

# Bankruptcy Law And Equity Capital: Evidence From India \*

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## Abstract

We study the impact of a creditor-in-control bankruptcy regime in India on equity capital particularly on outside equity, which refers to investment by non-controlling shareholders. We exploit the distance of lenders from the bankruptcy courts for identification. The inflow of both inside and outside equity capital increases significantly and cost reduces as a result of the bankruptcy law. A significant reduction in tunneling of resources by the insiders seems to be the channel at work. An increase in equity is also accompanied by an increase in debt at a lower cost. Firms use the additional capital to increase investment.

*Key Words:* Bankruptcy Laws; Creditor Rights; Tunneling; Banking; Firm Investments.

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# I Introduction

Although a large and growing literature examines the various implications of bankruptcy laws, their impact on equity capital, especially on outside equity, remains understudied. Outside equity refers to equity investments made by non-controlling shareholders, a category commonly found in most countries outside the U.S. and the U.K. The focus of the extant research has been mostly on implications of bankruptcy laws on debt, structure, activities, and governance of firms.<sup>1</sup> Given that the conflict between controlling and non-controlling shareholders is a major agency theme in many parts of the world, understanding the role of bankruptcy laws in either ameliorating or exacerbating the above agency conflict is important to further the scholarship on the impact of bankruptcy laws.<sup>2</sup>

The impact of stringent bankruptcy laws, that enhance the rights of the creditors, on outside and inside equity is theoretically ambiguous. Note that the bankruptcy laws generally do not distinguish between inside and outside equity. On the one hand, the equity investors, both outside and inside, may fear that the chances of their investment getting fully or partially written off either during liquidation or reorganization may increase after the enactment of bankruptcy laws. Outside equity investors may fear increased opportunistic “tunneling”<sup>3</sup> of resources by insiders in a state of distress after the enactment of strong bankruptcy laws (Favara, Morellec, Schroth, and Valta (2017)). In such a case, they may either pull out or demand a higher return on their capital. On the other hand, increased power of the creditors may put brakes on the tendency of inside shareholders to tunnel resources from the firm: creditors can now credibly threaten liquidation or reorganization (Vig (2013)). Insiders may reduce tunneling on their own also because it may make the firm more vulnerable to loan default during bad times, leading to loss of their control. It is also possible that the increased flow of debt capital at low rates may lead to higher investments by firms. Therefore, there are reasons to believe that the flow of outside and inside equity capital may increase and the cost of such capital may decrease after the bankruptcy reform. Our results are in line with the later hypothesis.

The economic setting for our study is provided by the Indian bankruptcy law enacted in the year 2016. Hitherto, the initiation of bankruptcy proceedings was based on the accounting event of net worth turning negative, and the incumbent management continued

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<sup>1</sup>See For example; Ponticelli and Alencar (2016); Mann (2018); Favara, Morellec, Schroth, and Valta (2017); Iverson (2018); Sautner and Vladimirov (2018); Gopalan, Mukherjee, and Singh (2016); Haselmann, Pistor, and Vig (2010); Qian and Strahan (2007); Djankov, Hart, McLiesh, and Shleifer (2008); Acharya and Subramanian (2009); Tantri (2020)

<sup>2</sup>Claessens, Djankov, Fan, and Lang (2002); Villalonga and Amit (2006); Lemmon and Lins (2003); Kalcheva and Lins (2007); Hong, Kim, and Welker (2017); Almeida, Kim, and Kim (2015)

<sup>3</sup>A well-known practice where the controlling shareholders indulge in diversion of firm’s resources for their private benefits at the expense of minority shareholders and creditors. Tunneling transactions could range from purchasing from related parties at a higher price to lending to entities connected to insiders at favorable terms (Johnson, La Porta, Lopez-de Silanes, and Shleifer (2000); Baek, Kang, and Park (2004); Jiang, Lee, and Yue (2010)).

to be in control during bankruptcy proceedings. The regime allowed significant leeway to insiders to “time” bankruptcy and “tunnel” resources while the bankruptcy proceedings were ongoing (Gopalan, Martin, and Srinivasan (2017)). There was no time limit on bankruptcy proceedings. The quasi-judicial board that adjudicated on bankruptcy cases took between five to eight years to dispose off a case.<sup>4</sup> Most important, multiple laws dealing with creditor rights and corporations, in general, conflicted with the bankruptcy law creating room for confusion and litigation. In contrast, the new bankruptcy law named “Insolvency And Bankruptcy Code” (IBC, henceforth) ushered in a regime of creditor in control during bankruptcy: the incumbent management is dismissed immediately on the admission of a case. The trigger event under IBC is a default on loan: a significantly less discretionary measure than before. The law imposes time limits for the completion of bankruptcy proceedings. Any violation of set time lines automatically leads to liquidation. Finally, the IBC overrides other related laws in matters of bankruptcy, reducing significantly the scope for litigation. Therefore, it is reasonable to characterize the new law as strongly favoring the creditors.

Our focus in this paper is on the impact of IBC on outside equity. Devising an identification strategy to test the above hypothesis is not straight forward. The law does not provide economically meaningful thresholds defined in terms of loan value for its application, and is universally applicable to all corporations. Therefore, we do not have natural discontinuities or “treated” and “control” groups arising from the law itself. We exploit the rules relating to the jurisdiction of courts under the law (Ponticelli and Alencar (2016)). The location of the firm decides the court that a creditor needs to approach for filing a bankruptcy case. Consider a firm F located in location A and having a banking relationship with creditors L1, L2, and L3 located in say locations B, C, and D respectively. Any bankruptcy case against the firm F needs to be filed in the relevant bench of the bankruptcy court having jurisdiction over area A. In more general terms, a creditor needs to approach the bench of the bankruptcy court having geographical jurisdiction over the area in which the borrower is located.

We assume that the distance a creditor needs to travel to file a bankruptcy case is one of the factors that influences a creditor’s decision to file a bankruptcy case or settle the case in other ways such as restructuring the loan. We discuss the assumption in detail in Section IV.A. We exploit the fact that the distance from the relevant court varies between creditors of a firm. Notice that the distance is to the relevant court having jurisdiction over the firm and not to the firm itself. Therefore, in some cases, a creditor who is closer to the firm may have a higher distance than a creditor who is farther. Since our focus is on firm-level outcomes, we create a firm-level measure by calculating the average distance of all creditors of a firm to the relevant court. Firms having below-median

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<sup>4</sup>[https://www.business-standard.com/article/economy-policy/ibc-takes-300-days-bifr-took-5-8-yrs-ibbi-chairman-m-s-sahoo-119040100020\\_1.html](https://www.business-standard.com/article/economy-policy/ibc-takes-300-days-bifr-took-5-8-yrs-ibbi-chairman-m-s-sahoo-119040100020_1.html)

average distance are considered “treated” firms. We use a difference-in-difference (DID, henceforth) framework by organizing data at a firm-year level. Note that we consider creditor-firm relationships formed before the enactment of IBC to address the concern that banks form relationships based on the distance from the relevant court.

We augment the required data from several sources. We obtain a loan-level data from the federal ministry of corporate affairs. The dataset contains all registered secured loans. [Chopra, Subramanian, and Tantri \(2020\)](#) show that the dataset is representative of overall lending in India. Apart from loan-level information such as the identity of the borrower, identity of the lender, loan amount, whether a loan has been restructured, and others, the data also has information about the exact location of the borrower and the lender. The lender’s location here refers to the location of the bank (or any other type of lender) branch that handles the loan under consideration. From the website of National Company Law Tribunal (NCLT), we collect information about the jurisdiction of every bench of the bankruptcy court and map it to every borrower.<sup>5</sup> We also collect information about the location of court benches. We then calculate the relevant distance for every firm-lender pair (the distance between the lender and the relevant court having jurisdiction over the firm) using Microsoft Bing Maps spatial data services.<sup>6</sup> We also collect information about distance between every pair of firms located on either side of the border of a bankruptcy courts jurisdiction. We obtain information about the firm and bank financial accounting statements from the Prowess database maintained by the Center For Monitoring Indian Economy (CMIE). Finally, we collect the list of firms that have either undergone or are undergoing the bankruptcy process from the website of Insolvency and Bankruptcy Board of India (IBBI), a regulatory organization formed under IBC.<sup>7</sup>

We test our assumption that distance to court matters by conducting several first stage tests. We find that the probability of a firm undergoing bankruptcy proceedings under IBC is negatively related to the firm-level average distance of its creditors to the relevant court having jurisdiction over the firm. Due to the non-availability of data about the identity of the lender that filed the bankruptcy case, we cannot conduct the above test at a firm-lender-year level. However, we conduct three indirect tests at the firm-lender-year level ([Khwaja and Mian \(2008\)](#); [Acharya, Eisert, Eufinger, and Hirsch \(2019\)](#)). Note that here the distance is defined at a firm-lender level. First, we find that the lenders located closer to the relevant court are less likely to restructure loans in the post-IBC period. The result is in line with such lenders’ increasing tendency to use the IBC route. The results hold even after we include firm and lender fixed effects and thus the test is within a lender and a firm. Second, as noted before, IBC is triggered by loan defaults. If the lower

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<sup>5</sup><https://nclt.gov.in/content/national-company-law-tribunal-benches>

<sup>6</sup><https://www.microsoft.com/en-us/maps/create-a-bing-maps-key>

<sup>7</sup><https://ibbi.gov.in/orders/nclt>

level of restructuring noted above is due to lenders' willingness to use the IBC route and not due to improvement in the macro economic or firm fundamentals, then it should lead to higher recognition of loan defaults (Kulkarni, Ritadhi, Vij, and Waldock (2019)). We find that the loan default is higher in borrower-lender pairs where the distance is lower. Third, banks are allowed to designate borrowers "willful defaulters" when the bank is convinced that the borrower has either diverted funds or has defaulted despite having the resources to repay. Banks have some discretion here. We find that within firm-lender pairs, lenders with a lower distance are more likely to designate a borrower a "willful defaulter" in the post IBC period. All the above tests show a higher willingness to use the borrower bankruptcy route on the part of the lenders located closer to the relevant court.

Our headline result is that the equity capital of treated firms increases by 34% in a DID sense on the median equity capital reported in the pre IBC period. The incremental investment by outside equity investors as a proportion of existing capital is about 10% higher when compared to the incremental investment made by the inside equity shareholders. Notice that we find an increase in the amount of debt and equity capital through active capital infusions. The debt to equity ratio remains largely unchanged. Therefore, our results cannot be explained by firms shunning debt due to increased costs of bankruptcy (Vig (2013)). Also note that it is unlikely that the demand for outside equity went up in the post IBC period based on the distance of a firm's lenders to the bankruptcy court for reasons unconnected with the IBC. Nonetheless, we conduct a test to show that the results are due to outside shareholders' increased willingness to supply equity capital. We document a significant increase in the price to book ratio for the treated firms which are actively traded. Thus, increased equity comes at a lower cost of capital, indicating a shift in the supply curve and not a movement on the existing supply curve due to a shift in demand. Finally, capital increases even when the firms are in distress showing that the disciplining impact IBC due to credible threat of seizing control overpowers the opportunistic incentives faced by the insiders (Favara, Morellec, Schroth, and Valta (2017)) while in distress.

Our focus then shifts to the channel at work. As noted above, there is evidence that insiders generally "tunnel" firm's resources for their private benefits (Bertrand, Mehta, and Mullainathan (2002); Johnson, La Porta, Lopez-de Silanes, and Shleifer (2000)).<sup>8</sup> It is possible that tunneling weakens a firm and increases the probability of loan default. In the pre IBC period, the insiders could have continued tunneling even during bankruptcy (Gopalan, Martin, and Srinivasan (2017)) as the insiders continued to be in control, and the process used to take a long period. As noted above, the application of IBC leads

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<sup>8</sup>It is important to note that studies such as Khanna and Palepu (2000);Gopalan, Nanda, and Seru (2007);Siegel and Choudhury (2012) do not find evidence of tunneling even when dominant inside shareholders are present.

to instant dismissal of the incumbent management upon admission of a case. Therefore, incumbents may find it incentive-compatible to reduce tunneling in the post IBC period. Since tunneling by definition is a clandestine activity, it is hard to cleanly identify such transactions (Bertrand, Mehta, and Mullainathan (2002)). We start with related party transactions—transactions a firm enters into with its insiders. We find a significant decline of close to four times in the value of related party transactions that involve the outflow of funds from the firm to the insiders and no significant change in the value of such transactions involving fund inflows to the firm. It translates into an economically meaningful 8% of revenues in the pre-period. Second, since related party transactions are one of the many ways of tunneling, we devise an alternative measure that depends on the structure of insiders' holdings. It is well known that insiders use pyramidal structures that create a wedge between the control and cash flow rights to facilitate tunneling (Almeida and Wolfenzon (2006); Almeida, Kim, and Kim (2015)). Therefore, any reduction in tunneling should have a higher impact on such structures. Accordingly, we find that the firms which are a part of a pyramidal structure and are at the bottom of the pyramid see a higher inflow of equity capital. Similarly, firms that are a part of a business group (Gopalan, Nanda, and Seru (2014)) that have controlling shareholders or families experience increased inflow of capital. Finally, an increase in price to book ratio documented above also hints at a reduction in tunneling since the extant literature talks about the tendency to tunnel being internalized by the stock price (Morck, Wolfenzon, and Yeung (2005)).<sup>9</sup>

We then focus on debt. There is almost a consensus among scholars that an increase in the rights of the creditors leads to a higher supply of credit at lower interest rates.<sup>10</sup> However, some studies find that the demand for credit could go down due to increase in risk aversion (Acharya, Amihud, and Litov (2011); Vig (2013)). We find an increase in the amount of debt and a reduction in interest rates in a DID sense. Given the data limitations, we cannot disentangle the demand and supply effects. Finally, we find that the treated firms increase investment in fixed assets by close to INR. 51 million in a DID sense. The incremental investment is 14% of the median fixed asset holding in the pre event period and more than 1.6 times the annual median investment in the pre-IBC period, and hence, is economically meaningful.

We conduct several hygiene and robustness tests. To address the concern that firms may have a high average distance, despite some lender(s) being closer to the bankruptcy court, we use the minimum distance among all creditors within a firm as the distance measure. Our results go through under this new definition for treated and control firms. Additionally, we test our main results using a completely different identification strategy.

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<sup>9</sup>However Cheung, Rau, and Stouraitis (2006) argue that investors fail to price in tunneling.

<sup>10</sup>See for example: Porta, Lopez-de Silanes, Shleifer, and Vishny (1998); Houston, Lin, Lin, and Ma (2010); Ponticelli and Alencar (2016); Haselmann, Pistor, and Vig (2010)

We use the fact that the court benches are not always located in the center of their jurisdictional area. Thus, firms located very close to each other on either side of the border of a court's jurisdiction have significant differences in their distance to the relevant court. Consider two firms, A and B located within, say, five kilometers of each other but are on different sides of the border of the jurisdiction of a bankruptcy court. Assume that the two bankruptcy courts are located in such a manner that the relevant court for A is located close to it whereas the relevant court for B is located far from it. We consider firm "A" type as treated whereas firm "B" type as control. The distinction makes sense at least for lenders who are located close to the borrowers. With this identification and using the DID approach, we find an increase in capital inflow and a decrease in outflow where insiders are the recipients. Thus, our results are robust to a different identification strategy.

A skeptic may argue that the regions where the bankruptcy courts are located may be "special" and have differences that mechanically lead to the results we obtain. Note that we account for time-invariant reasons using firm fixed effects. However, one possibility is that the courts are located in commercial and business centers and such centers are subject to time-varying shocks that vary along with the passage of IBC. To address concerns relating to time-varying endogenous reasons, we calculate the distance of lenders to a firm from the civil court that has jurisdiction over a firm and repeat our main exercise. We do not find any increase in the flow of equity capital using the above measure. Commercial centers or any other regions experiencing time-varying shocks should have more civil courts as well. Therefore, our results are unlikely to be due to the choice of location. Nonetheless, to address any residual concerns, we exclude firms located very close to the bankruptcy courts in our main analysis. We find that our results are largely unaffected by the above filter. Finally, we find that impact through distance is higher for borrowers who borrow from small banks when compared to large banks (Petersen and Rajan (2002)). Given their reach and resources at disposal, large banks may be less affected by distance from bankruptcy courts.

Coming to hygiene tests, we find that the treated and control firms have close to parallel trends concerning the variables of interest (Bertrand, Duflo, and Mullainathan (2004)). Further, we conduct several placebo tests using false years. We do not find significant results.

We contribute to the large and growing literature on the impact of bankruptcy laws and creditor rights on firms and providers of capital (White (1983); Djankov, Hart, McLiesh, and Shleifer (2008); Hotchkiss, John, Mooradian, and Thorburn (2008); Berkovitch and Israel (1999); Haselmann, Pistor, and Vig (2010); Ponticelli and Alencar (2016); Bae and Goyal (2009); Berkovitch, Israel, and Zender (1998); Acharya, Sundaram, and John (2011); Gormley, Gupta, and Jha (2016); Davydenko and Franks (2008); Visaria (2009); Lilienfeld-Toal, Mookherjee, and Visaria (2012)). Our contribution is unique in that we

focus on the impact of bankruptcy law on outside equity, a category of investors not examined before by the bankruptcy literature. We also contribute to the literature that focuses on agency issues between inside and outside equity investors. (Morck, Wolfenzon, and Yeung (2005); Bertrand, Mehta, and Mullainathan (2002); Claessens, Djankov, Fan, and Lang (2002); Young, Peng, Ahlstrom, Bruton, and Jiang (2008); Khanna and Yafeh (2007); Almeida, Kim, and Kim (2015)). We show that a creditor-in-control bankruptcy law could act as an effective antidote against the tunneling of resources by insider shareholders. Finally, we also contribute to the literature that highlights the role of physical distance in finance. We show that the distance from bankruptcy courts matters.

## II Institutional Background

Bankruptcy law in India originated with the legislation of the Sick Industrial Companies Act (SICA) in 1985. Before 1985, the Companies Act of 1956 provided a framework for insolvency resolution. Under the SICA, a quasi-judicial body named the Board of Industrial and Financial Reconstruction (BIFR) adjudicated on bankruptcy-related cases. The bankruptcy regime had the following features: (i) balance sheet test of negative net worth as a necessity for filing for insolvency procedures; (ii) debtors in possession during the resolution process; (iii) automatic stay on court cases, and a moratorium on loan payments during the resolution process; (iv) multiple laws and authorities dealt with the bankruptcy process leading to delays and confusion.<sup>11</sup> The specific bankruptcy law applied to only industrial firms as defined in the law. For other firms general provisions of the corporate law relating to winding up of companies were applicable. These features weakened creditor rights, encouraged asset stripping and opportunistic behavior by insiders (Gopalan, Martin, and Srinivasan (2017); Gormley, Gupta, and Jha (2016)).<sup>12</sup>

Insolvency cases used to languish for years as nearly three-quarters of the cases under the purview of BIFR as of March-end 2016 were the ones that were registered more than 10 years prior.<sup>13</sup> As cases kept on piling up in the bankruptcy court of BIFR, lender recovery plummeted adding to the nonperforming asset (NPA) problem of the

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<sup>11</sup>[https://www.bcasonline.org/Referencer2015-16/Other%20Laws/Company%20Law/sick\\_industrial\\_companies.htm](https://www.bcasonline.org/Referencer2015-16/Other%20Laws/Company%20Law/sick_industrial_companies.htm).

<sup>12</sup>New laws were also enacted to speed up the trials in large recovery cases. The Debt Recovery Tribunals (DRT) that were instituted to facilitate debt recovery by financial lenders from customers had limited teeth. Even after the legislation of Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act in 2002, which allowed seizure of secured assets of a defaulting firm by banks, the problem persisted. In a way the problem of value erosion got exacerbated, as firms which were already in default had some crucial assets seized by lenders under the provisions of SARFAESI. These assets which were an essential part of the firm's operations were taken away from them endangering the continuation of the firm as a going concern.

<sup>13</sup><https://dipp.gov.in/sites/default/files/lu713.pdf>, reply to Unstarred Question 713 in Lok Sabha on 21st November 2016, p5-p12.



Indian banking sector. As of the financial year 2016-17,<sup>14</sup> the year in which the IBC was legislated, the NPA of commercial banks stood at 9.9% of its lending portfolio.<sup>15</sup> As noted in the Introduction, in most cases, it took between 5 to 8 years to settle a case and the recovery rate was less than 20%.<sup>16</sup>

To address the lacunae of the BIFR bankruptcy regime and other debt restructuring mechanisms, The Insolvency and Bankruptcy Code 2016 was legislated. Although IBC is modeled on the lines of UK bankruptcy law, it also draws some of its no so stringent features from the U.S., German, and French Laws. Concerning some features, IBC is more creditor friendly than even the U.K bankruptcy law.

The trigger event for the initiation of the bankruptcy proceedings (known as Corporate Insolvency Resolution Process (CIRP)) is a default on a loan. Any default above INR<sup>17</sup> 100,000<sup>18</sup> is actionable under IBC. All types of creditors, including unsecured operational creditors, and borrowers themselves can file for bankruptcy. In line with the U.K. law, the incumbent management is dismissed and the management of the firm moves into the hands of the senior creditors during the bankruptcy process. The primary objective of the law is to maximize loan recovery for the creditors. The resolution professional who manages the firm in the interim is appointed by the financial creditors and works under their supervision and control. During the bankruptcy process, firms cannot raise super-priority credit that becomes senior to existing senior creditors. However, in line with the German and U.S laws, there is an automatic stay on all claims when the bankruptcy proceedings are ongoing. The resolution professional is entrusted with the job of finding suitors and sending their bids to the Committee of Creditors (CoC) consisting of all financial creditors. The creditors select the winning bid and send the plan for the approval of the bankruptcy court. As in Germany, the courts have some powers to modify the resolution plan proposed by the committee of creditors to the extent the terms violate any law although they cannot implement their plans. The amount realized from the winning bidders is distributed among various claimants as per the approved plan. In line with the French law, the claims of the workers have precedence over all other claims. However, unlike the French law, the government's claim is junior to the claims of the creditors. A failure to find a buyer within set time line leads to liquidation of the debtor firm. Figure A1 of the online appendix depicts the bankruptcy process under IBC.

Some provisions of the Indian law are more stringent than even the U.K. law. For instance, there is a time limit of 330 days for resolution. As noted above, a failure on this

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<sup>14</sup>The Indian financial year is between April and March.

<sup>15</sup>[https://www.rbi.org.in/scripts/Bs\\_viewcontent.aspx?Id=3478](https://www.rbi.org.in/scripts/Bs_viewcontent.aspx?Id=3478)

<sup>16</sup>[https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/0RTP2018\\_FE9E97E7AF7024A4B94321734C-D76DD4F.PDF](https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/0RTP2018_FE9E97E7AF7024A4B94321734C-D76DD4F.PDF)

<sup>17</sup>Indian Rupee

<sup>18</sup>Roughly equal to 1370 USD at the current rate of INR 73 to the Dollar. Recently in March 2020, the threshold was raised to INR 10,000,000

count automatically leads to the liquidation of the borrower.<sup>19</sup> Second, IBC overrides all other laws relating to bankruptcy. Finally, there is only one appellate authority under IBC after the initial court. Any party not satisfied with the judgment of the appellate authority has recourse only to the Supreme Court of India.

The IBC works through an eco-system consisting of the Insolvency and Bankruptcy Board of India (IBBI) which is the apex administrative body, the National Company Law Tribunal (NCLT), which is the adjudicating authority, and Information utilities (IUs) that act as a repository of financial information. Any appeals arising out of NCLT are heard by the National Company Law Appellate Tribunal (NCLAT). The committee of creditors (Coc) which consists of all financial creditors effectively works as a corporate board during bankruptcy proceedings. Bankruptcy professionals licensed and regulated by the IBBI work as resolution professionals and are in charge of day-to-day management during bankruptcy. They also work towards finding bidders to the firm and collate all the necessary details about all bids to facilitate decision making by the CoC. There were 15 NCLT benches as the end of year 2018-2019.

NCLT has benches in multiple cities across India. The left panel of figure 1 depicts various NCLT benches on the map of India. These benches have fixed jurisdiction. The insolvency proceedings can be filed against borrowers lying in their respective jurisdictions. For instance, insolvency proceeding regarding any firm in states of Jharkhand, Bihar, West Bengal, and Sikkim (coded in blue color in the left panel) can be filed at the Kolkata NCLT Bench. Even if the creditor of the defaulting firm is located in another state, the filing for bankruptcy has to be done at the bankruptcy court under whose jurisdiction the firm falls. We present an example in the right panel of figure 1. Tecpro-Infra Projects Pvt. Ltd., which is currently under bankruptcy, is based out of New Delhi, but its financial creditor, DBS bank, is situated in Chennai (2,196 km away). The insolvency proceedings are currently being carried out at the New Delhi bench.

Since inception and as of March 31st, 2020, 3,774 firms have entered bankruptcy resolution process. Out of these, 221 cases have ended with a resolution while 914 firms have been liquidated. Operational creditors have initiated 1,874 bankruptcy proceedings under the IBC while financial creditors have initiated 1,646. The rest 254 proceedings were initiated by corporate debtors themselves.<sup>20</sup>

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<sup>19</sup>Supreme Court of India in November 2019 observed that the limit of 330 days should be followed in 'ordinary course' and extensions can be granted by NCLT on a case-by-case basis, particularly if there are delays due to litigation.

<sup>20</sup><https://ibbi.gov.in/uploads/publication/3a3e6013ea3e0b73d5a3575d5c38b9c5.pdf> IBBI Quarterly Newsletter Jan-Mar 2020.

### III Data, Sample Construction, And Summary Statistics

The website of the Insolvency and Bankruptcy Board of India (IBBI) contains the list of firms that have undergone or are undergoing bankruptcy proceedings under the IBC regime.<sup>21</sup> It provides the date of admission, resolution, liquidation, and other proceedings for each firm that is under bankruptcy proceedings under IBC. The website of the Ministry of Corporate Affairs (MCA) of India provides a section on the “Index of charges” which contains the loan-level data of creditors and firms.<sup>22</sup> The data consists of lender name, firm name, loan ID, date of sanction of loan, date of modification (restructuring) of the loan, and the loan amount along with the address of the lender. The bank loans in the data set represent over 50% of all the bank loans given to the private sector in India (Chopra, Subramanian, and Tantri (2020)). Additionally, the information on defaulters and wilful defaulters (strategic default) is made publicly available on the TransUnion CIBIL website, at the creditor and state level.<sup>23</sup> This default data is available for all firms which have defaulted on one or more loans exceeding INR.10 million. We combine the manually collected loan level detail from MCA with loan delinquency details from TransUnion CIBIL to create our primary dataset. Further, to enrich this dataset with information on the firm fundamentals, we use Prowess database, which has financial information for the firms in the above-mentioned datasets. Prowess is a database provided by the Centre for Monitoring Indian Economy (CMIE).

For the first dataset on bankruptcy admission of firms and NCLT bench distance for creditors, we programmatically extract the lending data from the MCA website and bankruptcy data from IBBI website for the period 2005- 2020 and 2017-2020 respectively. In January 2017, the first set of firms went under bankruptcy proceedings under IBC. Panel A of Table 1 shows that lending data from MCA covers 29,863 unique firms and bankruptcy data covers 3,801 unique firms. Out of 29,863 firms, 25,191 firms have at least one loan between 2005 and 2020 and 19,359 firms have the information required to calculate the distance of their lenders from the nearest court. Out of the 3,801 firms in the IBBI dataset, we find 931 matches in the MCA loan data.

For each unique lender-firm pair in the MCA dataset, we calculate the driving distance of the lender to the nearest NCLT bench using Bing Maps service – an open source API tool for geospatial analysis. The nearest bench is based on jurisdiction as explained earlier in section II. We get the address of the lender from MCA data and the address of the bench having jurisdiction over the firm from the web. We feed the addresses into a program that automatically interacts with Bing Maps through their API which gives a

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<sup>21</sup><https://ibbi.gov.in/orders/nclt>

<sup>22</sup><http://www.mca.gov.in/mcafoportal/showIndexOfCharges.do>

<sup>23</sup>Source:<https://suit.cibil.com/>

unique driving distance of the lender to the relevant court for each lender-firm pair.<sup>24</sup> For example, “Tejas Networks,” a non-bankrupt firm based out of the city of Bengaluru, has 6 unique lenders- Citibank, DBS Bank, Standard Chartered Bank, Vijaya Bank, Export-Import Bank of India, and Kotak Mahindra Bank. The last two lenders are situated in Mumbai ( 1000 km away from Bengaluru bench) and the former 4 are situated in Bengaluru itself (branches are 0-10 km away from the Bengaluru bench). The program provides distances of the lender to the bench for each lender for Tejas Networks. We take the average of these 6 distances as our main explanatory variable.

The dataset on the distance of a lender to the relevant bankruptcy court (NCLT bench) is a cross-section data of firms at the loan level, where the loan amount is the total outstanding loan of the firm as of 2017 when IBC was legislated. In the bankruptcy data from IBBI, 5 firms had multiple dates of admission to the bankruptcy court. We take the latest date and delete the rest of the dates for those firms. This results in a dataset of 19,539 firms with distance estimates.

To test the effect of IBC on bank behavior, we determine the number of times the loan of a firm was restructured in the MCA loan data described earlier. Note that since information about financial statements is available up till the end financial year 2018-2019, the sample period is restricted to 2013-2014 to 2018-2019. This data is at the firm-year level. We obtain defaulters list for the period 2014-2019 as compiled by TransUnion CIBIL, and merge with the restructuring data on firm names using fuzzy matching followed by manual verification. We finally bring in the distance to NCLT bench data created earlier and combine it with restructured loans and loan default data. This dataset consists of 286 unique lenders out of which 82 are commercial banks. A firm-lender-year panel consisting of 164,766 observations is obtained where 852 observations are those where there is a default and 11,722 observations are those where there is a loan restructuring. The firm-lender-year observations with ‘wilful default’ are 307.

To study the reaction of firms, we obtain data from the Centre of Monitoring Indian Economy (CMIE). Since CMIE is a different dataset, we merge based on firm names with the MCA-distance dataset created earlier using fuzzy logic and manual verification. In Panel C of Table 1, we find that there are 75,164 firm-year observations available in CMIE for our sample period and 50,464 firm-year observations with a distance of more than 50 kilometers from the relevant court. We further get data on incremental capital, equity cash flows, investments made by a firm, and related party transactions (RPT) and there are 45,762, 40,506, 42,712, and 42,678 firm-year observations respectively for these variables. We have assumed that any missing data in Prowess to be ‘not available’ rather than coding it as ‘0’. This leads to a drop in observations in some of our tests where we use data from Prowess. The only exceptions are the cases where we have category totals

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<sup>24</sup>Geopy and Bingmaps packages in Python programming language is used to extract distances between two geographical locations based on addresses.

and the sum of the available sub-category totals add up to the value of the category. For instance, if the total cash inflow is INR.100 and the cash inflow from operations and financing adds up to 100, we assume zero for cash inflow from investing. In other cases, as stated above, we do not consider missing information as zeros. For instance, if information about capital is missing, we treat it as missing, which leads to exclusion of the observation from the regressions. We do not have usable data on bankruptcy admission in the pre-period, i.e. under BIFR, and there were no provisions for dedicated courts, unlike in the IBC. Thus, we record bankruptcies from the financial year 2017 onwards.

Table 2 provides the summary statistics relating to key variables for entire observation period as well as the pre-event period. As noted in Section II, there are only 15 bankruptcy benches for a country with a size of 3.3 million square kilometers and a population of exceeding 1.3 billion. Expectedly, the distance between the lending bank branch and the relevant bankruptcy court bench having jurisdiction over the firm is large. The median distance is close to 400 kilometers and the average is close to 500 kilometers. It is important to note that we work with economically meaningful distance values. The median total assets and sales of firms are close to a billion INR and the median net worth is close to 300 million INR although the mean values are larger due to the presence of extreme outliers as indicated by the maximum values. The median borrowing is close to 2.4 times the net worth. The liquidity position of the firms seems comfortable as shown by the median current ratio of 1.1. The transactions with insiders are classified as related party transactions.<sup>25</sup> Gopalan, Martin, and Srinivasan (2017) shows that the data coverage in Prowess is reasonable for only related party expenses and incomes. Therefore, we focus on such related party transactions. On a median basis, related party expenses are close to 2% of total assets. However, the mean is nearly 50%. In other words, some firms engage in large related transactions. Related party incomes are much smaller.

## IV Empirical Strategy

As noted in the Introduction, IBC does not provide any “natural” treatment and control groups nor is there any direct discontinuity arising from the law. The threshold for the applicability of law is low at INR. 100,000. 99.7% of the loans in the data are above that number. Therefore, the threshold cannot be used for identification. In addition, there are always self-selection related issues with thresholds. Therefore, for identification, we exploit the fact that the relevant bench of the bankruptcy court for dealing with the bankruptcy case is the one having jurisdiction over the area where the firm is located. This induces difference in lenders in terms of the distance to the relevant court. We assume that the difficulty of filing and dealing with a bankruptcy

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<sup>25</sup>Section 2(76) of the Companies Act, 2013 defines the term related party. The definition covers directors, key managerial personal, investors with substantial stake, subsidiary companies, and others.

case increases with distances. Note that a creditor not only appears before the court but also regularly participates in discussions with various parties such as the resolution professionals, prospective bidders, the legal team, and others. As noted in Section III, distances are economically meaningful.

We then proceed to conduct first stage tests. An ideal first stage test should examine the tendency to file a bankruptcy case within a firm between lenders based on distance. Unfortunately, we do not have the identity of the lender that filed the bankruptcy case. Therefore, we cannot conduct the first stage test within a borrower by including firm fixed effects as in [Khwaja and Mian \(2008\)](#). Instead, we create a firm-level average distance measure, which is based on the simple average of the distance of all lenders of a firm. We use the simple average as the threshold for filing the case is low and all financial creditors have the same right to file a case irrespective of the amount involved. We do conduct some auxiliary first stage tests at a borrower-lender-year level.

## IV.A Distance And Bankruptcy

We test the association between the firm-level average distance and the probability of a firm facing a bankruptcy case. To address the concern that micro areas where the bankruptcy courts are located are “special”, we exclude data points where the average distance is less than 50 kilometers. A large proportion of excluded firms are those which are located close to bankruptcy courts as well as their lenders. Note that we cannot conduct a diff-n-diff test based on pre and post-event comparison as the bankruptcy regime applicable before IBC was structurally different. As noted in Section II, the specific bankruptcy law was applicable only for industrial firms. Moreover, even the trigger event for filing for bankruptcy was different. As shown by [Gopalan, Martin, and Srinivasan \(2017\)](#), borrowers rather than lenders filed and benefited from bankruptcy proceedings. Therefore, we cannot compare the bankruptcy filing under the old and new regime in a single test. Hence, we limit the first stage test to the post-event period and conduct a cross-sectional borrower level test. We estimate the following logistic regression equation.

$$Y_i = \alpha + \beta_1 * Distance_i + \beta_2 * X_i + \beta_3 * \theta_i + \beta_4 * \gamma_i + \epsilon_i \quad (1)$$

Here the data are organized at a firm level and restricted to the post-event period of 2016-2017 to 2018-2019.  $Y_i$  is a dummy variable that takes the value one if the firm under consideration faces bankruptcy proceedings and zero otherwise.  $Distance_i$  represents the average distance of all lenders of a firm as the end of the year 2015-2016 to the bankruptcy court having jurisdiction over the firm under consideration.  $\theta_i$  represents industry fixed effects and  $\gamma_i$  represents bench fixed effects.  $X_i$  stands for firm-level controls. We include

the outstanding loan amount, the proportion of credit from banks, and the number of bank relationships as control variables. The outstanding loan amount accounts for size and firm leverage. The proportion of loans from banks controls for the difference in approach between the bank and non-bank lenders. The number of lenders is a proxy for whether a firm has an intense relationship with few bankers or operates in a transaction banking mode. These factors could influence the location and the outcome variable.

We present the results in Table 3. In columns 1 to 4, we use the distance measure as the explanatory variable. Column 4 which reports the results of the full-fledged specification including bench and industry fixed effects and firm-level controls shows that the odds ratio of filing for bankruptcy reduces by close to 35% with every 1000 Kilometers increase in distance. In columns 5 to 8, we use a dummy variable, *lowdist* that takes the value of one if the firm-level average distance is less than the median average distance and zero otherwise. Column 8 which used the full-fledged specification shows that the odds ratio for filing for bankruptcy is higher by close to 23% for firms having an average distance of less than the median for all firms. Both the results appear economically meaningful and show that distance does matter for the decision to file a bankruptcy case.

## IV.B Comparison Between Treated And Control Groups

Based on the results presented in Section IV.A, we classify firms having an average distance of less than the median for all firms as “treated” and the remaining as “control”. Recall that we exclude firms having an average distance of less than 50 kilometers. As a basic hygiene test, we compare the treated and the control group firms based on observable characteristics in the pre-event period spanning between years 2013-2014 to 2015-2016. We present the results in Table 4. The characteristics compared range from total assets to related party expenses. In columns 1 and 2, we present the number of observations available for the variable under consideration. The number of observations for the two groups is similar. In columns 3 and 4, we compare the average values for all the variables. We find that the difference between the treated and control groups is not statistically significant for any of the characteristics under consideration.

## IV.C First Stage Test At Firm Lender Year Level

We conduct additional set of first stage tests. If lenders located close to the relevant court having jurisdiction over the firm are more likely to file a bankruptcy case, they are expected to show a lower tendency to restructure loans and also a higher tendency to recognize defaults- a pre-condition for filing a bankruptcy case. Organizing data at firm-lender-year level, we estimate a regression equation of the following form:

$$Y_{ijt} = \alpha + \beta_1 * Low\_Distance_{ij} * Post_t + \beta_2 * Low\_Distance_{ij} + \beta_3 * Post_t + \beta_4 * X_{it} + \beta_5 * \theta_i + \beta_5 * \gamma_j + \beta_6 * \delta_t + \epsilon_{ijt} \quad (2)$$

The sample spans a period between the years 2013-2014 and 2018-2019. We limit the sample to banking relationships that existed before the enactment of IBC.  $Y_{ijt}$  represents an outcome at a firm-lender-year level.  $Low\_Distance_{ij}$  is a dummy variable defined at a firm-lender level: it takes the value one if the distance of the lender to the relevant bankruptcy court is below the median for all lenders and zero otherwise.  $Post_t$  is a dummy variable that takes the value of one for years after 2015-2016 and zero for other years.  $\theta_i$ ,  $\gamma_j$ ,  $\delta_t$  represent firm, lender, and year fixed effects, respectively. We use the same control variables described in section IV.A except that, here, they are defined at a firm year level. We cluster the standard errors at a lender level following Khwaja and Mian (2008) and adjust them for heteroskedasticity.

We report the results in Table 5 . Column 2 shows that the tendency to restructure decreases by about 1% in a DID sense. Column 4 shows that the tendency to recognize default increases by close to one percent. Given the average level of restructuring (default) of 8% (0.2%) in the pre-event period, the change, which represents 12.25% (500%) of the average, is economically meaningful.<sup>26</sup> Finally, we find that the probability of a defaulter being labeled a willful defaulter increases significantly. The extant guidelines allow banks to designate a borrower a willful defaulter after following a specified procedure.<sup>27</sup> Finally, as noted in the introduction, multiple studies have shown that higher creditor rights in bankruptcy leads to higher credit flow. Therefore, we use the impact on loan amount as a first stage test in our within borrower between lender framework. As shown in columns 7 and 8 of the Table 5, we find a significant increase of credit from lenders located closer to the relevant bankruptcy court. The economic magnitude of the impact represents 6% of the average debt of a firm, and hence, is meaningful. All the results collectively show that lenders located close to the relevant court are less willing to compromise with the defaulting borrower. Thus, the indirect evidence firm-lender-year level tests corroborate the direct evidence presented in Section IV.A. The results also show that armed with the bankruptcy law, the lenders are willing to lend more. Our within firm between lenders test controls for demand.

Further, we find that the cost of borrowing decreases significantly for the treated firms

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<sup>26</sup>Unconditional probability of restructuring(default) during the pre-period is 8% (2%). Refer to Table 5.

<sup>27</sup>Source: <https://rbidocs.rbi.org.in/rdocs/notification/PDFs/100MNF4F1E72176524C698EE963510-D79FBAE.PDF>

Being designated as a willful defaulter cuts off a borrower from the banking system and also has additional consequences for the firm's directors.



in a DID sense. Since we do not have interest rate data at a loan level, we can only test the cost of funds at a firm level. The result gets further contaminated by the fact that the weighted average cost of funds reported by the Prowess database includes the interest rate charged on legacy loans as well. Subject to the above caveats, we detect a 25 basis points reduction in the weighted average cost of funds. We present the results in Table A1 of the online appendix.

## V Results

### V.A Equity Infusion

We start our main analysis by examining the impact of the event on total equity capital of firms. We estimate the following regression equation.

$$Y_{it} = \alpha + \beta_1 * Low\_Distance_i * Post_t + \beta_2 * Low\_Distance_i * Pre1_t + \beta_3 * Low\_Distance_i * Pre2_t + \beta_4 * X_{it} + \beta_5 * \theta_i + \beta_6 * \delta_t + \epsilon_{it} \quad (3)$$

The data are organized at a firm level and span a period between 2013-2014 and 2018-2019. The dependent variable,  $Y_{it}$ , represents the incremental capital of a firm  $i$  for a year  $t$ . Given the presence of large outliers as shown in Table 2, we winsorize the top and bottom 1% of the values.  $Low\_Distance_i$  is a dummy variable that takes the value of one if the average distance of all lenders of a firm to the bankruptcy court having jurisdiction over it is below the median for all firms. We calculate the variable based on pre-event bank-borrower relationships. Pre1 (Pre2) is a dummy variable that takes the value one for year 2014-2015 (2015-2016) and zero otherwise. All other terms have the same meaning as assigned to them in equation 2.

We report the results in Table 6. In columns 1 and 2, we use the change in total equity capital as the dependent variable. Notice that the interaction term between the two pre-event dummy variables and the treatment variable- $Low\_Distance$ -is not statistically distinguishable from zero. The result hints at the absence of any pre-existing trend (Bertrand, Duflo, and Mullainathan (2004)). Figure 2 further corroborates our findings. There seems to be a close to parallel trend in the pre event period and a divergence after the event. However, the interaction between  $Low\_Distance$  and  $Post$  dummy variables shows that the total capital increases by between INR 83 and 87 million in a DID sense. Given the median equity capital of INR 255 million, the increase represents an economically meaningful 32%. Since the change in net worth could be negative, we do not use the logarithmic form of the variable but use the INR value of change in capital.

We note that the increase in capital itself is not sufficient to show active capital raising

efforts as capital could also increase due to increased retention of earnings. Unfortunately, we do not have data about the amount of capital raised through various sources. As an alternative, we look at the cash flow statement and obtain the amount of cash raised through shares and warrants. Note that firms can raise capital by paying non cash considerations as well, and therefore, the amount raised through shares and warrants does not account for the full amount of capital raised. We estimate equation 3 using the amount raised through shares and warrants as the dependent variable and report the results in columns 3 and 4 of Table 6. As before, the pre-event difference between the treated and control groups appear parallel as indicated by the two interaction terms of the pre event dummies and the treated variable. The interaction between *Low\_Distance* and *Post* dummy variables shows that the amount raised by way of shares and warrants increases by INR 29 and 32 million in a DID sense. Given the median equity capital of INR 255 million, the increase represents an economically meaningful 13%. The result shows that firms indeed raise funds actively.

The result presented in columns 1 to 4 do not prove any increase in investment by non controlling shareholders. It is possible that all the additional investments are done by the insiders. Note that even such a possibility reflects a strong impact of IBC on firms as increased investment by insiders is likely to reduce the wedge between cash flow and control rights, and hence, disincentivize tunneling. However, understanding the reaction of outside capital is even more interesting as it will reveal whether outsiders view bankruptcy reform as a credible deterrent against tunneling by insiders, and help firms raise capital from outsiders. Unfortunately, we do not have direct information on the amount invested by outsiders. However, we have information about the number of shares held by outsiders and insiders. We calculate the incremental shares subscribed by outsiders and insiders and calculate the difference between the two. The variable so obtained tells us the incremental number of shares subscribed by outsiders when compared to insiders. In other words, we ask which category of investors subscribe higher number of shares and by how much.

We estimate equation 3 using the above difference as the dependent variable and report the results in columns 5 and 6 of Table 6. The interaction between *Low\_Distance* and *Post* dummy variables shows that the difference in the incremental number of shares subscribed by the outsiders and insiders is between 2.3 and 2.4 million. Note that since we include firm fixed effects, the time-variant size and other factors are absorbed in these regressions. Given the median number of equity shares of a firm of 22.9 million, the increase represents an economically meaningful 10%. The result shows that firms can raise more shares from outsiders than insiders. Two caveats are important to note here. First, we have shareholding information for only about 20% of the observations. Therefore, our inference about outside shareholder participation is not based on full data. As a hygiene requirement, we compare the treated and control firms having shareholding information

and report the results in Table A2 of the online appendix. We do not find significant differences in terms of observable characteristics. Second, we do not have information about the value of each share. We make an implicit assumption that outsiders and insiders pay a similar price. It is unlikely that insiders pay a higher price. Therefore, our estimation of increased investment by outsiders when compared to insiders is likely an underestimation.

Further, we also cross check our results in an univariate sense, by graphically analysing the incremental capital for the treatment and control group, in both the pre and the post period. Panel A in figure 4 shows that the average change in capital for the treatment group increased substantially in the post period, but the control group did not witness any increase. Thus the plot validates our findings in table 6 and shows that the impact of IBC on change in capital is evident in the raw data, and is not just an artefact of the regression specification. On similar lines, Panel B and Panel C also corroborate our results for net equity raised via shares, and the additional holdings by outsiders.

### V.A.1 Debt To Equity Ratio

There is a possibility that increased power of the creditors makes entrepreneurs risk averse and hence the increase in equity may just represent a de-leveraging exercise and not an increase in capital (Vig (2013); Acharya, Amihud, and Litov (2011)). While we cannot test risk aversion, we can verify whether equity infusions merely replace debt or add to total capital. The results presented in Table 5 show that the treated firms increase borrowing post the IBC. Nonetheless, to directly test the debt replacement hypothesis, we examine the impact of the bankruptcy reform on the ratio between debt and equity using CMIE data. We estimate equation 3 with debt to equity ratio as the dependent variable. We present the results in Table A3 of the online appendix. We do not find any significant change in the ratio in a DID sense. Based on results presented in Table 5 and Table A3, it is reasonable to conclude that increased equity did not merely replace debt. There seems to be an overall increase in both equity and debt capital.

## V.B Reduced Tunneling

We proceed to test whether the expected reduction in tunneling is a reason for the increased inflow of equity. Recall that tunneling refers to excessive extraction of resources by insiders from the firm over and above their fair share (Bertrand, Mehta, and Mulinathan (2002)). Three points are worth noting here. First, as shown in Section IV.A, banks are more willing to approach bankruptcy courts in the post IBC period. Second, it is possible that tunneling makes firms more vulnerable to loan defaults, which is the trigger event for a bankruptcy case. Third, the incumbent management is removed as soon as a case is admitted under IBC. Therefore, IBC could curb the tendency of insiders

to tunnel resources.

Because tunneling by nature is a clandestine activity, it is not straightforward to identify tunneling. We adopt two approaches. First, we check transactions considered as related party transactions (RPTs). These are transactions a firm engages with insiders. Indian security laws require firms to disclose material related party transactions. We recognize that related party transaction is not the only way of tunneling. Also, not all related party transactions are done for tunneling. Therefore, we create a second measure that is not based on RPTs. We use the well-known fact that the wedge between cash flow and control rights incentivizes tunneling. If a reduction in tunneling is the channel, then the inflow of equity should be higher in settings where there is a wedge between cash flow and control rights.

### V.B.1 Related Party Transactions

We start by examining related party transactions. The related party transactions can be broadly categorized into the following categories: (i) revenue expenditure; (ii) revenue income; (iii) loans lent and received; (iv) investments in fixed assets and sale of fixed assets; (v) Others including guarantees. As shown by [Gopalan, Martin, and Srinivasan \(2017\)](#), data coverage is reasonable only for related party revenue expenditure and income. Table A4 in the online appendix summarizes data coverage for various types of related party transactions. We have non-zero values for revenue expenditure and income transactions for 61% and 39% of firm-year observations. However, for other RPTs such as loans, investments, guarantees, the proportion of non zero values is significantly lower. For instance, only 16% of observations relating to RPT loans lent are non zeros. The proportion is even lower for investments and guarantees. Therefore, following [Gopalan, Martin, and Srinivasan \(2017\)](#), we draw inferences based on revenue transactions. Besides, the nature of revenue transactions makes them more suitable for tunneling. There are repeated transactions of smaller value. Therefore, it is easier to extract value without raising an alarm. Capital transactions by nature are large and infrequent. Therefore, they are likely to be subject to higher scrutiny.

We estimate regression equation 3 with the amount spent by a firm in a year on revenue expenditure where the recipient is an insider as the dependent variable and report the results in columns 1 and 2 of Table 7. These transactions range from the purchase of goods and services from a firm owned by an insider to rent paid for use of facilities owned by an insider. Notice that the interactions of the treatment variable (*Low\_Distance*) with dummy variables representing the pre-event period are statistically indistinguishable from zero. The result rules out the mechanical continuation of a pre trend. Our focus is on the interaction between the treatment variable and the dummy variable representing the post-event period. We find that the revenue expenditure where the counter-party is an

insider declines by close to INR. 74 million in a DID sense. The decline represents 7% of the median revenue in the pre-event period and 400% decline from the median RPT expenditure in the pre-event period. Therefore, the result is economically meaningful. In columns 3 and 4, we use revenue income earned by the firm from related parties as the dependent variable. We do not find any significant change.

It is not our case that all related party transactions are tunneling transactions. However, there is no economic reason we are aware of for such transactions to decline in a DID sense for firms having creditors close to the relevant bankruptcy court in the post IBC period. Therefore, it is reasonable to attribute at least a part of the decline to reduction in tunneling due to IBC. The fact that the decline is limited to revenue expenditures and not incomes is also interesting. It appears that insiders use revenue expenditures that involve cash outflows rather than revenue incomes that involve cash inflows for expropriating rents from the firm. Finally, for completion, we examine other infrequent transactions such as loans lent and received, investments made and received, and guarantees given and taken where the counter-party is an insider. As noted above, most of these values are zeros and hence we do not draw any inference from these transactions. We find no significant change in the value of these transactions. We present the results in Table A5 of the online appendix.

### V.B.2 Organizational Forms Susceptible to Tunneling

It is important to note that engaging in RPTs is not the only possible way of expropriation by insiders. Creative insiders could use more complicated circular routes involving third parties and also exploit the threshold requirements to avoid disclosure of transactions that are done for tunneling. To test whether such transactions existed and whether IBC curbed them, we design an indirect test: we ask whether organizational forms that are known to be highly susceptible to tunneling react more in terms of equity infusion post the IBC. We use the known fact that pyramidal structures (Morck, Wolfenzon, and Yeung (2005)) are highly susceptible to tunneling and the firms lower in the hierarchy are the targets of expropriation by insiders. Using the above insight, we identify firms that are subsidiaries. Tightening the identification further, we identify firms that are at the bottom of the pyramid. These are firms that are subsidiaries but themselves do not have any subsidiaries. Finally, we also identify firms belonging to business groups. A business group is a set of firms controlled by a single owner or a family (Gopalan, Udell, and Yerramilli (2007)). The owners have a significant wedge between cash flow and control rights in many cases. (Bertrand, Mehta, and Mullainathan (2002)) find evidence of tunneling within business groups. Thus, we identify subsidiaries, firms in the bottom of the pyramid, and group firms as highly susceptible to tunneling and ask whether equity inflows are higher for these firms using the following triple interaction framework.

$$\begin{aligned}
Y_{it} = & \alpha + \beta_1 * Low\_Distance_i * Post_t * Susceptible_i + \beta_2 * Susceptible_i * Post_t + \\
& + \beta_3 * Low\_Distance_i * Post_t + \beta_4 * X_{it} + \beta_5 * \theta_i + \beta_6 * \delta_t + \epsilon_{it}
\end{aligned} \tag{4}$$

Here the dependent variable is the amount of incremental capital inflow as in equation 3. We report the results in Table 8. Susceptible is a dummy variable that takes the value of one for some categories of firms and zero otherwise. In columns 1 and 2 (3 and 4), firms that are subsidiaries (at the bottom of the pyramid) are considered susceptible. In columns 5 and 6, group firms are considered susceptible. All other terms have the same meaning as in Section V.A.

Notice that both the triple interaction between  $Low\_Distance_i$ ,  $Post_t$  and  $Susceptible_i$  variables and the double interaction between  $Low\_Distance_i$  and  $Post_t$  are economically meaningful and statistically significant. Also, notice that the co-efficient on the triple interaction terms is significantly higher than that of the double interaction terms. Consider column 2 for instance. The result shows that the treated firms received an incremental capital inflow of INR. 43.8 million in the post period. The increase represents an economically meaningful 17% of the median capital in the pre-IBC period. The triple interaction shows an additional increase of INR 243 million for treated firms that are subsidiaries in the post IBC period. The additional increase represents 95% of the median capital in the pre-IBC period. The results are similar when we use the other two definitions of susceptibility. The increase in capital flow to firms highly susceptible to tunneling along with the reduction in expenditures where the counter-party is an insider strongly point to a reduction in tunneling.

### V.B.3 Impact On Valuation

It is argued in the literature that minority shareholders price in the possible expropriation by controlling shareholders (Morck, Wolfenzon, and Yeung (2005)). Therefore, any expected reduction in tunneling is expected to reflect in valuations of shares. On the other hand, an increased chance of liquidation through bankruptcy could depress the share prices. Therefore, the net effect is not clear ex-ante.

We estimate regression equation 3 with the year-end price to book ratio as the dependent variable. We report the results in Table 9. Columns 1 and 2 show no significant difference between the treated and control groups in price to book ratio. However, we note that there are a large number of companies in India that are extremely illiquid. Approximately 25% of the listed stocks have less than 3% of their total float being traded daily on the exchanges. Given the above fact, we test whether relatively more liquid treated firms see a change in valuation using a triple interaction framework. Our focus

is on the interaction between *Post*, *Low\_Dist*, and *HighLiquid* dummy variables. We find the triple interaction term to be positive and significant. Therefore, at least for the relatively liquid firms whose share prices are more reliable indicators of value, there seems to be an increase in valuation and consequent reduction in the cost of capital. The suggestive evidence relating to the decline in the cost of capital shows that the increased equity inflow is a supply response from outside shareholders.

## V.C Firms In Distress

Favara, Morellec, Schroth, and Valta (2017) show that conditional on distress, firms have a higher tendency to risk-shift in countries having stricter debt enforcement. Given the above finding, we ask whether distressed firms behave any differently after a significant increase in creditor rights through IBC. On the one hand, in line with Favara, Morellec, Schroth, and Valta (2017), it is possible that fearing imminent loss of control insiders of distressed firms try to extract as much as possible from the firm by increasing tunneling and reducing additional capital infusions. On the other hand, IBC may work as a deterrent mechanism that forces insiders of distressed firms to act before it is too late and they lose control permanently. In the earlier regime, as noted in Section II, insiders retained control even during bankruptcy. The initiation of IBC leads to the immediate dismissal of the incumbent management. Therefore, there are reasons to believe that insiders of distressed firms may try to avoid bankruptcy in the post IBC period by reducing tunneling and infusing capital. Also note that even for insiders it is hard to identify ex-ante whether a downturn is a cyclical decline or a permanent shock to engage in opportunistic tunneling. Moreover, tunneling during distress may convert what would have been a temporary shock into a permanent shock and increase the probability of distress.

To test the above conflicting hypothesis, we estimate a regression equation of the form equation 4 and report the results in Table 10. We identify distress in three ways. The first (second) definition considers firms having an average interest coverage ratio of less than one (firms reporting operating loss) in the pre-intervention period as distressed. The third definition uses revenue de-growth at an industry level to measure distress. Firms belonging to industries that reported a more than 20% decline in revenue are considered distressed. We focus on capital infusion and related party transactions. Notice that the interaction between *post* and *Low\_Distance* dummy variables are as before. We focus on the triple interaction between *post*, *Low\_Distance*, and *distressed* dummy variables. Notice that the triple interaction in almost all cases is in the same direction as our main interaction term. Our headline results relating to a higher capital inflow and lower tunneling due to IBC applies even for firms in distress. In other words, the disciplining impact of the bankruptcy law seems to apply to distressed firms as well.

## V.D The Real Impact

We ask whether the firms invest the additional funds raised or build additional buffer of liquid assets as a precautionary measure (Vig (2013)). We create two measures of investment. The first measure is the difference between the INR value of assets purchased and sold (in INR millions). The second measure adjusts the first measure for depreciation charged during the firm-year under consideration. We deduct depreciation to ensure that the additional investment does not merely reflect replacement expenditure. We estimate the regression equation 3 with the measures of investment as the dependent variables. We report the results in columns 1 to 4 of Table 11. The INR value (in millions) of the first (second) measure is the dependent variable in columns 1 and 2 (3 and 4). Notice that, depending on the specification used, investment expenditure increases by between INR. 48.5 million to 55.6 million. The increase represents approximately 14% of the median value of fixed assets in the pre-IBC period, and hence, is economically meaningful. In columns 5 and 6, we use the amount of additional liquid assets (cash and cash equivalents) as the dependent variable. We do not find any significant change here.<sup>28</sup> Therefore, it is reasonable to conclude that firms invest a significant portion of the addition capital raised in real assets.

## V.E Other Robustness Tests

### V.E.1 Effect General Improvement In Legal Infrastructure

One concern could be that our results are due to general improvement in the legal infrastructure, and therefore, cannot be specifically attributed to the bankruptcy reform. In other words, if establishment of bankruptcy court is a part of a general expansion of legal infrastructure in the country, our results could be due to better access to courts in general. Even after a reasonable search, we did not find any information about any such general expansion in court infrastructure. Nonetheless, we test the above possibility by using the average distance of a firm's lenders from the nearest district court having jurisdiction over the firm. We leave out districts where bankruptcy courts are located from the sample to avoid any confounding effects. We conduct the first stage test reported in Section IV.A and report the results in Table A7 of the online appendix. We find no significant association between distance from district court and the tendency to file for bankruptcy.

We then examine whether equity inflows increase with reduction in distance. Here the analysis mimics the analysis done in Section V.A except that the distance is measured from the nearest district court and not from the bankruptcy court. There is no significant association between the distance as calculated above and equity flows. Even the

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<sup>28</sup>We find an increase in liquid assets one year before IBC. However, the increase does not continue in the post IBC period.



shareholdings of outsiders does not change significantly. We report the results in Table 12. Therefore, it is unlikely that our results are due to general expansion of courts. We acknowledge that our tests do not account for any other type of improvement in courts other than the expansion of benches. However, as noted above, despite reasonable efforts we did not come across any such correlated improvement.

### V.E.2 Placebo Test

To further rule out the possibility that firms that have lenders located closer to the regions where bankruptcy courts are located are somehow different, and hence, would have raised more capital and reduced RPTs even in the absence of IBC, we conduct placebo tests by using false event years. If our results are due to some peculiar features of the regions under consideration, we should find that even the false treated firms increase capital in the post false event year. If not, we should not find any effect in placebo tests. We use two false event years 2012-13 and 2006-07 and conduct false event tests. The data span three years before and after the false event years and are restricted to banking relationships formed before the false event year. We report the results in Table A6. The organization of the table mimics the organization of columns 1 and 2 of Table 6. The interaction term between the false treatment and false post-event dummies is statistically indistinguishable from zero throughout. Therefore, it is unlikely that our results are due to some unobservable factors attached to the regions where the courts are located.

### V.E.3 Modified Distance

As noted in section IV, we exclude firms having an average distance of their lenders from the bankruptcy court of less than 50 kms. The purpose is to at least partially address the concern that firms having a smaller distance of their lenders to the relevant court are special due to their location close to large cities such as Bengaluru, Mumbai, Chennai, Hyderabad, and Delhi. To test whether our results are solely due to the above exclusion, we re-estimate our results without the above condition. In other words, we calculate the median distance using all firms and include all firms in the analysis. We report the results in Table A8 of the online appendix. We consider the impact on capital, related party revenue expenditure, and investments. We find a significant increase in incremental capital and investments and a significant decline in revenue RPT expenditure. Reassuringly, the economic magnitudes are only higher than those reported in Table 6, Table 7, and Table 8.

### V.E.4 Minimum Distance

In some scenarios, the average distance of a “control” firm can be large owing to some lender(s) situated far off from the relevant court. However, a single lender that is

near to the IBC court can initiate bankruptcy proceedings against the firm, even when the average distance is high. Therefore, there could be situations where a firm is highly impacted even when the average distance of its lenders is high. Thus, to address this scenario we use the minimum distance among creditors of a firm as the distance measure, and segregate “treated” and “control” firms. Table A9 of the online appendix replicates our main results using the firm-level minimum distance. Columns 1 and 2 report the results for the first stage test and show that a decrease in the minimum distance is indeed associated with higher bankruptcy filings. In column 3 we show that firms with lower minimum distance witness a significant increase in equity inflows in a DID sense, which confirms with our headline result. Column 4 shows that the coefficient for RPT expense is statistically insignificant, but directionally it remains negative, which is in line with our thesis. Also, column 5 shows that firms with a low value of minimum distance make higher net investments in a DID sense. Overall, the results from using minimum distance are largely in line with our original findings.

### V.E.5 Smaller Banks

It is reasonable to argue that distance from the courts matters more for smaller lenders due to resource constraints. As shown in Table 1, out of 286 unique lenders in our data, only 82 are commercial banks. Commercial banks in India are designated as scheduled commercial banks by the Indian Central bank. We ask whether the impact is higher for non-banks by estimating a regression equation similar to equation 4. Our focus is on the triple interaction between *post*, *Low\_Distance*, and *Non\_Bank* dummy variables. *Non\_Bank* is a dummy variable that takes the value of one for firms that borrow a substantial portion of their total borrowings from non-banks.

We present the results in Table 13. The threshold used to define substantial borrowings from non-banks is 50%, 60%, 75%, and 90% in columns 1, 2, 3, and 4, respectively. As before, the amount of incremental capital is the dependent variable. Notice that, the double interaction is statistically significant in three out of four specifications. In other words, our main results hold for all banks including large banks. Our focus is on the triple interaction term. Notice that the triple interaction term has a co-efficient ranging between INR. 176 million and 267.8 million and is significant in all columns. The co-efficient is close to 83% of the pre-event median capital and several times higher than the main effect. Thus, the results are in line with our thesis that distance matters more for smaller banks and serves as validation of our identification strategy.

## V.F Alternative Identification

For further robustness, we adopt an alternative identification strategy. We use the fact that bankruptcy courts do not always lie in the center of their jurisdiction. Therefore,

firms located on either side of the border of the jurisdiction of bankruptcy courts could have significantly different distances from the relevant bankruptcy courts. Our identification exploits the fact that firms located in neighboring districts across the border of a bankruptcy court are otherwise similar except the fact that their distance to the nearest NCLT bench differs. These districts are also similar concerning many socio-economic indicators.

We select firms located on both sides of the border. We ensure that the maximum distance between any treatment and control firm is not more than 50 kilometers. We also ensure that difference in distance of a pair consisting of any treatment firm and any control firm from bankruptcy courts having jurisdiction on them is at least 100 kilometers. We use this condition to ensure that the firms and regions are comparable. Figure 3 further illustrates the identification strategy on a map of India. Consider two firms, Southern Ispat and Energy Limited and Jahnvi Motor Private which are in Palakkad district and Coimbatore district respectively. These districts are adjoining the border of the state of Kerala and Tamil Nadu in Southern India. Palakkad district is situated in Kerala and Coimbatore district is situated in Tamil Nadu. Southern Ispat and Energy Limited is the treatment firm and Jahnvi Motor Private Limited is the control firm. The distance between these firms is 40 kilometers. This distance is below the 50 kilometers threshold. The distance between Southern Ispat and Energy Limited and the nearest NCLT bench in Kochi under whose jurisdiction it falls is 87 kilometers. Similarly, the distance between Jahnvi Motor Private Limited and its nearest NCLT bench in Chennai under whose jurisdiction it falls is 423 kilometers. The difference between these distances exceeds 100 kilometers as noted above.

Thus, we identify the treated and control firms based on their distance from the relevant courts and estimate the regression equation 3. We report the results in Table 14. We find that equity inflows from shares and warrants increases by INR. 85.6 million in a DID sense. The increase represents 33% of average capital and is economically meaningful. We also find a significant decrease in related party expenditure. The economic magnitude of the decline is close to INR. 150 million, which is 15% of total revenues. However, we do not find a significant increase in the recorded net-worth, plausibly due to some write-off. The results seem to be robust to change in identification strategy.

## VI Conclusion

Almost all of the extant research on bankruptcy laws focuses on their impact on either debt financing or investment or operating decision of firms. In contrast, we study the impact of creditor-friendly bankruptcy law on a firm's equity capital and the relationship between outside and insider equity, which is a common distinction found outside the United States and the United Kingdom. We use the enactment of the Insolvency and

Bankruptcy Code in India in the year 2016 as the economic setting.

For identification, we use the fact that a bankruptcy case can be filed only in a bankruptcy court having jurisdiction over the firm. Therefore, the physical distance for different pre-existing lenders of the firm varies. Exploiting the above variation for identification, we find that the bankruptcy law leads to a significant inflow of equity capital: outside equity holders pump is relatively more capital when compared to insiders. Further tests reveal that expropriation by controlling shareholders reduces significantly after the enactment of the law. It appears that the credible threat of creditors to either liquidate the firm or restructure after firing the incumbent management acts as a deterrent against tunneling of resources which can potentially increase the possibility of loan default, a trigger event for bankruptcy under the new law. Reduction in tunneling seems to be having the effect of inviting more capital from outsiders. In line with the extant literature, we also detect a higher inflow of debt at a lower interest rate. Finally, we find that the firms increase investments out of the incremental capital and do not hoard cash.

Our paper shows a direct link between creditor reforms and the willingness of investors to fund a firm through equity capital. Although we show some real consequences in the form of increased investment, there could be other consequences on, say, governance of firms, ability to attract foreign investments, ability to innovate, and others, which may pan out as the bankruptcy law matures over time. These implications could be a subject of future research. Our findings also highlight the need to increase the supply of efficient bankruptcy courts. As shown by our control group firms, the non-availability of bankruptcy courts close-by could significantly dilute the economic impact of the reform.

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Figure 1: LOCATION OF BANKRUPTCY COURTS

The left panel depicts the location of bankruptcy courts on a map of India. The right panel depicts an example of our identification strategy.

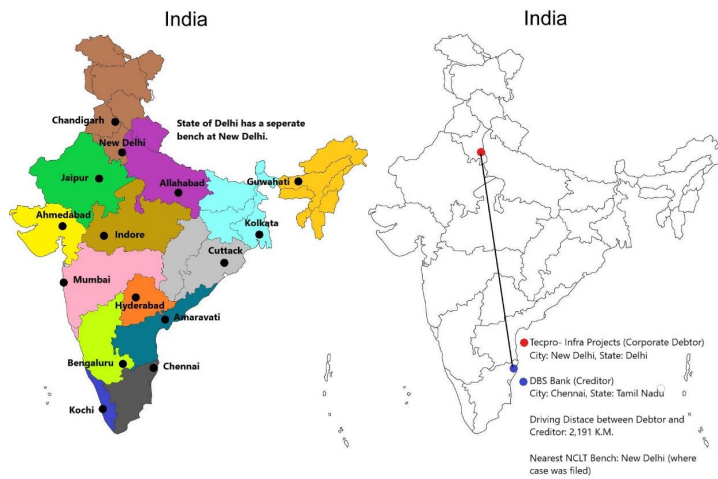


Figure 2: PARALLEL TREND

This figure plots the incremental capital for treated and control firms. The horizontal axis represents years and the vertical axis represents INR amounts. The blue (orange) line represents control (treatment) firms.

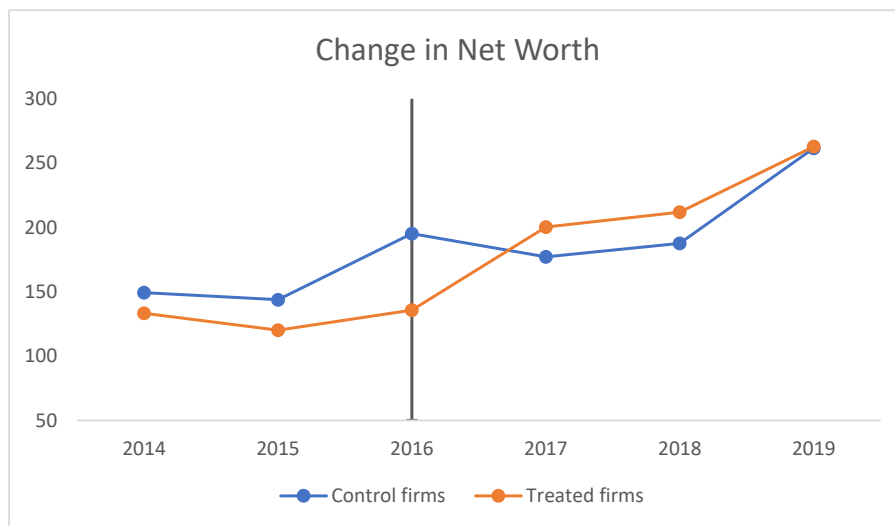


Figure 3: ALTERNATIVE IDENTIFICATION

This figure illustrates the alternative identification strategy. Point 1 and 2 are two firms. Point 4 is the relevant court for firm 2 whereas point 3 is the relevant court for firm 1.

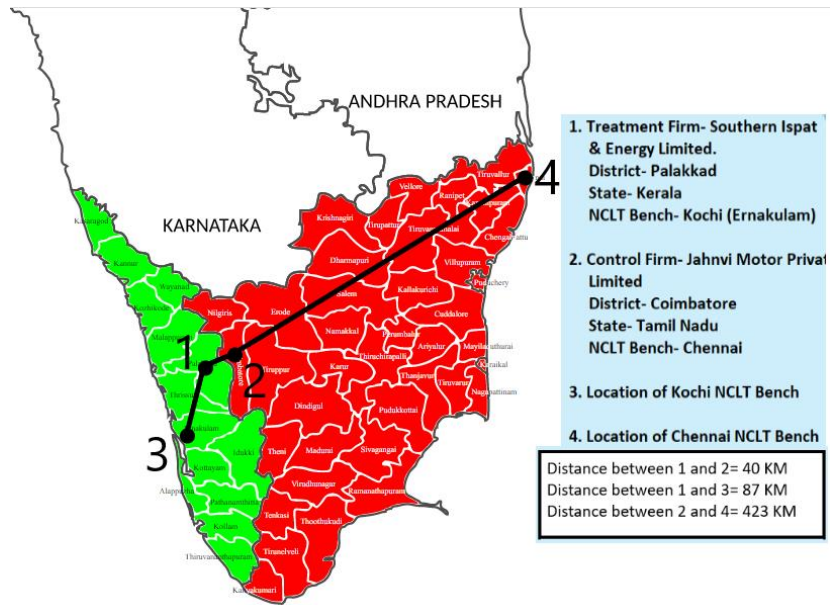


Figure 4: DIFFERENCE IN EQUITY INFUSION

Panel A in this figure shows the difference in average values of change in capital for the treatment and the control groups in the pre and post IBC periods. Panel B and C shows similar figures for average values for net equity inflows and average of additional holdings by outsiders, respectively.

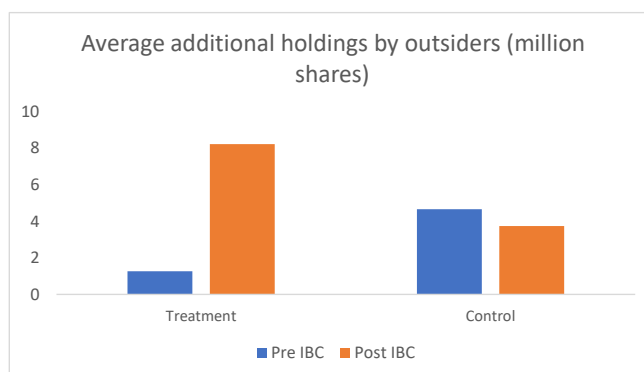
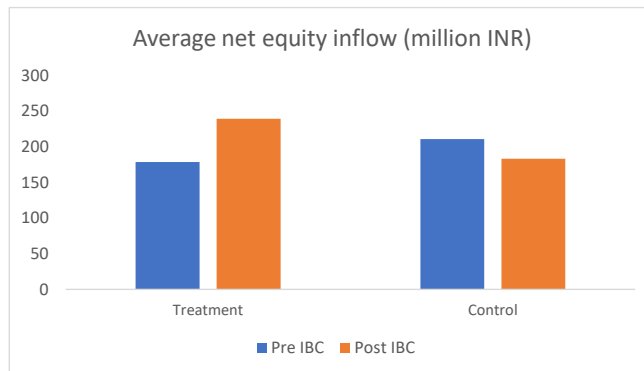
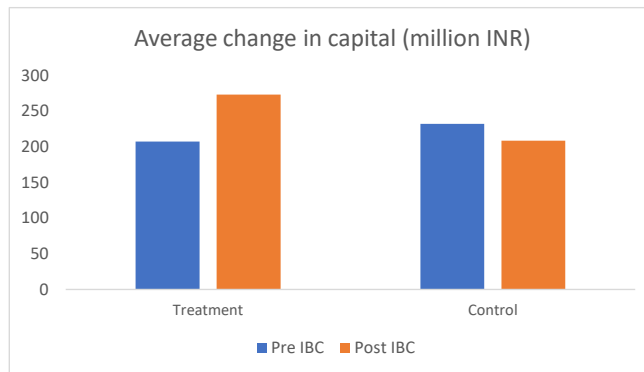


Table 1: Sample Construction

Panel A: Bankruptcy admission under the IBC

1. Firms admitted to NCLT court (under IBC) in 2017-2020	3,801
2. Firms available in MCA data	29,863
3. MCA firms which have at least one loan between 2005 to 2020	25,191
4. Firms available in MCA data with distance	19,539
5. Firms in MCA data which are admitted to NCLT	931

Panel B: Loan level information

6. Sample period coverage for loan default and loan restructuring	2014-2019
7. Total firm-lender-year level observations	3,45,552
8. Total firm-lender-year level observations, with distance more than 50 kilometers	1,85,264
9. Total firm-lender-year level observations, with distance more than 50 kilometers, based on lending relations created in pre IBC period	1,64,766
10. Unique lenders	286
11. Unique lenders which are categorized as banks	82
10. Firm-lender-year observations where there is a loan restructuring	11,722
11. Firm-lender-year observations where there is a loan default	852
12. Firm-lender-year observations where there is a willful default	307

Panel C: Information about firms

13. Sample period coverage from CMIE	2014-2019
14. Total firm year observation in CMIE 'annual financial statements' database	75,164
15. Firm year observation in CMIE 'annual financial statements' data, with distance more than 50 kilometers	50,464
16. Firm year observations with available data on change in capital	45,762
17. Firm year observations with available data on equity inflow	40,506
18. Firm year observations with available data on Investment cashflows	42,712
19. Firm year observations with available data on change in share holdings of investors	9,612
20. Total firm year observation in CMIE 'Related party transactions' database	64,376
21. Firm year observation in CMIE 'Related party transaction' database, with distance more than 50 kilometers	42,678

Table 2: Summary Statistics

The table presents the key summary statistics for the full sample in Panel A and pre-IBC years in Panel B. The INR values are expressed in millions. The distances are in 1000's of kilometers.

Panel A: Summary statistics for all years							
	Median Value	Minimum Value	25th Per-centile	75th Per-centile	Mean	Maximum Value	Std. Dev.
Distance	0.3	0.0	0.0	0.7	0.5	2.9	0.5
Total Assets	1,260.1	0.0	315.8	1,744.7	12,810.1	36,18,965.0	80,681.0
Fixed Assets	374.7	0.0	64.7	1,735.5	5,286.4	24,19,711.0	41,506.9
Sales	963.6	-31690.0	211.2	3,404.1	6,411.6	10,74,386.8	31,194.3
Current ratio	1.1	0.0	0.8	1.6	5.1	34,277.0	213.8
Total capital	279.7	-2,95,455.7	38.8	1,293.1	3,364.9	11,17,291.0	25,693.2
Total shares (millions)	22.0	0.0	8.9	89.8	159.4	12,319.1	583.0
Investments	20.3	0.0	2.0	136.2	601.6	4,38,450.0	6,114.6
Total loans	665.6	0.0	120.7	3,637.9	11,542.8	45,59,476.0	69,043.4
Related party expenses	24.5	0.0	4.1	146.7	5,542.9	4,82,47,648.0	3,27,984.4
Related party income	1.9	0.0	0.0	96.1	1,649.9	2,15,51,130.0	1,12,398.5
Panel B : Summary statistics for Pre IBC years							
	Median Value	Minimum Value	25th Per-centile	75th Per-centile	Mean	Maximum Value	Std. Dev.
Distance	0.3	0.0	0.0	0.7	0.5	2.9	0.5
Total Assets	1,159.1	0.0	312.3	4,216.4	10,738.6	24,66,551.0	79,260.9
Fixed Assets	359.2	0.1	67.2	1,577.3	4,479.1	14,56,687.0	31,046.4
Sales	967.5	-28.7	232.4	3,185.0	5,723.6	10,74,386.8	27,775.8
Current ratio	1.1	0.0	0.8	1.5	4.2	29,614.0	185.2
Total capital	255.4	-2,35,346.1	42.4	1,122.1	2,801.9	11,17,291.0	21,879.1
Total shares (millions)	22.9	0.0	9.1	88.8	152.2	11,070.7	546.1
Investments	21.5	0.0	2.4	134.4	578.0	3,06,938.0	4,985.7
Total loans	628.1	0.0	120.7	3,304.6	10,171.0	44,82,006.0	63,368.6
Related party expenses	22.6	0.0	3.8	134.2	5,229.5	4,82,47,650.0	3,70,712.0
Related party income	1.7	0.0	0.0	88.4	927.4	60,28,044.0	39,723.0

Table 3: FIRM LEVEL DISTANCE

The Table presents the results of a first stage test through a logistic regression. The data are at a firm level and restricted to the post IBC period. The dependent variable-Bankruptcy Admission-is a dummy variable that takes the value one if the firm under consideration faces bankruptcy proceedings and zero otherwise. Distance refers to the average distance of all the lenders of a firm to the bench of the bankruptcy court having jurisdiction over the firm. We consider only those lending relationships that existed before the passage of IBC. We omit firms whose average distance is less than 50 kilometers. Low distance is a dummy variable that takes the value of one for distances below the median. Controls variables included in even numbered columns are (i) 'Total loan' - the outstanding secured loan amount the firm has in the year 2016; (ii) 'Bank loan ratio' - the ratio of loans from large banks to loans from all creditors in the year 2016; and (iii) 'Lender relations' - the number of lenders a firm has in the year 2016. We include bench level fixed effects in all columns and industry fixed effects in columns 3, 4 and 7, and 8. The standard errors are clustered at a firm level and z-statistic are reported in parentheses. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variable								
			Bankruptcy Admission					
Distance	-0.592*** (-6.21)	-0.574*** (-5.49)	-0.464*** (-3.64)	-0.443*** (-3.17)				
Low distance					0.236*** (2.67)	0.194** (2.07)	0.226* (1.95)	0.210* (1.69)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	13262	13261	9090	9089	13262	13261	9090	9089
Pseudo R-square	0.02	0.0352	0.0717	0.1042	0.0113	0.0305	0.0691	0.1022
Industry FE	No	No	Yes	Yes	No	No	Yes	Yes
Bench FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4: COMPARING TREATED AND CONTROL GROUPS

The Table compares the treated and control groups based on the pre event observable characteristics. The pre event periods spans the years between 2013-2014 and 2015-2016. Firms having below the median distance are considered “treated.” Distance is as defined in Table 3. Columns 1 and 2 present the data for the number of observations in the pre event period for treated and control groups respectively. Columns 3 and 4 present the mean values for the characteristic under consideration for the treated and control groups, respectively. Column 5 reports the T statistic of the difference. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	Treatment Obs	Control obs	Treatment Mean	Control Mean	t value
Total assets	14,692	14,050	10,214.6	11,286.5	1.4
Total loan	18,993	18,663	10,598.0	9,736.4	-1.3
Net worth	14,692	14,054	2,645.6	2,965.0	1.2
Net equity inflow	11,501	11,594	178.4	210.5	1.0
Debt-to-equity ratio	13,420	12,566	15.2	10.8	-1.1
Sales	13,728	12,179	5,890.5	5,535.5	-1.0
Net profit margin	13,728	12,179	3.7	1.8	-0.3
Return on Assets	14,481	13,527	-394.9	-291.7	0.5
Operating profit	14,557	13,693	586.8	618.7	0.5
Investment	11,394	11,459	544.7	611.1	1.0
Dividend payout	14,299	13,464	0.1	0.1	-0.1
Price to book ratio	2,276	1,866	1.5	1.9	1.0
Related party expenses	11,952	12,001	7,479.8	2,988.4	-0.9
Related party income	11,952	12,001	606.7	1,246.8	1.2



Table 5: FIRST STAGE TEST-FIRM-LENDER-YEAR LEVEL

This table presents the firm-creditor-year level regressions of probability of loan restructuring, loan default, and willful default between a firm and a creditor, for the sample of firm-creditor pairs during the time span 2013-14 to 2018-19. The data are restricted to banking associations established before the enactment of IBC. Loan restructure is a dummy variable that takes the value of one if the loan under consideration is restructured and zero otherwise. Similarly, the next two dependent variables represent default and willful default. In columns 7 and 8, we use the loan amount (in INR millions) as the dependent variable. Post is a dummy variable that takes the value of one if the distance of one for years starting from the year 2016-2017. Low distance is a dummy variable that takes the value of one if the distance of the lender in a lender-borrower pair from the relevant court having jurisdiction over the borrower is below the median for all such pairs and zero otherwise. We include fixed effects at firm, creditor, and year levels in all columns. Firm level control variables listed in Table 3 are included in alternate columns. Standard errors are clustered at the creditor level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, \*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Low distance	0.017*** (3.63)	0.017*** (3.57)	-0.005*** (-3.14)	-0.005*** (-3.15)	-0.001*** (-2.19)	-0.001** (-2.15)	5.96 (0.29)	7.19 (0.36)
Post * Low distance	-0.010** (-2.02)	-0.009* (-1.90)	0.008*** (3.64)	0.008*** (3.67)	0.002*** (3.51)	0.002*** (3.50)	37.68* (1.93)	35.82* (1.91)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	164,763	164,757	164,763	164,757	164,763	164,757	164,766	164,757
R-squared	0.11	0.11	0.29	0.29	0.26	0.26	0.27	0.27
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Creditor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: IMPACT ON CAPITAL

This table presents the results relating to the impact of IBC on capital. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. The incremental capital in INR. millions is the dependent variable in columns 1 and 2. The amount raised through shares and warrants (in INR. millions) net off share redemptions is the dependent variable in columns 3 and 4. The difference between the additional number of shares subscribed by insiders and outsiders is the dependent variable in columns 5 and 6. Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. We count only pre IBC period bank relationships. Pre1 (Pre2) is a dummy variable that takes the value one for the year 2014-2015 (2015-2016) and zero otherwise. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variables	Change in capital		Net equity inflow	Additional holdings by outsiders		
Pre1 * Low distance	0.8 (0.03)	-0.5 (-0.02)	15.8 (1.27)	14.5 (1.17)	1.0 (0.88)	1.0 (0.89)
Pre2 * Low distance	-20.9 (-0.66)	-23.6 (-0.75)	15.1 (1.19)	13.3 (1.04)	1.7 (1.45)	1.7 (1.47)
Post * Low distance	87.7*** (2.79)	83.2*** (2.67)	32.0*** (2.52)	29.1** (2.34)	2.3** (2.47)	2.4** (2.50)
Controls	No	Yes	No	Yes	No	Yes
Observations	45,762	45,758	40,506	40,506	9,612	9,612
R-squared	0.49	0.49	0.50	0.50	0.32	0.32
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: RELATED PARTY TRANSACTIONS

This table presents the results relating to the impact of IBC on revenue transactions with insiders. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. The amount (in INR millions) spent on revenue expenditures (received as revenue income) where the counter party is an insider is the dependent variable in columns 1 and 2 (3 and 4). Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. We count only pre IBC period bank relationships. Pre1 (Pre2) is a dummy variable that takes the value one for the year 2014-2015(2015-2016) and zero otherwise. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent Variables	RPT expense	RPT income		
Pre1 * Low distance	-21.3 (-0.89)	-20.7 (-0.87)	24.8 (1.17)	25.1 (1.18)
Pre2 * Low distance	-14.0 (-0.53)	-14.0 (-0.53)	34.2 (1.42)	33.9 (1.41)
Post * Low distance	-73.4** (-2.24)	-73.1** (-2.23)	-11.5 (-0.37)	-11.7 (-0.38)
Controls	No	Yes	No	Yes
Observations	42,678	42,673	42,678	42,673
R-squared	0.77	0.77	0.83	0.83
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 8: IMPACT ON FIRMS HIGHLY SUSCEPTIBLE TO TUNNELING

This table presents the results relating to the impact of IBC on categories of firms that are highly susceptible to tunneling by insiders. The rupee amount (in INR Millions) of the incremental capital in a year is the dependent variable. Susceptible is a dummy variable that takes the value of one for some categories of firms and zero otherwise. In columns 1 and 2 (3 and 4), firms that are subsidiaries (at the bottom of the pyramid) are considered susceptible. In columns 5 and 6, group firms are considered susceptible. All other terms have the same meaning as in Table 6. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, \* and \* represent significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Change in capital		Change in capital		Change in capital	
Post * Low distance	268.1***	243.3***	192.0***	164.0**	114.3**	98.8*
Post * Low distance	(3.69)	(3.36)	(2.67)	(2.29)	(2.14)	(1.85)
	41.5	43.8*	64.2**	65.9**	43.5**	47.5**
Post * Susceptible firm	(1.57)	(1.67)	(2.38)	(2.46)	(2.01)	(2.2)
	-126.2***	-111.1**	-92.1**	-76.5*	-55.60	-50.40
Controls	(-2.92)	(-2.57)	(-2.16)	(-1.79)	(-1.54)	(-1.41)
	No	Yes	No	Yes	No	Yes
Observations	45,762	45,758	45,762	45,758	45,762	45,758
R-squared	0.49	0.49	0.49	0.49	0.49	0.49
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 9: IMPACT ON VALUATION

This table presents the results relating to the impact of IBC on valuation of firms. Price to book ratio is the dependent variable. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. We count only pre IBC period bank relationships. Pre1 (Pre2) is a dummy variable that takes the value one for the year 2014-2015 (2015-2016) and zero otherwise. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. High liquidity stock is a dummy variable that takes the value of one for firms that are above the median in terms of stock turnover calculated as the ratio between total shares traded and the number of floating shares. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent Variables	Price to book ratio			
Pre1 * Low distance	0.33 (0.87)	0.33 (0.87)	0.65 (1.28)	0.67 (1.30)
Pre2 * Low distance	-0.79 (-0.75)	-0.78 (-0.75)	-0.53 (-0.57)	-0.51 (-0.55)
Post * Low distance	0.98 (1.43)	0.99 (1.44)	-0.42 (-0.52)	-0.42 (-0.52)
Post * High liquidity stock			-2.54*	-2.53*
Post * Low distance * High liquidity stock			(-1.82) 2.67*	(-1.83) 2.69*
Controls	No	Yes	(1.77) No	(1.76) Yes
Observations	8,396	8,396	8,316	8,316
R-squared	0.18	0.18	0.19	0.19
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 10: DISTRESSED FIRMS

This table presents the results relating to the impact of IBC on capital and related party expenses for firms in distress. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. The incremental capital in INR. millions is the dependent variable in columns 1, 2, and 3. The amount of revenue expenditure made where the counter party is a related party is the dependent variable in columns 4, 5, and 6. Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. High Distress is a dummy variable that takes the value of one for firms in distress and zero otherwise. In columns 1 and 4 (2 and 5), firms having an average interest coverage ratio of less than one (firms that have reported operating loss) in the pre-event period are treated as firms in distress. In columns 3 and 6, we consider firms that belong to industries that experience a revenue decline of more than 20% in the previous year as distressed. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, \* and \* represent significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variables	Change in capital			RPT expense		
	(1)	(2)	(3)	(1)	(2)	(3)
Post * Low distance	42.0* (1.66)	77.7*** (3.01)	90.1*** (3.63)	-49.0* (-1.75)	-57.5** (-2.12)	-65.5** (-2.56)
Post * High distress firm	-114.6** (-2.04)	65.5 (1.4)	-126.7 (-1.54)	28 (0.45)	-11.2 (-0.19)	-0.6 (-0.01)
Post * Low distance * High distress firm	285.6*** (3.29)	154.0* (1.86)	76.6 (0.7)	-115.1 (-1.53)	-43 (-0.55)	19.1 (0.22)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	43220	45335	45744	39862	41705	41836
R-squared	0.49	0.49	0.49	0.78	0.77	0.77
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 11: IMPACT ON INVESTMENTS

This table presents the results relating to the impact of IBC on investments. Net Investments is the difference between the amount spent on purchase and sale of assets as reflected in the cash flow statements. Incremental investment refers to change in assets as reflected in the balance sheet over the previous year minus the additional depreciation. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. We count only pre IBC period bank relationships. Pre1 (Pre2) is a dummy variable that takes the value one for the year 2014-2015 (2015-2016) and zero otherwise. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(1)	(2)	(1)	(2)
Dependent Variables	Net Investment		Incremental investment		Change in cash balances	
Pre1 * Low distance	3.6 (0.22)	2.3 (0.14)	-5.1 (-0.31)	-6.1 (-0.37)	13.9 (1.20)	14.0 (1.21)
Pre2 * Low distance	21.9 (1.00)	21.3 (0.98)	28.3 (1.28)	28.3 (1.28)	22.5** (2.21)	22.9** (2.25)
Post * Low distance	51.0** (2.14)	48.5** (2.04)	55.6** (2.16)	53.7** (2.11)	5.4 (0.60)	5.8 (0.64)
Controls	No	Yes	No	Yes	No	Yes
Observations	42,712	42,712	40,114	40,114	50,657	50,653
R-squared	0.77	0.77	0.55	0.55	0.13	0.13
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 12: DISTANCE FROM OTHER COURTS

This table presents the results relating to the impact of IBC on capital. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. The incremental capital in INR. millions is the dependent variable in columns 1 and 2. The amount raised through shares and warrants (in INR. millions) net off share redemptions is the dependent variable in columns 3 and 4. The difference between the additional number of shares subscribed by insiders and outsiders is the dependent variable in columns 5 and 6. Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant district court below the median of all firms. We count only pre IBC period bank relationships. Pre1 (Pre2) is a dummy variable that takes the value one for the year 2014-2015 (2015-2016) and zero otherwise. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variables	Change in capital		Net equity inflow		Holdings by outsiders	
Post * Low distance	51.5 (1.09)	61.3 (1.33)	-14.9 (-1.03)	-9.5 (-0.68)	1.3 (1.11)	1.3 (1.16)
Controls	No	Yes	No	Yes	No	Yes
Observations	13644	13644	12348	12348	3082	3082
R-squared	0.44	0.44	0.52	0.52	0.32	0.32
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes



Table 13: IMPACT ON FIRMS BORROWING FROM SMALL BANKS

This table presents the results relating to the incremental impact of IBC on borrowers borrowing disproportionately from small banks. Banks that are not designated as scheduled commercial banks are considered small banks. The rupee amount (in INR Millions) of the incremental capital in a year is the dependent variable. In column 1(2)(3)(4), non bank relation is a dummy variable that takes the value of one if the firm under consideration borrows more than 50% (60%) (75%) (90%) of its loan value from small banks and zero otherwise. All other terms have the same meaning as in Table 6. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent Variables	Change in Capital			
Post * Low distance * Non-bank relation	212.1*** (2.84)	176.0** (2.22)	267.8*** (3.16)	264.3*** (2.95)
Post * Low distance	37.02 (1.5)	49.7* (1.96)	46.0* (1.93)	66.0** (2.46)
Post * Non-bank relation	-103.9** (-2.52)	-99.6** (-2.33)	-111.9** (-2.56)	-58.4 (-1.4)
Controls	Yes	Yes	Yes	Yes
Observations	45758	45758	45758	45758
R-squared	0.49	0.49	0.49	0.49
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 14: ALTERNATIVE IDENTIFICATION STRATEGY

This table presents the results relating to the impact of IBC on capital and related party expenses using an alternative identification strategy. We limit the sample to firms on the border the jurisdiction of bankruptcy courts. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. The incremental capital in INR. millions is the dependent variable in columns 1 and 2. The amount raised through shares and warrants (in INR. millions) net off share redemptions is the dependent variable in columns 3 and 4. The amount of revenue expenditure made where the counter party is a related party is the dependent variable in columns 5 and 6. Top and bottom 1% of the values have been winsorized. Treatment is defined at a firm level. It is a dummy variable that takes the value one for firms on the border districts that are within the jurisdiction of a bankruptcy court. Only those firms that are not more than 50 kms from a firm within the jurisdiction of a bankruptcy court are selected as control firms. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	Panel (A)		Panel (B)		Panel (C)	
	(1)	(2)	(1)	(2)	(1)	(2)
Dependent Variables	Change in capital		Net equity inflow		RPT expense	
Post * Treatment	19.9 (0.2)	-4 (-0.04)	78.1** (2.32)	85.6** (2.5)	-128.0** (-2.1)	-149.9** (-2.37)
Controls	No	Yes	No	Yes	No	Yes
Observations	3691	3455	3206	3036	3425	3217
R-squared	0.39	0.4	0.51	0.54	0.79	0.8
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

# Internet Appendix

Figure A1: THE BANKRUPTCY PROCESS

The figure depicts the bankruptcy process.

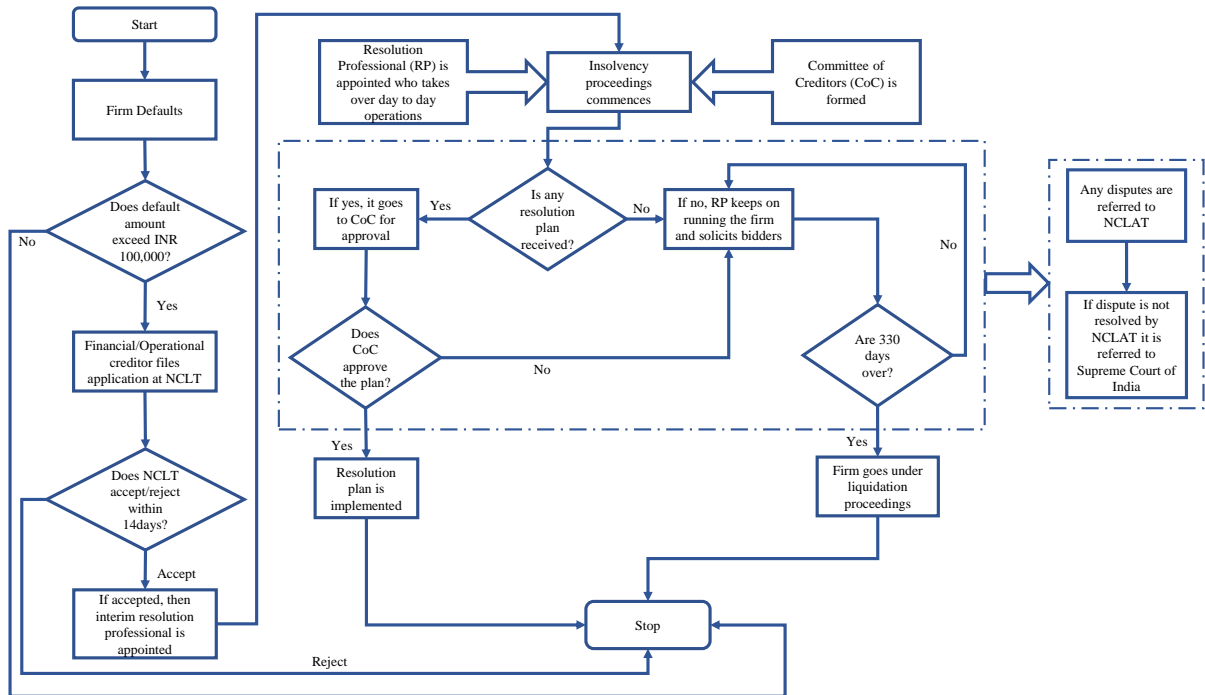


Table A1: INTEREST RATES

This table presents the results relating to the impact of IBC on interest rates. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. The amount weighted average cost of debt funds of a firm in a year is the dependent variable. Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. We count only pre IBC period bank relationships. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in column 2. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Dependent Variables	Interest rate (in %)	
Post * Low distance	-0.26*	-0.26*
	(-1.88)	(-1.89)
Controls	No	Yes
Observations	50514	50510
R-squared	0.58	0.58
Firm FE	Yes	Yes
Year FE	Yes	Yes

Table A2: COMPARING TREATED AND CONTROL GROUPS

The Table compares the treated and control groups based on the pre event observable characteristics. The sample is limited to firms whose shareholding information available. The pre event periods spans the years between 2013-2014 and 2015-2016. Firms having below the median distance are considered “treated.” Distance is as defined in Table 3. Columns 1 and 2 present the data for the number of observations in the pre event period for treated and control groups respectively. Columns 3 and 4 present the mean values for the characteristic under consideration for the treated and control groups, respectively. Column 5 reports the T statistic of the difference. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	Treatment Obs	Control obs	Treatment Mean	Control Mean	t value
Total assets	2,620	2,245	28,698.9	32,931.3	1.1
total mca loan	2,672	2,278	30,395.4	27,249.8	-1.1
Net worth	2,620	2,245	9,865.1	9,844.7	0.0
Net equity inflow	2,586	2,196	221.4	228.9	0.1
Debt-to-equity ratio	2,420	2,052	2.2	2.4	0.4
Sales	2,540	2,110	14,424.1	14,638.4	0.1
Net profit margin	2,540	2,110	28.0	20.7	-0.2
Return on assets	2,614	2,231	-99.8	-201.6	-1.2
Operating profit	2,620	2,245	1,855.3	2,302.0	1.3
Investment	2,582	2,207	1,031.0	1,142.6	0.5
Dividend payout	2,618	2,244	0.1	0.2	0.9
Related party expenses	2,528	2,143	2,158.8	922.1	-1.4
Related party income	2,528	2,143	1,516.9	1,377.4	-0.4

Table A3: IMPACT ON DEBT TO EQUITY RATIO

This table presents the results relating to the impact of IBC on debt to equity ratio. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. The ratio between total debt and equity is the dependent variable. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. We count only pre IBC period bank relationships. Pre1 (Pre2) is a dummy variable that takes the value one for the year 2014-2015 (2015-2016) and zero otherwise. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in column 2. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Dependent Variables	Debt to Equity ratio	
Pre1 * Low distance	-0.23 (-1.40)	-0.23 (0.87)
Pre2 * Low distance	0.16 (0.73)	0.16 (0.73)
Post * Low distance	0.13 (0.56)	0.13 (0.56)
Controls	No	Yes
Observations	44,264	44,264
R-squared	0.69	0.69
Firm FE	Yes	Yes
Year FE	Yes	Yes

Table A4: RPT OBSERVATIONS

This table reports the number and proportion of total non zero RPT transactions. Each row reports a category of RPT transaction. Column 1 reports the number of non zero observations. Column 2 reports the percentage of observations of each category having non-zero values.

RPT observations		
RPT category	Non-zero observations	As % of total firm-year obs
RPT expense	39548	61.43%
RPT income	25393	39.44%
RPT investments outflow	8586	13.34%
RPT loans given	10378	16.12%
RPT investments inflow	3988	6.19%
RPT loans taken	6135	9.53%
RPT guarantees given	1563	2.43%
RPT guarantees taken	1052	1.63%



Table A5: RELATED PARTY TRANSACTIONS

This table presents the results relating to the impact of IBC on different types of related party transactions. In columns 1 and 2, the amount of loans and investment made by the firm where the counterparty is an insider is the dependent variable. In columns 3 and 4, loans and investment received by the firm from such parties is the dependent variable. Columns 5 and 6 (column 7 and 8) have the value of guarantees given (received) to (from) insiders as the dependent variable. All values are in INR. millions. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. We count only pre IBC period bank relationships. Pre1 (Pre2) is a dummy variable that takes the value one for the year 2014-2015 (2015-2016) and zero otherwise. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, \*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variables	Loans And Inv Out	Loans And Inv In	Loans And Inv In	Guarantees Given	Guarantees Taken	Guarantees Given	Guarantees Taken	Guarantees Taken
Pre1 * Low distance	6.4 (0.29)	6.3 (0.28)	14.6 (1.17)	14.4 (1.15)	-0.7 (-0.14)	-0.7 (-0.13)	-1.1 (-0.47)	-1.1 (-0.49)
Pre2 * Low distance	-9.4 (-0.35)	-9.3 (-0.35)	-0.4 (-0.03)	-0.3 (-0.02)	-3.3 (-0.59)	-3.3 (-0.6)	-1.8 (-0.76)	-1.8 (-0.76)
Post * Low distance	24.1 (0.89)	22.7 (0.85)	16.4 (1.18)	15.7 (1.14)	-6.6 (-1.18)	-6.6 (-1.18)	-2.8 (-1.14)	-2.9 (-1.2)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	42678	42673	42678	42673	42678	42673	42678	42673
R-squared	0.7	0.7	0.66	0.66	0.55	0.55	0.48	0.49
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table A6: PLACEBO TEST

This table presents the results of placebo tests. In columns 1 and 2 (3 and 4), we use a placebo event year of 2013-2014 (2007-2008). The data span three years before and after the false event year. The incremental capital raised as defined in Table 6 is the dependent variable in all columns. The data are organized at a firm-year level. Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. We count only pre false event period bank relationships. Pre1 (Pre2) is a dummy variable that takes the value one for the years one (two) years before the false event year. Post is a dummy variable that takes the value one for the false event year and years thereafter. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent Variable	Incremental capital			
Post * Low distance	8.7 (0.25)	6.8 (0.2)	-29.5 (-0.66)	-26.9 (-0.62)
Pre1 * Low distance	17.3 (0.39)	15.6 (0.35)	135.3** (2.3)	131.0** (2.23)
Pre2 * Low distance	29.8 (0.84)	28.4 (0.8)	29.6 (0.57)	30 (0.58)
Controls	No	Yes	No	Yes
Observations	23416	23416	11835	11811
R-squared	0.56	0.56	0.66	0.66
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table A7: FIRM LEVEL DISTANCE FROM OTHER COURTS

The Table presents the results of a placebo first stage test. The data are at a firm level and restricted to the post IBC period. The dependent variable-Bankruptcy Admission-is a dummy variable that takes the value one if the firm under consideration faces bankruptcy proceedings and zero otherwise. Distance refers to the average distance of all the lenders of a firm to the district court having jurisdiction over the firm. We exclude firms located in districts where a bankruptcy court is located. We consider only those lending relationships that existed before the passage of IBC. In columns 3 and 4 we omit firms whose average distance is less than 50 kilometers. Controls variables included in even numbered columns are (i) 'Total loan' - the outstanding secured loan amount the firm has in the year 2016; (ii) 'Bank loan ratio' - the ratio of loans from large banks to loans from all creditors in the year 2016; and (iii) 'Lender relations' - the number of lenders a firm has in the year 2016. We include bench level fixed effects and industry fixed effects all columns. The standard errors are clustered at a firm level and t-statistics are reported in parentheses. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	Logit	Logit	Logit	Logit
Dependent Variable	Bankruptcy Admission			
distance	0.1097 (0.1571)	0.0121 (0.1835)	-0.1087 (0.2027)	-0.1642 (0.2314)
Controls	No	Yes	No	Yes
Observations	8,995	8,995	4,140	4,140
Pseudo R-Squared	0.0005	0.0198	0.0461	0.0768
Bench FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table A8: DISTANCE WITHOUT FILTER

This table presents the results relating to the impact of IBC on capital, RPTs, and investments. We include all firms including those having a distance of less than 50 kilometers. The dependent variable in columns 1 and 2 is the incremental capital as defined in Table 6. In columns 3 and 4, the dependent variable is the amount of related party revenue expenditure as defined in Table 7. In columns 5 and 6, net investment as defined in Table 8 is the dependent variable. The data span a period between 2013-2014 and 2018-2019. The data are organized at a firm-year level. Top and bottom 1% of the values have been winsorized. Low distance is defined at a firm level. It is a dummy variable that takes the value one for firms having an average distance of its creditors from the relevant bankruptcy court below the median of all firms. We count only pre IBC period bank relationships. Pre1 (Pre2) is a dummy variable that takes the value one for the year 2014-2015 (2015-2016) and zero otherwise. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include firm and year fixed effects in all columns. Firm year level control variables listed in Table 5 are included in alternate columns. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	Panel (A)		Panel (B)		Panel (C)	
	(1)	(2)	(1)	(2)	(1)	(2)
Dependent Variables	Change in capital		RPT expense		Net investment	
Pre1 * Low distance	1.8 (0.08)	3.7 (0.16)	-21.5 (-1.06)	-19.5 (-0.96)	15.6 (1.04)	15.2 (1.02)
Pre2 * Low distance	-24 (-0.86)	-20 (-0.72)	-25.7 (-1.11)	-23 (-1)	23.9 (1.23)	24.5 (1.28)
Post * Low distance	71.6** (2.59)	78.8*** (2.86)	-70.2** (-2.44)	-65.5** (-2.27)	64.2*** (3.05)	64.1*** (3.05)
Controls	No	Yes	No	Yes	No	Yes
Observations	65310	65306	60586	60581	60313	60313
R-squared	0.51	0.51	0.78	0.78	0.77	0.77
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table A9: RESULTS WITH FIRM LEVEL MINIMUM DISTANCE

This table presents the results using the minimum distance across creditors for each firm. The dependent variable in columns 1 and 2 is Bankruptcy Admission- a dummy variable that takes the value one if the firm under consideration faces bankruptcy proceedings and zero otherwise. The variable mindist refers to the minimum distance among the distances for all the lenders of a firm to the bankruptcy court having jurisdiction over the firm. We consider only those lending relationships that existed before the passage of IBC. The variable low\_mindist is a dummy variable which is set to one for firms which have a minimum distance below the median, zero otherwise. In column 3 the dependent variable is the amount of equity inflow as defined in Table 6. In column 4 the dependent variable is the amount of related party revenue expenditure as defined in Table 7. In columns 5 net investment as defined in Table 8 is the dependent variable. The data span a period between 2013-2014 and 2018-2019. The data in columns 1 and 2 are organized at a firm level, and in rest of the columns at a firm-year level. Top and bottom 1% of the values have been winsorized. Pre1 (Pre2) is a dummy variable that takes the value one for the year 2014-2015 (2015-2016) and zero otherwise. Post is a dummy variable that takes the value one for the year 2016-2017 and the years after. We include bench and industry fixed effects in columns 1 and 2; and firm and year fixed effects in columns 3, 4, and 5. Firm level control variables listed in Table 3 are included in columns 1 and 2. Firm year level control variables listed in Table 5 are included in columns 3, 4, and 5. Standard errors are clustered at the firm level and t-statistics are reported in the parenthesis. \*\*\*, \*\*, and \* represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Model	Logit	Logit	OLS	OLS	OLS
Dependent Variables	Bankruptcy admissions	Bankruptcy admissions	Change in capital	RPT expense	Net investment
mindist	-0.518*** (-4.43)				
Low_mindist		0.697*** (7.16)			
Pre1 * Low_mindist			14.4 (0.70)	-12.3 (-0.63)	17.8 (1.35)
Pre2 * Low_mindist			31.6 (1.25)	-28.6 (-1.32)	42** (2.46)
Post * Low_mindist			53.4** (2.15)	-6.5 (-0.25)	65.9*** (3.50)
Controls	Yes	Yes	Yes	Yes	Yes
Observations	13,460	13,460	65,306	60,581	60,313
R-squared	0.10	0.10	0.51	0.78	0.78
Bench FE	Yes	Yes			
Industry FE	Yes	Yes			
Firm FE			Yes	Yes	Yes
Year FE			Yes	Yes	Yes