016, has bolstered the rights of creditors in bankruptcy situations by enabling them to start bankruptcy proceedings against debtors in specialized bankruptcy courts. This law significantly increases the bargaining power of both secured and unsecured financial creditors, as it also allows them to take control of the debtor firm. For trade creditors, even though they lack voting rights, they are now able to initiate bankruptcy proceedings against defaulting firms instead of having to rely on civil courts for

dispute resolution as was necessary prior to the IBC. This enhancement in their bargaining power allows them to negotiate from a stronger position within a creditor-centric regime and with slightly improved enforcement than before. In 2019, the World Bank upgraded India's ranking to 163rd out of 190 countries in enforcement of contracts, an improvement from its 172nd rank in 2016.

7.1 Preliminary Results

The goal is to assess how this creditor-friendly law affects the use of trade credit by distressed firms, which are most likely to be impacted by changes in the bankruptcy framework. Since adjustments to the bankruptcy regime can influence both the supply and demand of credit, they affect the capital structure of the firms. In Table 2.2, I report the differences between profitable (control) and distressed (treatment) firms before and after the reform. Without incorporating any firm fixed effects and controls, significant pre-trends are visible, underscoring substantial inherent differences between these two groups across various financial metrics. After the law was enacted, the leverage of distressed firms, as measured by the debt-to-assets ratio, has increased compared to the control group. There has been no change in the cost of debt for these firms. However, the focal point of interest, reliance on trade credit (measured by accounts payable to COGS), has significantly increased for firms closer to default compared to financially robust firms. The liquidity of distressed firms has improved, and they also extend more trade credit after the reform. Additionally, size (measured by the natural logarithm of total assets), proportion of fixed assets to total assets as indicated by tangibility, and the natural logarithm of sales and cost of goods sold have declined for financially weaker firms in comparison to their profitable counterparts post-IBC. A decline in sales and

therefore a decline in cost of goods sold could be driving the increase in the ratio of payables to COGS. To test this, I define Payables* in Table 2.2 as the ratio of accounts payable to pre-treatment average COGS value. This ratio does not change post reform. However, a decline in COGS would imply a decline in raw material purchases. However, an increase in accounts payable to COGS ratio indicates that a larger percentage of raw material purchases are being bought on credit. Therefore, more trade credit is being extended and is being used by the distressed firms. Lastly, gross profitability has shown improvement in the post-treatment period for the treated group.

[INSERT TABLE 2.2 HERE]

Before beginning a detailed analysis, Figure 1 provides a graphical depiction of the univariate test results shown in Table 2.2 for the average accounts payable to COGS ratio. The graph illustrates that trade credit usage patterns for both groups were similar in the years leading up to the implementation of the law. However, in the years following the law's enactment, the distressed firms show an increase in their use of trade credit. This initial evidence suggests that changes in creditors' bargaining power may be influencing the reliance on trade credit among financially weaker firms.

[INSERT FIGURE 1 HERE]

The patterns observed in Figure 1 remain statistically robust to standard regression analysis. In Table 3, I investigate the impact of increased creditor protection on the use of trade credit by firms in distress using the difference-in-differences setting. The treatment and control groups are identified based on the former classification of a 'sick industrial unit' under the previous bankruptcy law in India. The analysis also adjusts for factors previously

noted that might influence firms' trade credit usage. Given the law's influence on the firm's balance sheet, results are presented both with and without these controls. To account for firm-level time-invariant heterogeneity, firm fixed effects are included. The year fixed effects are used to control for broad macroeconomic changes, while industry-year fixed effects account for industry-specific variations. After the law's implementation, treated firms experience a significant increase in payables by 22.6% as compared to the non-distressed firms. This amounts to a 15.6% increase with respect to the pre-reform level. These findings hold across different specifications detailed in Table 3. Additionally, an increase in a firm's age and size is found to be negatively associated with the demand for trade credit, indicating that larger and older firms depend less on trade credit for short-term financing. Conversely, firms with higher leverage and fewer fixed assets tend to require more trade credit. These firms are more credit constrained and thus rely more on their suppliers to finance their working capital. Finally, higher cash reserves are linked to reduced use of trade credit. The results are qualitatively similar when I use classify firms into treated and control groups using the Altman's Z-score apporach defined previously and are reported in Table 2B in Appendix B.

[INSERT TABLE 3 HERE]

Considering that enhanced creditor rights impact the trade credit practices of firms nearing bankruptcy, it is expected that there would be no notable difference in the accounts payable to COGS ratio between the control and treated firms. To verify this, I test the parallel trend assumption using equation (2), with findings displayed in Table 4. The analysis reveals no significant differences in trends between the control and treated groups in the years before the reform. The coefficients of the interaction terms between the pre-reform

year dummies and the distress indicator are statistically insignificant in all the different specifications presented in Table 4. Figures 2 and 3 graph the interaction term coefficients between the year dummies and the distress indicator with their 95% confidence intervals, both without and with firm specific controls. The parallel trend assumption also holds when employing the Altman's Z-score for emerging markets to delineate the control and treated groups, as indicated in Table 3B and Figures 2B and 3B in Appendix B.

[INSERT TABLE 4 HERE]

[INSERT FIGURES 2 and 3 HERE]

7.2 Heterogeneous Effects of the Law

Preliminary analysis reveals an increase in the usage of trade credit by firms most affected by a shift to a creditor-centric bankruptcy regime. A straightforward interpretation is that the increase is due to a greater willingness of suppliers to offer more credit to troubled firms, enhanced by better enforcement and a reduced risk of default. Yet, this could also be a result of demand-side dynamics, as financially strapped firms might seek more credit due to an increase in their expected liquidation value. To delve deeper into which effect predominates, I investigate the heterogeneous effects of the law.

I first explore if there are any distributional consequences of enhanced creditor protection depending on the input usage of the industries in which the distressed firms operate. From Table 5, it is evident that the heightened trade credit usage among distressed firms is concentrated amongst firms operating in industries with lower input-output ratio, such as the services sector, unlike in the manufacturing sector. The difference between

$IBC_t * Distress_i * HInp_k$ and $IBC_t * Distress_i * LInp_k$ is negative and significant at 1% and is presented at the bottom of the table. Additionally, there is no significant change in the trade credit usage of distressed firms operating in industries with higher input dependency as compared to their profitable counterparts operating in the same industry. This could be attributed to an increase in supply of trade credit to distressed firms operating in industries that undertake less transformation of the inputs. With increased creditor protection, the expected liquidation value of assets is likely higher, making it less risky for suppliers to offer trade credit. Consequently, suppliers might be more willing to extend credit to distressed firms in sectors with lower input dependency, as the potential for recovery in case of default may be better compared to sectors that heavily transform their inputs, like manufacturing.

[INSERT TABLE 5 HERE]

Given that trade credit finances short-term working capital requirements, I next explore how the law's effects vary according to the working capital management of firms. I analyse this by considering two factors: the gross working capital cycle and the trade credit extended, measured as the ratio of receivables to sales. Table 6 shows that distressed firms with a longer gross working capital cycle see an increase in their accounts payable compared to their more profitable peers with similarly long cycles. Furthermore, there is a notable and significant increase in trade credit usage among distressed firms with lengthier cycles compared to those with shorter ones, as evidenced in Table 6. Additionally, Table 7 highlights that the law's impact is more pronounced in distressed firms with higher receivables and longer debtor days, whereas those with lower receivables do not show an increased dependency on trade credit following the law.Consequently, the influence of the law is particularly significant among

distressed firms with inadequate working capital management. This group of firms likely has an elevated need for liquidity, and the relaxation of financial constraints following the law may have heightened their demand for trade credit. Moreover, this increase could stem from a boost in supply or from shifts in both demand and supply dynamics.

[INSERT TABLES 6 and 7 HERE]

Lastly, I explore whether differing growth opportunities lead to a varied impact of the law. Table 8 to 10 report the results based on the DID estimates of the effect of the law on trade credit utilization conditional on firm age, size and sales growth. Financially weaker but older firms see a noticeable increase in their trade credit usage. In contrast, younger distressed firms see no significant change in their trade credit use. The difference between $IBC_t * Distress_i * Old_i$ and $IBC_t * Distress_i * Young_i$, however, is not significant when industry-year fixed effects are considered, as shown at the bottom of Table 8. Thus, age does not appear to be a significant factor in how the law affects trade credit differently.

Table 9 shows that smaller distressed firms increase their use of trade credit following the law, whereas larger distressed firms do not see a change. The difference in trade credit usage between larger and smaller distressed firms is negative and significant at 1%. Likewise, Table 10 shows that the law's impact is notably stronger on distressed firms with low sales growth. Those with high sales growth see no significant changes in their trade credit usage. Overall, the law predominantly influences smaller firms with slow sales growth, which generally have limited access to financial markets. These firms have likely increased their demand for trade credit as their borrowing capacities have expanded. However, in light of potential risks of premature liquidation, they may also have cautiously reduced their trade credit demand.

At the same time, the supply of trade credit to these firms could have grown as suppliers lowered their lending criteria in anticipation of stronger enforcement (Costello, 2018). Even if there was a reduction in demand, this surge in supply would still dominate since the overall volume of trade credit has expanded. Moreover, if the supply decreased due to elevated risks of creditor actions against these firms, the fall in supply would be outweighed by the increase in demand. These findings remain consistent when using the Z-score method to categorize the treated and control groups, as detailed in Tables 4B through 8B in Appendix B.

[INSERT TABLES 8, 9 and 10 HERE]

7.3 Effect on Gross Profitability

Since the specific terms of the contracts are not known, the observed increase in the volume of trade credit could be attributed to suppliers meeting a heightened demand. This increase might lead suppliers to pass on the added risk to customers through higher implied interest rates or elevated raw material prices. Alternatively, due to the creditor-friendly law, suppliers may choose not to transfer the additional risk when extending trade credit to smaller firms with stagnant growth prospects and weak working capital management, showing a greater willingness to lend to higher-risk borrowers. This dynamic can be partially understood by analyzing how the law affects the gross profitability of financially unstable firms.

Utilizing the DID estimation equation (1) as in prior analyses, we now employ the ratio of gross profit (EBDITA) to total assets as the dependent variable. The time-varying firm-level controls include firm age, size, tangibility, leverage, liquidity, and asset turnover (sales to total assets). Firm-level and time fixed effects are included, and the results are displayed in

Table 11. Post-law implementation, treated firms experienced a significant 4.8% increase in gross profitability, as shown in column 5 of Table 11. This DID estimate is consistent across various model specifications detailed in the table. Additionally, increases in a firm's age and size are positively associated with gross profitability, indicating that larger and older firms generally report higher profit margins. Conversely, firms with lower leverage and a greater proportion of fixed assets tend to be more profitable. Additionally, firms with higher cash reserves and better asset turnover rates also exhibit higher profit margins.

[INSERT TABLE 11 HERE]

Since significant differences between the two groups were observed before and after the law across various financial metrics, there may be pre-existing trends that influence the gross profitability in the pre-treatment years. To examine the presence of parallel trends, I utilize equation (2) with the gross profit to total assets ratio as the dependent variable, and the findings presented in Table 12 located in Appendix A.The coefficients for the interaction terms between the pre-reform year dummies and the distress indicator are statistically insignificant across all the models outlined in Table 12. Figures 4 and 5 illustrate these interaction term coefficients between the year dummies and the distress indicator, along with their 95% confidence intervals, both without and with firm-specific controls. The evidence supports the absence of significant pre-existing trends that could skew the analysis.

[INSERT TABLE 12 HERE]

[INSERT FIGURES 4 and 5 HERE]

Since there is an observed increase in gross profitability for financially strained firms fol-

lowing the law, the goal is to determine whether larger distressed firms with superior working capital management and growth opportunities are driving this improvement in profitability. Considering that less efficient distressed firms are utilizing more trade credit post-law, their gross profits might not have risen significantly if suppliers had transferred the increased risk through higher implied interest costs. I conduct the heterogeneity analysis as previously done, but now using the gross profit to total assets ratio as the dependent variable, with the findings presented in Tables 13 to 17.

Since gross profitability increases for financially strained firms after the law, the aim is to assess whether bigger distressed firm with better working capital management and growth opportunities drive the improvement in gross profitability after the law. Given that the more inefficient subset of distressed firms use more trade credit after the law, their gross profits may not have increased much if the suppliers would have passed on the additional risk that they take by lending to the distressed firms in the form of increased implied interest cost. I run the heterogeneity analysis as before but now with gross profit to total assets ratio as the dependent variable. The results are reported in Tables 13 to 17. Starting with Table 13, it is evident that distressed firms in industries with lower input dependency see an increase in their profit margins compared to their profitable peers in similar sectors. Likewise, distressed firms in sectors with higher input-output ratios also show improved profit margins compared to their profitable counterparts in similar industries. However, the difference in profitability between distressed firms across these industry types is not statistically significant.

[INSERT TABLE 13 HERE]

Tables 14 and 15 detail the effects of profitability conditional on the gross working capital

cycle and the ratio of receivables to sales, respectively. According to Table 14, distressed firms with both longer and relatively shorter cycles exhibit improved profitability compared to their financially stable counterparts. However, the law does not affect the profit margins of distressed firms differently based on the duration of their gross working capital cycle. Similarly, the impact of the law on gross profitability is not specifically pronounced among distressed firms that issue more trade credit to maintain competitiveness. As shown in Table 15, distressed firms with both higher and lower receivables see an increase in profitability compared to their financially stable counterparts. Yet, the difference between $IBC_t * Distress_i * HRec_i$ and $IBC_t * Distress_i * LRec_i$ is not statistically significant, as indicated at the bottom of the table. Consequently, the law's effect on profitability does not appear to vary according to working capital management efficiency.

[INSERT TABLE 14 and 15 HERE]

Tables 16 and 17 present the results of profitability conditional on firm size and sales growth, respectively. According to Table 16, both larger and smaller distressed firms show improved profitability compared to their financially stable counterparts. However, the law does not have a differential impact on the profit margins of distressed firms based on their size. Similarly, the impact of the law on gross profitability is not specifically focused on distressed firms with either high or low sales growth. As shown in Table 17, distressed firms with both higher and lower sales growth experience improved profitability compared to their financially stable counterparts. Nevertheless, the difference in profitability levels between distressed firms based on their sales growth is not statistically significant. Therefore, it appears that the effect of the law on profitability does not vary depending on growth opportunities

[INSERT TABLE 16 and 17 HERE]

Distressed firms that experience a bigger impact of the law on their trade credit usage do not drive the improvement in the gross profit margins. However, their gross profit margins have not deteriorated either. This indicates a greater willingness among trade creditors to extend more credit to the less efficient segments of distressed firms without any increase in the implicit interest costs. Another scenario could be a reduction in trade credit supply with a demand increase that surpasses the shift in supply, since the volume of trade credit has risen. This scenario would suggest higher costs for trade credit. If trade credit costs had increased, these firms might have passed on this increase to their customers, preventing a decline in their gross profit margins. However, as these distressed firms are small, with limited growth prospects and operate in industries with low input dependency, they might find it difficult to increase prices due to the competitive market environment. Consequently, these firms cannot transfer the heightened cost of trade credit to their customers without impacting their gross profit margins. This analysis helps us dismiss any significant reductions in trade credit supply that are not matched by even larger increases in demand after the reform, or an increase in credit supplied in response to growing demand. Thus, the supply of trade credit to these firms must have increased. It remains challenging to ascertain changes in the demand for trade credit among these distressed firms. Demand might have decreased due to fears of liquidation, the availability of alternative financing options, or it might have actually increased due to enhanced borrowing capacities. Any potential decrease in demand is offset by the increase in supply, as shown by the higher volumes of trade credit. Moreover, any increase in demand would not exceed the increase in supply, as this would likely lead to higher

implicit interest costs and declining gross profit margins. With an upsurge in trade credit and no worsening of gross profit margins among smaller firms with inadequate working capital management and limited growth opportunities, enhanced creditor rights benefit financially unstable firms. Therefore, the granting of only initiation rights (no reclamation or voting rights) to suppliers in a more creditor-friendly environment has led to an increase in the supply of trade credit to firms on the brink of default.

8 Robustness Checks

8.1 Propensity Score Matching

Given that treated and untreated firms differ markedly, the likelihood of a firm being distressed is calculated using a logit regression that considers variables such as size (log of total assets), leverage (total debt to total assets), asset turnover (sales to total assets), and two-digit industry classification. Following the calculation of these propensity scores, firms in the treatment group are matched with comparable units in the control group based on these scores. This method effectively minimizes selection bias by ensuring that matched firms share similar covariate values, thus approximating a randomized experimental set-up. The preliminary analyses using these matched firms are conducted, with findings detailed in Table 1C. Post-law implementation shows that treated firms report a 23.6% increase in payables compared to their non-distressed counterparts, equating to a 28% rise relative to levels before the reform. Table 2C confirms the absence of parallel trends. Figures 1C and 2C graph the interaction term coefficients between the year dummies and the distress indicator with their 95% confidence intervals, both without and with firm specific controls. This anal-

ysis is also performed using the Z-score method to identify distressed and profitable firms. The findings are documented in Tables 3C and 4C and display similar qualitative results. Correspondingly, Figures 3C and 4C illustrate the parallel trends analysis for the Z-score identified groups.

8.2 Synthetic Difference-in-Differences

Synthetic Difference-in-Differences (Arkhangelsky et al. , 2021) is used to address the concern of unobserved correlation between treatment assignment and firm-level time trends (Berman and Israeli, 2022). This method constructs a synthetic control from a selection of appropriate control units using pre-intervention data, ensuring it reflects the counterfactual trends that the treated unit would have followed. By weighting the pre-intervention periods to resemble the post-intervention periods more closely, this technique guarantees that relying solely on the outcome variable for 'matching' is adequate. Figure 5C demonstrates a significant increase in trade credit for distressed firms compared to the control group post-intervention, with a 39% increase observed when including only firm and year fixed effects. This result is significant at the 1% level and closely corresponds to the DID estimate of a 41.5% increase shown in column 1 of Table 3.

8.3 Additional Robustness Test

On 22 August 2014, the Ministry of Finance created the Bankruptcy Legislative Reforms Committee (BLRC) to draft the new bankruptcy law which was passed in May 2016 and came into effect from December 1, 2016. In order to account for possible anticipation, the preliminary analysis is re-run by excluding the financial years from April 2014 to March

2015 and April 2015 to March 2016 (Rajgopal andTantri, 2022). Following the law's implementation, trade credit usage among distressed firms rose by 24.5%. The coefficient for the interaction between the sole pre-reform year (March 2013 - April 2014) and the treated indicator is statistically insignificant, confirming that the parallel trends assumption is satisfied.

9 Conclusion

The influence of shifts in creditor bargaining power on trade credit remains a relatively uncharted territory. Previous studies have primarily focused on the implications of providing suppliers with reclamation or negotiation and voting rights and stringent enforcement (Ge et al., 2017; Sautner and Vladimirov, 2018; Costello, 2019). This paper investigates the specific impact of granting suppliers only initiation rights, without reclamation, negotiation, or voting rights, within a creditor-centric bankruptcy framework. I observe an increase in trade credit utilization and an improvement in the gross profitability of distressed firms, particularly among smaller firms with limited growth prospects and extensive cash conversion cycles characterized by longer debtor days. The absence of a decline in their gross profitability suggests a rise in the supply of trade credit, thereby supporting these firms in maintaining operations and competitiveness. This suggests that financially weaker firms seem to be have benefited from the reform.

However, it remains uncertain whether the observed increase in trade credit usage can be solely attributed to the strengthened rights of suppliers. Without more robust financial creditor rights, the mere presence of initiation rights for trade creditors might not pose a credible threat to customers, which in turn might not significantly influence the supply of

trade credit. In a pro-debtor regime, with the initiation right intact, debtors retain control, which potentially strengthens the bargaining power of firm's management in bankruptcy and out-of-court settlements. This poses an interesting avenue for future research.

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Appendix A

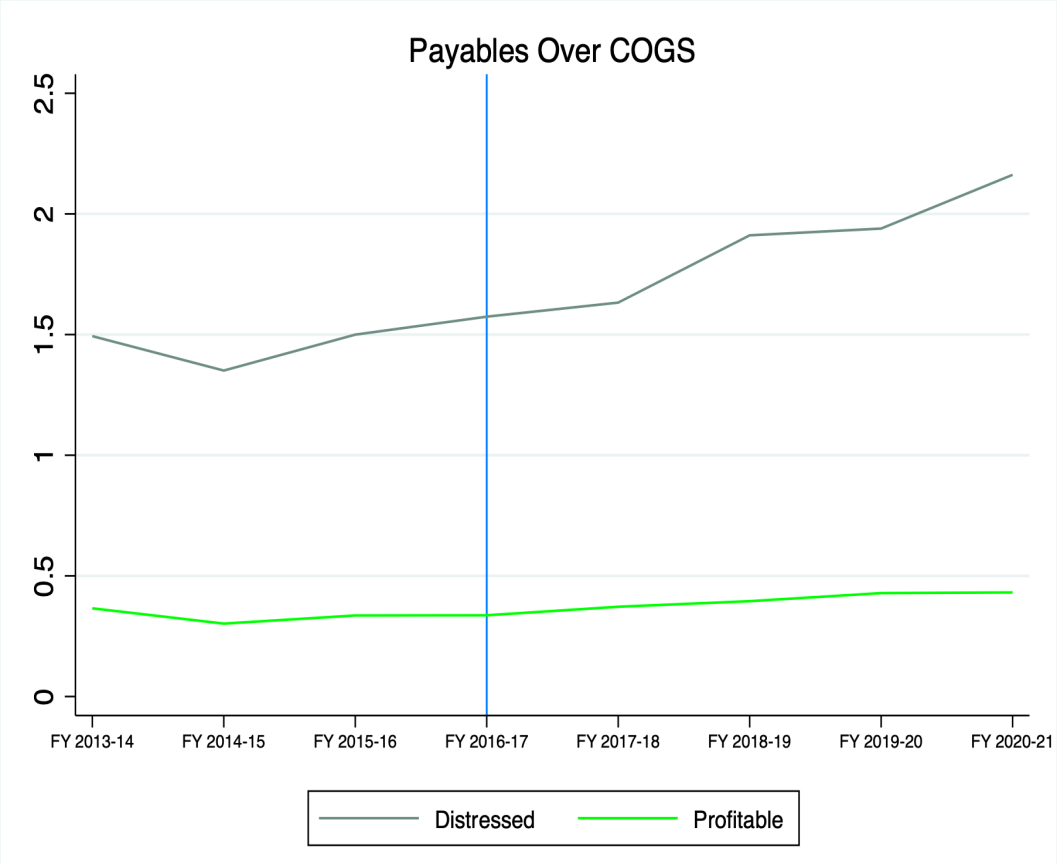

Figure 1: Trends in Payables among treated and control firms. This figure shows the average payables over COGS around the bankruptcy reform (2016-17) in the treated and control groups. The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. The vertical line denotes the adoption of the IBC law (2016-17).

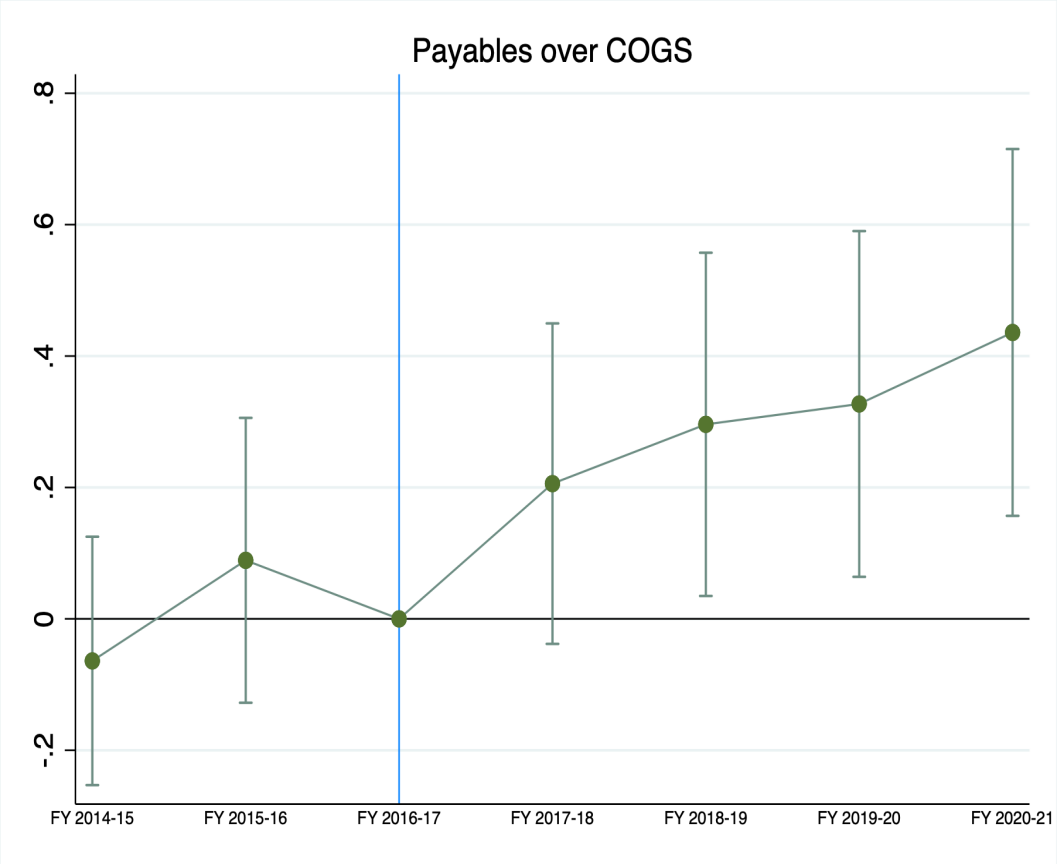

Figure 2: Effect of the IBC reform on payables: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $ap_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. A financially healthy firm has a positive balance of accumulated profits, in every year from April 2013 - March 2021. The dependent variable ap_{it} is the ratio of accounts payable to COGS for firm i in year t. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals. Firm level, time-varying controls are not included.

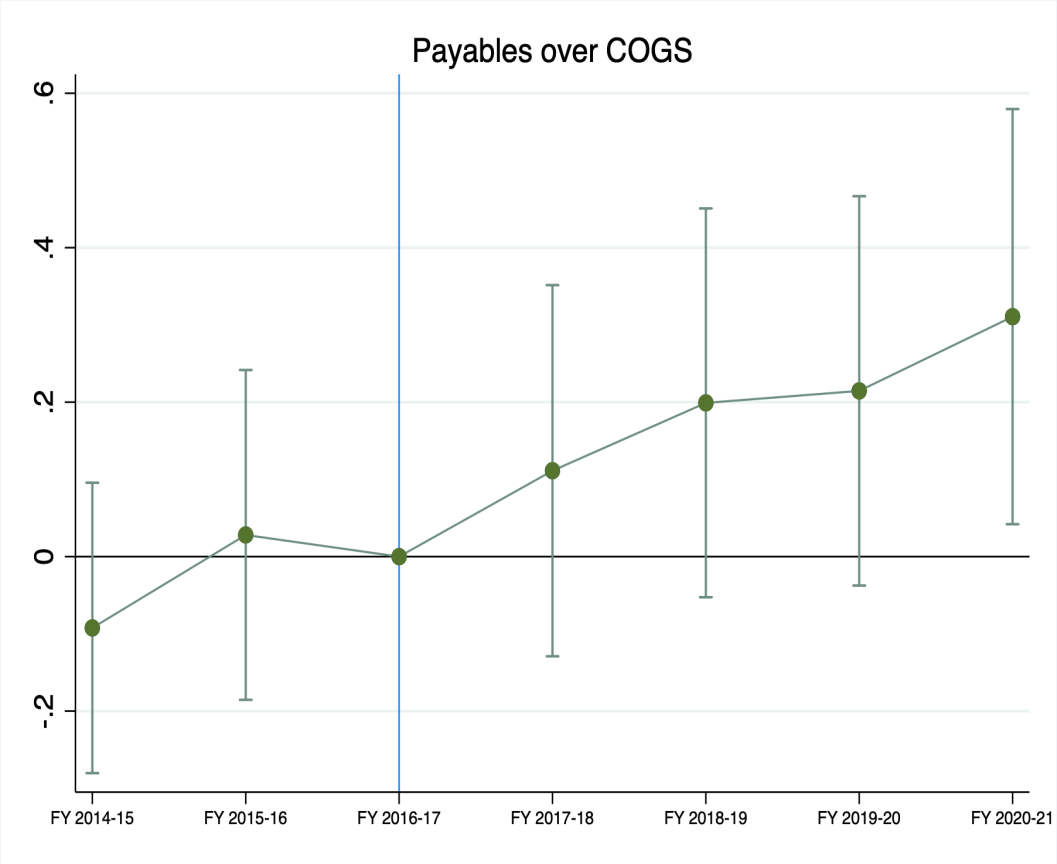

Figure 3: Effect of the IBC reform on payables: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $ap_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. A financially healthy firm has a positive balance of accumulated profits, in every year from April 2013 - March 2021. The dependent variable ap_{it} is the ratio of accounts payable to COGS for firm i in year t. X_{it} are the firm level, time varying controls that include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals.

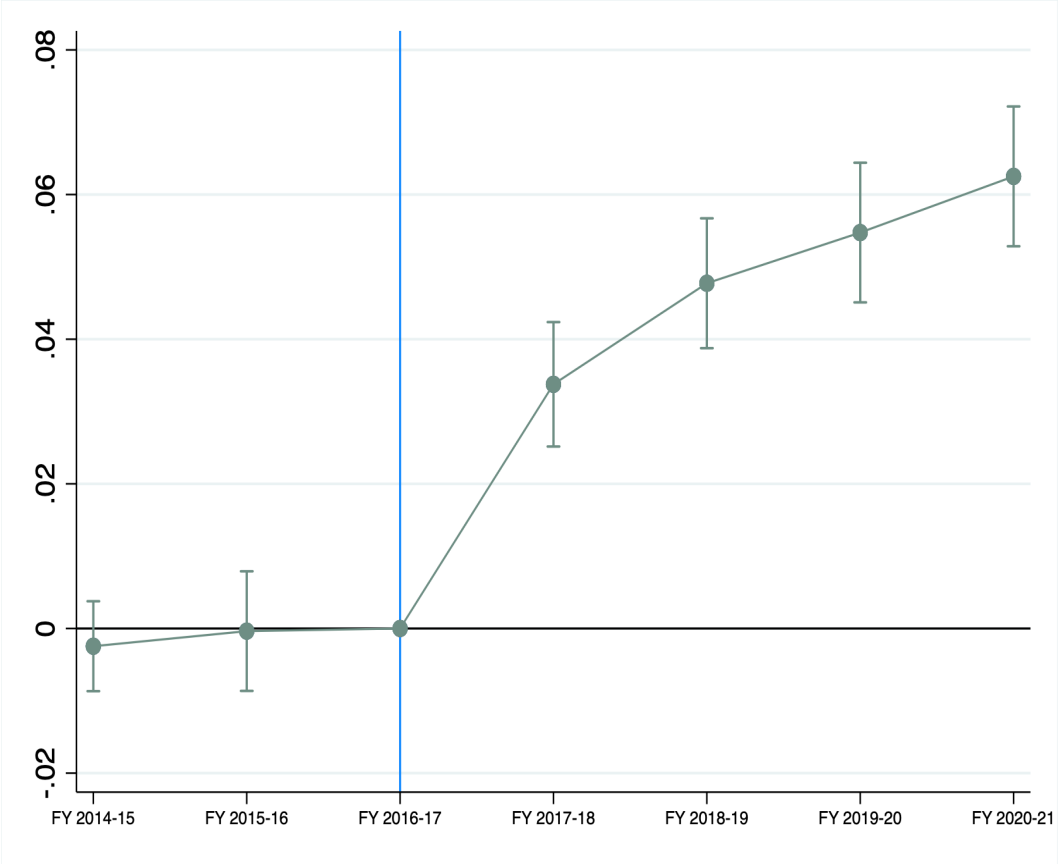

Figure 4: Effect of the IBC reform on profitability: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $gp_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. A financially healthy firm has a positive balance of accumulated profits, in every year from April 2013 - March 2021. The dependent variable gp_{it} is the ratio of gross profit to total assets for firm i in year t. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals. Firm level, time-varying controls are not included.

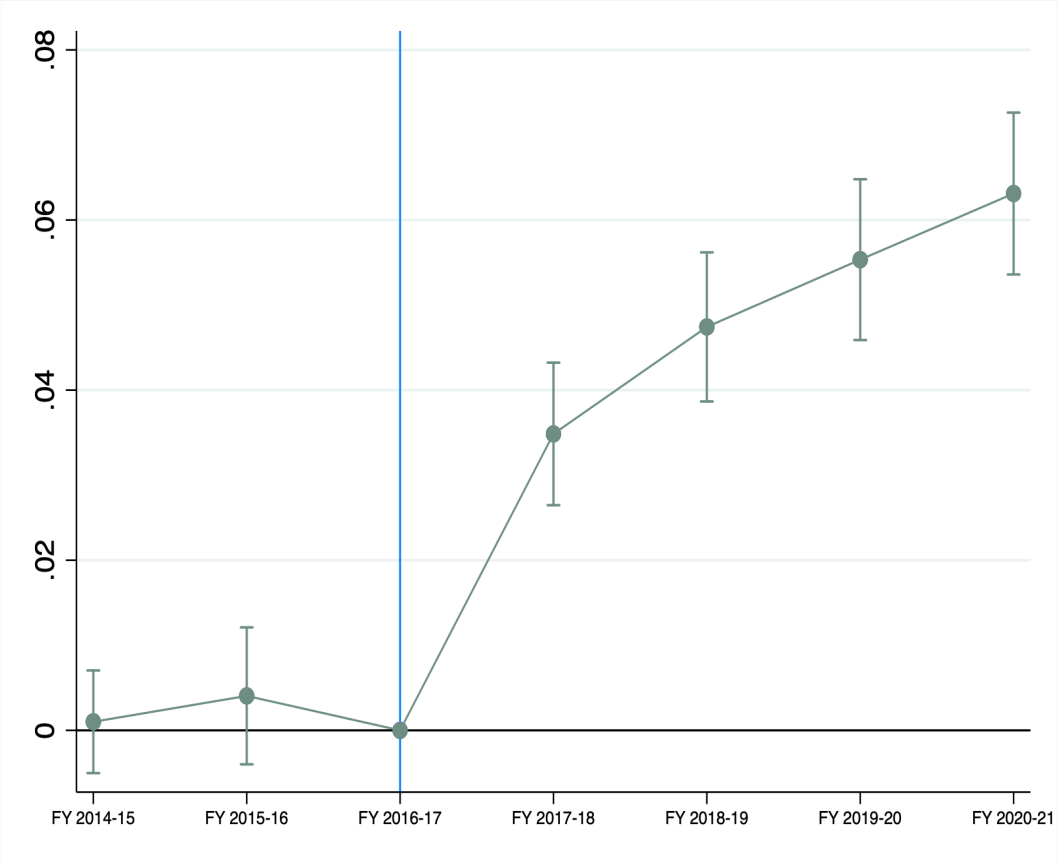

Figure 5: Effect of the IBC reform on profitability: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $gp_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. A financially healthy firm has a positive balance of accumulated profits, in every year from April 2013 - March 2021. The dependent variable gp_{it} is the ratio of gross profit to total assets for firm i in year t. X_{it} are the firm level, time varying controls that include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and sales to total assets. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals.

Table 1: Variable Definition

Variable	Definition
Age	Natural logarithm of (1+age)
Size	Natural logarithm of total assets
Tangibility	Plant, property and equipment scaled by total assets
Leverage	Total borrowings/debt scaled by total assets
Cost of debt	Total interest expense scaled by total debt
Liquidity	Cash and bank balances scaled by total assets
Sales	Natural logarithm of total sales
COGS	Cost of Goods Sold
Asset Turnover	Sales scaled by total assets
Profitability	EBDITA divided by total assets
Receivables	Trade receivables scaled by sales
Payables	Trade payables scaled by COGS
Payables*	Trade payables scaled by pre-treatment average of COGS (Cost of Goods Sold)
Altman's Z-score	Altman's (1968) Z-score for emerging markets defined as: $3.25 + 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$ X_1 = (Current Assets − Current Liabilities)/Total Assets, X_2 = Retained Earnings/Total Assets, X_3 = EBIT/Total Assets, X_4 = Book Value of Equity/Total Liabilities.

Table 2.1: Descriptive Statistics

This table presents the summary statistics (number of observations, mean and standard deviation) for the variables used in the analysis. The sample period is from April 2013 to March 2021 (excluding the treatment year i.e. April 2016 to March 2017). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013-March 2021. All variables are defined in the Appendix.

	Full Sample $N = 10,445$			Control $N = 6,050$			Treatment $N = 1,762$		
	Obs.	Mean	Std. dev.	Obs.	Mean	Std. dev.	Obs.	Mean	Std. dev.
Age	73,115	28.75	17.03	42,350	29.87	16.39	12,334	27.25	17.15
Size	73,071	6.90	2.00	42,350	7.11	1.85	12,295	6.16	2.24
Tangibility	70,588	0.25	0.22	41,529	0.23	0.19	11,347	0.31	0.28
Leverage	63,306	0.41	0.50	36,194	0.27	0.19	11,010	0.90	0.92
Cost of debt	58,104	0.12	0.18	34,509	0.13	0.19	9,001	0.10	0.14
Liquidity	72,039	0.08	0.12	42,127	0.09	0.12	11,769	0.07	0.12
Sales	69,508	6.69	2.15	41,669	7.10	1.94	10,614	5.68	2.39
Cost of Goods Sold	71,766	6.21	2.37	42,166	6.69	2.09	11,560	5.06	2.70
Profitability	72,703	0.07	0.12	42,312	0.11	0.09	12,078	–0.01	0.15
Receivables	67,455	0.37	0.92	41,009	0.28	0.62	9,845	0.58	1.37
Payables	71,766	0.74	3.04	42,166	0.38	1.76	11,560	1.71	4.92
Payables*	72,387	0.57	1.78	42,245	0.33	0.95	11,900	1.11	2.77
% of Listed Firms	18,396	25%		11,046	26%		2,632	21%	
% of Unlisted Firms	54,677	75%		31,304	74%		9,702	79%	

Table 2.2: Univariate Comparison

This table presents the before and after the treatment results for the full sample, treated firms and control firms. The treatment is the passing of the IBC, 2016 law in India. The sample period is from April 2013 to March 2021 (excluding the treatment year i.e. April 2016 to March 2017). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013-March 2021. 'Before' refers to the pre-treatment period from April 2013 to March 2016 and 'Difference' refers to the difference between simple averages in the pre and post treatment periods. Standard errors are presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively. All variables are defined in the Appendix.

	Pre-treatment			Post-treatment			
	Control $N = 6,050$	Treatment $N = 1,762$	Diff.	Control $N = 6,050$	Treatment $N = 1,762$	Diff.	Diff. in Diff.
Size	6.887	6.148	0.739***	7.281	6.163	1.117***	0.379***
	(0.014)	(0.030)	(0.013)	(0.012)	(0.027)	(0.027)	(0.040)
Tangibility	0.242	0.332	–0.089***	0.223	0.297	–0.074***	0.015***
	(0.001)	(0.004)	(0.003)	(0.001)	(0.003)	(0.003)	(0.005)
Leverage	0.294	0.857	–0.563***	0.251	0.942	–0.691***	–0.128***
	(0.002)	(0.012)	(0.007)	(0.001)	(0.013)	(0.007)	(0.010)
Cost of debt	0.128	0.099	0.029***	0.133	0.097	0.036***	0.007
	(0.001)	(0.002)	(0.003)	(0.001)	(0.002)	(0.003)	(0.004)
Liquidity	0.084	0.062	0.022***	0.086	0.075	0.011***	–0.011***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.013)	(0.007)	(0.003)
Sales	6.976	5.625	1.351***	7.189	5.732	1.457***	0.107**
	(0.014)	(0.034)	(0.033)	(0.013)	(0.032)	(0.030)	(0.044)
Profitability	0.114	–0.025	0.139***	0.101	0.008	0.092***	–0.047***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
Receivables	0.252	0.514	–0.262***	0.299	0.626	–0.327***	–0.064***
	(0.004)	(0.018)	(0.013)	(0.004)	(0.020)	(0.013)	(0.018)
Payables	0.335	1.448	-1.113***	0.407	1.910	–1.503	–0.390***
	(0.011)	(0.062)	(0.039)	(0.012)	(0.065)	(0.041)	(0.057)
Payables*	0.264	1.032	–0.768***	0.374	1.169	–0.796***	–0.028
	(0.007)	(0.037)	(0.023)	(0.006)	(0.034)	(0.022)	(0.032)
Cost of Goods Sold	6.570	5.109	1.461***	6.783	5.021	1.763***	0.302***
	(0.015)	(0.036)	(0.034)	(0.014)	(0.035)	(0.032)	(0.047)

Table 3: Effect of the IBC Reform on Payables

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS					
	1	2	3	4	5	6
Post x Treated	0.415***	0.306***	0.426***	0.302***	0.226***	0.319***
	(0.096)	(0.087)	(0.096)	(0.088)	(0.084)	(0.088)
Age				–0.526**	–0.553**	–0.518**
				(0.223)	(0.230)	(0.226)
Size				–0.238***	–0.195***	–0.225***
				(0.063)	(0.063)	(0.062)
Tangibility				–0.797***	–0.747***	–0.805***
				(0.222)	(0.220)	(0.222)
Leverage				0.436***	0.357***	0.440***
				(0.123)	(0.118)	(0.123)
Liquidity				–0.442**	–0.420**	–0.442**
				(0.191)	(0.195)	(0.192)
Profitability				–0.006	0.050	–0.008
				(0.206)	(0.209)	(0.205)
Constant	0.476***	0.490***	0.475***	3.894***	3.697***	3.778***
	(0.012)	(0.011)	(0.012)	(0.832)	(0.845)	(0.835)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	7,153	7,149	7,153	7,153	7,149	7,153
No. of obs	45,216	45,184	45,216	45,216	45,184	45,216
Adjusted R^2	0.544	0.553	0.544	0.548	0.556	0.549

Table 4: Testing Parallel Trends

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS					
	1	2	3	4	5	6
Treated x Year $= t-2$	–0.041	–0.064	–0.038	–0.075	–0.092	–0.071
	(0.093)	(0.096)	(0.091)	(0.093)	(0.096)	(0.091)
Treated x Year $= t-1$	0.093	0.089	0.096	0.013	0.028	0.018
	(0.106)	(0.111)	(0.104)	(0.105)	(0.109)	(0.103)
Treated x Year $= t+1$	0.264**	0.206*	0.269**	0.137	0.111	0.147
	(0.122)	(0.124)	(0.121)	(0.119)	(0.123)	(0.117)
Treated x Year $= t+2$	0.430***	0.296**	0.445***	0.296**	0.199	0.317**
	(0.137)	(0.133)	(0.137)	(0.130)	(0.128)	(0.129)
Treated x Year $= t+3$	0.458***	0.327**	0.474***	0.303**	0.215*	0.327**
	(0.143)	(0.134)	(0.142)	(0.133)	(0.129)	(0.132)
Treated x Year $= t+4$	0.590***	0.436***	0.608***	0.415***	0.311**	0.441***
	(0.150)	(0.142)	(0.149)	(0.140)	(0.137)	(0.139)
Constant	0.472***	0.488***	0.471***	3.902***	3.705***	3.787***
	(0.020)	(0.020)	(0.019)	(0.834)	(0.848)	(0.836)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	7,153	7,149	7,153	7,153	7,149	7,153
No. of obs	45,216	45,184	45,216	45,216	45,184	45,216
Adjusted R^2	0.544	0.553	0.545	0.549	0.556	0.549

Table 5: Effect of the IBC Reform on Payables, Conditional on Input Dependency

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. High Input-Output and Low Input-Output ratios are two dummies measuring whether the input dependency of the firm is high or low. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x High Input-Output Ratio	–0.044	–0.019	–0.037
	(0.095)	(0.095)	(0.092)
Post x Treated x Low Input-Output Ratio	0.461***	0.350**	0.487***
	(0.142)	(0.138)	(0.143)
Post x Low Input-Output Ratio	0.029		0.023
	(0.035)		(0.035)
Constant	4.115***	3.741***	4.013***
	(0.890)	(0.894)	(0.893)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	6,405	6,403	6,405
No. of obs	41,102	41,088	41,102
Adjusted R^2	0.544	0.552	0.544
Difference between High & Low Input-Output Ratio	–0.505***	–0.369**	–0.524***
	(0.175)	(0.169)	(0.174)

Table 6: Effect of the IBC Reform on Payables, Conditional on Gross Working Capital Cycle

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. Long and short cycle are two dummies measuring whether the gross working capital cycle of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x Long Cycle	0.479***	0.347***	0.502***
	(0.135)	(0.125)	(0.134)
Post x Treated x Short Cycle	0.048	0.030	0.064
	(0.095)	(0.097)	(0.096)
Post x Long Cycle	–0.023	–0.027	–0.024
	(0.032)	(0.035)	(0.034)
Constant	4.156***	3.984***	4.044***
	(0.778)	(0.789)	(0.780)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	6,979	6,975	6,979
No. of obs	44,344	44,312	44,344
Adjusted R^2	0.519	0.528	0.520
Difference between Long & Short Gross WC Cycle	0.430**	0.317*	0.437**
	(0.172)	(0.165)	(0.170)

Table 7: Effect of the IBC Reform on Payables, Conditional on Receivables

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. High and low receivables are two dummies measuring whether the receivables to sales ratio of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x High Receivables	0.550***	0.422***	0.567***
	(0.137)	(0.122)	(0.135)
Post x Treated x Low Receivables	–0.042	–0.054	–0.025
	(0.086)	(0.088)	(0.086)
Post x High Receivables	0.058**	0.047	0.063**
	(0.029)	(0.032)	(0.030)
Constant	4.168***	4.054***	4.048***
	(0.719)	(0.729)	(0.721)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	6,844	6,840	6,844
No. of obs	43,564	43,532	43,564
Adjusted R^2	0.494	0.503	0.494
Difference between High & Low Receivables	0.591***	0.475***	0.592***
	(0.169)	(0.160)	(0.167)

Table 8: Effect of the IBC Reform on Payables, Conditional on Firm Age

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. Old and young are two dummies measuring whether the age of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x Old	0.504***	0.378***	0.520***
	(0.138)	(0.132)	(0.137)
Post x Treated x Young	0.134	0.098	0.153
	(0.120)	(0.119)	(0.121)
Post x Young	0.152**	0.138**	0.159**
	(0.062)	(0.062)	(0.062)
Constant	4.312***	4.169***	4.258***
	(1.021)	(1.024)	(1.023)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	7,153	7,149	7,153
No. of obs	45,216	45,184	45,216
Adjusted R^2	0.549	0.556	0.549
Difference between Old & Young	0.370**	0.280	0.367*
	(0.188)	(0.186)	(0.187)

Table 9: Effect of the IBC Reform on Payables, Conditional on Firm Size

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. Large and small are two dummies measuring whether the size (log of total assets) of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x Large	–0.028	–0.085	–0.011
	(0.128)	(0.127)	(0.129)
Post x Treated x Small	0.573***	0.477***	0.590***
	(0.128)	(0.123)	(0.128)
Post x Small	–0.024	–0.039	–0.036
	(0.033)	(0.033)	(0.035)
Constant	3.719***	3.535***	3.596***
	(0.838)	(0.849)	(0.840)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	7,152	7,148	7,152
No. of obs	45,212	45,180	45,212
Adjusted R^2	0.550	0.557	0.550
Difference between Large & Small Sized Firms	–0.602***	–0.562***	–0.600***
	(0.186)	(0.185)	(0.187)

Table 10: Effect of the IBC Reform on Payables, Conditional on Sales Growth

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. High and low sales growth are two dummies measuring whether the sales growth of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x High Sales Growth	–0.017	–0.069	–0.008
	(0.084)	(0.085)	(0.084)
Post x Treated x Low Sales Growth	0.573***	0.524***	0.586***
	(0.120)	(0.112)	(0.120)
Post x High Sales Growth	–0.041	–0.047*	–0.035
	(0.026)	(0.025)	(0.027)
Constant	2.352***	2.214***	2.245***
	(0.653)	(0.657)	(0.656)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	6,899	6,895	6,899
No. of obs	43,963	43,931	43,963
Adjusted R^2	0.495	0.507	0.496
Difference between High & Low Sales Growth	–0.590***	–0.593***	–0.594***
	(0.153)	(0.150)	(0.153)

Table 11: Effect of the IBC Reform on Profitability

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016- 17) on Gross Profit over Total Assets. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and sales to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Gross Profit over Total Assets					
	1	2	3	4	5	6
Post x Treated	0.047***	0.050***	0.047***	0.045***	0.048***	0.045***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Age				0.021***	0.020***	0.023***
				(0.007)	(0.007)	(0.007)
Size				0.014***	0.013***	0.014***
				(0.002)	(0.002)	(0.002)
Tangibility				0.028***	0.026***	0.028***
				(0.007)	(0.007)	(0.007)
Leverage				–0.035***	–0.034***	–0.035***
				(0.005)	(0.005)	(0.005)
Liquidity				0.049***	0.050***	0.051***
				(0.010)	(0.010)	(0.010)
Asset Turnover				0.040***	0.039***	0.040***
				(0.002)	(0.002)	(0.002)
Constant	0.082***	0.082***	0.082***	–0.131***	–0.125***	–0.143***
	(0.000)	(0.000)	(0.000)	(0.025)	(0.026)	(0.026)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	7,069	7,065	7,069	7,069	7,065	7,069
No. of obs	44,341	44,306	44,341	44,341	44,306	44,341
Adjusted R^2	0.621	0.629	0.622	0.659	0.664	0.659

Table 12: Parallel Trends - Profitability

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on Gross Profit over Total Assets. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and sales to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Gross Profit over Total Assets					
	1	2	3	4	5	6
Treated x Year $= t-2$	–0.001	–0.002	–0.001	0.003	0.001	0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Treated x Year $= t-1$	0.001	–0.000	0.001	0.005	0.004	0.006
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Treated x Year $= t+1$	0.032***	0.034***	0.033***	0.035***	0.035***	0.035***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Treated x Year $= t+2$	0.045***	0.048***	0.045***	0.046***	0.047***	0.046***
	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)
Treated x Year $= t+3$	0.054***	0.055***	0.054***	0.055***	0.055***	0.056***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Treated x Year $= t+4$	0.057***	0.063***	0.057***	0.059***	0.063***	0.059***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Constant	0.082***	0.082***	0.082***	–	–	–
				0.131***	0.125***	0.142***
	(0.001)	(0.001)	(0.001)	(0.025)	(0.026)	(0.026)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	7,069	7,065	7,069	7,069	7,065	7,069
No. of obs	44,341	44,306	44,341	44,341	44,306	44,341
Adjusted R^2	0.622	0.630	0.623	0.659	0.665	0.660

Table 13: Effect of the IBC Reform on Profitability, Conditional on Input Dependency

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on Gross Profit over Total Assets. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. High Input-Output and Low Input-Output ratios are two dummies measuring whether the input dependency of the firm is high or low. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and sales to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Gross Profit over Total Assets		
	1	2	3
Post x Treated x High Input-Output Ratio	0.048***	0.047***	0.048***
	(0.005)	(0.005)	(0.005)
Post x Treated x Low Input-Output Ratio	0.040***	0.045***	0.040***
	(0.004)	(0.004)	(0.004)
Post x Low Input-Output Ratio	0.004***		0.004**
	(0.002)		(0.002)
Constant	–0.126***	–0.113***	–0.136***
	(0.026)	(0.027)	(0.026)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	6,327	6,325	6,327
No. of obs	40,290	40,273	40,290
Adjusted R^2	0.656	0.661	0.656
Difference between High & Low Input-Output Ratio	0.008	0.002	0.008
	(0.006)	(0.006)	(0.006)

Table 14: Effect of the IBC Reform on Profitability, Conditional on Gross Working Capital Cycle

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on Gross Profit over Total Assets. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. Long and short cycle are two dummies measuring whether the gross working capital cycle of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and sales to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Gross Profit over Total Assets		
	1	2	3
Post x Treated x Long Cycle	0.048***	0.049***	0.048***
	(0.004)	(0.004)	(0.004)
Post x Treated x Short Cycle	0.043***	0.047***	0.043***
	(0.005)	(0.005)	(0.005)
Post x Long Cycle	–0.002	–0.003	–0.002
	(0.002)	(0.002)	(0.002)
Constant	–0.128***	–0.119***	–0.138***
	(0.026)	(0.027)	(0.026)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	6,956	6,952	6,956
No. of obs	43,822	43,785	43,822
Adjusted R^2	0.653	0.658	0.653
Difference between Long & Short Gross WC Cycle	0.005	0.002	0.004
	(0.006)	(0.006)	(0.006)

Table 15: Effect of the IBC Reform on Profitability, Conditional on Receivables

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on Gross Profit over Total Assets. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. High and low receivables are two dummies measuring whether the receivables to sales ratio of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and sales to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Gross Profit over Total Assets		
	1	2	3
Post x Treated x High Receivables	0.047***	0.050***	0.048***
	(0.004)	(0.004)	(0.004)
Post x Treated x Low Receivables	0.044***	0.048***	0.045***
	(0.005)	(0.005)	(0.005)
Post x High Receivables	–0.005***	–0.004**	–0.005***
	(0.002)	(0.002)	(0.002)
Constant	–0.131***	–0.122***	–0.141***
	(0.026)	(0.027)	(0.026)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	6,839	6,835	6,839
No. of obs	43,233	43,196	43,233
Adjusted R^2	0.651	0.657	0.652
Difference between High & Low Receivables	0.003	0.002	0.003
	(0.006)	(0.006)	(0.006)

Table 16: Effect of the IBC Reform on Profitability, Conditional on Firm Size

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on Gross Profit over Total Assets. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. Large and small are two dummies measuring whether the size (log of total assets) of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and sales to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Gross Profit over Total Assets		
	1	2	3
Post x Treated x Large	0.046***	0.049***	0.045***
	(0.004)	(0.004)	(0.004)
Post x Treated x Small	0.044***	0.047***	0.045***
	(0.005)	(0.005)	(0.005)
Post x Small	0.002	0.001	0.002
	(0.002)	(0.002)	(0.002)
Constant	–0.130***	–0.124***	–0.142***
	(0.026)	(0.026)	(0.026)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	7,068	7,064	7,068
No. of obs	44,339	44,304	44,339
Adjusted R^2	0.659	0.664	0.659
Difference between Large & Small Sized Firms	0.001	0.002	0.000
	(0.006)	(0.006)	(0.006)

Table 17: Effect of the IBC Reform on Profitability, Conditional on Sales Growth

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on Gross Profit over Total Assets. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. High and low sales growth are two dummies measuring whether the sales growth of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and sales to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Gross Profit over Total Assets		
	1	2	3
Post x Treated x High Sales Growth	0.048***	0.050***	0.048***
	(0.005)	(0.005)	(0.005)
Post x Treated x Low Sales Growth	0.042***	0.045***	0.042***
	(0.004)	(0.004)	(0.004)
Post x High Sales Growth	–0.004**	–0.002	–0.004**
	(0.002)	(0.002)	(0.002)
Constant	–0.136***	–0.124***	–0.146***
	(0.026)	(0.027)	(0.026)
Controls	No	No	No
Firm FE	Yes	Yes	Yes
Year FE	Yes	No	No
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	6,897	6,893	6,897
No. of obs	43,668	43,633	43,668
Adjusted R^2	0.652	0.658	0.653
Difference between High & Low Sales Growth	0.006	0.006	0.006
	(0.006)	(0.006)	(0.006)

Appendix B

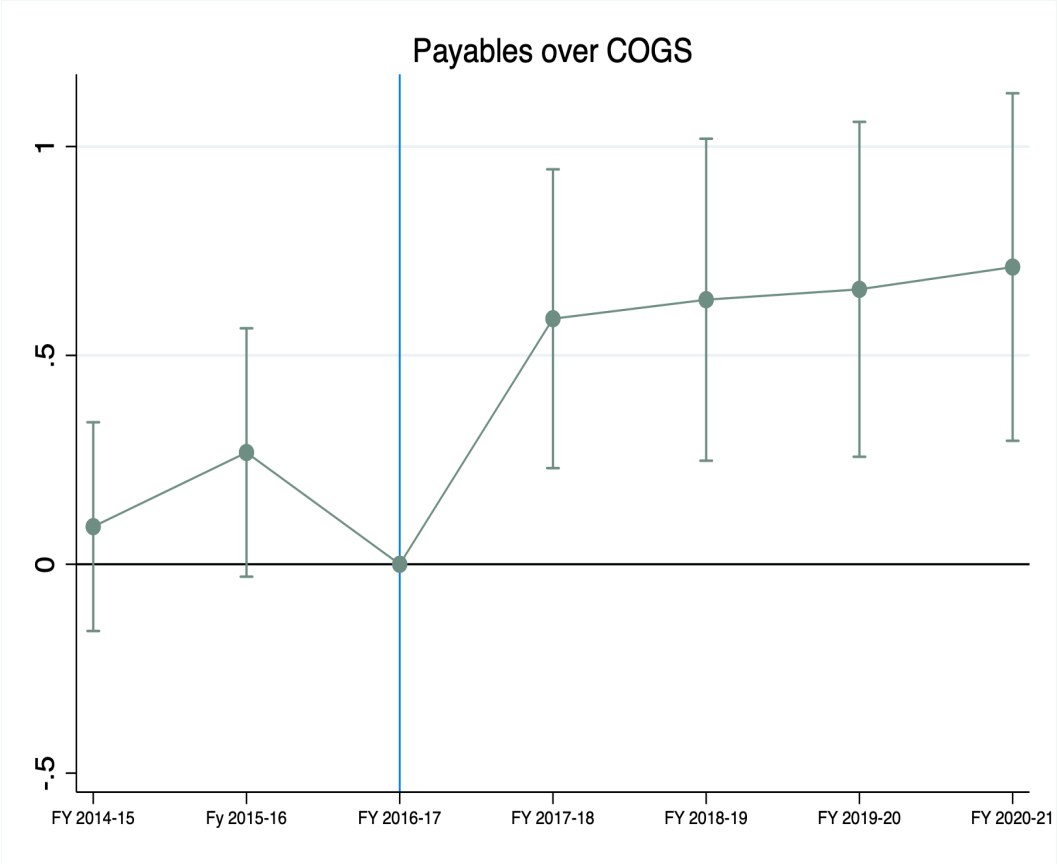

Figure 1B: Effect of the IBC reform on payables: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $ap_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has an Altman's Zscore of less than 1.1 at the end of the financial year 2015-16. A financially healthy firm has a zscore above 2.6, in every year from April 2013 - March 2021. The dependent variable ap_{it} is the ratio of accounts payable to COGS for firm i in year t. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals. Firm level, time-varying controls are not included.

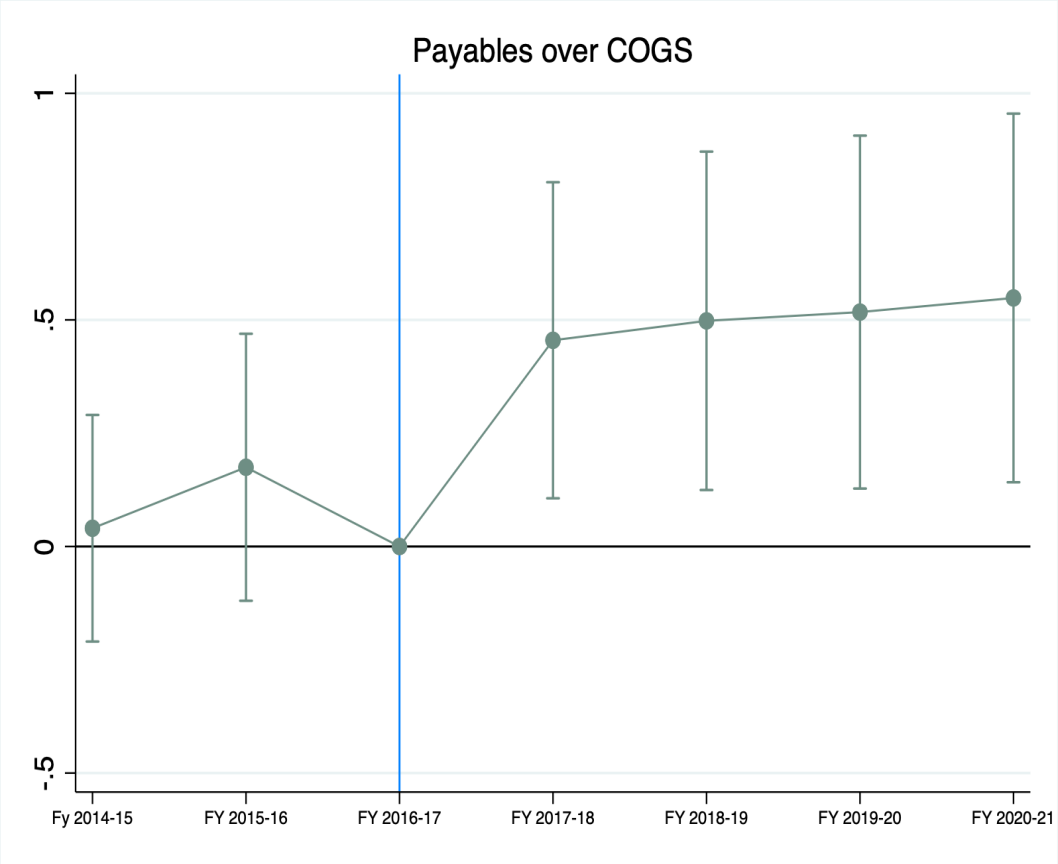

Figure 2B: Effect of the IBC reform on payables: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $ap_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has an Altman's Zscore of less than 1.1 at the end of the financial year 2015-16. A financially healthy firm has a zscore above 2.6, in every year from April 2013 - March 2021. The dependent variable ap_{it} is the ratio of accounts payable to COGS for firm i in year t. X_{it} are the firm level, time varying controls that include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals.

Table 2B: Effect of the IBC Reform on Payables

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,036 firms) consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group (7,828 firms) includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS					
	1	2	3	4	5	6
Post x Treated	0.612***	0.526***	0.617***	0.489***	0.429***	0.496***
	(0.145)	(0.142)	(0.145)	(0.138)	(0.138)	(0.138)
Age				–0.345*	–0.349	–0.326
				(0.209)	(0.212)	(0.208)
Size				–0.266***	–0.249***	–0.260***
				(0.056)	(0.056)	(0.056)
Tangibility				–1.318***	–1.296***	–1.322***
				(0.254)	(0.252)	(0.255)
Leverage				0.314**	0.282**	0.315**
				(0.122)	(0.120)	(0.123)
Liquidity				–0.443**	–0.485**	–0.436**
				(0.205)	(0.208)	(0.206)
Profitability				–0.468**	–0.463**	–0.459**
				(0.197)	(0.199)	(0.198)
Constant	0.488***	0.493***	0.488***	3.757***	3.661***	3.655***
	(0.009)	(0.009)	(0.009)	(0.719)	(0.732)	(0.719)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	8,121	8,116	8,114	8,121	8,116	8,114
No. of obs	51,162	51,128	51,113	51,162	51,128	51,113
Adjusted R^2	0.534	0.537	0.533	0.538	0.541	0.538

Table 3B: Testing Parallel Trends

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,036 firms) consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group (7,828 firms) includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS					
	1	2	3	4	5	6
Treated x Year $= t-2$	0.170	0.090	0.172	0.116	0.040	0.119
	(0.123)	(0.127)	(0.122)	(0.123)	(0.128)	(0.122)
Treated x Year $= t-1$	0.314**	0.268*	0.313**	0.203	0.175	0.204
	(0.144)	(0.152)	(0.142)	(0.143)	(0.150)	(0.141)
Treated x Year $= t+1$	0.665***	0.588***	0.670***	0.503***	0.455**	0.512***
	(0.179)	(0.182)	(0.179)	(0.173)	(0.178)	(0.173)
Treated x Year $= t+2$	0.796***	0.633***	0.800***	0.629***	0.498***	0.636***
	(0.198)	(0.197)	(0.198)	(0.190)	(0.190)	(0.190)
Treated x Year $= t+3$	0.784***	0.658***	0.793***	0.612***	0.517***	0.623***
	(0.207)	(0.204)	(0.207)	(0.199)	(0.199)	(0.199)
Treated x Year $= t+4$	0.863***	0.711***	0.869***	0.662***	0.548***	0.670***
	(0.214)	(0.212)	(0.213)	(0.205)	(0.207)	(0.205)
Constant	0.470***	0.480***	0.470***	3.735***	3.645***	3.634***
	(0.014)	(0.014)	(0.014)	(0.722)	(0.735)	(0.722)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	8,121	8,116	8,114	8,121	8,116	8,114
No. of obs	51,162	51,128	51,113	51,162	51,128	51,113
Adjusted R^2	0.534	0.537	0.533	0.538	0.541	0.538

Table 4B: Effect of the IBC Reform on Payables, Conditional on Input Dependency

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,036 firms) consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group (7,828 firms) includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. High Input-Output and Low Input-Output ratios are two dummies measuring whether the input dependency of the firm is high or low. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x High Input-Output Ratio	–0.059	–0.035	–0.064
	(0.160)	(0.160)	(0.152)
Post x Treated x Low Input-Output Ratio	0.757***	0.684***	0.772***
	(0.217)	(0.220)	(0.219)
Post x Low Input-Output Ratio	–0.005		–0.011
	(0.038)		(0.038)
Constant	3.865***	3.618***	3.784***
	(0.762)	(0.768)	(0.762)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	7,277	7,275	7,271
No. of obs	46,528	46,519	46,486
Adjusted R^2	0.529	0.532	0.528
Difference between High & Low Input-Output Ratio	–0.817***	–0.719***	–0.836***
	(0.275)	(0.276)	(0.272)

Table 5B: Effect of the IBC Reform on Payables, Conditional on Gross Working Capital Cycle

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,036 firms) consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group (7,828 firms) includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. Long and short cycle are two dummies measuring whether the gross working capital cycle of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x Long Cycle	0.833***	0.702***	0.852***
	(0.237)	(0.225)	(0.234)
Post x Treated x Short Cycle	0.299**	0.259*	0.304**
	(0.148)	(0.156)	(0.149)
Post x Long Cycle	0.001	–0.004	–0.004
	(0.036)	(0.038)	(0.036)
Constant	3.569***	3.537***	3.495***
	(0.644)	(0.663)	(0.645)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	7,937	7,932	7,930
No. of obs	50,271	50,237	50,222
Adjusted R^2	0.508	0.512	0.507
Difference between Long & Short Gross WC Cycle	0.533*	0.443	0.548*
	(0.285)	(0.281)	(0.284)

Table 6B: Effect of the IBC Reform on Payables, Conditional on Receivables

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,036 firms) consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group (7,828 firms) includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. High and low receivables are two dummies measuring whether the receivables to sales ratio of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x High Receivables	0.919***	0.767***	0.939***
	(0.246)	(0.231)	(0.244)
Post x Treated x Low Receivables	0.094	0.076	0.101
	(0.136)	(0.140)	(0.136)
Post x High Receivables	0.107***	0.086**	0.106***
	(0.032)	(0.035)	(0.032)
Constant	3.345***	3.346***	3.259***
	(0.625)	(0.648)	(0.624)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	7,783	7,778	7,776
No. of obs	49,397	49,363	49,348
Adjusted R^2	0.478	0.483	0.478
Difference between High & Low Receivables	0.825***	0.691**	0.838***
	(0.287)	(0.277)	(0.285)

Table 7B: Effect of the IBC Reform on Payables, Conditional on Firm Age

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,036 firms) consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group (7,828 firms) includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. Old and young are two dummies measuring whether the age of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x Old	0.593***	0.488***	0.598***
	(0.189)	(0.183)	(0.188)
Post x Treated x Young	0.398*	0.381*	0.409**
	(0.205)	(0.209)	(0.205)
Post x Young	0.124**	0.111*	0.133**
	(0.059)	(0.059)	(0.060)
Constant	4.436***	4.312***	4.400***
	(0.890)	(0.897)	(0.903)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	8,121	8,116	8,114
No. of obs	51,162	51,128	51,113
Adjusted R^2	0.538	0.541	0.538
Difference between Old & Young	0.195	0.107	0.189
	(0.284)	(0.283)	(0.282)

Table 8B: Effect of the IBC Reform on Payables, Conditional on Sales Growth

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,036 firms) consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group (7,828 firms) includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. High and low sales growth are two dummies measuring whether the sales growth of the firm is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x High Sales Growth	0.160	0.104	0.167
	(0.145)	(0.150)	(0.145)
Post x Treated x Low Sales Growth	0.561***	0.501***	0.565***
	(0.174)	(0.166)	(0.171)
Post x High Sales Growth	–0.063**	–0.072***	–0.060**
	(0.024)	(0.026)	(0.025)
Constant	2.028***	1.992***	1.894***
	(0.672)	(0.675)	(0.686)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	6,342	6,338	6,342
No. of obs	40,336	40,304	40,336
Adjusted R^2	0.528	0.535	0.527
Difference between High & Low Sales Growth	–0.401*	–0.396*	–0.398*
	(0.232)	(0.235)	(0.230)

Table 9B: Effect of the IBC Reform on Payables, Conditional on Court Efficiency

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,036 firms) consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group (7,828 firms) includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. High and low caseload are two dummies measuring whether the number of newly established firms, in the state in which the firm is registered, is above or below the sample median. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS		
	1	2	3
Post x Treated x High Caseload	0.491***	0.435**	0.503***
	(0.177)	(0.178)	(0.177)
Post x Treated x Low Caseload	0.507**	0.438*	0.502**
	(0.235)	(0.232)	(0.235)
Post x High Caseload	–0.029	–0.051	
	(0.047)	(0.051)	
Constant	3.804***	3.680***	3.704***
	(0.742)	(0.754)	(0.739)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Ind*Year FE	No	Yes	No
State*Year FE	No	No	Yes
No. of firms	7,585	7,579	7,583
No. of obs	47,741	47,706	47,727
Adjusted R^2	0.545	0.547	0.544
Difference between High & Low Caseload	–0.015	–0.004	0.001
	(0.297)	(0.297)	(0.297)

Appendix C

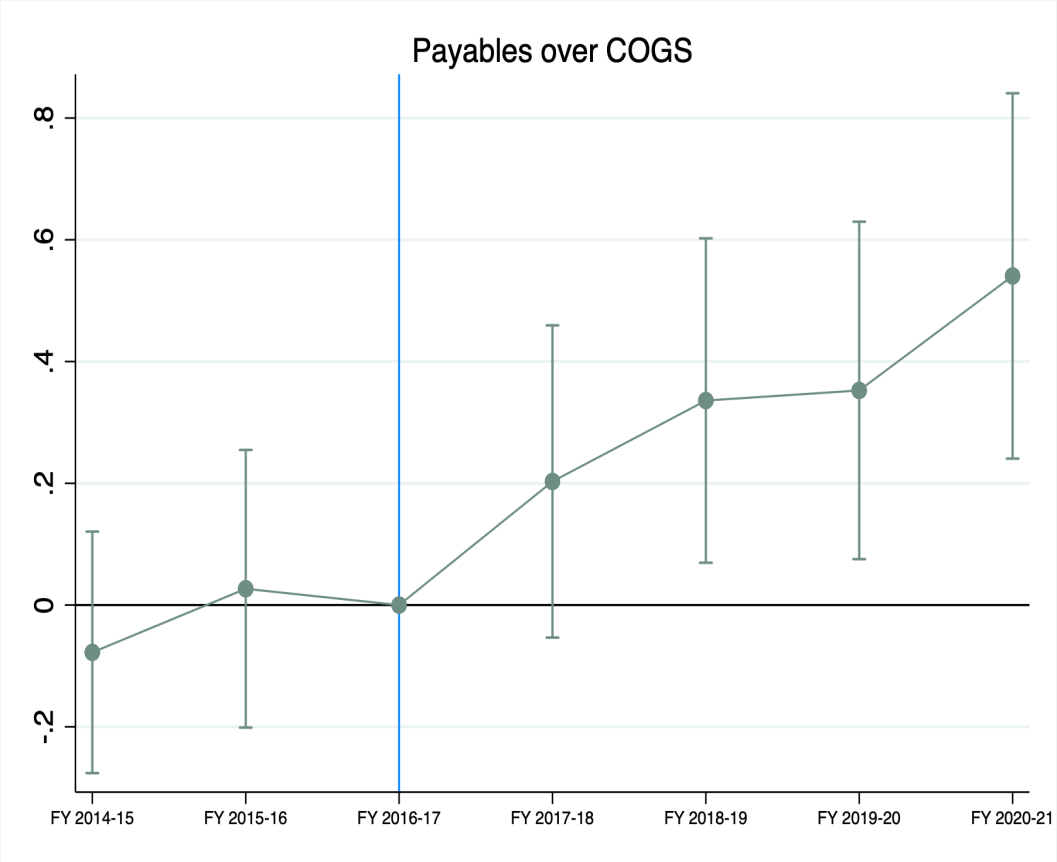

Figure 1C: Effect of the IBC reform on payables using PSM: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $ap_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. A financially healthy firm has a positive balance of accumulated profits, in every year from April 2013-March 2021. 1,434 distressed firms are matched to 1,434 unique firms in the control group using the propensity score matching technique. The dependent variable ap_{it} is the ratio of accounts payable to COGS for firm i in year t. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals. Firm level, time-varying controls are not included.

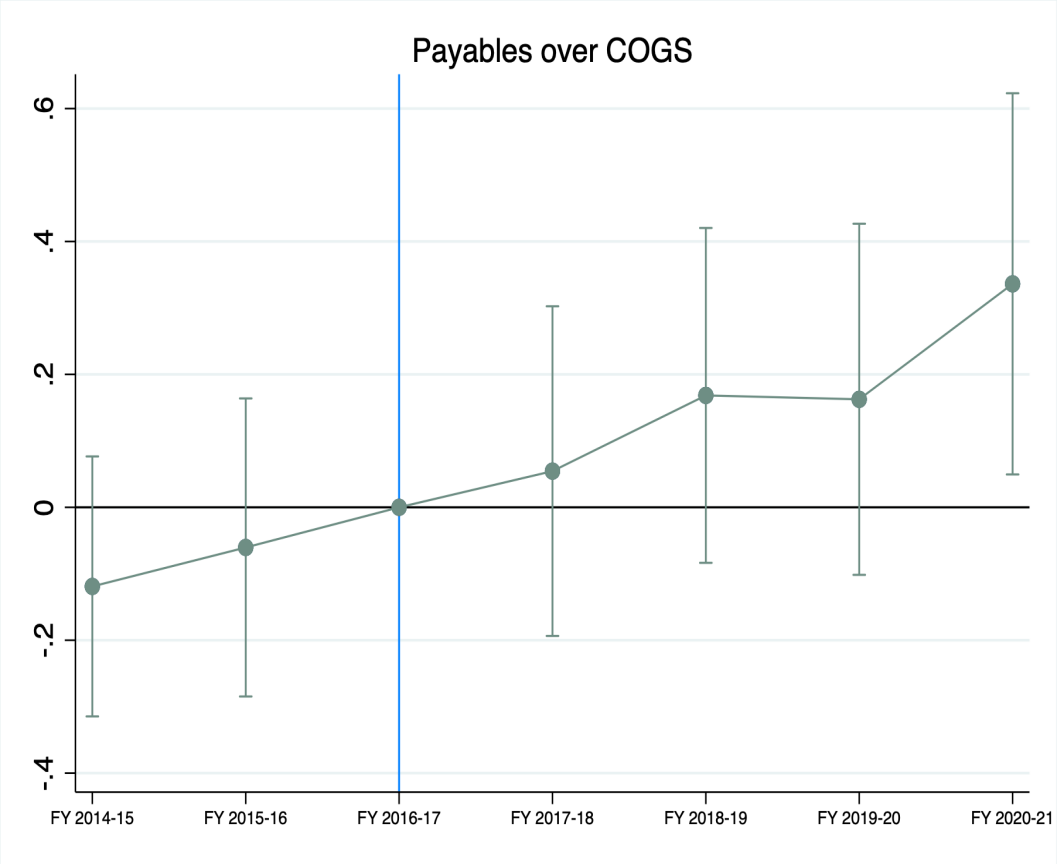

Figure 2C: Effect of the IBC reform on payables using PSM: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $ap_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. A financially healthy firm has a positive balance of accumulated profits, in every year from April 2013-March 2021. 1,434 distressed firms are matched to 1,434 unique firms in the control group using the propensity score matching technique. The dependent variable ap_{it} is the ratio of accounts payable to COGS for firm i in year t. X_{it} are the firm level, time varying controls that include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals.

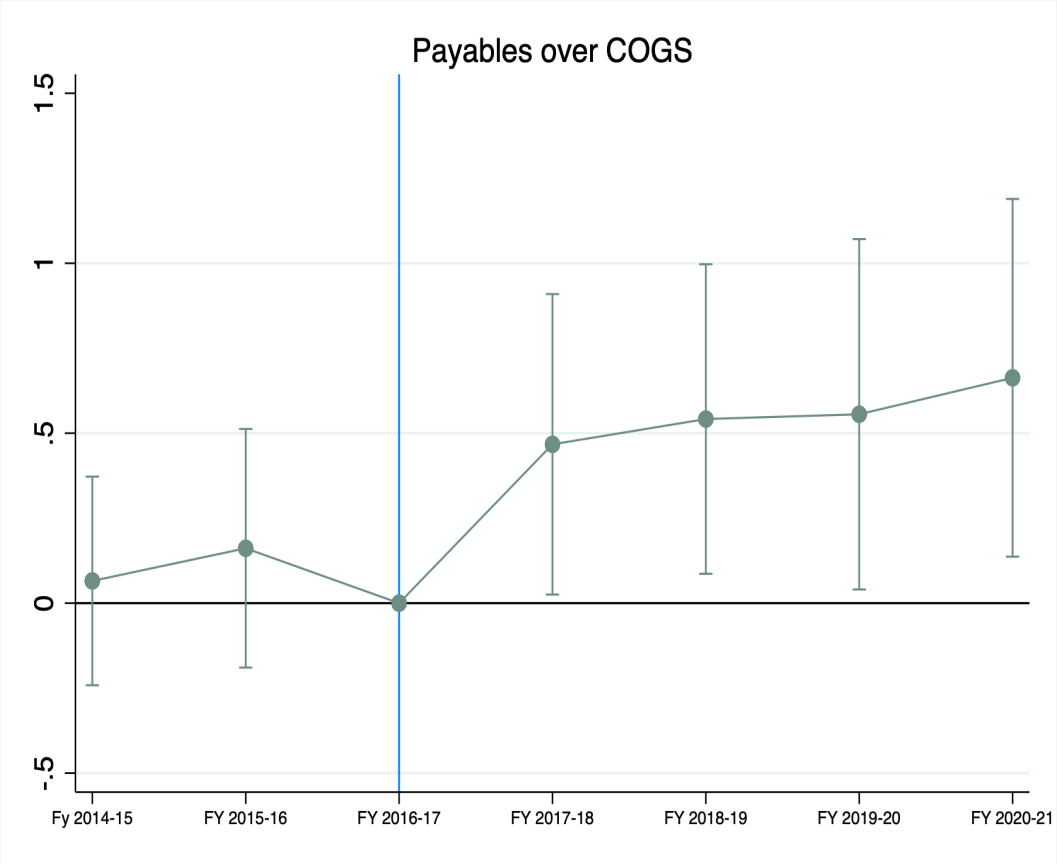

Figure 3C: Effect of the IBC reform on payables using PSM: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $ap_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has an Altman's Zscore of less than 1.1 at the end of the financial year 2015-16. A financially healthy firm has a zscore above 2.6, in every year from April 2013 - March 2021. 825 distressed firms are matched to 825 unique firms in the control group using the propensity score matching technique. The dependent variable ap_{it} is the ratio of accounts payable to COGS for firm i in year t. X_{it} are the firm level, time varying controls that include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals.

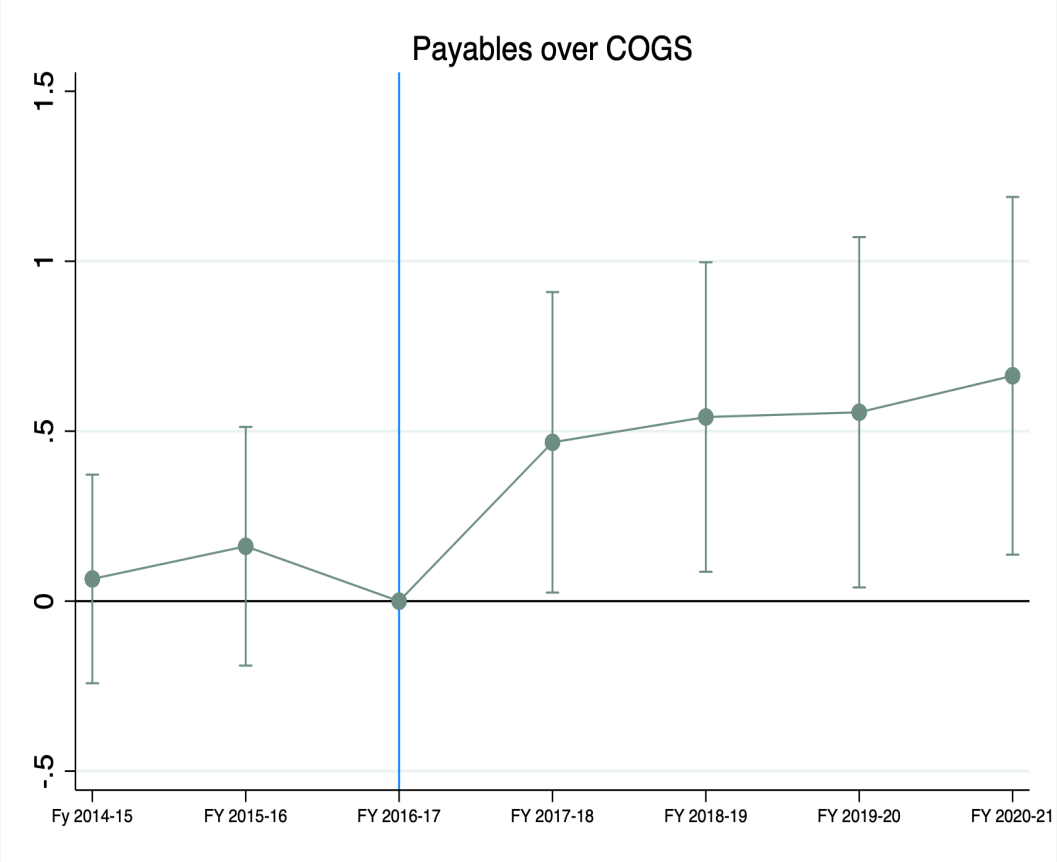

Figure 4C: Effect of the IBC reform on payables using SDID using PSM: The figure plots the coefficient β for $t \in T = \{2013-14, ..., 2020-21\}$ in the following regression: $ap_{it} = \alpha + \sum_{t \in T} \beta_t \mathbb{1}(t) \mathbb{1}(IBC_t * Distress_i) + \phi X_{it} + \gamma_i + \delta_{kt} + \epsilon_{it}$ where i indexes firms or trade credit customers. IBC_t is a dummy variable equal to 1 for years in the post treatment period (April 2017 to March 2021) and equal to 0 for the pre-treatment period. $Distress_i$ is a dummy variable equal to 1 if the firm is financially distressed and 0 if the firm is financially healthy as of the financial year April 2015 – March 2016. A financially distressed firm has an Altman's Zscore of less than 1.1 at the end of the financial year 2015-16. A financially healthy firm has a zscore above 2.6, in every year from April 2013 - March 2021. 825 distressed firms are matched to 825 unique firms in the control group using the propensity score matching technique. The dependent variable ap_{it} is the ratio of accounts payable to COGS for firm i in year t. X_{it} are the firm level, time varying controls that include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. γ_i and δ_{kt} are respectively the firm and industry-year fixed effects. The industry classification used is the two-digit National Industrial Classification (NIC). The IBC_t and $Distress_i$ dummies are not included separately as these are absorbed in industry-time and firm fixed effects respectively. The regression is estimated using OLS and errors are clustered at the individual firm level. The vertical blue line denotes the year of implementation of the law. The dashed lines around β_t are 5% confidence intervals.

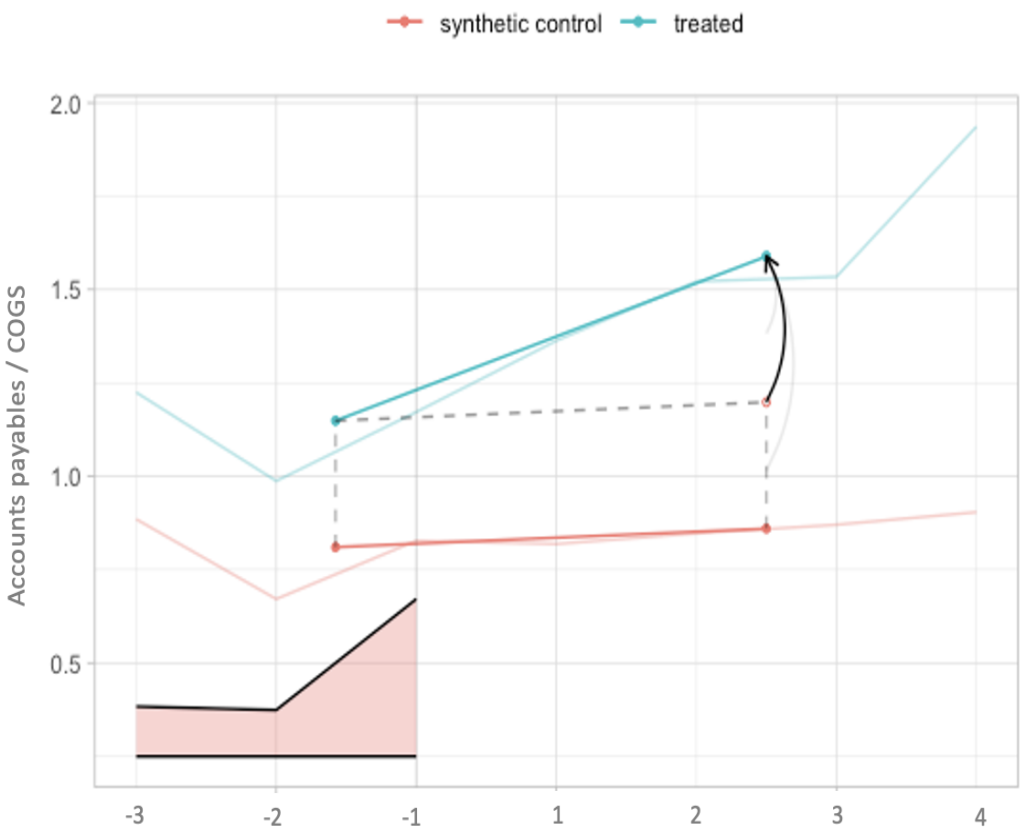

Figure 5C: Effect of the IBC reform on payables using SDID: The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021.

Table 1C: Effect of the IBC Reform on Payables using PSM

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. 1,434 distressed firms are matched to 1,434 unique firms in the control group using the propensity score matching technique. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS					
	1	2	3	4	5	6
Post x Treated	0.450***	0.372***	0.487***	0.285***	0.236***	0.335***
	(0.094)	(0.086)	(0.095)	(0.084)	(0.082)	(0.086)
Age				–1.106***	–0.945**	–1.107***
				(0.416)	(0.429)	(0.427)
Size				–0.443***	–0.392***	–0.414***
				(0.097)	(0.096)	(0.095)
Tangibility				–1.061***	–0.957***	–1.086***
				(0.312)	(0.311)	(0.309)
Leverage				0.419***	0.331***	0.437***
				(0.126)	(0.123)	(0.127)
Liquidity				–0.865**	–1.146***	–0.834**
				(0.391)	(0.392)	(0.387)
Profitability				0.099	0.224	0.096
				(0.318)	(0.328)	(0.317)
Constant	0.539***	0.556***	0.528***	7.013***	6.224***	6.803***
	(0.025)	(0.023)	(0.026)	(1.445)	(1.449)	(1.461)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	Yes	No	No
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	2,838	2,834	2,838	2,838	2,834	2,838
No. of obs	18,689	18,663	18,689	18,689	18,663	18,689
Adjusted R^2	0.463	0.468	0.465	0.474	0.475	0.475

Table 2C: Parallel Trends - Payables

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. 1,434 distressed firms are matched to 1,434 unique firms in the control group using the propensity score matching technique. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS					
	1	2	3	4	5	6
Treated x Year $= t-2$	–0.051	–0.078	–0.025	–0.096	–0.119	–0.067
	(0.096)	(0.101)	(0.091)	(0.094)	(0.100)	(0.090)
Treated x Year $= t-1$	0.049	0.027	0.078	–0.055	–0.060	–0.018
	(0.106)	(0.116)	(0.103)	(0.105)	(0.114)	(0.102)
Treated x Year $= t+1$	0.274**	0.203	0.334***	0.095	0.054	0.169
	(0.125)	(0.131)	(0.126)	(0.119)	(0.126)	(0.120)
Treated x Year $= t+2$	0.445***	0.336**	0.507***	0.243*	0.168	0.322**
	(0.136)	(0.136)	(0.137)	(0.126)	(0.128)	(0.127)
Treated x Year $= t+3$	0.460***	0.353**	0.505***	0.232*	0.163	0.296**
	(0.145)	(0.141)	(0.145)	(0.132)	(0.135)	(0.134)
Treated x Year $= t+4$	0.633***	0.541***	0.688***	0.387***	0.336**	0.459***
	(0.151)	(0.153)	(0.153)	(0.138)	(0.146)	(0.141)
Constant	0.539***	0.564***	0.520***	7.020***	6.239***	6.798***
	(0.045)	(0.047)	(0.044)	(1.455)	(1.461)	(1.469)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	2,838	2,834	2,838	2,838	2,834	2,838
No. of obs	18,689	18,663	18,689	18,689	18,663	18,689
Adjusted R^2	0.463	0.468	0.465	0.474	0.476	0.475

Table 3C: Effect of the IBC Reform on Payables using PSM

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. 825 distressed firms are matched to 825 unique firms in the control group using the propensity score matching technique. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS					
	1	2	3	4	5	6
Post x Treated	0.704***	0.656***	0.742***	0.512***	0.476***	0.559***
	(0.155)	(0.166)	(0.157)	(0.151)	(0.167)	(0.152)
Age				–1.186*	–0.908	–1.132*
				(0.626)	(0.655)	(0.632)
Size				–0.561***	–0.519***	–0.549***
				(0.128)	(0.134)	(0.126)
Tangibility				–1.646***	–1.611***	–1.757***
				(0.459)	(0.465)	(0.461)
Leverage				0.287**	0.245*	0.307**
				(0.145)	(0.147)	(0.147)
Liquidity				–0.777	–1.022*	–0.774
				(0.499)	(0.523)	(0.476)
Profitability				–0.075	0.003	–0.045
				(0.390)	(0.408)	(0.398)
Constant	0.686***	0.699***	0.675***	8.317***	7.244***	8.078***
	(0.041)	(0.045)	(0.042)	(2.036)	(2.098)	(2.051)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	1,629	1,626	1,626	1,629	1,626	1,626
No. of obs	10,596	10,574	10,575	10,596	10,574	10,575
Adjusted R^2	0.484	0.483	0.483	0.495	0.491	0.494

Table 4C: Parallel Trends - Payables

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the three years prior to the reform (FY 2013-14, FY 2014-15, FY 2015-16). The treated group consists of firms with an Altman Z-score less than 1.1 at the end of the financial year 2015-16. The control group includes firms with an Altman Z-score greater than 2.6 in every year from April 2013 - March 2021. 825 distressed firms are matched to 825 unique firms in the control group using the propensity score matching technique. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS					
	1	2	3	4	5	6
Treated x Year $= t-2$	0.232	0.143	0.242	0.139	0.065	0.152
	(0.147)	(0.159)	(0.151)	(0.145)	(0.156)	(0.148)
Treated x Year $= t-1$	0.366**	0.288	0.384**	0.210	0.162	0.244
	(0.164)	(0.182)	(0.164)	(0.161)	(0.179)	(0.161)
Treated x Year $= t+1$	0.757***	0.674***	0.787***	0.516***	0.467**	0.558***
	(0.201)	(0.228)	(0.209)	(0.197)	(0.225)	(0.203)
Treated x Year $= t+2$	0.952***	0.778***	0.986***	0.683***	0.542**	0.734***
	(0.218)	(0.234)	(0.224)	(0.212)	(0.232)	(0.217)
Treated x Year $= t+3$	0.900***	0.809***	0.962***	0.624***	0.556**	0.705***
	(0.238)	(0.261)	(0.245)	(0.235)	(0.263)	(0.240)
Treated x Year $= t+4$	1.025***	0.953***	1.088***	0.715***	0.663**	0.796***
	(0.239)	(0.264)	(0.248)	(0.234)	(0.268)	(0.243)
Constant	0.587***	0.628***	0.572***	8.175***	7.135***	7.917***
	(0.072)	(0.080)	(0.074)	(2.051)	(2.122)	(2.063)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	1,629	1,626	1,626	1,629	1,626	1,626
No. of obs	10,596	10,574	10,575	10,596	10,574	10,575
Adjusted R^2	0.484	0.483	0.484	0.495	0.491	0.494

Table 5C: Effect of the IBC Reform on Payables (Additional Robustness Check)

This table presents the DID estimates of the effect of the bankruptcy reform (FY 2016-17) on payables over COGS. Post is a dummy equal to one in the four years following the reform (FY 2017-18, FY 2018-19, FY 2019-20, FY 2020-21) and zero in the year (FY 2013-14). The pre-treatment years FY 2014-15 and FY 2015-16 were dropped. The treated group (1,762 firms) consists of firms with accumulated losses exceeding or equal to the net worth at the end of the financial year 2015-16. The control group (6,050 firms) includes firms with a positive balance of accumulated profits, in every year from April 2013 - March 2021. The controls include log of age, log of total assets, fixed assets to total assets, debt to total assets, cash balances to total assets and EBDITA to total assets. Standard errors are corrected for clustering at the firm-level and presented in parentheses. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively.

	Payables over COGS					
	1	2	3	4	5	6
Post x Treated	0.428***	0.302**	0.441***	0.243**	0.162	0.264**
	(0.127)	(0.122)	(0.126)	(0.117)	(0.116)	(0.115)
Age				–0.685***	–0.730***	–0.683***
				(0.251)	(0.263)	(0.257)
Size				–0.283***	–0.239***	–0.270***
				(0.064)	(0.064)	(0.063)
Tangibility				–0.792***	–0.735***	–0.809***
				(0.264)	(0.261)	(0.263)
Leverage				0.551***	0.483***	0.553***
				(0.134)	(0.131)	(0.134)
Liquidity				–0.355	–0.361	–0.360
				(0.243)	(0.247)	(0.242)
Profitability				0.055	0.093	0.064
				(0.251)	(0.255)	(0.250)
Constant	0.481***	0.502***	0.478***	4.732***	4.582***	4.633***
	(0.022)	(0.021)	(0.021)	(0.896)	(0.932)	(0.903)
Controls	No	No	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind*Year FE	No	Yes	No	No	Yes	No
State*Year FE	No	No	Yes	No	No	Yes
No. of firms	6,916	6,911	6,916	6,916	6,911	6,916
No. of obs	31,967	31,942	31,967	31,967	31,942	31,967
Adjusted R^2	0.580	0.587	0.580	0.586	0.591	0.586