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Credit Reallocation and Exporting: Evaluating the IBC Reforms in India

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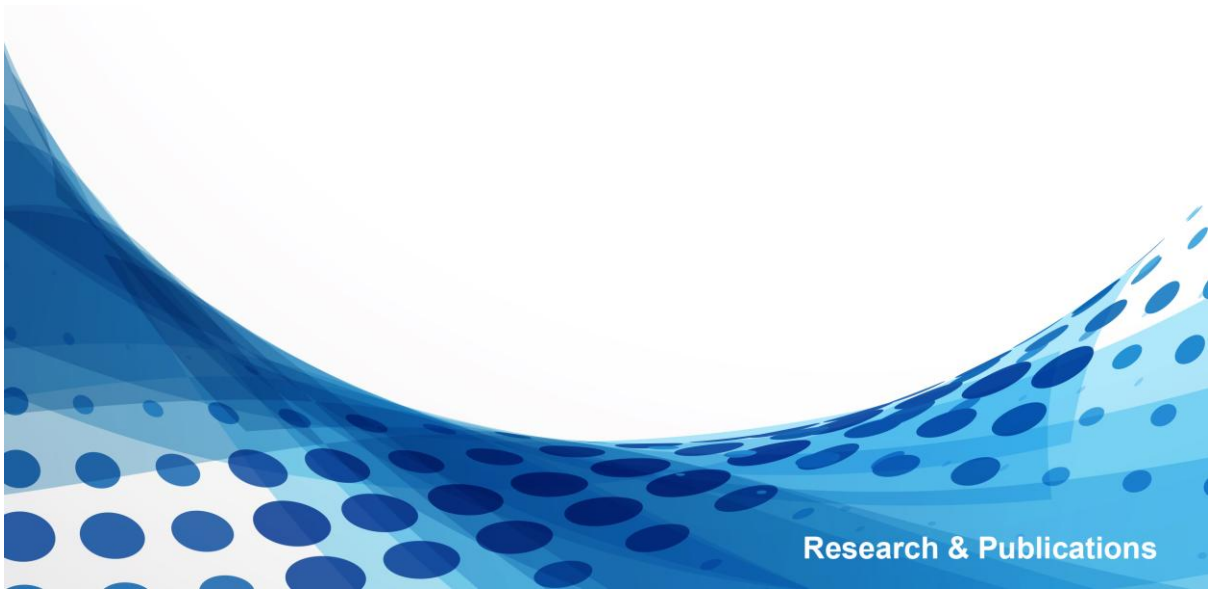

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Abstract

This paper studies whether strengthening creditor rights improves the allocation of capital toward productive exporting firms. I examine India's Insolvency and Bankruptcy Code (IBC) of 2016, which introduced a time-bound insolvency resolution framework and strengthened creditor control. Using firm-level data from CMIE Prowess and a difference-in-differences design, I test whether the reform relaxed financing constraints for firms with high marginal returns to capital (MRPK). I find that following the IBC, high-MRPK exporting firms experience a significant increase in export intensity, investment, and long-term domestic borrowing relative to other firms. In contrast, foreign borrowing remains unchanged, suggesting that the reform primarily improved access to domestic credit markets. The findings imply that stronger insolvency institutions can improve allocative efficiency by channeling capital toward productive but financially constrained firms. More broadly, the paper highlights the role of creditor rights in shaping export performance and resource allocation in emerging economies.

1 Introduction

A defining feature of many developing economies is that capital is not allocated to the firms that can use it most productively—a phenomenon commonly referred to as misallocation. Firms with high returns to investment often remain too small, while less productive firms continue to absorb a disproportionate share of resources. In an efficient allocation, capital would flow toward firms with the highest marginal returns. However, a large literature shows that this is often not the case, and that such distortions can account for substantial differences in aggregate productivity(Restuccia and Rogerson (2008)Hsieh and Klenow (2009)Bartelsman et al. (2013)).This raises a central question: what frictions prevent capital from flowing toward high-return firms, despite clear differences in productivity?

While misallocation can arise from a variety of sources, an important mechanism operates through financial frictions that shape how capital is allocated across firms. In models of imperfect contracting, limited enforceability of credit contracts implies that lenders cannot fully appropriate the returns from investment, giving rise to borrowing constraints that depend on collateral rather than project productivity (Hart and Moore (1994);Kiyotaki and Moore (1997);Holmstrom and Tirole (1997)). Empirical evidence suggests that such constraints are quantitatively important in developing economies, where firms face large wedges between the marginal product of capital and the cost of borrowing (Banerjee and Moll (2010) ; Midrigan and Xu (2014))). As a result, access to credit becomes tied to balance sheet strength rather than productivity, breaking the link between investment and marginal returns(Banerjee and Duflo (2005);Buera et al. (2011)). In such settings, firms with high returns to capital may remain credit constrained if they lack pledgeable assets, while less productive firms continue to receive financing. This mechanism generates a form of misallocation in which capital does not flow to its most productive uses, despite large differences in returns across firms.

These frictions are likely to be particularly consequential when firms try to sell in foreign

markets. Entering export markets is costly: firms must spend on building distribution networks, meeting regulatory standards, and managing shipping and payment delays. As a result, only firms that are sufficiently productive can profitably export (Melitz (2003);Helpman et al. (2004)). But productivity alone is not enough. Firms also need access to finance to cover these upfront and ongoing costs. When credit is limited, even productive firms may be unable to enter export markets or may operate at a smaller scale than they otherwise would. Consistent with this idea, a growing literature shows that financial constraints play a key role in shaping both which firms export and how much they export (Manova (2013);Chaney (2016)).

These insights point to a central tension. Standard trade models predict that only sufficiently productive firms enter export markets, yet a growing body of evidence shows that many such firms either do not export or export at a scale below what their productivity would warrant. This gap arises because exporting requires substantial upfront and working capital financing, so access to external credit—rather than productivity alone—becomes a key determinant of export participation. In environments with weak contracting and limited creditor protection, firms with high returns to capital may remain financially constrained if they lack collateral or internal funds, preventing them from expanding into foreign markets. This paper studies whether improvements in creditor rights can relax these constraints and enable capital to flow toward productive firms, thereby allowing them to scale up their export activity and operate closer to their efficient size.

I examine this question in the context of India's Insolvency and Bankruptcy Code (IBC), implemented in 2016. Prior to the reform, India's insolvency regime was characterized by weak enforcement, protracted resolution timelines, and widespread evergreening of loans, which allowed distressed firms to survive and tied up bank capital Acharya et al. (2020). Such environments are well understood to distort credit allocation: when recovery in default

is low, lenders rely on collateral and relationships rather than expected returns, weakening the link between firm productivity and access to finance.

The IBC introduced a time-bound insolvency resolution process, strengthened creditor control, and increased recovery rates Bose et al. (2021). I argue that this reform affects firm outcomes through two distinct but complementary channels. First, by improving recovery prospects and strengthening creditor rights, the reform increases lenders' willingness to extend credit, particularly to firms with high expected returns but limited pledgeable assets. This mechanism is consistent with theoretical models in which improvements in contract enforceability expand borrowing capacity and relax financing constraints (Kiyotaki and Moore (1997) ;Buera et al. (2011)) . Second, by facilitating the exit or restructuring of distressed firms, the reform frees up capital previously locked in unproductive uses, thereby improving the allocation of credit across firms. This reallocation channel is closely related to models of creative destruction and cleansing, in which the removal of inefficient firms enables resources to flow toward more productive uses (Caballero et al. (2008); Restuccia and Rogerson (2008)).

Exporting firms provide a natural setting to evaluate these mechanisms. Because exporting requires substantial sunk entry costs, working capital to finance production and shipment, and the ability to absorb demand and exchange rate risk, exporters are disproportionately dependent on external finance Melitz (2003);Manova (2013). A growing body of evidence shows that credit conditions directly shape firms' participation in global markets. In particular, shocks to bank balance sheets propagate to export outcomes Amiti and Weinstein (2011), and credit constraints reduce both export entry and export volumes Paravisini et al. (2015);Chaney (2016). These findings imply that exporting is not determined solely by productivity, but also by firms' ability to finance the fixed and variable costs of serving foreign markets.

Following the IBC reforms if financial frictions are relaxed—particularly through improvements in creditor rights—the response should be strongest among high-productivity firms engaged in exporting, as these firms combine high returns to capital with high dependence on external finance.I test this hypothesis using firm-level data on exports, balance sheets, and productivity, combined with a difference-in-differences strategy that exploits variation in exposure to the IBC reform.I focus on firms that exhibit high returns to capital, which signals both strong productivity and potential misallocation, as such firms are typically under-served in distorted credit markets.

I document three main findings. First, the IBC leads to a significant increase in export intensity among high productive exporting firms, consistent with a relaxation of financial constraints. Second, these firms exhibit higher investment and productivity growth in the post-reform period, suggesting that improved access to credit enables expansion. Third, I find evidence of a decline in capital misallocation, particularly in export-oriented and financially dependent sectors, consistent with improved allocation of resources.In addition, I find that long-term bank borrowing increases following the reform, but foreign borrowing remains unchanged. Although improved domestic credit conditions were expected to substitute for external finance, the results instead suggest an expansion in domestic borrowing without crowding out foreign sources.

This paper contributes to three strands of literature. First, it contributes to the literature on misallocation and productivity by providing evidence on how institutional reforms in credit markets affect the allocation of capital across firms. Second, it contributes to the literature on trade and financial frictions by showing that improvements in creditor rights can affect firms' participation in export markets. Third, it contributes to the literature on the economic effects of India's IBC by documenting its impact on firm-level real outcomes.Broadly, the results suggest that strengthening creditor rights can improve allocative efficiency not only within

domestic markets but also in firms' engagement with global markets, thereby amplifying the gains from trade.

2 Literature Review and Hypothesis Development

2.1 Credit Frictions, Misallocation, and Exporting

A central insight in the development and trade literature is that distortions in credit markets can lead to inefficient allocation of capital across firms. In environments with weak financial institutions, firms that generate high returns to capital often remain undercapitalized, while less productive firms continue to receive credit. This results in persistent dispersion in marginal returns and losses in aggregate productivity (Buera et al., 2011; Hsieh and Klenow, 2009; Midrigan and Xu, 2014; Restuccia and Rogerson, 2008). Empirical evidence from developing economies supports this mechanism, showing that firms frequently exhibit high returns to investment but face limited access to external finance (Banerjee and Duflo, 2005; De Mel et al., 2008).

These distortions have important implications for firms' participation in international markets. Exporting requires firms to incur substantial fixed and working capital costs, implying that even productive firms may be unable to enter or expand in export markets if they are financially constrained. A large literature shows that access to finance plays a key role in shaping export outcomes. Cross-country evidence (Manova, 2013) demonstrates that financial development increases export participation and trade volumes, while firm-level studies show that credit shocks directly affect export activity (Amiti and Weinstein, 2011; Paravisini et al., 2023). Other work finds that credit constraints limit both export entry and export intensity (Berman and Héricourt, 2010; Minetti and Zhu, 2011).

Taken together, this literature suggests that financial frictions not only distort domestic re-

source allocation but also restrict firms' ability to engage with global markets. In particular, productive firms with high returns to capital are likely to be disproportionately affected by such frictions, as they face the greatest gap between desired and actual investment.

Against this backdrop, institutional reforms that improve credit market functioning may have significant real effects. India's Insolvency and Bankruptcy Code, introduced in 2016, represents a major shift in this direction. By strengthening creditor rights, expediting resolution, and reducing delays in asset recovery, the reform is expected to increase the supply of credit to productive firms and improve allocative efficiency. If the IBC relaxes financial constraints, firms with high returns to capital should be better able to expand in export markets. This leads to our first hypothesis:

Hypothesis 1: *Following the IBC, firms with high returns to capital increase their export intensity.*

2.2 IBC, Credit Allocation, and Firm Investment

The effectiveness of bankruptcy reforms depends critically on how they alter both the supply of and demand for credit. A well-functioning insolvency regime improves creditor protection and reduces enforcement costs, thereby increasing lenders' willingness to supply credit (Djankov et al., 2007). At the same time, improved access to credit enables firms to undertake value-enhancing investments that may otherwise be constrained. Prior to the IBC, India's weak insolvency framework contributed to prolonged resolution processes and widespread "zombie lending," whereby unproductive firms continued to receive credit, crowding out more efficient firms (Acharya et al., 2020). Recent work shows that the IBC improved recovery rates and strengthened lending discipline, leading to more efficient allocation of bank credit (Bose et al., 2021). By reallocating credit away from distressed firms and toward more productive firms, the reform has the potential to relax financial constraints for firms with high

returns to capital.From an investment perspective, financially constrained firms may either underinvest—by foregoing positive NPV projects—or overinvest in risky projects to avoid distress. By improving access to credit and reducing uncertainty around resolution, the IBC should enable firms to undertake more efficient investment decisions and expand their capital stock. Accordingly, if the reform alleviates financial constraints, firms with high returns to capital should increase investment in the post-reform period. This leads to the second hypothesis:

Hypothesis 2: *Following the IBC, firms with high returns to capital increase their investment.*

2.3 Credit Market Reforms and Financing Structure

In addition to affecting investment, improvements in credit market institutions may alter firms' financing choices. In financially underdeveloped economies, firms often rely on a combination of domestic and foreign borrowing, with foreign borrowing serving as an alternative when domestic credit is limited. Theoretical and empirical work suggests that stronger creditor rights increase the availability of long-term credit by reducing enforcement costs and improving contract enforceability (Djankov et al., 2007; Qian and Strahan, 2007). This can lead to a shift toward more stable forms of financing, particularly domestic bank borrowing. At the same time, improved domestic credit access may reduce firms' reliance on external sources of finance.However, whether such reforms lead to substitution away from foreign borrowing is ambiguous. Firms may instead expand overall financing without reducing their reliance on foreign capital, particularly if different sources of finance serve distinct purposes.Given that the IBC strengthens creditor rights and improves credit allocation, it is expected to increase access to domestic bank credit, especially long-term borrowing. The extent to which this leads to substitution away from foreign borrowing remains an empirical question. This leads to the final hypothesis:

Hypothesis 3: *Following the IBC, firms increase their reliance on domestic borrowing.*

3 Compiled Data and summary statistics

The empirical analysis uses firm-level data from the Centre for Monitoring Indian Economy (CMIE) Prowess database, which provides a comprehensive panel of publicly listed and large unlisted Indian firms across manufacturing, services, and infrastructure sectors. The dataset contains detailed financial information, including balance sheets, profit and loss statements, and cash flow accounts, along with firm characteristics such as ownership, age, location, and industry classification. The availability of consistent annual data makes Prowess well-suited for examining firm behavior around the implementation of the Insolvency and Bankruptcy Code (IBC) in 2016.

The sample period spans 2010–2022, providing sufficient pre- and post-reform observations to implement a difference-in-differences strategy. Industries are classified using the National Industrial Classification (NIC) 2008 codes. To ensure comparability, financial firms and utilities are excluded due to their distinct balance sheet structures and regulatory environments.

The analysis focuses on manufacturing exporting firms. A firm is classified as an exporter if it reports positive export earnings at any point during the pre-reform period (2010–2015). The final dataset is constructed by merging firm-level financial information with export performance measures and firm characteristics.

The resulting sample is an unbalanced panel comprising 72,872 firm-year observations across approximately 8,219 firms over the period 2010–2022. Observations with missing or implausible values for key variables, such as sales and assets, are excluded. All monetary variables are expressed in real terms using appropriate deflators: sales are deflated using the GDP deflator, while capital variables are deflated using a capital goods deflator. To mitigate the

influence of outliers, all continuous variables are winsorized at the 1st and 99th percentiles. Summary statistics for the main variables are reported in Table 1.

4 Empirical Strategy

4.1 Baseline Specification

To estimate the causal effect of improvements in creditor rights on firm-level export performance, I implement a difference-in-differences specification of the following form:

$$Y_{ijt} = \beta \left(HighMRPK_{ij} \times Post_t \right) + \gamma X_{ij,t-1} + \alpha_i + \delta_t + \theta_{jt} + \varepsilon_{ijt} \tag{1}$$

where i indexes firms, j indexes industries, and t indexes time. The dependent variable Y_{ijt} measures firm-level export performance, defined as export earnings scaled by total sales (export intensity).The key explanatory variable is the interaction between an indicator for firms with above-median marginal revenue product of capital in the pre-reform period ($HighMRPK_{ij}$) and a post-reform indicator ($Post_t$) that equals one for years following the implementation of the IBC in 2016.Under the identifying assumption of parallel trends, the coefficient of interest, β, captures the differential change in export performance for highly productive firms (high-MRPK) relative to less productive firms (low-MRPK) following the reform. This comparison is made within the same industry-year and accounts for time-invariant firm-level heterogeneity. Further details on the construction of the MRPK measure are provided in Section 4.2.

The vector $X_{ij,t-1}$ includes a set of time-varying firm characteristics that capture differences in scale, financial structure, and internal resources, all of which may jointly influence firms' export performance and their access to external finance. All control variables are expressed in

logarithmic form and are lagged by one period to mitigate concerns of simultaneity (Bernard and Jensen, 1999, 2004; Greenaway et al., 2007). First, I control for *firm age* and *firm size*. *firm age*, measured as the logarithm of years since incorporation. Older firms are more likely to export due to accumulated experience, market knowledge, and established networks, and also benefit from stronger reputational capital and lending relationships, which can ease access to credit. *firm size*, measured as the logarithm of total assets. Larger firms are more likely to participate in export markets due to economies of scale and fixed cost advantages, and at the same time face lower borrowing constraints due to better collateral availability and stronger lender relationships (Beck et al., 2008; Bougheas et al., 2006). Second, I include *profitability*, which captures firms' internal financing capacity. More profitable firms are better able to finance the fixed and working capital costs associated with exporting, while also being less dependent on external finance (Fazzari et al., 1988).Finally, I control for *leverage* and *collateral*. *leverage*, defined as the ratio of total debt to equity. Leverage reflects firms' financial structure and risk exposure, which may influence both their ability to expand into export markets and their access to additional borrowing. Highly leveraged firms may face tighter borrowing constraints and higher financing costs, potentially limiting export activity.*Collateral*, measured as the ratio of net fixed assets to total assets. Collateral determines firms' ability to secure external finance and reduce borrowing costs (Vig, 2013), while also enabling firms to undertake capital-intensive activities such as exporting.

I include firm fixed effects (α_i), year fixed effects (δ_t), and industry $\times$ year fixed effects (θ_{jt}) to ensures that identification comes from within-firm variation over time, relative to other firms operating in the same industry-year. Firm fixed effects absorb all time-invariant heterogeneity across firms, such as ownership structure , managerial ability, and baseline productivity. Year fixed effects control for aggregate shocks affecting all firms, including macroeconomic conditions and global trade dynamics. Industry $\times$ year fixed effects flexibly account for time-varying industry-specific shocks, such as changes in demand conditions, in-

put prices, or sectoral credit supply. Standard errors are clustered at the firm-level to account for potential autocorrelation in the error terms.

4.2 Construction of High- and Low-MRPK Firms

I construct firm-level measures of the marginal revenue product of capital (MRPK) to identify firms that are likely to be constrained in distorted credit markets. Following Bau and Matray (2023), I use dispersion in MRPK as an indicator of misallocation, where persistent differences in marginal returns reflect distortions in the allocation of capital. In standard models with frictionless capital markets, firms equate the marginal product of capital to its user cost, implying that MRPK should be equalized across firms within narrowly defined industries. Deviations from this benchmark—manifested as dispersion in MRPK—suggest that capital is not allocated efficiently across firms.

Formally, the MRPK for firm i in industry j at time t is defined as:

$$MRPK_{ijt} = \alpha_k \frac{Revenue_{ijt}}{Capital_{ijt}} \tag{2}$$

where α_k denotes the capital share of output. In practice, we compute MRPK using firm-level revenue and capital, scaled by an industry-level estimate of the capital share. This approach follows the misallocation literature, where revenue-based measures are used as proxies for marginal products in the presence of imperfect competition and measurement constraints.

4.2.1 Identification of Financially Constrained Firms

To identify firms that are most likely to be affected by distortions in credit allocation, I focus on firms with persistently high marginal returns to capital prior to the reform. Specifically, I compute the average MRPK for each firm over the pre-reform period (2010–2015), and con-

struct an industry-specific benchmark using the median MRPK within each 2-digit industry. Firms with MRPK above the industry median are classified as high-MRPK firms, while those below are classified as low-MRPK firms.

This classification is motivated by the following economic intuition. In the absence of frictions, firms with higher marginal returns to capital should attract additional investment, leading to convergence in MRPK across firms. However, in the presence of financial frictions—such as weak creditor rights or collateral constraints—high-return firms may be unable to expand due to limited access to external finance. As a result, persistently high MRPK can be interpreted as an indicator of binding financial constraints, rather than purely reflecting differences in technology or productivity.

4.2.2 Ex-Ante Classification in Identification

A key feature of my empirical strategy is that the classification of firms into high- and low-MRPK groups is based entirely on pre-reform information. This ex-ante definition plays a critical role in ensuring credible identification. First, by using MRPK measured prior to the implementation of the IBC, I avoid concerns of reverse causality or simultaneity, whereby the reform itself could influence firms' productivity or capital allocation and thereby affect their MRPK. The treatment variable is therefore predetermined with respect to the policy change. Second, the use of pre-reform MRPK mitigates concerns of endogenous sorting or selection bias. Firms are classified based on their pre-existing position in the distribution of marginal returns, rather than outcomes that may be directly affected by the reform. As a result, any differential post-reform outcomes between high- and low-MRPK firms can be interpreted as arising from their differential exposure to financial constraints, rather than changes in their underlying characteristics. Third, the use of industry-specific medians ensures that the classification is relative to firms operating in similar technological and market environments. This is important because levels of MRPK may differ systematically across industries due to

differences in production technologies, capital intensity, or demand conditions. By benchmarking firms within industries, we isolate within-industry variation that is more likely to reflect distortions in capital allocation rather than structural differences across sectors.

5 Empirical Results

5.1 Baseline Results: The IBC reform and Export Performance

Firm-level evidence: I begin by providing visual evidence on the evolution of export performance for firms with high and low marginal returns to capital around the implementation of the Insolvency and Bankruptcy Code (IBC). Figure 1 plots the event-study estimates of the differential effect of the reform on export intensity for high-MRPK firms relative to low-MRPK firms. The coefficients are normalized to zero in the year prior to the reform.

The figure shows no evidence of differential pre-trends between high- and low-MRPK firms in the years leading up to the reform, supporting the validity of the parallel trends assumption. Following the implementation of the IBC, there is a gradual increase in export intensity for high-MRPK firms relative to low-MRPK firms, suggesting that the reform disproportionately benefits firms with high marginal returns to capital.

Average effect: I next estimate the effect of the IBC reform on firm-level export performance using the baseline difference-in-differences specification described in Section 4. Table 2 reports the results. Column (1) presents a parsimonious specification without controls or fixed effects, showing a relative decline in export intensity for high-MRPK firms following the reform. This pattern becomes more pronounced when firm-level controls are included in column (2), indicating that observable characteristics do not account for the initial relationship. In column (3), the inclusion of firm fixed effects attenuates the magnitude of the decline, suggesting that part of the earlier pattern reflects persistent differences across firms rather

than the effect of the reform itself. Finally, column (4) includes industry $\times$ year fixed effects, which absorb time-varying industry-level shocks such as changes in demand, input costs, and sectoral credit conditions. In this specification, the coefficient turns positive, with an estimated effect of 1.108. This implies that, within the same industry-year, high-MRPK firms increase their export intensity by approximately 1.1 percentage points relative to low-MRPK firms following the reform. This reversal in magnitude is economically meaningful. It indicates that once differential industry trends are accounted for, the reform is associated with a reallocation of export activity toward firms with higher returns to capital. The earlier negative estimates appear to reflect confounding industry-level shocks that disproportionately affected high-MRPK firms. Controlling for these shocks isolates the within-industry effect, revealing an increase in export intensity consistent with improved credit allocation.

Dynamic effects: The event-study evidence in Figure 1 complements these findings by showing that the increase in export intensity emerges gradually over time. The post-reform coefficients become progressively larger, suggesting that firms adjust their export activity with a lag. This pattern is consistent with the presence of adjustment costs in exporting, including the time required to scale production, establish foreign market linkages, and respond to improved access to credit.

5.2 Mechanisms

Having established that the IBC reform increased export intensity among high-MRPK firms, we now examine the mechanisms through which this effect operates. The central conjecture is that the reform improves creditor rights, which in turn relaxes financing constraints faced by productive firms. This leads to a reallocation of credit toward high-MRPK firms, enabling them to expand investment and scale up export activity.

I investigate two complementary channels. First, we examine whether the reform increases

the availability of domestic credit and leads to higher capital accumulation among high-MRPK firms. Second, we analyze whether improved domestic credit conditions affect the composition of financing, leading firms to substitute away from foreign borrowing toward domestic sources.

5.2.1 Credit Reallocation and Capital Expansion

The first mechanism I consider is a *domestic credit reallocation channel*. If the IBC improves recovery prospects and strengthens creditor control, lenders should become more willing to extend credit to firms with high expected returns. In the presence of pre-existing distortions, such an effect should be particularly pronounced for high-MRPK firms, which are likely to be financially constrained despite being productive.I test this mechanism by examining the impact of the reform on firm-level borrowing and investment. Specifically, I estimate variants of the following specification:

$$Y_{ijt} = \beta \left(HighMRPK_i \times Post_t \right) + \gamma X_{ij,t-1} + \alpha_i + \delta_t + \theta_{jt} + \varepsilon_{ijt}, \tag{3}$$

where Y_{ijt} denotes firm-level outcomes related to financing and investment. I consider two primary outcomes: (i) firm-level capital , and (ii) long-term domestic bank borrowing. The variable $HighMRPK_i$ is an indicator for firms with above-median marginal revenue product of capital in the pre-reform period, and $Post_t$ is an indicator for the post-IBC period. The coefficient of interest, β, captures the differential change in borrowing and investment for high-MRPK firms relative to low-MRPK firms following the reform. A positive estimate of β would indicate that the reform led to an expansion of credit and capital among productive firms, consistent with a relaxation of financial constraints. All specifications include firm fixed effects (α_i), year fixed effects (δ_t), and industry $\times$ year fixed effects (θ_{jt}), ensuring that identification comes from within-firm variation over time relative to other firms in the same

industry-year.

5.2.2 Substitution Between Domestic and Foreign Borrowing

The second mechanism I consider relates to the composition of firm financing. In settings where domestic credit markets are weak, firms may rely on foreign borrowing despite higher costs or exposure to external risks. If the IBC improves the functioning of domestic credit markets, firms may substitute away from foreign borrowing toward domestic sources. To examine this channel,I estimate the same baseline specification using foreign borrowing as the outcome variable:

$$Foreign\_Borrowing_{ijt} = \beta\left(HighMRPK_i \times Post_t\right) + \gamma X_{ij,t-1} + \alpha_i + \delta_t + \theta_{jt} + \varepsilon_{ijt}. \quad (4)$$

Here, $Foreign\_Borrowing_{ijt}$ denotes firm-level foreign borrowing. The coefficient β captures whether high-MRPK firms adjust their reliance on external sources of finance following the reform. If improved domestic credit conditions lead to substitution, we would expect domestic borrowing to increase, while foreign borrowing either remains unchanged or declines for high-MRPK firms. This would indicate that the reform affects not only the level of financing but also its composition.Together, these two mechanisms provide a framework for understanding how improvements in creditor rights can translate into real outcomes. By reallocating credit toward productive firms and altering their financing structure, the reform may enable firms to expand investment and, in turn, increase export activity.

5.3 Mechanism Results

5.3.1 Domestic Credit and Capital Expansion Channel

Table 3 presents the effect of the IBC reform on firm-level capital accumulation. In the preferred specification with firm and industry $\times$ year fixed effects (column (4)), the coefficient on $HighMRPK_i \times Post_t$ is 0.074. This implies that high-MRPK firms increase their capital stock by approximately 7.4% relative to low-MRPK firms following the reform. The estimates in Table 4 provide direct evidence on the credit channel.In the most stringent specification (column (4)), the coefficient is 0.225, indicating that long-term bank borrowing among high-MRPK firms increases by approximately 22.5% after the reform. These results point to a substantial reallocation of credit toward high-return firms. The magnitude of the increase in borrowing is economically large and is accompanied by a corresponding expansion in capital, consistent with a relaxation of financial constraints faced by productive firms.

5.3.2 Substitution Between Domestic and Foreign Borrowing

Table 5 reports the effect of the reform on foreign long-term borrowing. In the preferred specification (column (4)), the coefficient on $HighMRPK_i \times Post_t$ is -0.175, corresponding to an approximate decline of 17.5% in foreign borrowing. However, the estimate is statistically imprecise and not robust across specifications.The absence of a consistent increase in foreign borrowing, despite a large increase in domestic bank lending, suggests that the reform does not operate through a general expansion in firms' demand for external finance. Instead, the results indicate a shift in the composition of financing toward domestic sources.

Overally, the evidence is consistent with a domestic credit channel. The IBC reform leads to a substantial increase in long-term bank borrowing—on the order of 22%—and a corresponding increase in capital of approximately 7% among high-MRPK firms. At the same time, there is no robust increase in foreign borrowing. These patterns suggest that improve-

ments in creditor rights enhance the functioning of domestic credit markets, enabling banks to reallocate credit toward firms with higher marginal returns to capital. This reallocation allows productive firms to expand investment and scale up production, providing a mechanism through which the reform translates into higher export intensity.

6 Robustness Checks

6.1 Placebo Test

As an additional robustness check, I conduct a placebo test to assess the validity of the identification strategy. The difference-in-differences framework relies on the assumption that, in the absence of the reform, high- and low-MRPK firms would have followed similar trends in export performance. If this assumption is violated, then the estimated effects may be driven by pre-existing differences rather than the reform itself. To examine this, I construct a placebo treatment using pre-reform period of 2012 as a placebo treatment year and re-estimate the baseline specification in the absence of the actual policy shock. If the baseline results are driven by underlying differences between high- and low-MRPK firms, I would expect to observe a significant effect of the placebo treatment on export intensity.

Table 6 reports the results. In specifications without fixed effects (columns (1) and (2)), the placebo coefficient is statistically significant, indicating the presence of systematic differences across firms that are correlated with export performance. However, once we include firm fixed effects and industry $\times$ year fixed effects (columns (3) and (4)), the placebo effect becomes small and statistically insignificant. This pattern is informative. The significance in the simpler specifications reflects omitted variable bias arising from unobserved firm heterogeneity and time-varying industry-level shocks. By contrast, the absence of any effect in the fully saturated specification indicates that, after appropriately controlling for these confound-

ing factors, placebo assignment does not predict export performance. Overall, the placebo test provides strong support for the identification strategy. The lack of a significant placebo effect in the preferred specification suggests that the main results are not driven by spurious correlations or pre-existing trends, but rather reflect the causal impact of the reform.

6.2 Matching Estimation

I next assess the robustness of the baseline results using a propensity score matching (PSM) approach. The objective is to compare firms with similar observable characteristics prior to the reform, thereby reducing concerns that differences between high- and low-MRPK firms drive the estimated effects. Table 7 shows that matching substantially improves comparability between treated and control firms. The average standardized bias declines from over 30% in the unmatched sample to close to 5% after matching, and the pseudo R^2 falls sharply, indicating that observable characteristics no longer systematically predict treatment status. This suggests that the matched sample provides a more credible basis for comparing outcomes across firms.

Turning to the regression results in Table 8, the pattern across specifications closely mirrors the baseline estimates. In specifications without firm and industry-year controls, high-MRPK firms appear to exhibit a relative decline in export intensity following the reform. However, once firm fixed effects are introduced, this negative relationship attenuates, and in the most demanding specification with industry $\times$ year fixed effects, the coefficient turns positive. The estimated effect implies that, within the same industry and year, high-MRPK firms increase export intensity by roughly 1.7 percentage points relative to comparable low-MRPK firms following the reform.

This shift in magnitude is economically meaningful. It indicates that the initial negative estimates are driven by differential trends across industries that disproportionately affect high-

MRPK firms. Conditioning on these trends isolates the within-industry reallocation effect, revealing that the reform is associated with an expansion of export activity among more productive firms. The similarity of these results to the baseline estimates suggests that selection on observables is not driving the main findings.

To further examine the underlying mechanism, Table 9 reports the effect of the reform on firm-level outcomes within the matched sample. The results show that high-MRPK firms increase their capital stock by approximately 6 percent following the reform. This is accompanied by an increase in long-term bank borrowing of about 10 percent, indicating improved access to domestic credit. In contrast, there is no corresponding decline in foreign borrowing, suggesting that firms expand domestic financing without substituting away from external sources.

These findings reinforce the interpretation that the IBC improved the allocation of credit by enabling more productive firms to expand. The increase in domestic borrowing and capital accumulation provides a clear mechanism through which the reform translates into higher export intensity. Moreover, the absence of a decline in foreign borrowing suggests that the adjustment operates through an expansion of available credit rather than a rebalancing across financing sources.Overall, the matching results confirm that the baseline findings are not driven by differences in observable firm characteristics and provide additional evidence that strengthening creditor rights leads to a reallocation of resources toward more productive firms.

7 Conclusion

This paper examines whether India's IBC reform improved the allocation of capital among exporting firms by strengthening creditor rights and easing financing frictions. Bringing together insights from the trade-finance and misallocation literatures, the analysis studies

whether the post-IBC credit environment enabled financially constrained but productive firms to expand investment and export activity. Using firm-level data from CMIE Prowess and exploiting the introduction of the IBC as a quasi-natural experiment, the paper evaluates how the reform affected firms' financing patterns, investment behavior, and export performance across heterogeneous levels of marginal revenue product of capital.

The findings suggest that the IBC generated economically meaningful improvements in allocative efficiency. Following the reform, high-MRPK firms experienced stronger growth in investment and export intensity relative to lower-productivity firms, consistent with a reallocation of credit toward more productive users of capital. The evidence further indicates that improved creditor protection relaxed borrowing constraints in domestic credit markets. More broadly, the results highlight the role of insolvency institutions in shaping real economic outcomes in emerging markets. While the IBC is often evaluated through the lens of resolution efficiency and banking-sector stability, the evidence presented here suggests that its effects extend beyond debt recovery to the broader allocation of resources across firms. By improving the functioning of credit markets, stronger insolvency frameworks can facilitate the movement of capital toward more productive exporters, thereby supporting productivity growth, export competitiveness, and aggregate efficiency.

The paper also contributes to a growing literature emphasizing the importance of institutional quality in determining the effectiveness of financial intermediation. In environments where credit allocation is distorted by weak enforcement and high recovery uncertainty, productive firms may remain systematically underfunded despite high returns to capital. The IBC appears to have mitigated some of these distortions by strengthening creditor confidence and improving the enforceability of financial contracts. These findings carry important policy implications for developing economies seeking to improve productivity and external competitiveness through financial-sector reforms. Effective insolvency regimes may not only reduce

non-performing assets and improve banking discipline, but also enhance long-run growth by enabling a more efficient allocation of scarce capital.

References

Acharya, V. V., Rajan, R. G., and Subramanian, K. (2020). Zombie lending and policy traps: Evidence from india. *American Economic Review: Insights*, 2(3):433–450.

Amiti, M. and Weinstein, D. E. (2011). Trade finance and the great trade collapse. *American Economic Review*, 101(3):298–302.

Banerjee, A. V. and Duflo, E. (2005). Growth theory through the lens of development economics. *Handbook of Economic Growth*, 1:473–552.

Banerjee, A. V. and Moll, B. (2010). Why does misallocation persist? *American Economic Journal: Macroeconomics*, 2(1):189–206.

Bartelsman, E. J., Haltiwanger, J., and Scarpetta, S. (2013). Cross-country differences in productivity: The role of allocation and selection. *American Economic Review*, 103(1):305–334.

Bau, N. and Matray, A. (2023). Misallocation and capital market integration: Evidence from india. *American Economic Review*, 113(1):250–286.

Beck, T., Demirguc-Kunt, A., and Maksimovic, V. (2008). Finance, firm size, and growth. *Journal of Money, Credit and Banking*, 40:1379–1405.

Berman, N. and Héricourt, J. (2010). Financial factors and the margins of trade: Evidence from cross-country firm-level data. *Journal of Development Economics*, 93(2):206–217.

Bernard, A. B. and Jensen, J. B. (1999). Exceptional exporter performance: Cause, effect, or both? *Journal of International Economics*, 47(1):1–25.

Bernard, A. B. and Jensen, J. B. (2004). Why some firms export. *Review of Economics and Statistics*, 86(2):561–569.

Bose, U., Filomeni, S., and Mallick, S. (2021). Does bankruptcy law improve the fate of distressed firms? the role of credit channels. *Journal of Corporate Finance*, 68:101836.

Bougheas, S., Mizen, P., and Yalcin, C. (2006). Access to external finance: Theory and evidence on the impact of monetary policy and firm-specific characteristics. *Journal of Banking & Finance*, 30(1):199–227.

Buera, F. J., Kaboski, J. P., and Shin, Y. (2011). Finance and development: A tale of two sectors. *American Economic Review*, 101(5):1964–2002.

Caballero, R. J., Hoshi, T., and Kashyap, A. K. (2008). Zombie lending and depressed restructuring in japan. *American Economic Review*, 98(5):1943–1977.

Chaney, T. (2016). Liquidity constrained exporters. *Journal of Economic Dynamics and Control*, 72:141–154.

De Mel, S., McKenzie, D., and Woodruff, C. (2008). Returns to capital in microenterprises: Evidence from a field experiment. *Quarterly Journal of Economics*, 123(4):1329–1372.

Djankov, S., McLiesh, C., and Shleifer, A. (2007). Private credit in 129 countries. *Journal of Financial Economics*, 84(2):299–329.

Fazzari, S., Hubbard, G., and Petersen, B. (1988). Financing constraints and corporate investment. *Brookings Papers on Economic Activity*, pages 141–206.

Greenaway, D., Guariglia, A., and Kneller, R. (2007). Financial factors and exporting decisions. *Journal of International Economics*, 73(2):377–395.

Hart, O. and Moore, J. (1994). A theory of debt based on the inalienability of human capital. *Quarterly Journal of Economics*, 109(4):841–879.

Helpman, E., Melitz, M., and Yeaple, S. R. (2004). Export versus fdi with heterogeneous firms. *American Economic Review*, 94(1):300–316.

Holmstrom, B. and Tirole, J. (1997). Financial intermediation, loanable funds, and the real sector. *Quarterly Journal of Economics*, 112(3):663–691.

Hsieh, C.-T. and Klenow, P. J. (2009). Misallocation and manufacturing tfp in china and india. *Quarterly Journal of Economics*, 124(4):1403–1448.

Kiyotaki, N. and Moore, J. (1997). Credit cycles. *Journal of Political Economy*, 105(2):211–248.

Manova, K. (2013). Credit constraints, heterogeneous firms, and international trade. *Review of Economic Studies*, 80(2):711–744.

Melitz, M. J. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica*, 71(6):1695–1725.

Midrigan, V. and Xu, D. Y. (2014). Finance and misallocation: Evidence from plant-level data. *American Economic Review*, 104(2):422–458.

Minetti, R. and Zhu, S. C. (2011). Credit constraints and firm export: Microeconomic evidence from italy. *Journal of International Economics*, 83(2):109–125.

Paravisini, D., Rappoport, V., Schnabl, P., and Wolfenzon, D. (2015). Dissecting the effect of credit supply on trade: Evidence from matched credit-export data. *Review of Economic Studies*, 82(1):333–359.

Paravisini, D., Rappoport, V., Schnabl, P., and Wolfenzon, D. (2023). Specialization in bank lending: Evidence from exporters. *Review of Financial Studies*, 36(1):197–233.

Qian, J. and Strahan, P. E. (2007). How laws and institutions shape financial contracts: The case of bank loans. *Journal of Finance*, 62(6):2803–2834.

Restuccia, D. and Rogerson, R. (2008). Policy distortions and aggregate productivity with heterogeneous establishments. *Review of Economic Dynamics*, 11(4):707–720.

Vig, V. (2013). Access to collateral and corporate debt structure: Evidence from a natural experiment. *Journal of Finance*, 68:881–928.

APPENDIX

Table 1: Descriptive Statistics

Variable	N	Mean	SD	Min	p25	p50	p75	Max
$\log$(Export Intensity)	72,872	10.74	22.48	0.00	0.00	0.00	7.67	94.45
$\log$(Firm Size$_{t-1}$)	72,872	6.82	1.76	-1.20	5.69	6.77	7.93	11.30
$\log$(Profitability$_{t-1}$)	72,872	0.03	0.08	-0.66	0.01	0.03	0.06	0.28
$\log$(Leverage$_{t-1}$)	72,872	1.75	3.94	0.00	0.25	0.82	1.78	38.86
$\log$(Collateral$_{t-1}$)	72,872	0.31	0.18	0.00	0.16	0.28	0.43	0.94
$\log$(Sales)	71,575	6.72	1.91	-2.81	5.64	6.79	7.89	15.31
$\log$(Capital)	72,360	6.04	1.94	-2.49	4.88	6.04	7.25	15.38

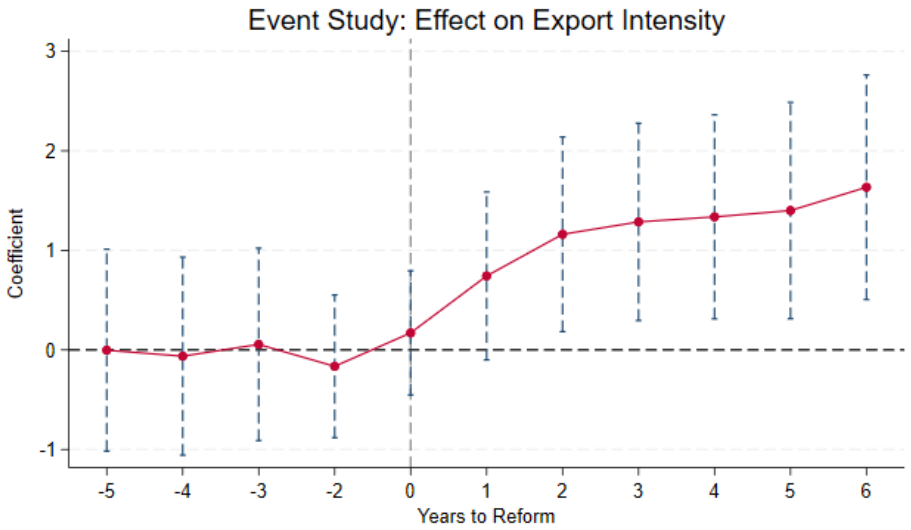
Notes: This table reports summary statistics for the main variables used in the analysis. All variables are defined in the appendix table. The sample period is from 2010 to 2022. All variables are winsorized at the 1st and 99th percentiles.

Table 2: Baseline Regression Results

	(1) Export intensity	(2) Export intensity	(3) Export intensity	(4) Export intensity
$HighMRPK_i \times Post_t$	-2.338***	-4.047***	-1.622***	1.108**
	(0.300)	(0.339)	(0.277)	(0.387)
log(Age)		-0.792***	-3.338***	4.668***
		(0.288)	(0.550)	(0.711)
log(Firm Size)		1.235***	-0.676**	0.419*
		(0.106)	(0.261)	(0.253)
log(Profitability)		18.090***	1.838	1.525
		(2.246)	(1.179)	(1.212)
log(Leverage)		-0.151***	0.025	0.014
		(0.027)	(0.018)	(0.018)
log(Collateral)		-5.663***	-0.523	-2.243***
		(1.036)	(0.840)	(0.826)
N	92,913	73,304	72,902	72,872
Adj. R^2	0.002	0.022	0.679	0.691
Firm FE	No	No	Yes	Yes
Year FE	No	No	No	No
Ind $\times$ Year FE	No	No	No	Yes

Notes: This table reports estimates from variants of the baseline difference-in-differences specification $Y_{ijt} = \beta(HighMRPK_i \times Post_t) + \gamma X_{ij,t-1} + \alpha_i + \delta_t + \theta_{jt} + \varepsilon_{ijt}$, where i denotes firms, j denotes industries, and t denotes years. The dependent variable is export intensity, measured as export earnings scaled by total sales. $HighMRPK_i$ is an indicator equal to one for firms whose marginal revenue product of capital (MRPK) is above the industry-specific median in the pre-reform period, and $Post_t$ is an indicator equal to one for years following the implementation of the IBC in 2016.The Sample period covers 2010-2022. The coefficient of interest captures the differential change in export performance for high-MRPK firms relative to low-MRPK firms after the reform. Columns (1)–(4) progressively add controls and fixed effects. Column (1) presents the baseline specification without controls. Column (2) includes firm-level controls. Column (3) further includes firm fixed effects, and Column (4) additionally includes industry $\times$ year fixed effects. The vector $X_{ij,t-1}$ includes lagged firm-level controls such as size, age, profitability, leverage, and collateral. Standard errors, reported in parentheses, are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Figure 1: Event study plots for the differential effect of IBC on High-MRPK firms Export Intensity



Notes: The figure plots the event-study estimates of the differential effect of the policy on export intensity for treated firms relative to control firms. The Sample period is from 2010-2022. The horizontal axis shows years relative to the reform, with $t = 0$ denoting the year of the policy implementation. The omitted category is the year prior to the reform. The vertical axis reports the estimated coefficients, and the dashed lines represent 95% confidence intervals.

Table 3: Effect of IBC on Firm-Level Capital

	(1) log(Capital)	(2) log(Capital)	(3) log(Capital)	(4) log(Capital)
$HighMRPK_i \times Post_t$	-0.284***	-0.071***	0.069***	0.074***
	(0.033)	(0.009)	(0.010)	(0.010)
log(Age)		0.181***	0.288***	0.281***
		(0.009)	(0.022)	(0.023)
log(Firm Size)		0.966***	0.720***	0.719***
		(0.004)	(0.014)	(0.014)
log(Profitability)		0.275***	0.005	0.009
		(0.060)	(0.042)	(0.043)
log(Leverage)		-0.002**	-0.001*	-0.002*
		(0.001)	(0.001)	(0.001)
log(Collateral)		3.063***	1.539***	1.535***
		(0.041)	(0.041)	(0.041)
N	72,360	72,360	72,341	72,341
Adj. R^2	0.005	0.904	0.970	0.970
Firm FE	No	No	Yes	Yes
Year FE	No	No	Yes	No
Ind $\times$ Year FE	No	No	No	Yes

Notes: This table reports estimates from variants of the baseline difference-in-differences specification $Y_{ijt} = \beta(HighMRPK_i \times Post_t) + \gamma X_{ij,t-1} + \alpha_i + \delta_t + \theta_{jt} + \varepsilon_{ijt}$, where i denotes firms, j denotes industries, and t denotes years. The dependent variable is the logarithm of firm-level deflated Capital, constructed by using gross fixed assets.$HighMRPK_i$ is an indicator equal to one for firms whose marginal revenue product of capital (MRPK) is above the industry-specific median in the pre-reform period, and $Post_t$ is an indicator equal to one for years following the implementation of the IBC in 2016.The Sample period covers 2010-2022. The coefficient of interest captures the differential change in capital accumulation for high-MRPK firms relative to low-MRPK firms after the reform. Columns (1)–(4) progressively add controls and fixed effects. Column (1) presents the baseline specification without controls. Column (2) includes firm-level controls. Column (3) further includes firm and year fixed effects, and Column (4) additionally includes industry $\times$ year fixed effects. The vector $X_{ij,t-1}$ includes lagged firm-level controls such as size, age, profitability, leverage, and collateral. Standard errors, reported in parentheses, are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4: Effect of IBC on Long-Term Bank Borrowing

	(1) log(LT Bank Borr)	(2) log(LT Bank Borr)	(3) log(LT Bank Borr)	(4) log(LT Bank Borr)
$HighMRPK_i \times Post_t$	-0.459***	-0.076***	0.208***	0.225***
	(0.043)	(0.027)	(0.041)	(0.043)
log(Age)		-0.234***	-0.614***	-0.631***
		(0.022)	(0.079)	(0.078)
log(Firm Size)		1.025***	0.913***	0.912***
		(0.009)	(0.035)	(0.035)
log(Profitability)		-1.660***	-0.999***	-1.093***
		(0.209)	(0.181)	(0.182)
log(Leverage)		0.045***	0.014***	0.014***
		(0.003)	(0.002)	(0.002)
log(Collateral)		2.691***	0.616***	0.554***
		(0.086)	(0.098)	(0.097)
N	50,158	43,628	43,157	43,134
Adj. R^2	0.008	0.558	0.771	0.773
Firm FE	No	No	Yes	Yes
Year FE	No	No	Yes	No
Ind $\times$ Year FE	No	No	No	Yes

Notes: This table reports estimates from variants of the baseline difference-in-differences specification $Y_{ijt} = \beta(HighMRPK_i \times Post_t) + \gamma X_{ij,t-1} + \alpha_i + \delta_t + \theta_{jt} + \varepsilon_{ijt}$, where i denotes firms, j denotes industries, and t denotes years. The dependent variable is the logarithm of firm-level long-term bank borrowing. $HighMRPK_i$ is an indicator equal to one for firms whose marginal revenue product of capital (MRPK) is above the industry-specific median in the pre-reform period, and $Post_t$ is an indicator equal to one for years following the implementation of the IBC in 2016.The Sample period covers 2010-2022.The coefficient of interest captures the differential change in long-term borrowing for high-MRPK firms relative to low-MRPK firms after the reform. Columns (1)–(4) progressively add controls and fixed effects. Column (1) presents the baseline specification without controls. Column (2) includes firm-level controls. Column (3) further includes firm and year fixed effects, and Column (4) additionally includes industry $\times$ year fixed effects. The vector $X_{ij,t-1}$ includes lagged firm-level controls such as size, age, profitability, leverage, and collateral. Standard errors, reported in parentheses, are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5: Effect of IBC on Foreign Long-Term Borrowing

	(1) log(Foreign Borr)	(2) log(Foreign Borr)	(3) log(Foreign Borr)	(4) log(Foreign Borr)
$HighMRPK_i \times Post_t$	-0.224*	-0.095	0.012	-0.175
	(0.126)	(0.077)	(0.120)	(0.141)
log(Age)		-0.451***	0.009	0.149
		(0.053)	(0.183)	(0.229)
log(Firm Size)		0.990***	0.819***	0.908***
		(0.029)	(0.098)	(0.096)
log(Profitability)		-1.619***	-0.501	-0.624*
		(0.393)	(0.308)	(0.332)
log(Leverage)		0.012	0.009**	0.009**
		(0.008)	(0.004)	(0.004)
log(Collateral)		0.652***	-0.200	-0.465*
		(0.217)	(0.216)	(0.256)
N	4,994	4,495	4,266	4,135
Adj. R^2	0.002	0.571	0.829	0.837
Firm FE	No	No	Yes	Yes
Year FE	No	No	Yes	No
Ind $\times$ Year FE	No	No	No	Yes

Notes: This table reports estimates from variants of the baseline difference-in-differences specification $Y_{ijt} = \beta(HighMRPK_i \times Post_t) + \gamma X_{ij,t-1} + \alpha_i + \delta_t + \theta_{jt} + \varepsilon_{ijt}$, where i denotes firms, j denotes industries, and t denotes years. The dependent variable is the logarithm of firm-level foreign long-term borrowing. $HighMRPK_i$ is an indicator equal to one for firms whose marginal revenue product of capital (MRPK) is above the industry-specific median in the pre-reform period, and $Post_t$ is an indicator equal to one for years following the implementation of the IBC in 2016.The Sample period covers 2010-2022. The coefficient of interest captures the differential change in foreign borrowing for high-MRPK firms relative to low-MRPK firms after the reform. Columns (1)–(4) progressively add controls and fixed effects. Column (1) presents the baseline specification without controls. Column (2) includes firm-level controls. Column (3) further includes firm and year fixed effects, and Column (4) additionally includes industry $\times$ year fixed effects. The vector $X_{ij,t-1}$ includes lagged firm-level controls such as size, age, profitability, leverage, and collateral. Standard errors, reported in parentheses, are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6: Placebo Test: Effect on Export Intensity

	(1) Export intensity	(2) Export intensity	(3) Export intensity	(4) Export intensity
$PlaceboHigh_i$	-0.737*	-3.149***	-0.489	-0.489
	(0.384)	(0.486)	(0.377)	(0.377)
log(Age)		-0.240	3.931***	3.931***
		(0.320)	(1.226)	(1.226)
log(Firm Size)		2.160***	0.889**	0.889**
		(0.142)	(0.402)	(0.402)
log(Profitability)		19.748***	3.358*	3.358*
		(3.304)	(1.729)	(1.729)
log(Leverage)		-0.144***	0.004	0.004
		(0.039)	(0.037)	(0.037)
log(Collateral)		-6.474***	0.110	0.110
		(1.339)	(1.228)	(1.228)
Constant	11.735***	2.337*	-4.292	-4.292
	(0.278)	(1.285)	(4.112)	(4.112)
N	39,816	26,801	25,084	25,084
Adj. R^2	0.000	0.036	0.811	0.811
Firm FE	No	No	Yes	Yes
Year FE	No	No	No	No
Ind $\times$ Year FE	No	No	Yes	Yes

Notes: This table reports placebo estimates from variants of the baseline difference-in-differences specification $Y_{ijt} = \beta(HighMRPK_i \times Post_t) + \gamma X_{ij,t-1} + \alpha_i + \delta_t + \theta_{jt} + \varepsilon_{ijt}$, where i denotes firms, j denotes industries, and t denotes years. The dependent variable is export intensity, measured as export earnings scaled by total sales. $HighMRPK_i$ is an indicator equal to one for firms whose marginal revenue product of capital (MRPK) is above the industry-specific median in the pre-reform period, and $Post_t$ is an a placebo treatment indicator constructed using 2012 as the year of treatment.The Sample period covers 2010-2015.The coefficient of interest tests whether placebo assignment predicts export performance in the absence of the actual reform. Columns (1)–(4) progressively add controls and fixed effects. Column (1) includes no controls. Column (2) adds firm-level controls. Column (3) includes firm fixed effects and industry $\times$ year fixed effects. Column (4) uses the same specification as column (3) but restricts the sample to match the baseline regression sample. Standard errors, reported in parentheses, are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7: Covariate Balance Before and After Matching

	Unmatched			Matched		
Variable	Treated	Control	% Bias	Treated	Control	% Bias
log(Age)	2.9225	2.9501	-3.9	2.9225	2.9851	-8.9
log(Firm Size)	6.6372	6.8061	-9.7	6.6372	6.4527	10.6
log(Profitability)	0.0349	0.0138	26.5	0.0349	0.0381	-4.0
log(Leverage)	1.6898	2.3329	-15.0	1.6898	1.6139	1.8
log(Collateral)	0.2293	0.3989	-101.3	0.2293	0.2288	0.3
Summary Statistics						
Mean Bias (%)		31.3			5.1	
Median Bias (%)		15.0			4.0	
Pseudo R^2		0.173			0.004	
B		104.3			15.7	
R		0.70			0.68	

Notes: This table reports covariate balance before and after propensity score matching (PSM). The table compares means of key firm-level characteristics between treated and control firms. % Bias refers to the standardized difference in means between treated and control groups. After matching, the mean standardized bias declines from 31.3% to 5.1%, and the pseudo R^2 falls from 0.173 to 0.004, indicating substantial improvement in covariate balance. All variables exhibit significantly reduced imbalance after matching, suggesting that the matched sample is well-balanced along observable dimensions.

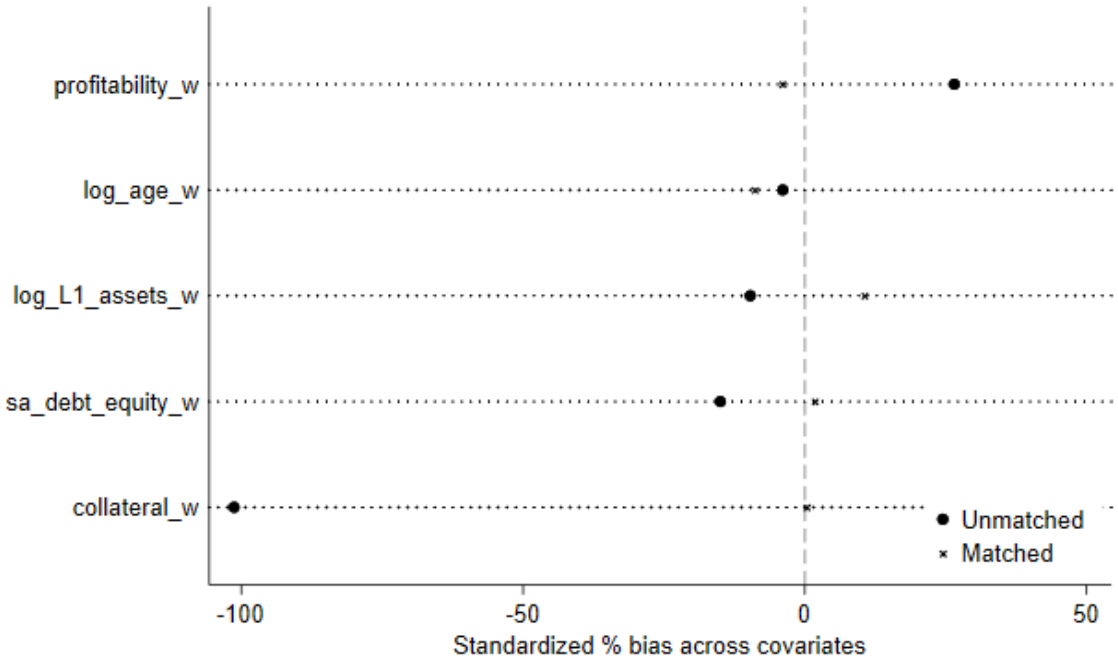


Table 8: PSM-Matched Regression Results

	(1) Export intensity	(2) Export intensity	(3) Export intensity	(4) Export intensity
$HighMRPK_i \times Post_t$	-3.753***	-4.650***	1.619***	1.739***
	(0.355)	(0.392)	(0.563)	(0.566)
log(Age)		-1.053***	4.868***	5.387***
		(0.378)	(0.939)	(0.926)
log(Firm Size)		1.076***	0.216	0.431
		(0.143)	(0.334)	(0.331)
log(Profitability)		22.970***	2.317	2.057
		(3.217)	(1.603)	(1.658)
log(Leverage)		-0.208***	0.015	0.013
		(0.041)	(0.026)	(0.026)
log(Collateral)		-4.606***	-2.254**	-2.731**
		(1.543)	(1.129)	(1.117)
N	56,010	48,936	48,923	48,885
Adj. R^2	0.006	0.024	0.691	0.695
Firm FE	No	No	Yes	Yes
Year FE	No	No	Yes	No
Ind $\times$ Year FE	No	No	No	Yes

Notes: This table reports estimates from propensity score matched (PSM) difference-in-differences regressions. The dependent variable is export intensity, measured as export earnings scaled by total sales. $Post\_High_{it}$ is an indicator capturing treated firms in the post-reform period. The sample consists of firms matched on pre-treatment characteristics using nearest-neighbor propensity score matching. Columns (1)–(4) progressively add controls and fixed effects. Column (1) presents the baseline specification. Column (2) includes firm-level controls. Column (3) adds firm and year fixed effects, and Column (4) includes firm and industry $\times$ year fixed effects. Standard errors (in parentheses) are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Figure 2: Event study plots for the differential effect of IBC on High-MRPK firms Export Intensity from the matched sample

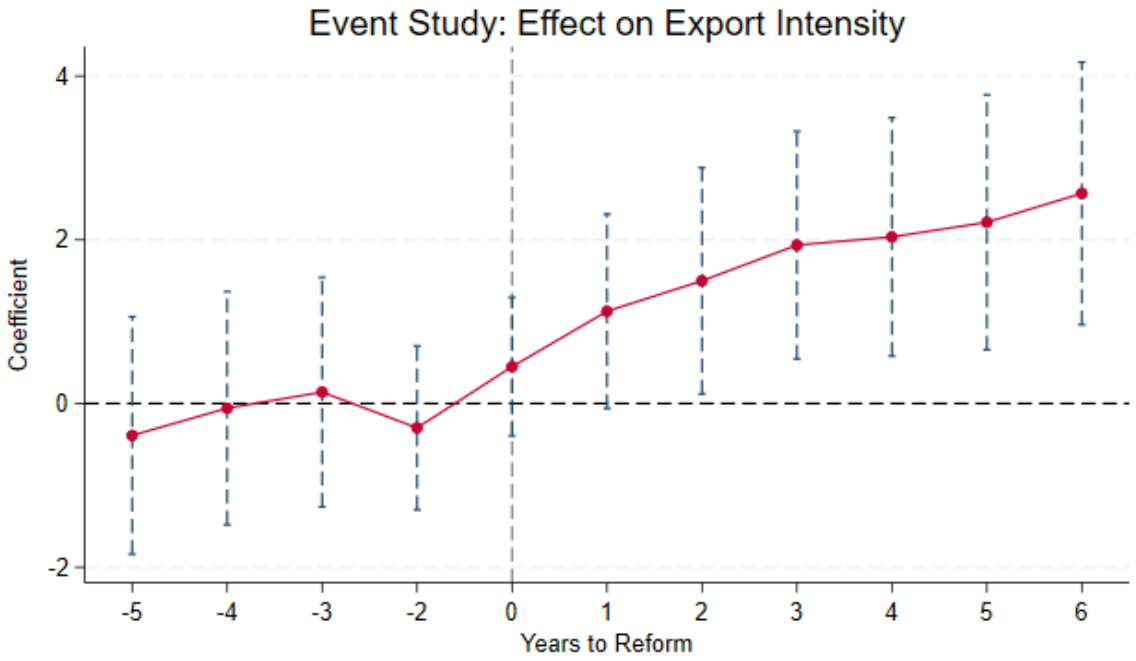


Table 9: Mechanism Results: Firm-Level Outcomes (PSM-Matched Sample)

	(1) log(Capital)	(2) log(LT Bank Borr)	(3) log(LT Foreign Borr)
$HighMRPK_i \times Post_t$	0.064***	0.100*	-0.342
	(0.013)	(0.060)	(0.213)
log(Age)	0.310***	-0.499***	-0.096
	(0.028)	(0.101)	(0.433)
log(Firm Size)	0.719***	0.890***	0.958***
	(0.014)	(0.043)	(0.128)
log(Profitability)	0.062	-1.014***	-0.535
	(0.051)	(0.248)	(0.537)
log(Leverage)	-0.002	0.018***	0.019*
	(0.002)	(0.004)	(0.010)
log(Collateral)	1.749***	0.773***	-0.213
	(0.048)	(0.136)	(0.426)
N	48,781	28,091	2,410
Adj. R^2	0.969	0.741	0.810
Firm FE	Yes	Yes	Yes
Ind $\times$ Year FE	Yes	Yes	Yes

Notes: This table reports mechanism regressions using the propensity score matched (PSM) sample. The dependent variables are firm-level outcomes: log of capital stock, log of long-term bank borrowing, and log of long-term foreign borrowing. $Post\_High_{it}$ is an indicator capturing treated firms in the post-reform period. All specifications include firm fixed effects and industry $\times$ year fixed effects. The vector of controls includes lagged firm characteristics such as age, size, profitability, leverage, and collateral. Standard errors (in parentheses) are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.