

Operational creditor rights and trade credit: Evidence from policy interventions*

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Abstract

When contract enforcement is ineffective and costly, it is difficult to induce lenders to enforce debt contracts. We examine the impact of an exogenous increase in suppliers' creditor rights through a general and a targeted legal intervention [Insolvency and Bankruptcy Code (IBC) and Micro, Small, and Medium Enterprises Development Act (MSMED), respectively] on the flow of trade credit. The findings indicate a vital role of bargaining power, which creates a heterogeneous impact of creditor rights on the supply and demand of trade credit. Small suppliers experience a reduction in their collection period owing to the threat of economic penalties for delayed payments under the MSMED Act. When the rights of all suppliers are increased through IBC, the erstwhile beneficiaries of the MSMED Act are forced to supply higher trade credit with a longer collection period due to their low bargaining power. Trade credit flow post-IBC is channeled more towards financially constrained firms.

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1 Introduction

What is the role of the legal environment in the demand and supply of trade credit? Are the effects of changes in the rights of suppliers homogeneous for all customers? These questions warrant empirical examination considering the objectives of the regulators and the interests of the market participants. We examine the impact of a general and targeted intervention in suppliers' enforcement rights on the flow of trade credit in an emerging market.

Trade credit is one of the most important sources of financing available to firms, with its widespread use transcending across economies with different legal environments, banking systems, and firm ownership concentration (Petersen and Rajan, 1997; Demirgüç-Kunt and Maksimovic, 2001; Levine et al., 2018; Seifert et al., 2013). For instance, prior research with a cross-country sample spanning 34 countries states that trade credit comprises 25% of the average firm's total debt liabilities (Levine et al., 2018). Existing research offers multiple perspectives on the reasoning for the use of trade credit, even in the presence of specialized financial intermediaries such as banks. Apart from being an alternative to short-term bank lending, trade credit offers certain 'business' and 'financial' advantages (Demirgüç-Kunt and Maksimovic, 2001; Ferrando and Mulier, 2013). The business motivations for trade credit include the minimization of transaction cost (Stephen Ferris, 1981), as a way to practice price discrimination (Brennan et al., 1988), or to act as implicit quality guarantees (Emery and Nayar, 1998). The financial motivations for

trade credit include the informational advantage of suppliers over financial intermediaries (Jain, 2001; Biais and Gollier, 1997), as arbitrage to negate the difference between borrowing and lending rate of interest (Emery, 1984), or to curb the adverse selection problem (Myers and Majluf, 1984) faced by the customers in the capital markets. Multiple studies document the role of the legal environment, particularly creditor rights, on the size of the credit markets (La Porta et al., 1997; Porta et al., 1998; Djankov et al., 2007). The argument is that stronger creditor protection allows creditors to enforce contracts with their borrowers, which further reduces the cost of external financing (Costello, 2019). Conversely, when contract enforcement is ineffective and costly, it is difficult to induce lenders to enforce debt contracts (Diamond, 2004).

Operational credit by suppliers constitutes a major chunk of the working capital of firms, especially in weak enforcement environments (Gopalan et al., 2016; Burkart and Ellingsen, 2004) like India, where recovery rates for lenders have been abysmal under previous insolvency resolution mechanisms (Bose et al., 2021). The introduction of the Insolvency and Bankruptcy Code (IBC henceforth) in India marked a paradigm change in terms of enforcement rights available to the traditionally overlooked class of creditors, viz. operational creditors. The enactment of IBC empowers operational creditors to initiate insolvency proceedings against the corporate debtor in case of non-payment of dues, leading to the dismissal of existing management and the interim transfer of control of operations of the debtor to an independent insolvency

professional. Prior studies have focused on the impact of increased creditor rights on the long-term borrowings of the firms (Bose et al., 2021) provided by financial creditors (Jose et al., 2020). We examine the effect of increased rights of operational creditors on the demand and supply of trade credit. As per data from the January-March (2024) newsletter of the Insolvency and Bankruptcy Board of India (IBBI), operational creditors have initiated 48.46% of insolvency resolution cases since the inception of IBC, while 45.46% were initiated by financial creditors. This makes it evident that operational creditors are actively engaged in enforcing the recovery rights available to them by virtue of IBC.

Under a stronger creditor protection regime, two countervailing effects are plausible. On the supply side, higher protection may lead to a higher flow of credit since lenders are assured of either repayment of debt or access to collateral and liquidation (Funchal and Galdi, 2008; Djankov et al., 2007). However, on the demand side, borrowers might cut down their debt under the threat of liquidation (Vig, 2013; Jose et al., 2020). The effect of increased creditor rights on the usage of trade credit is not expected to be homogeneous on all sets of customers. We argue that firms' financial constraints play a major role in the relative strength of the demand or supply side effect. Since suppliers have an information advantage over financial intermediaries (Jain, 2001; Biais and Gollier, 1997), financially constrained firms are more likely to depend on trade credit with limited access to other sources of external financing (Beck et al., 2008; Emery, 1984). High-credit quality suppliers

have a comparative advantage in obtaining outside finance and pass on this advantage to small, credit-constrained buyers (Boissay and Gropp, 2007). Whether an increase in creditor rights enables financially constrained firms better access to trade credit due to a positive supply-side effect or a reduction in usage owing to a fear of liquidation and loss of control is an empirical question.

Policy interventions can be general (applicable to all firms) or targeted towards a specific group. We analyze the differential impact of a general intervention (IBC, 2016) compared to a targeted intervention [Micro, Small, and Medium Enterprises Development Act (MSMED henceforth), 2006] on creditor rights. As opposed to IBC, which increases creditor rights applicable to all suppliers, the MSMED Act is applicable to a specific subset of suppliers. These suppliers, with superior rights through targeted intervention, may be adversely affected by a general intervention. To test this, we compare the impact of IBC on suppliers with erstwhile superior rights to their counterparts.

We analyze the supply of trade credit by small firms primarily because their dependence on trade credit is higher (Petersen and Rajan, 1997; Hoang et al., 2023). Despite facing financing costs and scale issues, small- and medium-sized enterprises (SMEs) use trade credit payables to reduce information asymmetry about their product quality (Emery and Nayar, 1998; Hoang et al., 2023; García-Teruel and Martínez-Solano, 2010). Failure to provide adequate trade credit may hurt their sales volume and profitability

([Long et al., 1993](#); [Martínez-Sola et al., 2014](#)). Even after legal protection, SMEs are less likely to enforce credit terms on their customers owing to weak bargaining power ([Wilson and Summers, 2002](#)). In this context, we analyze the impact of creditor rights changes on the supply of trade credit by SMEs.

In this paper, we primarily focus on answering the following questions concerning the usage of trade credit by small and financially constrained firms following exogenous changes in creditor rights. Do small firms extend more trade credit in response to a targeted creditor rights reform that increases their rights relative to other suppliers? When the suppliers' rights become homogeneous through a general intervention, do small firms lose out owing to a lower bargaining power? Do financially constrained firms receive higher trade credit upon an increase in creditor rights?

We chose the Indian setting to examine these questions for multiple reasons. First, India witnessed exogenous policy interventions in creditor rights through MSMED (2006) and IBC (2016), which helps us to tease out the causal effect of creditor rights on trade credit. Second, India is an emerging market associated with weaker enforcement rights, where informal sources of financing, such as trade credit, form a major chunk of working capital for firms. This is especially valid for small and financially constrained firms, which have less access to formal sources of finance ([Nilsen, 2002](#); [Fisman and Love, 2003](#); [Wilner, 2000](#)). Third, additional rights granted to small suppliers through MSMED help us examine the role of heterogeneity in creditor rights for protecting the interests of firms with low bargaining power. Fourth,

despite being a unique setting, the Indian market is representative of other emerging markets in terms of government ownership of banks and the ratio of private credit to GDP (Gopalan et al., 2016). Hence, we believe that the findings of our study are generalizable to other emerging markets.

The findings of the study suggest that a targeted improvement in the rights of micro/small suppliers resulted in tangible benefits to their operating cycle with a reduction in their collection period. However, general intervention whereby the rights of all creditors improved forced the erstwhile beneficiaries of targeted intervention to supply goods on lenient terms (longer collection period and larger portion of goods supplied on credit). Within the general intervention in creditor rights, it is the financially constrained firms that get a higher credit supply on lenient terms. The results suggest that post the expansion of creditor rights, suppliers provide higher trade credit to financially constrained firms, who face difficulty in raising funds from other sources.

The paper contributes to the literature on the effect of legal interventions on credit supply (Gopalan et al., 2016; Bose et al., 2021; Singh et al., 2024) by two alternative channels, viz. imposition of economic penalty on default and suppliers' right to proceed for insolvency proceedings leading to dismissal of existing management of defaulting customers. We also add to the literature on SME trade credit (Wilson and Summers, 2002; Carb-Valverde et al., 2009; McGuinness et al., 2018; Hoang et al., 2023; Martínez-Sola et al., 2014) financing by presenting the contrasting impact of a targeted and a general

intervention in suppliers' rights. The paper adds to the literature on the relationship between creditor rights and trade credit flow (Singh et al., 2024; Chen et al., 2019; Costello, 2019; Agarwal and Singhvi, 2021) by examining the heterogeneous impact of the exogenous changes in creditor rights on the supply of trade credit to financially constrained vs. unconstrained firms. Another related paper analyzes the impact of creditor rights on trade credit availability to financially vulnerable vs. non-vulnerable firms (Singh et al., 2024). Although our paper also looks at the impact of change in creditor rights on trade credit, our perspective is from both the demand and supply side. We consider the role of heterogeneity in rights [micro/small firms (MS henceforth) vs. large firms] on the supply of trade credit. From the demand side, we focus on the trade credit availability to financially constrained vs. unconstrained firms. Another advantage that our setting offers is a clear identification of treatment and control groups (MS vs. non-MS firms) in the policy interventions. We examine whether market power (higher credit to financially unconstrained firms) dominates the information asymmetry channel (higher trade credit to financially constrained firms) in the distribution of trade credit post increase in creditor rights. While prior studies highlight the positive effects of an increase in creditor rights on credit availability to financially distressed and vulnerable firms (Singh et al., 2024; Bose et al., 2021), this study provides evidence of higher credit availability to financially constrained firms upon an improvement in suppliers' rights.

The rest of the paper is arranged as follows. Section 2 describes the

legal background of the study. Section 3 reviews the relevant literature and builds up testable hypotheses. Section 4 describes the dataset, variables, and methodology used in the study. In Section 4, we describe the results of the study. The robustness checks are discussed in section 5 followed by the conclusion in Section 6.

2 Background

The background of the study revolves around two policy interventions, i.e., the MSMED Act, 2006 and IBC, 2016, that affect the rights of operational creditors in different ways. A brief summary of the major provisions under both interventions is listed as follows:

MSMED Act can be considered as a targeted intervention to promote and enhance the competitiveness of micro, small, and medium enterprises defined under the act. It provides specific protection to suppliers classified as micro/small (MS) firms. For manufacturing entities, the criterion is based on the amount invested in plant & machinery. For a firm to be classified as a micro (small) enterprise, the maximum amount invested in plant & machinery can be twenty-five lakh rupees (five crore rupees)¹. Under the act, any dispute relating to payments can be raised in the micro and small enterprises facilitation council. A delay in payment to suppliers classified as MS attracts an interest penalty of three times the bank rate specified

¹u/s 7(1)(a) of the MSMED Act, 2006

by the Reserve Bank of India². Additionally, the interest payable on delayed payments is not deductible under the income tax law (IT Act, 1961)³. Hence, a high economic penalty is imposed on the customers of the MS suppliers if they delay the payment beyond the contractual terms. The decision on any dispute is provided to be made within a period of 90 days by the micro and small enterprise facilitation council⁴.

IBC, on the other hand, was enacted as a comprehensive bankruptcy resolution process that strengthened the rights of all operational creditors. It can be considered a general intervention as its provisions are applicable for the recovery of dues to all suppliers, irrespective of the size or other criteria. All suppliers under this act can file a suit for insolvency of the customer in the National Company Law Tribunal (NCLT), subject to a minimum default amount of one lakh rupees⁵. If the application is admitted by the NCLT, the existing promoters/managers lose control of the firm to an independent interim resolution professional⁶. An operational creditor initiating a corporate insolvency resolution process may propose a resolution professional to act as an interim resolution professional⁷. The decision for resolution or liquidation of the defaulting customer has to be made in a maximum of 270 days by the tribunal⁸. To further strengthen the rights of creditors, an amendment to

²u/s 16 of the MSMED Act, 2006

³u/s 23 of the MSMED Act, 2006

⁴u/s 18(5) of the MSMED Act, 2006

⁵u/s 9(1) of IBC 2016

⁶u/s 17(1) of IBC 2016

⁷u/s 9(4) of IBC 2016

⁸u/s 12(1) and 12(3) of IBC 2016

the IBC was introduced through section 29A, rendering defaulting promoters ineligible to become resolution applicants. However, this provision is not applicable to the promoters of MS firms⁹¹⁰. Although operational creditors are not allowed to vote in the resolution plan formed by the committee of creditors, their interests are protected under the act through multiple provisions. Firstly, any resolution plan must provide for the repayment of the debts of operational creditors in such manner as may be specified by the Board, which shall not be less than the amount to be paid to the operational creditors in the event of a liquidation of the corporate debtor¹¹. Additionally, the amount payable to operational creditors is paid in priority over financial creditors who voted for the plan¹². Hence, through IBC, operational creditors can get incumbent management to change and have recovery through a resolution greater than what they would have received in case of liquidation of the debtor firm.

In this context, we examine the impact of a general policy intervention (IBC) vis-a-vis a targeted intervention (MSMED) on the demand and supply aspect of trade credit.

⁹u/s 240A of IBC 2016

¹⁰<https://www.scconline.com/blog/post/2023/12/09/section-29a-ibc-disqualification-promoters-applying-resolution-plan-not-applicable-to-msme-supreme-court/>

¹¹u/s 30(2)(b) of IBC 2016

¹²Regulation 38 of Insolvency Bankruptcy Board of India (Insolvency Resolution Process for Corporate Persons) Regulations, 2016

3 Hypothesis Development

The nature and purpose of trade credit differ from credit supplied by financial institutions. While financial intermediaries fund the working capital requirements of a firm for earning interest, the suppliers extend trade credit to boost their current and future revenues by creating a supplier-customer dependency. The theories providing an explanation for the use of trade credit have been broadly classified under two categories- ‘Business Aspect’ and ‘Financial Aspect’ (Demirgüç-Kunt and Maksimovic, 2001; Ferrando and Mulier, 2013). The business motivations for trade credit include the minimization of transaction cost (Stephen Ferris, 1981), as a way to practice price discrimination (Brennan et al., 1988), or to act as implicit quality guarantees (Emery and Nayar, 1998). The financial motivations for trade credit in prior literature attribute the use of trade credit to the informational advantage of suppliers over financial intermediaries (Jain, 2001; Biais and Gollier, 1997), as arbitrage to negate the difference between borrowing and lending rate of interest (Emery, 1984), or to curb the adverse selection problem (Myers and Majluf, 1984) faced by the customers in the capital markets. Credit by operational creditors is an integral part of a firm’s financing. Under the SAR-FAESI regime, the increase in the rights of creditors was limited to secured financial creditors only. The enactment of IBC empowers all classes of creditors, whether financial or operational, to file a suit for insolvency of a firm in case of non-repayment of dues owed to them. Prior literature envisages

countervailing effects on the demand and supply side of credit post-increase in creditor rights. On the supply side, higher protection may lead to a higher flow of credit since lenders are assured of either repayment of debt or access to collateral and liquidation (Funchal and Galdi, 2008; Djankov et al., 2007). However, on the demand side, borrowers might cut down their debt under the threat of liquidation (Jose et al., 2020; Vig, 2013).

The effect of an increase in creditor rights on the availability of trade credit might be heterogeneous depending on the customers' financial constraints. Suppliers have an information advantage over financial intermediaries (Jain, 2001; Biais and Gollier, 1997). High-credit quality suppliers have a comparative advantage in obtaining outside finance and pass on this advantage to small, credit-constrained buyers (Boissay and Gropp, 2007). They may also be better able to extract value from the liquidation of assets in default, generating demand for trade credit from credit-constrained buyers (Petersen and Rajan, 1997; Fabbri and Menichini, 2010). However, listed multinational firms around the world, unlikely to face financing constraints in the market, have large volumes of accounts payable on their balance sheet (Demirgüç-Kunt and Maksimovic, 2001). Financially unconstrained firms can use their market power to extract favorable contract terms from small suppliers, which reduces their overall borrowing costs (Fabbri and Menichini, 2010; Giannetti et al., 2011). They (with unused bank credit lines) take trade credit to exploit the supplier's liquidation advantage (Fabbri and Menichini, 2010). While stronger creditor rights should incentivize suppliers to extend

higher trade credit, the usage of trade credit by financially constrained vs. unconstrained firms depends on the relative strength of information advantage or market power channel. The information advantage theory postulates greater availability of trade credit to financially constrained buyers, while the market power theory postulates higher credit availability to financially unconstrained buyers post an increase in rights of suppliers through IBC.

Hypothesis 1(a): Financially constrained firms receive higher trade credit relative to unconstrained firms post the implementation of IBC.

Hypothesis 1(b): Financially constrained firms receive lower trade credit relative to unconstrained firms post the implementation of IBC.

Next, we analyze trade credit supply by small firms primarily because their dependence of small firms on trade credit is higher (Petersen and Rajan, 1997; Hoang et al., 2023). Despite facing financing costs and scale issues, small- and medium-sized enterprises (SMEs) use trade credit payables to reduce information asymmetry about their product quality (Emery and Nayar, 1998; Hoang et al., 2023; García-Teruel and Martínez-Solano, 2010). Failure to provide adequate trade credit may hurt their sales volume and profitability (Long et al., 1993; Martínez-Sola et al., 2014). In this context, we analyze the impact of creditor rights changes on the supply of trade credit by SMEs. MSMED Act, 2006 provides for payment of a high penalty (three times the prevailing bank rate) to MS suppliers on delay in payment by customers of

these firms. Moreover, the interest payable on delay is not deductible under income tax laws. These rights are applicable specifically to the supplier firms who come under the Micro/Small (MS) category under the act (Gross investment in plant & machinery up to 5 crores rupees).

Since the MSMED Act increased the rights of MS firms with respect to trade credit, they should have a higher incentive to supply goods on credit. The provision of high economic penalties on delays in payments should incentivize the customers of MS firms to adhere to the contractual terms of repayment of trade credit. However, the customers of these firms might be reluctant to avail of more trade credit owing to fear of a high penalty for a possible delay in payment. Additionally, the customers of MS firms might be concerned about a loss of reputation in such cases. With a lower bargaining power, MS firms might fear losing their market share if they exercise their rights under the act. Existing literature shows that even after legal protection, SMEs are less likely to enforce credit terms on their customers owing to weak bargaining power ([Wilson and Summers, 2002](#)). Hence, the plausible impact may be on either side depending on the strength of the supply side or demand side effect. We expect the increased rights of MS suppliers through penalty provision on customers for delays in payment to bring a reduction in the debtor conversion period of MS suppliers.

Hypothesis 2: The debtor collection period for MS suppliers reduced post the implementation of the MSMED Act relative to other suppliers.

Suppliers with weak bargaining power toward their customers are more likely to extend trade credit, have a larger share of goods sold on credit, and offer a longer payment period before imposing penalties (Fabbri and Klapper, 2016). The MS firms, with their small size, can be argued to have weaker bargaining power. The introduction of IBC marked a substantial increase in suppliers' rights by allowing all classes of operational creditors to file a suit for insolvency of the defaulting customer, leading to the dismissal of existing management. While stronger creditor rights should incentivize all suppliers to offer trade credit on lenient terms to their customers (higher amount with longer payment period), this effect is not expected to be homogeneous for all firms. MS firms, erstwhile, had superior rights under the MSMED Act for recovery of their dues by way of high penalty payable to them. With the introduction of IBC, the rights of other suppliers increased. Additional rights to MS suppliers granted through MSMED became less effective post-IBC. Hence, MS suppliers, with similar rights to other suppliers but weaker bargaining power (Wilson and Summers, 2002), and greater dependence on trade credit for sales and profitability (Long et al., 1993; Martínez-Sola et al., 2014; Petersen and Rajan, 1997), are expected to offer higher trade credit to their customers compared to non-MS firms post-IBC.

Hypothesis 3: Trade credit provided by MS suppliers increased post the implementation of the IBC relative to other suppliers.

4 Data and Methodology

We use the CMIE Prowess database for analysis, which has a wide array of financial information on Indian firms. Our data is divided into two time periods: 2003-2010 to analyze the impact of the MSMED Act and 2013-2020 to analyze the impact of IBC. The MSMED Act is applicable for manufacturing firms with gross investment in plant & machinery up to fifty million rupees. As such, our sample consists of only manufacturing entities (NIC 2-digit code 10-33). Following prior literature, we exclude government-owned entities from our sample. To analyze the impact of IBC, we include all the non-financial, non-utility firms for which requisite data fields are available. Additionally, to capture the correct impact of regulations, we remove firms with less than two years of pre- and post-data around the respective regulations. We filter firms with positive values of sales, total assets, debt, trade receivables, and plant & machinery. We retain firms with age (year-incorporation year) greater than or equal to zero. To remove the effect of outliers, we winsorize all variables at a 1% level. We analyze the impact on manufacturing firms around the MSMED as well as IBC. Following the listed exclusions, we have a final sample of 21,736 and 44,433 firm-year observations for the manufacturing firms around the MSMED and the IBC period respectively. The complete sample around the IBC period is 81,347, which

we use to compare the impact of IBC on financially constrained vs. unconstrained firms. We use a difference-in-differences (DiD) regression model for the analysis. Our primary specifications are reported below:

Impact of MSMED on trade credit supplied by MS firms:

$$\begin{aligned} \text{Debtor days}_{ijt} = & \beta_1[\text{MSMED}_t * \text{MS firm}_{it}] + \beta_2 \text{MS firm}_{it} \\ & + \text{MSMED}_t * \chi_{it} + \gamma_i + \delta_j * \varphi_t + \epsilon_{ijt} \end{aligned} \quad (1)$$

Impact of IBC on the trade credit supplied by MS firms:

$$\begin{aligned} \text{Receivables/Debtor days}_{ijt} = & \beta_1[\text{IBC}_t * \text{MS firm}_{it}] + \beta_2 \text{MS firm}_{it} \\ & + \text{IBC}_t * \chi_{it} + \gamma_i + \delta_j * \varphi_t + \epsilon_{ijt} \end{aligned} \quad (2)$$

Impact of IBC on the trade credit supplied to FC firms:

$$\begin{aligned} \text{Payables}_{ijt} = & \beta_1[\text{IBC}_t * \text{FC}_{it}] + \beta_2 \text{FC}_{it} + \beta * \chi_{it} \\ & + \gamma_i + \delta_j * \varphi_t + \epsilon_{ijt} \end{aligned} \quad (3)$$

In equation 1, the main dependent variable is *Receivables/Debtor days_{ijt}*, which is measured as $\text{Log}(((\text{Opening debtors} + \text{Closing debtors})/2) * 365 / \text{Sales})$. The subscript ‘i’ denotes the firm, ‘j’ denotes the industry, and ‘t’ denotes the time. Similarly, the dependent variables in equation 2 and 3 are *Receivables* (trade receivables to sales) and *Payables* (trade payables to sales), respectively. For robustness checks and alternative explanations, I further substitute the dependent variables (receivables-payables) to check for

both demand and supply side effects. *IBC* is a dummy that takes a value ‘1’ for the years 2017-2020, of ‘0’ otherwise. *MSMED* is a dummy that takes a value ‘1’ for years 2007-2010, ‘0’ otherwise. *MS firm* is a dummy for small firms as defined under MSMED (‘1’ for firms with less than 50 million rupees investment in plant and property, ‘0’ otherwise). *FC* is a dummy (‘1’ for firms with above industry-year median of Hadlock-Pierce measure of financial constraints, ‘0’ otherwise). In all specifications, our main variable of interest is the coefficient β_1 , which represents the differential impact of creditor rights reform on the treated vs. control group.

In line with the prior literature, we control for firm characteristics that may affect the demand/supply of trade credit. Hence, our control variables are consistent in all the specifications. χ_{it} represents the set of control variables, including firm size, age, leverage, tangibility, profitability, and sales growth. All the control variables are defined in Table A.1 of the appendix. In our full model, we apply firm fixed effects (γ_i) to control for time-invariant characteristics in firms and industry-year fixed effects ($\delta_j * \varphi_t$) to control for industry-related shocks that might induce a change in the demand/supply of trade credit. Additionally, the interaction term of the creditor rights reform dummy (MSMED/IBC) with firm characteristics controls for changes in the firm fundamentals in the pre-and post-reform periods.

4.1 Corporate insolvency under IBC

Fig. 1 shows the year-wise distribution of the corporate insolvency resolution process (CIRP) initiated by the relevant stakeholders, i.e., financial creditors (FC), operational creditors (OCs), and the corporate debtor (CD) itself. It is quite evident that operational creditors initiate a greater number of CIRPs than financial creditors, implying the widespread use of IBC by operational creditors to protect their interests. Additionally, the number of cases initiated under IBC shows an upward trend on a yearly basis, reflecting the acceptance of the new insolvency resolution framework. A reduction in the CIRP initiation in the years 2020 and 2021 is possibly due to loan restructuring and moratorium offered during the Covid period¹³ (not included in our analysis).

[Insert Figure 1 about here]

Out of the 7567 cases initiated under IBC, the contribution of operational and financial creditors is 3667 (48.46%) and 3440 (45.46%), respectively (Table 1). Table 1 shows that despite being lower on the liquidation waterfall hierarchy, operational creditors are able to recover 25.1% of their claims through the resolution process under IBC. The comparable figure for financial creditors stands at 32.4%. Even if a firm goes for liquidation under IBC, operational creditors are able to recover a higher proportion of their claims (9.1%) compared to financial creditors (5.6%). There are two key takeaways from this

¹³<https://www.moneycontrol.com/news/business/supreme-court-ruling-on-loan-moratorium-case-10-key-questions-answered-6686721.html>

data. First, operational creditors are actively using their rights under IBC to initiate CIRPs. Second, the resolution process through IBC is able to generate a substantial value for both operational and financial creditors over and above the liquidation value of the firm.

[Insert Table 1 about here]

Now, we move on to the motive of operational creditors for initiating the CIRP under IBC. Sometimes, operational creditors might use the insolvency initiation under IBC as a threat to the debtors who deliberately delay their payments. If the threat is credible and regularly employed by operational creditors, we should see a withdrawal of those cases by settlement before the commencement of CIRP. Table 2 shows the distribution of cases (based on claim amount) where the closure of CIRPs was done through withdrawal. Of the OC-initiated CIRPs that were closed, around 53% were closed on appeal, review, or withdrawal. Such closures accounted for more than 70% of all closures by appeal, review, or withdrawal. Thus, using the initiation of CIRP as a threat, a large number of operational creditors are able to use their rights under IBC to settle cases with the corporate debtor.

[Insert Table 2 about here]

It is observed that about 80% of CIRPs having an underlying default of less than ten million rupees were initiated on applications by OCs while about 80% of CIRPs having an underlying default of more than 100 million rupees

were initiated on applications by FCs¹⁴. It implies that firms use operational credit to fulfill their working capital requirements while other commitments requiring relatively larger funds are financed through financial creditors.

4.2 Descriptive Statistics

Table 3 and Table 4 depicts the summary statistics for the manufacturing firms (to compare MS vs. non-MS firms) around the MSMED (2003-2010) and IBC (2013-2020) period, respectively. Table 3 clearly shows that MS firms use trade credit extensively compared to non-MS firms, with their ratio of receivables to sales (27%) and payables to sales (25%) substantially higher than non-MS firms (20% and 18%). However, the overall leverage of MS firms is lower than that of non-MS firms, reflecting their inability to raise debt from other sources, possibly due to lower size, age, and proportion of tangible assets in total assets. Fig. 2 shows the yearwise plot of the debtor days of MS and non-MS firms around the MSMED intervention. We can see that after the increased rights of MS firms in 2006, their collection period has been relatively stable, while the collection period of non-MS firms has increased post the reform.

[Insert Tables 3 and 4 about here]

[Insert Figure 2 about here]

¹⁴IBBI newsletter January-March 2024

We observe a similar pattern for MS firms around the IBC period in Table 4, with higher receipt (22%) and disbursement (28%) of trade credit compared to non-MS firms (17% and 21% respectively). However, the overall debt levels of MS and non-MS firms are similar during the IBC period. The plots of supply (Fig. 3) and use (Fig. 4) of trade credit around the IBC period reflect a substantial increase in the usage of trade credit post-IBC intervention.

[Insert Figures 3 and 4 about here]

Table 5 gives the summary statistics for the full sample around IBC. Despite having similar tangibility (27%), financially unconstrained firms have lower leverage (35%) than financially constrained firms (42%). It shows the inability of financially constrained firms to raise further debt, meaning a higher dependency on trade credit. Hence, the payables of financially constrained firms (27% of sales) are higher than those of financially unconstrained firms (25% of sales).

[Insert Table 5 about here]

4.3 Multivariate Analysis

Our main results during the MSMED period are given in Table 6. The dependent variable in all the specifications is the debtor collection period in days (log values). The main variable of interest is the coefficient on the interaction

term ($MSMED * MS\ firm$), which represents the differential impact of creditor rights reform on the treated vs. control group. In column 1, the results are reported with firm fixed effects. We add the year-fixed effects in column 2. The results with all control variables are reported in columns 3 and 4. In column 4, we also control for changes in specific industries that may affect the collection period with industry-year fixed effects. We observe that the DiD coefficients are negative and significant for all models, suggesting that bolstering the rights of MS suppliers through MSMED led to a reduction in their collection period compared to non-MS firms. The economic magnitude of the interaction term corresponds to an 8.3% (column 4) reduction in the collection period of MS firms compared to non-MS firms after the policy reform.

[Insert Table 6 about here]

Next, we compare the impact of creditor rights reform through IBC on the sample of manufacturing firms (MS vs non-MS firms). While MSMED increased the rights of MS firms only, IBC enhanced the rights of all operational creditors. Hence, we are interested in examining the differential impact of IBC on MS suppliers who were already protected through MSMED. The results are presented in Table 7. The dependent variable in all specifications is *Receivables* (trade receivables to sales). The main variable of interest is the coefficient on the interaction term ($IBC * MS\ firm$), which represents the differential impact of creditor rights reform on the treated vs. control group. In column 1, the results are reported with firm fixed effects. We add the year

fixed effects in column 2. We add control variables in columns 3 and 4. In column 4, we also control for changes in specific industries that may affect the trade receivables with industry-year fixed effects. We observe that the DiD coefficients are positive and significant for all models, implying that MS firms supplied more trade credit than non-MS firms post-IBC compared to the pre-IBC period. The coefficient on the interaction term implies a 1.9% increase in the supply of trade credit by MS firms compared to non-MS firms post the implementation of IBC.

[Insert Table 7 about here]

We also examine the impact of creditor rights reform on trade credit availability. We test whether the enactment of IBC has improved trade credit availability to financially constrained firms who may face difficulty in raising finance from other sources. The results are presented in Table 8. The dependent variable in all the specifications is *Payables* (trade payables to sales). The main variable of interest is the coefficient on the interaction term ($FC * IBC$), which represents the differential impact of creditor rights reform on the treated vs. control group. In column 1, the results are reported with firm fixed effects. In column 2, the results are reported after adding controls and year fixed effects. We add industry-year fixed effects in column 3. The coefficient on the interaction term is positive across specifications and statistically significant in specifications with control variables. This suggests that financially constrained firms receive higher trade credit post-IBC com-

pared to financially unconstrained firms. In the full model (column 3), the economic magnitude of the interaction term suggests that after IBC reform, FC firms received 2.4% higher trade credit compared to non-FC firms.

[Insert Table 8 about here]

5 Robustness Checks

5.1 Propensity Score Matching

We estimate the primary model through a comparison of treated (MS firms) and control (non-MS firms) firms and draw inferences from the results of those models as reported in Tables 6 and 7. However, there might be some concerns regarding the comparability of the treated and control groups. To alleviate those concerns, we employ the DiD regression model between highly comparable treated and control groups. For this, we first estimate the likelihood of a firm being included in the treatment group through the following model, using the pre-MSMED/IBC period data:

$$MS Firm_i = \alpha + \chi_i * \beta + \epsilon_i \quad (4)$$

Here, $MS Firm_i$ is a dummy that takes a value ‘1’ for firms defined as micro/small as under MSMED, ‘0’ otherwise. χ_i is a vector of control variables including size, age, tangibility, profitability, leverage, and sales growth. All control variables are defined in Table A.1 of the appendix. The treated

firms are matched with control firms within the same industry cluster to retain comparability. We apply propensity score matching using the nearest-neighborhood method without replacement to get treated-control firm pairs with similar characteristics. We present the results of the regression analysis on the sample of matched firms in Tables 9 and 10, respectively. The finding indicates that even after controlling for comparability between treatment and control groups, the results are quantitatively and qualitatively similar to those presented in the unmatched sample. It reflects that the effect of creditor rights on MS firms is not driven by the differences in firm fundamentals between the treatment and control groups, providing additional validity to the baseline results.

[Insert Tables 9 and 10 about here]

Similarly, we perform a propensity score matching for financially constrained vs. unconstrained firms around the IBC period. The specifications and the controls remain the same as provided in the case of matching MS firms with non-MS firms. The regression results of the matched sample are reported in Table 11. The results are quantitatively and qualitatively similar to those reported in the case of the full sample in Table 8. Hence, the differential impact of IBC on financially constrained vs. unconstrained firms is not due to the difference in pre-IBC characteristics of the treatment and control groups.

[Insert Table 11 about here]

5.2 Placebo Test

It is possible that our DiD results are driven by any other economic event around the regulation change period. To alleviate these concerns, we perform a placebo test by creating fake shock prior to the regulatory change (Bose et al., 2021; Singh et al., 2024). We create a year dummy for each of the years before IBC, i.e., 2013, 2014, and 2015. Subsequently, we interact the false shock dummies with our main variable of interest (financial constraints dummy and MS firms dummy). If there are any pre-existing trends, the coefficient on these interaction terms should be significant. However, as reported in Tables 12 and 13, the coefficients on the interaction terms are not significant. This supports the idea that our baseline results are not driven by confounding events during the reform period. Hence, we conclude that our results are driven by the reform in creditor rights and not any other omitted variables.

[Insert Tables 12 and 13 about here]

5.3 Alternative Measure

To ensure that our results are not driven by the choice of the explanatory variable, we replace our main dependent variables with close substitutes and re-run the regression specification. In place of *Receivables* as the primary dependent variable in Table 7, we take *Debtor days* [$\text{Log} ((\text{Opening debtors} + \text{Closing debtors})/2) * 365 / \text{Sales}$]. The results are reported in Table A.2

of the appendix. The interaction term is positive across specifications and statistically significant in three out of four specifications, suggesting the increased trade credit supply by MS firms compared to non-MS firms post-IBC. We test an alternative definition of financial constraints, including only the top 33% of firms in every industry (HP index) as financially constrained and the bottom 33% of firms as financially unconstrained (Vig, 2013). We re-run the regression models (not reported) and find that the results are qualitatively similar to our main specifications. We also perform a subsample analysis to check the impact of creditor rights on the trade credit behavior of business group firms relative to standalone firms. Business group affiliated firms have access to internal capital markets and thus face less financial constraints compared to standalone firms (Gopalan et al., 2007; Buchuk et al., 2014; Almeida et al., 2015). They can leverage the resources of other firms within the group to meet their financing requirements. Hence, we expect financially constrained firms that are part of a business group to be less affected by creditor rights reform than standalone firms. Our results in Table 14 align with this assumption. The interaction term ($FC * IBC$) is positive and significant for the sample of standalone firms (Columns 3 and 4). However, we do not observe any significant impact of firms affiliated with a business group (Columns 1 and 2). It suggests that financially constrained standalone firms increase their usage of trade credit post-IBC compared to unconstrained firms. This indicates that upon an increase in rights, suppliers are willing to extend trade credit even to standalone financially constrained

firms, who may face difficulty in raising finance from other sources.

[Insert Table 14 about here]

5.4 Alternative explanation

Our main results suggest that MS firms provide more trade credit compared to non-MS firms after the implementation of IBC. It is possible that the general expansion of trade credit post-IBC benefitted MS firms in terms of higher trade credit availability, which further enabled them to supply more trade credit. We test for this explanation by taking *Payables* (trade payables to sales) as the dependent variable in Table A.3 of the appendix. The interaction term is statistically insignificant across specifications, suggesting that the expanded trade credit supply by MS firms post-IBC is not due to higher trade credit availability.

Our primary results show that financially constrained firms receive higher trade credit compared to unconstrained firms post-IBC. It is possible that financially unconstrained firms substitute trade credit with short-term bank credit post-creditor rights reform, driving these results. Traditional belief suggests that trade credit is necessarily an expensive form of financing compared to bank credit (Burkart and Ellingsen, 2004; Biais and Gollier, 1997; SMITH, 1987). Therefore, firms resort to trade credit in the lower hierarchy of the pecking order theory. However, empirical evidence in many papers suggests the contrary (Giannetti et al., 2011). To that extent, there is less

reason to believe that financially unconstrained firms substitute trade credit with short-term bank credit post-IBC. If IBC improves the supply of credit (Bose et al., 2021), we should observe a rise in the use of short-term bank credit for financially unconstrained firms compared to constrained firms post-IBC. However, our tests do not suggest a significant difference in the use of short-term bank credit by financially unconstrained firms post-IBC (reported in Table 15). Hence, there is no evidence of financially unconstrained firms substituting trade credit with bank credit post-IBC.

[Insert Table 15 about here]

Similarly, our results suggest that financially constrained firms receive higher trade credit post-IBC. We check whether this is due to a general expansion in the usage of trade credit by financially constrained firms. If that is the case, we should also observe an improvement in their trade credit supply post-IBC. However, the interaction term ($FC*IBC$) in Table A.4 of the appendix is insignificant, suggesting that there has not been any change in the trade credit supply of financially constrained firms compared to unconstrained firms post-IBC. Hence, our results are not driven by a general expansion in the usage of trade credit by financially constrained firms.

6 Conclusion

This paper highlights the relationship between the rights of operational creditors and the demand/supply of trade credit. Improvement in creditor rights

enables financially constrained firms to receive higher trade credit from their suppliers relative to unconstrained firms. The targeted improvement in the rights of micro/small suppliers resulted in tangible benefits to their operating cycle, leading to a reduction in their debtor collection period. However, general intervention whereby the rights of all creditors improved forced the erstwhile beneficiaries of targeted intervention to supply goods on lenient terms (longer collection period and larger portion of goods supplied on credit). Additionally, the study highlights the heterogeneous impact of policy interventions in creditor rights. Specifically, the benefits of targeted intervention to certain suppliers (micro/small) may be diminished by a general intervention if additional protection for the weaker group is not taken into consideration. The paper contributes to multiple strands of literature, viz., the role of legal interventions on trade credit, the heterogeneous impact of creditor rights strengthening through higher financial penalties vs. suppliers' right to initiate insolvency leading to dismissal of management, and the role of bargaining power in availing supply of trade credit following an exogenous shock.

The study has implications for suppliers, customers, and policymakers. Legal changes in the business environment can not be understood in isolation. Regulators should consider existing legislation and the bargaining power of customers to yield the desired outcome of policy interventions.

7 Figures

Figure 1: Initiation of CIRP- Stakeholderwise

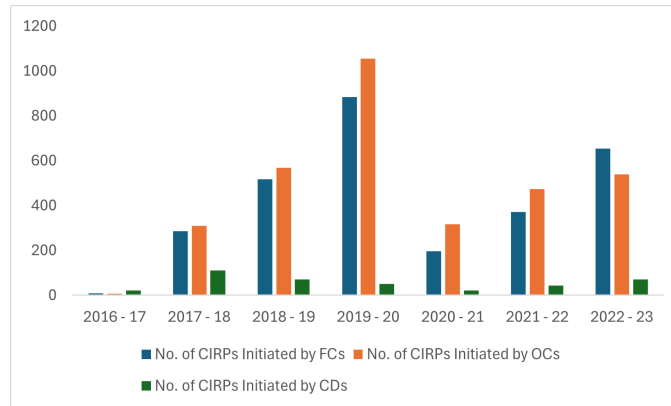


Figure 2: Debtor days around MSMED

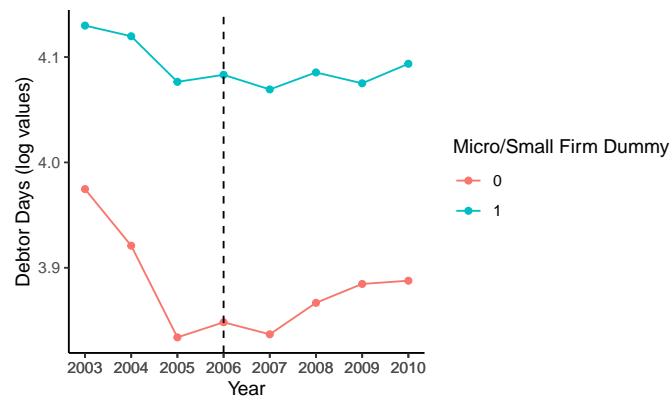


Figure 3: Trade receivables around IBC

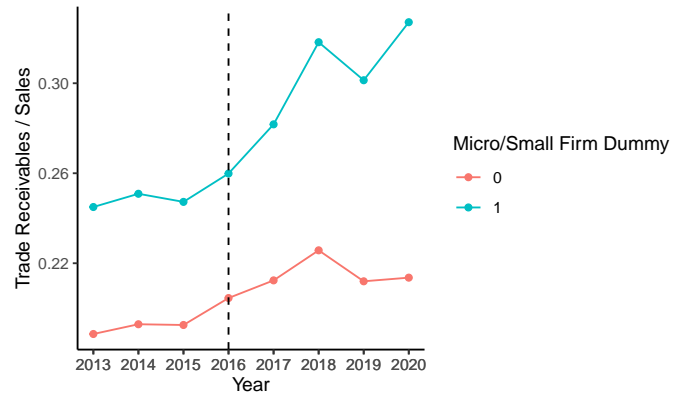


Figure 4: Trade payables around IBC

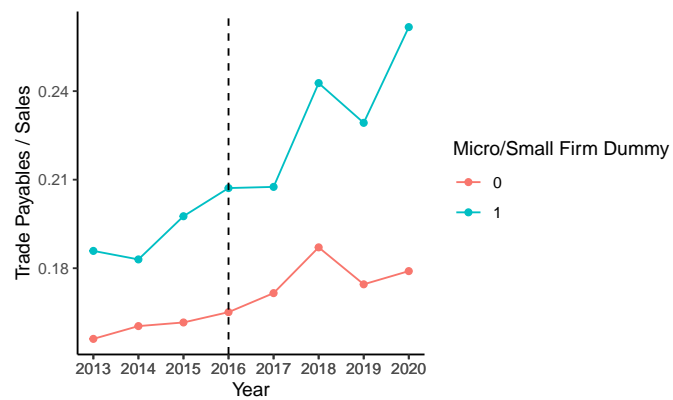
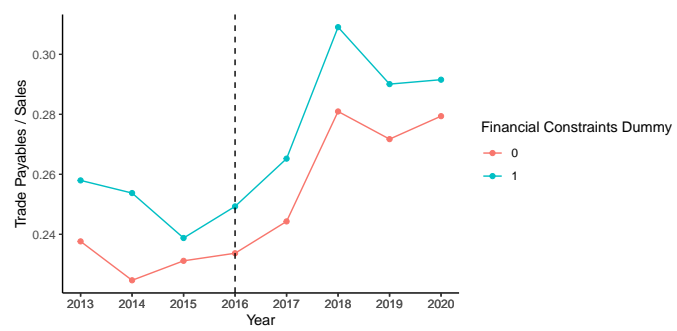


Figure 5: Trade Payables around IBC



8 Tables

Table 1: Outcome of CIRPs initiated stakeholderwise, as of March 31, 2024

Outcome	Description	CIRPs initiated by				
		FCs	OCs	CDs	FiSPs	Total
Status of CIRPs	Closure by Appeal/Review/Settled	347	798	9	0	1154
	Closure by Withdrawal u/s 12A	306	756	8	0	1070
	Closure by Approval of Resolution Plan	547	322	74	4	947
	Closure by Commencement of Liquidation	1148	1071	257	0	2476
	Ongoing	1092	720	108	0	1920
	Total	3440	3667	456	4	7567
CIRPs yielding Resolution Plans	Realisation by creditors as % of Liquidation Value	176.3	129.5	146.7	134.9	161.8
	Realisation by creditors as % of their Claims	32.4	25.1	18.2	41.4	32.1
	Average time taken for Closure of CIRP	683	691	573	677	679
CIRPs yielding Liquidations	Liquidation Value as % of Claims	5.6	9.1	8.5	-	6.3
	Average time taken for Closure of CIRP	495	492	437	-	495

Note: The table depicts the results of CIRPs (corporate insolvency resolution process) under IBC. The CIRP may be initiated by financial service providers (FiSPs), operational creditors (OCs), or financial creditors (FCs).

Table 2: Closure of CIRPs by Withdrawal till March 31, 2024

Panel A

Amount of Claims Admitted (INR Millions)	No. of CIRPs
Less than 10	577
10-100	260
100-500	127
500-1000	35
1000-10000	50
Greater than 10000	9

Panel B

Reason for withdrawal	
Full settlement with the applicant	380
Full settlement with other creditors	56
Agreement to settle in future	51
Other settlements with creditors	321
Others	250

Note: The table depicts a summary of cases under IBC where the corporate insolvency resolution process (CIRPs) was closed by withdrawal from the concerned parties. Panel A represents the distribution of cases according to the claim amount, while Panel B represents the reason for the withdrawal of such cases.

Table 3: Summary Statistics for the MSMED Period (Manufacturing Firms)

Statistic	Full Sample			MS Firms			Non-MS Firms		
	n	mean	sd	n	mean	sd	n	mean	sd
Receivables	21,736	0.22	0.27	5,078	0.27	0.33	16,658	0.20	0.24
Payables	21,736	0.20	0.35	5,078	0.25	0.43	16,658	0.18	0.32
Debtor days	21,736	3.93	0.93	5,078	4.10	1.05	16,658	3.88	0.88
Creditor days	21,703	4.20	1.07	5,058	4.34	1.22	16,645	4.16	1.01
Size	21,736	6.43	1.74	5,078	4.66	1.08	16,658	6.97	1.53
Leverage	21,736	0.45	0.46	5,078	0.39	0.44	16,658	0.47	0.46
Age	21,736	3.19	0.59	5,078	3.09	0.64	16,658	3.22	0.58
Tangibility	21,736	0.36	0.19	5,078	0.29	0.20	16,658	0.38	0.18
Profitability	21,736	0.12	0.10	5,078	0.10	0.10	16,658	0.13	0.09
Sales growth	21,736	0.20	0.44	5,078	0.22	0.54	16,658	0.19	0.41

Note: The table represents summary statistics of the variables used in the study for the 2003-2010 period. *Receivables (Payables)* are measured as the ratio of trade receivables (payables) to sales. *Size* is measured as the log of total assets. *Debtor days* are measured as the $\log((\text{Opening debtors} + \text{Closing debtors})/2) * 365 / \text{Sales}$. *Age* is measured as $\log(1 + (\text{Year-Incorporation year}))$. *Creditor days* are measured as $\log((\text{Opening Creditors} + \text{Closing Creditors})/2) * 365 / \text{Total operating expenses}$. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. *MS firm* is a dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise).

Table 4: Summary Statistics for the IBC Period (Manufacturing Firms)

Statistic	Full Sample			MS Firms			Non-MS Firms		
	n	mean	sd	n	mean	sd	n	mean	sd
Receivables	44,433	0.22	0.23	8,130	0.28	0.29	36,303	0.21	0.22
Payables	44,433	0.18	0.22	8,130	0.22	0.26	36,303	0.17	0.21
Collection period	44,433	79.76	89.38	8,130	101.87	111.32	36,303	74.81	82.88
Size	44,433	7.08	1.69	8,130	5.26	1.22	36,303	7.49	1.50
Age	44,433	3.15	0.60	8,130	2.99	0.64	36,303	3.19	0.58
Tangibility	44,433	0.31	0.18	8,130	0.21	0.18	36,303	0.34	0.17
Profitability	44,433	0.11	0.09	8,130	0.09	0.09	36,303	0.11	0.09
Sales growth	44,433	0.11	0.41	8,130	0.14	0.52	36,303	0.11	0.39
Leverage	44,433	0.38	0.28	8,130	0.38	0.29	36,303	0.38	0.28

Note: The table represents summary statistics of the variables used in the study for the 2013-2020 period (manufacturing firms sample). *Receivables (Payables)* are measured as the ratio of trade receivables (payables) to sales. *Size* is measured as the log of total assets. *Collection period* is measured as $((\text{Opening debtors} + \text{Closing debtors})/2) * 365 / \text{Sales}$. *Age* is measured as $\log(1 + (\text{Year-Incorporation year}))$. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. *MS firm* is a dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise).

Table 5: Summary Statistics for the IBC Period (All Firms)

Statistic	Full Sample			Non-FC Firms			FC Firms		
	n	mean	sd	n	mean	sd	n	mean	sd
Receivables	81,347	0.32	0.65	39,462	0.33	0.67	41,885	0.32	0.62
Payables	81,347	0.26	0.61	39,462	0.25	0.60	41,885	0.27	0.62
Debtor days	81,347	4.10	1.10	39,462	4.12	1.09	41,885	4.08	1.11
Size	81,347	7.00	1.81	39,462	7.64	1.54	41,885	6.40	1.84
Leverage	81,347	0.39	0.34	39,462	0.35	0.32	41,885	0.42	0.35
Age	81,347	3.05	0.61	39,462	3.48	0.42	41,885	2.65	0.48
Tangibility	81,347	0.27	0.21	39,462	0.27	0.21	41,885	0.27	0.22
Profitability	81,347	0.10	0.10	39,462	0.10	0.09	41,885	0.10	0.11
Sales growth	81,347	0.17	0.73	39,462	0.12	0.60	41,885	0.23	0.83

Note: The table represents summary statistics of the variables used in the study for the 2013-2020 period. *Receivables* (*Payables*) are measured as the ratio of trade receivables (payables) to sales. *Size* is measured as the log of total assets. Debtors days are measured as ((Opening debtors + Closing debtors)/2) *365/ Sales). *Age* is measured as log(1+(Year-Incorporation year)). *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. *FC firm* is a dummy ('1' for firms with above industry-year median of Hadlock-Pierce measure of financial constraints, '0' otherwise).

Table 6: Impact of MSMED on Collection Period- MS Firms

	Debtor days			
	(1)	(2)	(3)	(4)
MSMED	-0.016 (0.011)			
MS firm	0.057** (0.026)	0.054** (0.026)	0.095*** (0.027)	0.091*** (0.027)
MSMED \times MS firm	-0.064** (0.026)	-0.066** (0.027)	-0.086*** (0.031)	-0.079** (0.032)
Tangibility			-0.246*** (0.079)	-0.250*** (0.079)
Size			0.090*** (0.017)	0.099*** (0.017)
Profitability			-0.824*** (0.098)	-0.813*** (0.098)
Sales growth			-0.240*** (0.015)	-0.242*** (0.015)
Leverage			0.086** (0.041)	0.079** (0.040)
Age			0.114 (0.113)	0.088 (0.112)
MSMED \times Tangibility			-0.115* (0.061)	-0.160*** (0.062)
MSMED \times Size			-0.020*** (0.007)	-0.019*** (0.007)
MSMED \times Profitability			-0.008 (0.109)	0.020 (0.109)
MSMED \times Sales growth			-0.117*** (0.023)	-0.116*** (0.023)
MSMED \times Leverage			0.028 (0.031)	0.021 (0.031)
MSMED \times Age			-0.002 (0.022)	-0.004 (0.022)
Observations	21,736	21,736	21,736	21,736
Adjusted R ²	0.79	0.79	0.82	0.82
Firm FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Industry*Year FE	No	No	No	Yes

Note: All specifications are estimated using difference-in-differences estimator. The dependent variable in all the columns is *Debtor days*, measured as $\log((\text{Opening debtors} + \text{Closing debtors})/2 * 365 / \text{Sales})$. *MS firm* is a dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise). *MSMED* is a dummy that takes a value of '1' for years 2007-2010, '0' otherwise. *Age* is measured as $\log(1 + (\text{Year-Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table 7: Impact of IBC on Trade Credit- MS Firms

	Receivables			
	(1)	(2)	(3)	(4)
IBC	0.026*** (0.002)			
MS firm	0.007 (0.007)	0.010 (0.007)	0.005 (0.007)	0.002 (0.008)
IBC \times MS firm	0.019*** (0.006)	0.021*** (0.006)	0.019*** (0.006)	0.019*** (0.007)
Tangibility			-0.158*** (0.015)	-0.142*** (0.017)
Size			0.011** (0.006)	0.025*** (0.006)
Profitability			-0.250*** (0.023)	-0.205*** (0.027)
Sales growth			-0.059*** (0.003)	-0.023*** (0.004)
Leverage			0.115*** (0.015)	0.083*** (0.014)
Age			-0.017 (0.018)	-0.022 (0.022)
IBC \times Tangibility				-0.047*** (0.014)
IBC \times Size				0.003* (0.001)
IBC \times Profitability				-0.043 (0.027)
IBC \times Sales growth				-0.085*** (0.007)
IBC \times Leverage				0.040*** (0.013)
IBC \times Age				-0.010** (0.004)
Observations	44,433	44,433	44,433	44,433
Adjusted R ²	0.64	0.64	0.67	0.68
Firm FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Industry*Year FE	No	No	Yes	Yes

Note: All specifications are estimated using difference-in-differences estimator. The dependent variable in all the columns is *Receivables*, measured as the ratio of trade receivables to sales. *MS firm* is a dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise). *IBC* is a dummy that takes a value of '1' for years 2017-2020, '0' otherwise. *Age* is measured as $\log(1+(\text{Year-Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table 8: Impact of IBC on Trade Credit- FC Firms

	Payables		
	(1)	(2)	(3)
IBC	0.045*** (0.006)		
FC × IBC	0.007 (0.009)	0.019* (0.010)	0.024** (0.010)
Leverage		0.133*** (0.030)	0.129*** (0.030)
Sales growth		-0.085*** (0.005)	-0.085*** (0.005)
Size		-0.071*** (0.011)	-0.071*** (0.011)
Age		-0.099** (0.048)	-0.132*** (0.050)
Tangibility		-0.016 (0.038)	-0.012 (0.038)
Profitability		-0.576*** (0.043)	-0.573*** (0.043)
Observations	81,347	81,347	81,347
Adjusted R ²	0.52	0.54	0.54
Firm FE	Yes	Yes	Yes
Year FE	No	Yes	Yes
Industry*Year FE	No	No	Yes

Note: All specifications are estimated using difference-in-differences estimator. The dependent variable in all the columns is *Payables*, measured as the ratio of trade payables to sales. *FC* is a dummy ('1' for firms with above industry-year median of Hadlock-Pierce measure of financial constraints, '0' otherwise). *IBC* is a dummy that takes a value of '1' for the years 2017-2020, '0' otherwise. *Age* is measured as $\log(1+(\text{Year-Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table 9: Impact of MSMED on Collection Period- MS Firms (PSM Sample)

	Debtor days			
	(1)	(2)	(3)	(4)
MS firm	0.052*	0.047	0.065**	0.065**
	(0.028)	(0.029)	(0.028)	(0.027)
MSMED	-0.007			
	(0.018)			
MS firm \times MSMED	-0.080***	-0.081***	-0.067**	-0.068**
	(0.031)	(0.031)	(0.030)	(0.030)
Size			0.046**	0.055**
			(0.022)	(0.022)
Leverage			0.136***	0.136***
			(0.048)	(0.048)
Sales growth			-0.268***	-0.270***
			(0.015)	(0.015)
Age			0.164	0.142
			(0.143)	(0.143)
Tangibility			-0.387***	-0.384***
			(0.103)	(0.104)
Profitability			-1.01***	-0.991***
			(0.114)	(0.113)
Observations	11,209	11,209	11,209	11,209
Adjusted R ²	0.78	0.78	0.81	0.81
Firm FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Industry*Year FE	No	No	No	Yes

Note: All specifications are estimated using difference-in-differences estimator on propensity score matched sample (nearest neighbourhood matching without replacement). The dependent variable in all the columns is *Debtor days*, measured as $\log((\text{Opening debtors} + \text{Closing debtors})/2) * 365 / \text{Sales}$. *MS firm* is a dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise). *MSMED* is a dummy that takes a value of '1' for years 2007-2010, '0' otherwise. *Age* is measured as $\log(1 + (\text{Year} - \text{Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10% (*).

Table 10: Impact of IBC on Trade Credit- MS Firms (PSM Sample)

	Receivables			
	(1)	(2)	(3)	(4)
MS firm	-0.0010 (0.008)	0.002 (0.008)	0.003 (0.008)	-0.001 (0.008)
IBC	0.017*** (0.004)			
IBC \times MS firm	0.028*** (0.007)	0.029*** (0.007)	0.025*** (0.007)	0.026*** (0.009)
Size			0.028*** (0.009)	0.040*** (0.009)
Leverage			0.082*** (0.022)	0.075*** (0.024)
Sales growth			-0.060*** (0.005)	-0.028*** (0.006)
Age			0.020 (0.029)	
Tangibility			-0.219*** (0.029)	-0.226*** (0.032)
Profitability			-0.309*** (0.035)	-0.266*** (0.043)
IBC \times Tangibility				-0.008 (0.024)
IBC \times Size				0.0009 (0.004)
IBC \times Profitability				-0.035 (0.045)
IBC \times Sales growth				-0.075*** (0.009)
IBC \times Leverage				0.006 (0.021)
Observations	17,212	17,212	17,212	17,212
Adjusted R ²	0.64	0.64	0.67	0.67
Firm FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Industry*Year FE	No	No	Yes	Yes

Note: All specifications are estimated using difference-in-differences estimator using a propensity score-matched sample. The dependent variable in all the columns is *Receivables*, measured as the ratio of trade receivables to sales. *MS firm* is a dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise). *IBC* is a dummy that takes a value of '1' for years 2017-2020, '0' otherwise. *Age* is measured as $\log(1+(\text{Year-Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table 11: Impact of IBC on Trade Credit- FC Firms (PSM Sample)

	Payables		
	(1)	(2)	(3)
FC \times IBC	0.006 (0.009)	0.020* (0.010)	0.024** (0.010)
Leverage		0.118*** (0.032)	0.115*** (0.032)
Sales growth		-0.082*** (0.005)	-0.082*** (0.005)
Size		-0.075*** (0.012)	-0.075*** (0.012)
Age		-0.080 (0.051)	-0.106** (0.052)
Tangibility		0.010 (0.039)	0.013 (0.040)
Profitability		-0.602*** (0.046)	-0.596*** (0.047)
Observations	73,591	73,591	73,591
Adjusted R ²	0.52	0.54	0.54
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry*Year FE	Yes	No	Yes

Note: All specifications are estimated using difference-in-differences estimator using a propensity score-matched sample. The dependent variable in all the columns is *Payables*, measured as the ratio of trade payables to sales. *FC* is a dummy ('1' for firms with above industry-year median of Hadlock-Pierce measure of financial constraints, '0' otherwise). *IBC* is a dummy that takes a value of '1' for the years 2017-2020, '0' otherwise. *Age* is measured as $\log(1+(\text{Year}-\text{Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table 12: Impact of IBC on Trade Credit- FC Firms (Falsification Test)

	Payables		
	(1)	(2)	(3)
Leverage	0.129*** (0.030)	0.129*** (0.030)	0.129*** (0.030)
Sales growth	-0.085*** (0.005)	-0.085*** (0.005)	-0.085*** (0.005)
Size	-0.071*** (0.011)	-0.071*** (0.011)	-0.071*** (0.011)
Age	-0.086** (0.043)	-0.076* (0.042)	-0.085** (0.043)
Tangibility	-0.013 (0.038)	-0.014 (0.038)	-0.013 (0.038)
Profitability	-0.573*** (0.043)	-0.573*** (0.043)	-0.573*** (0.043)
FC × IBC 2013	-0.013 (0.013)		
FC × IBC 2014		0.002 (0.009)	
FC × IBC 2015			-0.013 (0.008)
Observations	81,347	81,347	81,347
Adjusted R ²	0.52	0.54	0.54
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry*Year FE	Yes	Yes	Yes

Note: All specifications are estimated using difference-in-differences estimator. The dependent variable in all columns is *Payables*, measured as the ratio of trade payables to sales. *FC* is a dummy ('1' for firms with above industry-year median of Hadlock-Pierce measure of financial constraints, '0' otherwise). *IBC 2013* is a dummy variable that takes a value of '1' for the year 2013 and '0' otherwise. *IBC 2014* is a dummy variable that takes a value of '1' for the year 2014 and '0' otherwise. *IBC 2015* is a dummy variable that takes a value of '1' for the year 2015 and '0' otherwise. *Age* is measured as $\log(1+(\text{Year}-\text{Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table 13: Impact of IBC on Trade Credit- MS Firms (Falsification Test)

	Receivables		
	(1)	(2)	(3)
MS firm	0.012* (0.007)	0.012 (0.007)	0.012* (0.007)
Tangibility	-0.138*** (0.017)	-0.137*** (0.017)	-0.137*** (0.017)
Size	0.026*** (0.005)	0.026*** (0.005)	0.026*** (0.005)
Profitability	-0.203*** (0.027)	-0.203*** (0.027)	-0.204*** (0.027)
Sales growth	-0.024*** (0.004)	-0.024*** (0.004)	-0.024*** (0.004)
Leverage	0.083*** (0.014)	0.083*** (0.014)	0.082*** (0.014)
IBC × Tangibility	-0.055*** (0.014)	-0.055*** (0.014)	-0.055*** (0.014)
IBC × Size	0.0006 (0.001)	0.0005 (0.001)	0.0005 (0.001)
IBC × Profitability	-0.046* (0.027)	-0.046* (0.027)	-0.046* (0.027)
IBC × Sales growth	-0.084*** (0.006)	-0.084*** (0.006)	-0.084*** (0.006)
IBC × Leverage	0.041*** (0.013)	0.041*** (0.013)	0.041*** (0.013)
IBC 2015 × MS firm	-0.007 (0.005)		
IBC 2014 × MS firm		-0.008 (0.006)	
IBC 2013 × MS firm			-0.009 (0.008)
Observations	44,433	44,433	44,433
Adjusted R ²	0.67	0.67	0.67
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry*Year FE	Yes	Yes	Yes

Note: All specifications are estimated using difference-in-differences estimator. The dependent variable in all the columns is *Receivables*, measured as the ratio of trade receivables to sales. *MS firm* is a dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise). *IBC 2013* is a dummy variable that takes a value of '1' for the year 2013 and '0' otherwise. *IBC 2014* is a dummy variable that takes a value of '1' for the year 2014 and '0' otherwise. *IBC 2015* is a dummy variable that takes a value of '1' for the year 2015 and '0' otherwise. *IBC* is a dummy that takes a value of '1' for the years 2017-2020, '0' otherwise. *Age* is measured as $\log(1+(\text{Year-Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table 14: Impact of IBC on Trade Credit- BG Affiliate vs Standalone Firms

	Payables			
	BG Affiliate Firms (1)	BG Affiliate Firms (2)	Standalone Firms (3)	Standalone Firms (4)
Leverage	0.114* (0.059)	0.114* (0.059)	0.143*** (0.034)	0.140*** (0.034)
Sales growth	-0.092*** (0.011)	-0.094*** (0.011)	-0.083*** (0.005)	-0.083*** (0.005)
Size	-0.047* (0.026)	-0.042 (0.026)	-0.079*** (0.013)	-0.080*** (0.013)
Age	-0.267** (0.130)	-0.308** (0.140)	-0.045 (0.051)	-0.083 (0.053)
Tangibility	0.160* (0.092)	0.174* (0.094)	-0.084** (0.039)	-0.083** (0.039)
Profitability	-0.741*** (0.101)	-0.736*** (0.100)	-0.511*** (0.046)	-0.507*** (0.046)
FC × IBC	0.024 (0.030)	0.023 (0.030)	0.018* (0.011)	0.025** (0.011)
Observations	16,289	16,289	65,058	65,058
Adjusted R ²	0.55	0.55	0.53	0.53
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry*Year FE	No	Yes	No	Yes

Note: All specifications are estimated using an ordinary least squares estimator. The dependent variable in all the columns is *Payables*, measured as the ratio of trade payables to sales. *FC* is a dummy ('1' for firms with above industry-year median of Hadlock-Pierce measure of financial constraints, '0' otherwise). Column 1 & 2 represents the subsample of BG affiliate firms. Column 3 & 4 represents the subsample of standalone firms. *IBC* is a dummy that takes a value of '1' for the years 2017-2020, '0' otherwise. *Age* is measured as $\log(1+(\text{Year}-\text{Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table 15: Impact of IBC on Bank Credit- FC Firms

	Bank credit		
	(1)	(2)	(3)
FC \times IBC	0.003 (0.004)	-0.003 (0.004)	-0.004 (0.004)
Leverage		0.424*** (0.020)	0.425*** (0.020)
Sales growth		-0.003** (0.001)	-0.002** (0.001)
Size		-0.054*** (0.008)	-0.054*** (0.008)
Age		0.067*** (0.016)	0.076*** (0.016)
Tangibility		-0.027 (0.024)	-0.025 (0.024)
Profitability		-0.028 (0.029)	-0.027 (0.029)
Observations	61,950	61,950	61,950
Adjusted R ²	0.65	0.73	0.73
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry*Year FE	Yes	No	Yes

Note: All specifications are estimated using difference-in-differences estimator. The dependent variable in all columns is the *Bank credit*, measured as the ratio of short-term bank borrowings to total assets. *FC* is a dummy ('1' for firms with above industry-year median of Hadlock-Pierce measure of financial constraints, '0' otherwise). *IBC* is a dummy that takes a value of '1' for the years 2017-2020, '0' otherwise. *Age* is measured as $\log(1+(\text{Year}-\text{Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Appendix

Table A.1: Variable Definitions

Variable	Description
MS firm	Dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise).
FC	Dummy that takes a value of '1' for firms that have above industry-year median score measured through Hadlock-Pierce SA Index, '0' otherwise
IBC	Dummy that takes a value of '1' for years 2017-2020, '0' otherwise
MSMED	Dummy that takes a value of '1' for years 2007-2010, '0' otherwise
BG Affiliate	Dummy that takes a value of '1' for firms which are a part of a business group, '0' otherwise
Receivables	Trade receivables / Sales
Payables	Trade payables / Sales
Debtor days	$\text{Log}((\text{Opening debtors} + \text{Closing debtors})/2) * 365 / \text{Sales}$
Bank credit	Ratio of short-term bank borrowings to total assets
Size	$\text{Log}(1 + \text{total assets})$
Age	$\text{Log}(1 + (\text{year} - \text{incorporation year}))$
Leverage	Ratio of total debt to total assets
Profitability	Ratio of EBITDA to total assets
Tangibility	Ratio of net property, plant, and equipment to total assets
Sales growth	$(\text{Sales} - \text{previous sales}) / \text{Previous sales}$

Note: SA Index = $-.737 * \text{Size} + .043 * (\text{Size}^2) - .040 * \text{Age}$. Firm size is capped at 360 billion rupees and age at 37 years for calculation of the Hadlock Pierce SA Index to remove the effect of outliers.

Table A.2: Impact of IBC on Trade Credit- MS Firms

	Debtor days			
	(1)	(2)	(3)	(4)
IBC	0.116*** (0.007)			
MS firm	-0.039* (0.022)	-0.027 (0.022)	-0.034 (0.021)	-0.037* (0.022)
IBC × MS firm	0.037* (0.019)	0.042** (0.019)	0.038** (0.018)	0.034 (0.021)
Tangibility			-0.548*** (0.048)	-0.520*** (0.053)
Size			0.064*** (0.017)	0.090*** (0.017)
Profitability			-0.984*** (0.062)	-0.913*** (0.076)
Sales growth			-0.317*** (0.009)	-0.231*** (0.011)
Leverage			0.248*** (0.035)	0.226*** (0.040)
Age			-0.056 (0.056)	-0.038 (0.065)
IBC × Tangibility				-0.083** (0.042)
IBC × Size				0.002 (0.004)
IBC × Profitability				-0.020 (0.083)
IBC × Sales growth				-0.202*** (0.017)
IBC × Leverage				0.024 (0.033)
IBC × Age				-0.018 (0.013)
Observations	44,433	44,433	44,433	44,433
Adjusted R ²	0.80	0.80	0.83	0.84
Firm FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Industry*Year FE	No	No	Yes	Yes

Note: All specifications are estimated using difference-in-differences estimator. The dependent variable in all the columns is *Debtor days*, measured as $\log((\text{Opening debtors} + \text{Closing debtors})/2 * 365 / \text{Sales})$. *MS firm* is a dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise). *IBC* is a dummy that takes a value of '1' for the years 2017-2020, '0' otherwise. *Age* is measured as $\log(1 + (\text{Year} - \text{Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table A.3: Impact of IBC on Trade Payables- MS Firms

	Payables			
	(1)	(2)	(3)	(4)
IBC	0.021*** (0.002)			
MS firm	0.014* (0.007)	0.016** (0.007)	0.008 (0.007)	0.008 (0.007)
IBC × MS firm	0.008 (0.006)	0.009 (0.006)	0.009 (0.006)	0.004 (0.007)
Tangibility			-0.031 (0.019)	-0.023 (0.020)
Size			-0.009 (0.006)	0.010* (0.006)
Profitability			-0.432*** (0.023)	-0.350*** (0.028)
Sales growth			-0.043*** (0.004)	-0.013*** (0.005)
Leverage			0.024 (0.015)	-0.033** (0.015)
Age			-0.066*** (0.020)	-0.066*** (0.025)
IBC × Tangibility				-0.031** (0.013)
IBC × Size				0.0005 (0.002)
IBC × Profitability				-0.127*** (0.031)
IBC × Sales growth				-0.071*** (0.007)
IBC × Leverage				0.070*** (0.011)
IBC × Age				-0.002 (0.004)
Observations	44,433	44,433	44,433	44,433
Adjusted R ²	0.59	0.59	0.62	0.63
Firm FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
Industry*Year FE	No	No	Yes	Yes

Note: All specifications are estimated using difference-in-differences estimator. The dependent variable in all the columns is *Payables*, measured as the ratio of trade payables to sales. *MS firm* is a dummy for small firms as defined under MSMED ('1' for firms with less than 50 million rupees investment in plant and property, '0' otherwise). *IBC* is a dummy that takes a value of '1' for the years 2017-2020, '0' otherwise. *Age* is measured as $\log(1 + (\text{Year} - \text{Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

Table A.4: Impact of IBC on Trade Receivables- FC Firms

	receivables		
	(1)	(2)	(3)
IBC	0.069*** (0.007)		
FC × IBC	0.009 (0.009)	0.003 (0.011)	0.011 (0.011)
Leverage		0.247*** (0.028)	0.242*** (0.028)
Sales growth		-0.093*** (0.005)	-0.094*** (0.005)
Size		-0.067*** (0.012)	-0.066*** (0.012)
Age		0.0002 (0.047)	-0.054 (0.049)
Tangibility		-0.200*** (0.031)	-0.194*** (0.031)
Profitability		-0.422*** (0.041)	-0.419*** (0.041)
Observations	81,347	81,347	81,347
Adjusted R ²	0.54	0.56	0.56
Firm FE	Yes	Yes	Yes
Year FE	No	Yes	Yes
Industry*Year FE	No	No	Yes

Note: All specifications are estimated using difference-in-differences estimator. The dependent variable in all columns is *Receivables*, measured as the ratio of trade receivables to sales. *FC* is a dummy ('1' for firms with above industry-year median of Hadlock-Pierce measure of financial constraints, '0' otherwise). *IBC* is a dummy that takes a value of '1' for the years 2017-2020, '0' otherwise. *Age* is measured as $\log(1+(\text{Year-Incorporation year}))$. *Size* is measured as the log of total assets. *Profitability* is measured as the ratio of EBITDA to total assets. *Leverage* is measured as the ratio of debt to total assets. *Tangibility* is measured as the ratio of net plant, property, and equipment to total assets. *Sales growth* is measured as the difference between current sales and previous sales divided by previous sales. Standard errors are clustered at the firm level. Statistical significance is denoted at 1% (***), 5% (**), and 10%(*).

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