

Can Firms Adjust Their Opaqueness to Lenders? Evidence from Foreign Bank Entry into India*

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Abstract

This paper investigates the impact of financial market competition on a firm's choice regarding accounting quality. In particular, this paper uses the entry of foreign banks into India during the 1990s—analyzing variation in both the timing of the new foreign banks' entries and in their location—to estimate the effect of increased banking competition on firms' timely recognition of economic losses, an important aspect of accounting quality to lenders. The estimates indicate that foreign bank entry is associated with improved accounting quality among firms, and this improvement is positively related to a firm's subsequent debt level. The change in accounting quality appears driven by a shift in firms' incentives to supply higher quality information to lenders and lenders seem to value this information. The increase in accounting quality is also greatest among private firms, smaller firms, less profitable firms, and firms more dependent on external financing. Overall, our evidence suggests that a firm's opaqueness is not static, and that a firm's choice regarding accounting quality is a function of credit market competition.

Keywords: Banking Competition, Opaqueness, Accounting Quality, India

JEL Classification: D82, G21, O16, M41

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Whether increased financial market competition improves credit access for all firms has been an open question in finance for many years. Theories that incorporate information asymmetries demonstrate that greater competition among lenders has the potential to reduce credit access for informationally-opaque firms (Petersen and Rajan, 1995), and evidence from the deregulation of U.S. banking markets seems to support this possibility (Zarutskie, 2006). The welfare of such opaque firms in competitive lending environments, however, may depend on a number of factors. The source of competition (Boot and Thakor, 2000) and the response of existing lenders to increased competition (Dell'Ariccia and Marquez, 2004; Sengupta, 2007) may each affect whether opaque firms are adversely affected by an increase in financial competition.

Another, less explored, factor that might affect the impact of increased financial competition on opaque firms is the extent to which firms' opaqueness is fixed. By providing lenders with higher quality financial reports, firms can reduce their opaqueness when the cost of being opaque increases. One way firms could accomplish this is through a more timely accounting recognition of economic losses. While timely loss recognition can be costly for firms by lowering stated earnings, which may then reduce outsiders' valuation of the company and constrain dividend payments, it can benefit firms by enhancing the efficiency of debt contracting and improving a firm's ability to obtain debt-financing (Ahmed, Billings, Morton, and Harris, 2002; Ball and Shivakumar, 2005; Leuz, Nanda and Wysocki, 2003).¹ This enhanced efficiency occurs because timely loss recognition, which is easily verified by a lender using a firm's historic accounting statements, reduces the likelihood of a borrower's current financial position being

¹ The costs and benefits of timely loss recognition have been extensively studied in the accounting literature. For more details, see Watts and Zimmerman (1990) and Watts (2003a).

overstated. This enables lenders to better screen borrowers' creditworthiness, to construct financial covenants more effectively, and to mitigate agency conflicts pertaining to dividend policy.

The possibility that a firm's opacity may not be static is the focus of our paper. In particular, we ask the following questions: Does a firm's accounting quality change when credit market competition and the cost of being opaque increases? And if so, for which firms are these changes most prominent, and do lenders appear to value these changes? To answer these questions, we study firms' accounting choices during the entry of foreign banks into India in the 1990s.

The entry of foreign banks into India provides two key advantages in analyzing whether firms adjust their accounting quality to reflect changes in lending environments. First, theory suggests that the costs of being opaque may be particularly high following an increase in financial competition. Foreign bank's entry into India leads to an increase in financial competition, which may directly increase the cost of being opaque (Petersen and Rajan, 1995). Additionally, foreign banks may also be less able to acquire soft information about local firms (Stein, 2002). This limited information may lead foreign banks to only finance firms that are less informationally opaque, larger, or extremely profitable (Dell'Arricia and Marquez, 2004; Segupta, 2007), and this 'cream-skimming' by foreign banks can reduce opaque firms' access to domestic lenders (Detragiache, Gupta, and Tressal, 2008; Gormley, 2007).

Second, geographical variation in foreign bank locations over time facilitates the use of novel identification techniques. We make use of the staggered entry of foreign banks into India following the country's 1994 commitment to the World Trade

Organization (WTO). Some districts of India received a foreign bank branch as early as 1994, while others did not receive such a branch until 2001, and as of today, many districts have yet to receive a foreign bank. Matching this information to a large panel dataset of firms' audited financial statements, we compare changes in accounting quality between domestic firms located geographically near the new foreign banks and domestic firms located further from the new foreign banks. The variation *both* in the timing of the new foreign banks' entries *and* in their location within the country reduces potential confounding effects that might arise from other country-wide changes in financial market competitiveness or accounting standards. Such country-wide changes would affect all firms in India and therefore unlikely explain differential changes in accounting quality for firms located geographically near foreign banks versus those that are not. By using firm-level data, we can also test for heterogeneous effect across firms as well as control for any differences in the types of firms located in areas with a new foreign bank.

To measure a firms' timely recognition of economic losses, we rely on established methodologies in the accounting literature. In particular, we follow the research design by Ball and Shivakumar (2005) and apply an accrual-cash flow non-linear regression technique. Since this measure of accounting timeliness only relies on the information in firms' historical financial statements, we are able to calculate it for both public and private firms in India. This is particularly important since the cost of being opaque is likely more acute for private firms after foreign bank entry. Following Basu (1997), we also adopt another measure of timely loss recognition using earnings time-series regression, and our main results are robust to this alternative measure.

Using the aforementioned framework, we find evidence that firms' accounting

choices are associated with changes in the lending environment. The overall level of accounting quality, as measured by the timely loss recognition, increases for firms located in the vicinity of new foreign banks following their entry. Firms located in districts without any foreign bank entry do not change their financial reporting policies, and there is no evidence of timely loss recognition prior to foreign bank entry. The increases in accounting quality are concentrated among firms with the strongest incentives to adjust their accounting procedures so as to reduce information asymmetries and alleviate financing constraints. We find that smaller, less profitable, and private firms, particularly private firms with greater dependence on external financing, increase their timely loss recognition the most. The findings are robust to the use of different samples, control variables, and model specifications.

The evidence also indicates that lenders value this change in accounting quality. Within districts that experience a foreign bank entry, we find the largest accounting quality improvements occur, on average, among firms that maintain or increase their level of borrowings following foreign bank entry, whereas firms that experience declines in their debt levels exhibit a smaller average increase in accounting quality.

The evidence in this study provides a new perspective to the potential effects of greater financial market competition on lending relationships and the supply of credit to informationally-opaque firms (Berger, Saunders, Scalise, and Udell, 1998; Degryse and Ongena, 2007; Sapienza, 2002; Rice and Strahan, 2009; and Zarutskie, 2006). Contrary to analyzing whether the credit access or performance of opaque firms decline, our paper looks at whether these firms reduce their opaqueness to lenders following an increase in financial competition. Our evidence suggests that firms' opaqueness may not be

completely fixed and that firms attempt to furnish additional and easily verifiable information to lenders to mitigate the potential adverse outcomes of greater financial market competition. This possible adjustment by firms has been overlooked in the existing literature that studies the potential effects of greater bank competition.

This paper is also related to the empirical literature that studies the relationships between foreign bank entry, domestic bank performance, interest rates, and firms' debt usage.² This paper compliments this literature by analyzing the changes in firms' accounting practices following foreign bank entry and showing that these changes may be related to a firm's demand for credit. In the extant literature, there is a void in investigating how firms adapt their behavior in response to foreign lenders' entry, with the exception of Berger, Klapper, Peria, and Zaidi (2008). They document that firms may choose to have multiple bank relationships as an insurance against the 'fragility' of foreign bank relationships. Our study provides evidence that domestic firms may also resort to improving accounting quality to alleviate information asymmetries and the potential adverse effects of foreign bank entry. The observed increase is consistent with theories suggesting that competition from foreign lenders may affect the importance of firms' opaqueness (Dell'Arricia and Marquez, 2004; Gormley, 2007; Sengupta, 2007).

Finally, our paper is related to the accounting literature that analyzes the importance of timely loss recognition and its impact on debt contracts (Ahmed, Billings,

² Claessens, Demirguc-Kunt, and Huizinga (2001) uncover evidence that foreign bank entry is associated with lower profit margins among domestic banks, while Berger, Klapper, and Udell (2001), Haber and Musacchio (2004), and Mian (2006) provide evidence that foreign banks tend to finance only larger, more established firms. Clarke, Cull, and Martinez Peria (2006) find that entrepreneurs in countries with high levels of foreign bank ownership perceive interest rates and access to loans as smaller constraints to their operations. Detragiache, Gupta, and Tressal (2008) and Gormley (2008) find that foreign ownership is negatively related to aggregate and firm-level measures of debt-usage, while within Eastern European countries, Giannetti and Ongena (2009a) find the share of foreign lending to be positively related to firm-level sales and overall debt usage, particularly for larger firms. Giannetti and Ongena (2009b) also find that foreign bank entry may make bank relationships more stable and enhance financial access.

Morton, and Harris, 2002; Zhang, 2008; Moerman, 2008; Beatty, Weber, and Yu, 2008; Guay 2008). Rather than analyze the importance of timely reporting of losses in a static credit market, however, our paper tests whether changes in lending market competition are correlated to changes in firms' accounting choices.³ Our paper provides supporting evidence to the arguments of Ball (2001) and Kothari (2001) that institutional mechanisms are important in shaping a country's accounting quality. Our paper also corroborates Ball, Robin, and Sadka (2008), who show that the debt market rather than the equity market drives timely loss recognition among firms.

The remainder of the paper proceeds as follows. Section 1 provides a review of India's policy change. Section 2 develops testable hypotheses. Section 3 describes the data and research design. Section 4 presents empirical results, and Section 5 concludes.

1. Description of Policy Change in India

Prior to 1991, India's economy and financial system was heavily regulated and dominated by the public sector. Following a balance of payments crisis in 1991, however, a number of structural reforms were implemented that greatly deregulated many economic activities. In November 1991, a broad financial reform agenda was established in India by the Committee on the Financial System (CFS). One of the committee's recommendations to meet this goal was to introduce greater competition into the banking system by allowing more foreign banks to enter India.

However, no significant action was taken by the Government of India regarding the CFS recommendation on foreign banks until April 1994 when the government agreed

³ One exception to the completely static analysis is Ball, Kothari, and Ashok (2000), which examines differences in firms' timely loss recognition using cross-country variation in debt market development.

to allow for an expansion of foreign banks under the General Agreement on Trades in Services (GATS). In the initial GATS agreement, India committed to issue five additional branch licenses to both new and existing foreign banks each year. In a subsequent supplemental agreement in July 1995, India increased the limit to eight licenses per year, and in February 1998, the limit was increased to 12. While there were no restrictions on where foreign banks could choose to establish new branches, the expansion of foreign banks in India was allowed by de novo branches only.⁴

In the years preceding the signing of the GATS agreement, very few licenses for new foreign bank branches were granted, and the presence of foreign banks in India was limited. On March 31, 1994 there were 24 foreign banks with 156 branches in India. Most of these banks, however, had begun operations before India's first nationalization of private banks in April 1969, and only seven new branches had opened since 1990. Moreover, most of India's 575 districts did not have a foreign bank, as roughly 75 percent of these foreign bank branches were concentrated in districts encompassing India's three largest cities: Delhi, Mumbai, and Kolkata.

In the eight years following the acceptance of GATS, however, 17 new foreign banks and 89 new foreign bank branches were opened in India bringing the total number foreign banks to 41 with 212 branches as of March 2002.⁵ The expansion of foreign banks also increased their representation outside of India's most populous cities, as the

⁴ Foreign banks were not allowed to own controlling stakes in domestic banks, and foreign banks wishing to establish new branches needed to seek Reserve Bank of India approval, as do all banks under Section 23 of the Banking Regulation Act, 1949. Requests for new branches are evaluated on the "merits of each case and taking into consideration overall financial position of the bank, quality of its management, efficacy of the internal control system, profitability, and other relevant factors". See "Master Circular on Branch Licensing," DBOD.No. BL.BC. 5/22.01.001/2004, Reserve Bank of India, Mumbai, pp. 4.

⁵ 33 foreign bank branches closed during this time period, so the net change was only 56. 17 of these closures were from ANZ Grindlays Bank Ltd. and five from Standard Chartered Bank in 1998 and 1999.

number of districts with a foreign bank increased from 18 to 26, and foreign banks' share of total long-term loans increased as well. In March 1994, foreign banks accounted for 5 percent of all outstanding long-term loans, but with their expansion of branches, their share of long-term loans increased and averaged roughly 8 percent from 1996 to 1998, and 10 percent from 1999 to 2001. Moreover, some back of the envelope calculations suggest foreign bank entry was sizeable in the eight districts receiving their first foreign bank. By 2003, foreign banks accounted for roughly 5.5 percent of long-term loans in these districts, and their share of loans is about 10 percent in districts that experienced entry between 1994 and 1996, suggesting foreign banks' share of loans grows with time.

The entry of foreign banks into India appears to have reduced credit access for opaque firms. Gormley (2008) finds that while average bank borrowings increased for large, profitable firms following foreign bank entry into India, the average domestic firm located in the vicinity of a new foreign bank experienced a drop in bank borrowings. These declines were larger on average among firms generally considered more opaque, such as smaller firms and firms with fewer tangible assets. The drop in credit also appears to adversely affect the performance of smaller firms with greater dependence on external financing. The experience of India is consistent with the cross-country evidence of Detragiache, Gupta, and Tressal (2008), which also finds evidence that foreign bank entry is associated with reduced bank credit among opaque firms.

The reduced use of debt for many opaque firms in India would seem to suggest that the cost of being opaque increased following foreign bank entry. We now turn to exploring why this might occur and how firms might be expected to respond.

2. Hypotheses Development

In making lending decisions, banks face ex-ante information asymmetry and ex-post moral hazard problems. To overcome these frictions, banks can adopt stringent screening standards (Ramakrishnan and Thakor, 1984) and/or monitor borrowers (Diamond, 1984). Each requires information about the creditworthiness of borrowers. While some information on credit quality can be obtained from credit agencies, suppliers, and customers of a firm, a large share of the information used by lenders will be contained in the firms' financial statements. The quality of these financial statements will hence affect lending decisions.

One particular accounting quality that may affect lending decisions is the timely accounting recognition of economic losses (Watts and Zimmerman, 1986; Ahmed, Billings, Morton, and Harris, 2002; Watts, 2003a, 2003b; Beatty, Weber, and Yu, 2008).⁶ Because of lenders' asymmetric payoff from firms' net assets (lenders incur loss when the net assets of borrower are below the principal but are not compensated when net assets exceed the principal), lenders are concerned with the lower bound of a borrower's net asset value. Timely loss recognition ensures, however, that expected losses are reflected in the financial statements earlier and that the borrowers' true net asset value is not overstated (Watts, 2003a). This lower bound is informative to the lenders in making lending decisions and in specifying financial covenants.⁷ Timely loss recognition also increases the effectiveness of ex-post monitoring because it better informs lenders about a

⁶ More specifically, timely accounting recognition of economic losses is also termed as asymmetric timeliness or *conditional conservatism*. Ball and Shivakumar (2005, pp. 88-92) explain the role of conditional conservatism in efficient contracting, and contrast it with *unconditional conservatism* which is argued to have no positive effect on efficient contracting.

⁷ There is evidence that banks in India use covenants to monitor borrowers. For example, on February 11, 2001, the *Financial Times* reported that Indian banks "have been asked by the Reserve Bank of India to make bill finance one of the covenants for sanction of working capital credit limits".

borrower's ability to repay, and the decreased reported earnings help constrain dividends, thus alleviating the ex-post moral hazard problems (Watts and Zimmerman, 1986).

Several studies find evidence consistent with timely loss recognition having a positive effect on lending decisions. Ahmed, Billings, Morton, and Harris (2002) find evidence that timely loss recognition plays an important role in mitigating bondholder and shareholder conflicts over dividend policy and in reducing firms' borrowing costs. Zhang (2008) shows that timely loss recognition benefits lenders through a timely signaling of default risk, and in return, benefits borrowers through a lower cost of debt. Beatty, Weber and Yu (2008) find evidence that debt covenants and conservative financial reports are complementary in meeting lenders' demand.

On the other hand, timely loss recognition can be costly for firms. Earlier recognition of losses lowers stated earnings, which may reduce outsiders' valuation of the company and constrain dividend payment to shareholders (Ahmed, Billings, Morton, and Harris, 2002). Firms also violate debt covenants earlier when they are timely in recognition of losses (Zhang, 2008), and such violations can be costly for firms (Roberts and Sufi, 2009). Timely loss recognition may also reduce a manager's private benefits, particularly in countries with weak investor protections (Leuz, Nanda and Wysocki, 2003).

Given these costs, firms face a trade-off when choosing how timely to recognize economic losses. Holding all else equal, loss recognition is expected to be more timely when the potential benefits of doing so increase, and vice versa, loss recognition should be less timely when the potential costs increase.

By increasing both the cost of being opaque and the reliance on ‘hard’ information in making lending decisions, the entry of foreign banks is likely to affect this tradeoff in increasing the benefits of timely loss recognition. First, foreign bank entry will increase banking competition, which has the potential to reduce credit access for opaque firms (Petersen and Rajan, 1995). Second, foreign banks’ higher cost of acquiring information about local firms (Berger, Klapper, and Udell, 2001; Stein, 2002; Mian, 2006) may limit their willingness to finance opaque, smaller, or less profitable firms (Dell’Arricia and Marquez, 2004; Segupta, 2007; Gormley, 2007). Third, foreign banks’ use of largely arm-length transactions that rely more heavily on hard information will increase the importance of a firm’s accounting quality in making lending decisions. Domestic lenders may also adopt these ‘best practices’ of foreign banks, further increasing the importance of a firm’s accounting quality in the lending process (Lensink and Hermes, 2004).

The increased cost of being opaque and potential change in lenders’ demand for accounting quality following foreign bank entry provides firms with an incentive to reduce their opaqueness to lenders. Since timely loss recognition may help accomplish this, we conjecture it will increase after foreign bank entry. Therefore, our first hypothesis is stated as follows:

HYPOTHESIS 1 (H1): The level of timely loss recognition will increase in districts where foreign bank entry occurs.

A rejection of this hypothesis would indicate that foreign bank entry has no impact on timely loss recognition. This might occur if lending competition, as captured

by foreign bank entry, does not increase the cost of being opaque, or if lenders do not value this particular change in accounting quality.

The increased cost of being opaque following foreign bank entry is also likely to vary across firms. More opaque firms will be at a larger disadvantage if lenders place greater emphasis on hard information when making lending decisions. Additionally, firms that are more dependent on external financing may find it more beneficial to increase accounting quality if doing so can increase the odds of maintaining credit access. As a result, small and private firms, which are typically more informationally-opaque and dependent on external financing, may have the greatest incentive to adjust accounting quality following foreign bank entry. Less profitable firms may also have a greater incentive to improve their accounting quality. Bernanke and Gertler (1989) argue that less profitable firms may have greater agency costs of debt arising from information asymmetries between lenders and borrowers. Our second hypothesis is stated as follows:

HYPOTHESIS 2 (H2): The change in timely loss recognition will be more pronounced among less profitable, small and private firms, and firms with greater external financing dependence.

Finally, if increased timely loss recognition reduces firms' opaqueness and the risk born by lenders in assessing firms' creditworthiness, we expect lenders to reward firms who increase the supply of accounting quality by granting more credit to these firms. Therefore, our third hypothesis is stated as follows:

HYPOTHESIS 3 (H3): The change in timely loss recognition after foreign bank entry will be positively associated with firms' access to credit.

3. Data and Research Design

3.1. Data

The data used to identify the location and opening date for each foreign bank in India is the *Directory of Bank Offices* published by the Reserve Bank of India. Providing the location, name, opening date, and closing date for every bank office in India, the data is used to construct a complete annual directory of all banks in India from 1988 to 2004.

With this data, it is possible to map out the timing and location of arrival for the new foreign banks. Table 1 shows the number of foreign banks by district and year from 1990 to 2002. In the top half of the table are the 18 districts that already had a foreign bank before 1991. These include the three districts with very large metropolitan centers: Delhi, Greater Mumbai, and Kolkata. In the bottom half are the eight districts that received their first foreign bank during the 1990s. As can be quickly seen, the overall increase in foreign bank branches largely coincides with the signing of the GATS in 1994, but the actual timing of entry across these eight districts is staggered across years. The district location of new foreign banks is mapped in Figure 1 which highlights the eight districts that receive their first foreign bank between 1991 and 2002. The eight districts are relatively dispersed across India, spanning seven of India's 35 states.⁸

[Insert Table 1 here]

[Insert Figure 1 here]

The bank location data are matched up to the Prowess data set compiled by the

⁸ Citibank and Hong Kong & Shanghai Banking (HSBC) were responsible for half of the new foreign bank branches in the eight districts. Other banks opening branches in these districts were ABN AMRO, American Express Bank Ltd., ANZ Grindlays, BNP Paribas, Crédit Lyonnais, Deutsche Bank (Asia), Société Générale, and Standard Chartered. Each had pre-existing branches elsewhere in India at the time of entry in the eight districts.

Centre for Monitoring Indian Economy (CMIE). Prowess is a panel data set of firms from 1988 to 2002 where both listed and unlisted publicly limited Indian and foreign firms with assets plus sales greater than 40 million Rupees (approx. \$900,000) are included in the data set.⁹ The data set provides the annual financial and accounting data of each firm along with descriptive variables including the ownership, year of incorporation, and registered address. Using each firm's address, it is possible to track their financial status at the district level and to merge this data to the district location of the new foreign banks in India. We exclude firm-year observations for firms located in the districts that already have foreign banks prior to 1991 because these banks are usually located in the big metropolitan areas and firms in these areas are different in many ways, which can be seen in Appendix Table 1.¹⁰ Because of fewer data points and the heavy regulation of the Indian banking system and economy prior to 1992, we also exclude observations prior to 1992 from our main analysis. Our final sample consists of 20,438 firm-year observations for 2,547 unique firms over the period 1992-2002.

While foreign banks only entered eight new Indian districts after 1992, the financial data provided by Prowess indicates that a large number of Indian firms were likely affected by this entry. Within our sample, these eight districts account for 25 percent of the observed firms and 24 percent of total sales in 1992. These high numbers reflect foreign banks' tendency to locate in heavily populated districts.

⁹ CMIE compiles the financial data using the audited annual accounts that all registered companies in India must submit to the Registrar of Companies. The cutoff level of firm size in the Prowess dataset seems to be an arbitrary point chosen to limit the size of the database.

¹⁰ Comparing the summary statistics in the appendix with those in Table 2 suggests that firms located in the areas with foreign banks entry prior to 1991 are much larger in size than firms in our sample. They are also more profitable as measured by their return on assets (ROA), and have higher cash flow from operations.

3.2. Measuring timely loss recognition

3.2.1. Accruals-cash flows model

Following Ball and Shivakumar (2005), we measure timely loss recognition using a non-linear relation between operating cash flows and accruals. The model is as follows:

$$ACC_{it} = \beta_1 DCFO_{it} + \beta_2 CFO_{it} + \beta_3 DCFO_{it} \times CFO_{it} + \varepsilon_{it} \quad (1)$$

The dependent variable ACC_{it} is accruals computed as $[(\Delta CA_{it} - \Delta Cash_{it}) - (\Delta CL_{it} - \Delta STD_{it}) - DEP_{it}]$ scaled by total assets for firm i in year t , where ΔCA is the change in current assets, $\Delta Cash$ is the change in cash and bank balances, ΔCL is the change in current liabilities, ΔSTD is the change in short term debt, and DEP is depreciation expense. CFO represents the operating cash flows (scaled by total assets), measured as the difference between ROA and ACC , where ROA is the profit after tax charges (PAT) scaled by total assets. Accruals are subtracted from ROA to undo the accrual accounting methods used to calculate firms' cash flows and to better reflect the true level of current operating cash flows generated by the firm.¹¹ $DCFO$ is an indicator variable equal to 1 if CFO is negative, and 0 otherwise.

Firms that engage in a timely recognition of economic gains and losses will exhibit a positive correlation between accruals, ACC , and contemporaneous cash flows, CFO . The positive correlation comes from the fact that cash flows generated from individual durable assets (such as plant and equipment) tend to be correlated over time

¹¹ Firms use accrual accounting to mitigate the transitory variation in operating cash flows and to produce a better matching of expenses against revenues. For example, accrual accounting attempts to eliminate the transitory variations in cash flow by matching the cost of inventory sold, rather than current-period payments for inventory purchased, against sales revenue. An implication of the noise-reduction role of accruals is that accruals and the cash flow from operations are contemporaneously negatively correlated (Dechow, 1994; Dechow, Kothari, and Watts, 1998).

(Ball and Shivakumar 2005). For example, a piece of equipment that generates less cash today due to changes in product market conditions is also likely to experience a downward revision in its expected future cash flows. If these revisions of future cash flow expectations are incorporated into current-period accruals by a firm in a timely fashion, a positive correlation between accruals, ACC , and contemporaneous cash flows, CFO , will occur. In this example, a decline in expected future cash flows may be accounted for in accruals through a markdown in the value of assets or inventory.

The more timely firms are in their recognition of expected losses, the stronger the positive correlation between accruals, ACC , and operating cash flows, CFO , will be when cash flows are negative. Thus, the level of timely loss recognition is increasing in the coefficient, β_3 . This will be our primary coefficient of interest throughout the paper. A timely recognition of gains would instead be captured by a positive correlation between cash flows and accruals when current cash flows are positive (i.e. $\beta_2 > 0$). However, because standard accounting practices generally do not allow firms to account for expected future gains in cash flows until those gains are actually realized, there is little positive correlation between positive cash flows and accruals on average. This asymmetry in the correlation between accruals and cash flows is why 'timely loss recognition' is often referred to as 'asymmetric timeliness'.

3.2.2 Basu's (1997) earnings time-series model

To corroborate results based on accruals-cash flow measure of timely loss recognition, we also use the Basu's (1997) earnings time-series model as another measure. The model specification is as follows:

$$\Delta NI_{it} = \beta_1 D_{it-1} + \beta_2 \Delta NI_{it-1} + \beta_3 \Delta NI_{it-1} \times D_{it-1} + \varepsilon_{it} \quad (2)$$

In model (2), the dependent variable ΔNI_t is the change in *ROA* from fiscal year $t-1$ to t . The explanatory variable D_{it-1} is a dummy equal to 1 if ΔNI_{t-1} is negative, and 0 otherwise. To the extent that the recognition of expected economic *gains* is subject to realization requirements, a positive shock to earnings will only be gradually incorporated into a firm's earnings over time. This will imply that an increase in earnings this period will have persistence and a positive ΔNI_{t-1} will be associated with a positive ΔNI_t (i.e., $\beta_2 > 0$). If firms recognize economic losses on a timelier basis than economic gains, then a negative shock to expected earnings is recognized immediately and fully rather than waiting for actual realization. Therefore, timely loss recognition implies a decrease in earnings this period is likely to be transitory. This asymmetry in the persistence of earning changes predicts β_3 (which captures the *incremental* timeliness in the recognition of economic losses) to be negative, (i.e., $\beta_3 < 0$).

3.3 Research design

3.3.1. Regression using accruals and cash flows model

To test whether foreign bank entry is correlated with timely loss recognition, we expand model (1) by introducing a dummy variable, *Bank*, to capture foreign bank entry, and interact it with other explanatory variables in model (1). In particular, the model we estimate is specified as follows:

$$\begin{aligned} ACC_{idt} = & \beta_1 DCFO_{idt} + \beta_2 CFO_{idt} + \beta_3 DCFO_{idt} \times CFO_{idt} \\ & + \beta_4 Bank_{dt} + \beta_5 Bank_{dt} \times DCFO_{idt} + \beta_6 Bank_{dt} \times CFO_{idt} \\ & + \beta_7 Bank_{dt} \times DCFO_{idt} \times CFO_{idt} + \alpha_i + \delta_t + \varepsilon_{it} \end{aligned} \quad (3)$$

where $Bank_{dt}$ is equal to 1 if a foreign bank is present in district d in year t , and 0 otherwise. The regression also includes firm fixed effects, α_i , to control for time-invariant differences across firms, and year fixed effect, δ_t , to control for non-secular time trends in average accounting quality across India. Since foreign entry occurs at the district level, standard errors are clustered at the district-level.

By interacting $Bank_{dt}$ with the main specification of Ball and Shivakumar (2005) and including year and firm fixed effects, this new specification will make use of variation *both* in the location and timing of foreign bank entry to identify the impact of foreign bank entry on timely loss recognition. The main coefficient of interest, β_7 , will test the changes in timely loss recognition for firms located in a district with a new foreign bank after its entry relative to changes for firms located elsewhere in India. A positive β_7 would support Hypothesis 1 (H1) and indicate that timely loss recognition increased for firms located near a new foreign bank after entry relative to other firms located elsewhere in India.

The use of variation in both the location and timing of foreign bank entry reduces potential confounding effects that might arise from country-wide changes in accounting quality or fixed differences in accounting quality across firms. Changes in average accounting quality over time, which might arise from other country-level reforms or changes in financial competitiveness, would be absorbed by the year dummies. Likewise, fixed differences in average accounting quality or the opaqueness of firms located in districts experiencing entry will be captured by the firm-level fixed effects.

This difference-in-difference estimation relies on two identification assumptions.

First, it implicitly assumes that the effect of foreign bank entry is localized and realized predominately by firms headquartered in the district with a foreign bank. In general, we expect this to hold as empirical work in other countries has demonstrated the average distance between firms and their bank is usually quite small.¹² However, even if this assumption is not fully true, this would only bias the results against finding an effect of foreign bank entry on accounting quality because some firms affected by foreign bank entry would be wrongly classified as control firms in the estimation.¹³

The second identification assumption is that foreign banks did not select into districts that were already trending differently or going to trend differently in the future, with respect to average accounting quality, for reasons unrelated to the actual entry. Consistent with this assumption, it is shown later that there is no evidence of differences in accounting quality across Indian districts prior to foreign bank entry. There is also little reason to expect that foreign banks' location choices would be directly related to expectations of future changes in firms' average accounting quality. We come back to elaborate on this issue later in section 4.3.1.

Another related concern, however, may be that foreign banks selected into districts with differential trends in growth opportunities, which may itself be directly

¹² Analyzing small firms in the U.S., Petersen and Rajan (2002) finds that the average distance between a firm and its main bank was 67.8 miles in 1993, and the median distance was five miles. The Indian districts included in this sample had an average size of 2,457 square miles. While the U.S. firms sampled were on average six times smaller than the firms found in the Prowess data, it is likely the Indian firms also borrow locally as the positive relation between distance and borrowing costs are likely greater in a developing country such as India. Recent work on lending relationships and loan prices in Belgium and the U.S. also suggest that greater lending distances are associated with increased transportation and informational costs (Agarwal and Hauswald, 2007; Degryse and Ongena, 2005).

¹³ As a robustness check, we also examine the relation between foreign bank entry and timely loss recognition for firms located in the neighborhood of the districts with foreign bank entry. Results suggest that timely loss recognition does not change for these firms after foreign bank entry, which lends empirical support to our identification assumption.

related to timely loss recognition.¹⁴ To account for this possibility, we also include controls for growth opportunities and other time-varying variables throughout the empirical analyses. In particular, we include *SIZE*, *LEV*, and *SG*, where *SIZE* is natural log of total assets, *LEV* is bank borrowings scaled by total assets, and *SG* is sales growth, which is equal to $((sales_t - sales_{t-1}) / sales_{t-1})$.¹⁵ Each of the three controls is also interacted with *DCFO*, *CFO*, and *DCFO*CFO*.

3.3.2. Regression using earnings time-series model

Similarly, we can expand model (2) by introducing a dummy variable, *Bank*, to capture foreign bank entry, and interact it with other explanatory variables in model (2) to test our hypothesis. The model below is used as a robustness check:

$$\begin{aligned} \Delta NI_{idt} = & \beta_1 D_{idt-1} + \beta_2 \Delta NI_{idt-1} + \beta_3 D_{idt-1} \times \Delta NI_{idt-1} \\ & + \beta_4 Bank_{dt} + \beta_5 Bank_{dt} \times D_{idt-1} + \beta_6 Bank_{dt} \times \Delta NI_{idt-1} \\ & \beta_7 Bank_{dt} \times D_{idt-1} \times \Delta NI_{idt-1} + \alpha_i + \delta_t + \varepsilon_{it} \end{aligned} \quad (4)$$

All variables are as defined previously. The regression also includes firm fixed effects, α_i , to control for time-invariant differences across firms, and year fixed effect, δ_t , to control for non-secular time trends in accounting practice across India. Since foreign entry occurs at the district level, standard errors are clustered at the district-level. Based on H1, we expect the coefficient, β_7 , to be negative. This would indicate that timely loss recognition increases for firms located near a new foreign bank after its entry relative to other firms located elsewhere in India.

¹⁴ Growth opportunities, leverage and size have each been linked to timely loss recognition (Roychowdhury and Watts, 2007; LaFond and Watts, 2007).

¹⁵ Market-to-book ratio is frequently used in the accounting literature as a factor related with timely loss recognition. Due to the presence of unlisted public limited firms in our sample, we are unable to obtain market-to-book ratio for all firms. Instead we use sales growth as an alternative proxy for growth opportunities.

4. Empirical Results

4.1. Descriptive statistics

Table 2 reports descriptive statistics for our sample of firms. The average total assets of firms in our sample is 2.5 billion Rupee (approximately \$60 million) and the median is 320 million Rp (approximately \$7.4 million). ROA (net income/assets) has a mean of -0.4 percent and a median of 1.2 percent, suggesting that on average, Indian firms incur losses. Accruals has a mean of -0.005, indicating that accruals decrease income on average in India, and cash flows has a mean of 0.

Profitability and cash flows of firms in districts where foreign bank entry occurs are similar to the profitability and cash flows of firms in districts with no foreign bank entry. Panel B presents separately the summary statistics for firms located in the districts with foreign bank entry (N=3,450), and Panel C presents summary statistics for firms located in districts with no foreign bank entry (N=16,988). On average, firms located in districts with foreign bank entry are slightly less profitable, and have lower accruals and cash flows compared to firms located in districts where foreign bank entry does not occur, but the differences are small and not statistically different.

[Insert Table 2 here]

4.2. Regression results

4.2.1. Timely loss recognition prior to foreign bank entry

Before we test our hypotheses, we first investigate whether timely loss recognition is present in India prior to foreign banks' entry beginning in 1994 and whether it varies across districts in a way that may raise concerns about our identification strategy. We do this by separately estimating equation (1), using only financial data from

1990-1993, for both districts that eventually receive a foreign bank and those that do not. We also include the time-varying controls for size, leverage, and growth along with their interactions as described earlier. The results are reported in Table 3.

Prior to foreign bank entry, there does not appear to be any evidence of timely loss recognition among Indian firms, and there is no evidence to indicate that the timely loss recognition was significantly different in districts that later experience foreign bank entry relative to districts that do not experience entry. The coefficient, β_3 , is neither significantly positive for firms located in districts that eventually experience foreign bank entry [Table 3, Column (i)] nor among firms located in districts that do not experience entry [Table 3, Column (ii)]. This finding lends support to our identification assumption that accounting quality in the districts with foreign bank entry is not significantly different from that in other districts prior to foreign bank entry.

[Insert Table 3 here]

4.2.2. Timely loss recognition following foreign bank entry

Based on the first hypothesis, we predict that firms located in the foreign bank entry districts will increase timely loss recognition after foreign bank entry. The OLS estimates of equation (3) are reported in Table 4. Consistent with our hypothesis, the coefficient on the variable of interest, β_7 , is positive and statistically significant at the one percent significance level [Table 4, Column (i)].

[Insert Table 4 here]

This increase in timely loss recognition following foreign bank entry is robust to controlling for other important factors that are known to affect timely loss recognition (e.g., Zhang, 2008; Beatty, Weber, and Yu, 2008). In column (ii), we re-estimate

equation (3) after controlling for size, leverage, and growth, and their interactions with *DCFO*, *CFO*, and *DCFO*CFO*. The coefficient, β_7 , continues to be positive and statistically significant at the one percent significance level, indicating that differential trends in growth or leverage across districts are not driving the results.¹⁶

The increase in accounting quality after foreign bank entry is not only statistically significant, but is also economically significant. In column (i) the incidence of foreign bank entry increases timeliness of loss recognition by about six times from 0.017 to 0.098. For the model with time-varying controls, column (ii), the timeliness increases by about four times from 0.035 to 0.141. Overall, the evidence is consistent with increases in lending market competition driving increases in average accounting quality among firms.

4.2.3 Cross-sectional changes in timely loss recognition

Our second hypothesis predicts that certain firms – those that are informationally opaque, less profitable or more dependent on external financing – are more likely to increase timely loss recognition than their counterparts when changes in the lending environment increase the cost of being opaque. We analyze this possibility by re-estimating equation (3) on subsamples of firms broken down by size, ownership, profitability, and need for external financing. These estimates are reported in Tables 5-8.

Splitting the full sample into two groups based on the median of ROA, we find that the increase in the timely loss recognition is greater, on average, among less profitable firms. This is seen in Table 5, where the coefficient on the variable of interest, β_7 , is positive and statistically significant at the one percent level for less profitable firms but not for more profitable firms. This result suggests that less profitable firms

¹⁶ Unless noted otherwise, all subsequent regressions include these additional controls.

disproportionally increased accounting quality after foreign bank entry. This may reflect an attempt by less profitable firms to mitigate the increased importance of agency costs arising from information asymmetries between lenders and borrowers. We also find the coefficient on $DCFO * CFO$ is positive and significant for low profit firms but negative and significant for high profit firms. A possible explanation could be that the agency cost of debt for profitable firms is low, and banks do not demand high quality financial reports for the ex-ante screening or ex-post monitoring of these firms.

[Insert Table 5 here]

Consistent with the argument that smaller firms are more informationally-opaque and that foreign bank entry increases the cost of being opaque, we find the increase in accounting quality is more pronounced among smaller firms. This is shown in Table 6 where the results are reported separately based on firms' size. Timely loss recognition increases among firms with assets below the median sample value [Table 6, Column (ii)], but for firms with assets above the median value, we do not observe any average increase in accounting quality [Table 6, Column (i)].

[Insert Table 6 here]

The increase in accounting quality also appears larger, on average, among private firms. This is seen in Table 7, where we split between public and private firms. While we find a statistically significant increase in timely loss recognition for public firms [Column (i)], the average increase among private firms [Column (ii)] is more than twice as large. This evidence is consistent with the hypothesis that private firms may be more informationally-opaque or dependent on bank financing than public firms.

[Insert Table 7 here]

We next test whether the change in accounting quality varies by a firm's external financing dependence. Following Rajan and Zingales (1998), we assume that industry-level external financing needs are persistent across countries, and we measure external financing dependence at the industry level for Indian firms using data from U.S. firms.¹⁷ We then split the sample into firms with above median external financing dependence, and those with below median dependence. The estimates are reported in Table 8.

While we do not find any difference between high and low external financing dependence firms in the full sample, we do find that private firms with more external dependence increase accounting quality more than private firms with less dependence after foreign bank entry. As seen in columns (i) and (ii), where we report the estimates using the full sample, β_7 is not statistically significant for either high or low dependence firms. When we restrict the sample to private firms, as done in columns (iii) and (iv), we find that high external dependence firms increase timely loss recognition significantly after foreign bank entry but low external financing dependence firms do not. The result is consistent with the hypothesis that increased cost of being opaque is greater among private firms with more dependence on external financing.

[Insert Table 8 here]

Taken together, the results in Tables 5-8 suggest that certain firms -- those that are informationally opaque, less profitable, or more dependent on external funding -- are more likely to increase their accounting quality when lending competition increases.

¹⁷ Since Rajan and Zingales's external financing measure is only available for manufacturing industries, we lose about one third of our observations in these regressions. Rajan and Zingales (1998) measure industry external financing needs using international standard industries classification and data for U.S. public firms from Compustat. Specifically, they calculate the portion of capital expenditure (Item #128) that is not financed by the cash flows generated from business operations ((Item #110) + decrease in inventory (Item #3) + decrease in accounts receivable (Item #2) + increase in accounts payable (Item #70)) and scaled by capital expenditure. See Rajan and Zingales (1998) for more details on how this measure is constructed.

This evidence provides a new perspective to the potential effects of greater financial market competition on lending relationships and the supply of credit to informationally-opaque firms (Berger, Saunders, Scalise, and Udell, 1998; Degryse and Ongena, 2007; Sapienza, 2002; and Zarutskie, 2006). The evidence suggests that firms' opaqueness may not be completely fixed and that firms may actually be able to furnish additional and easily verifiable information to lenders when lending market conditions change. This possible adjustment by firms has been overlooked in the existing theoretical literature that studies the potential effects of greater competition on the lending relationships that firms may rely on (Boot and Thakor, 2000; Petersen and Rajan, 1995).

4.2.4. Timely loss recognition and access to credit

In this section, we test our third hypothesis of whether the increase in timely loss recognition is correlated with firms' access to credit markets. An underlying assumption of the previous analyses is that lenders value timely loss recognition when making lending decisions. Absent this, it would be difficult to understand why firms' timely loss recognition increases after foreign bank entry.

To test this underlying assumption, we analyze whether the increase in timely loss recognition is accompanied by an increase in credit access among firms in districts that experience foreign bank entry. To do this, we first re-estimate equation (3) using only the firm-year observations of firms located in the eight districts that experience foreign bank entry over the sample period. The estimates from using this more restrictive sample, which are reported in column (i) of Table 9, confirm our earlier findings. The increase of timely loss recognition after foreign entry is still positive and statistically significant at the one percent level.

[Insert Table 9 here]

To test whether the increase in accounting quality is associated with better access to credit for firms, we then divide the sample into firms that experience an increase in debt levels after foreign entry and those that do not. This is done based on whether a firms' overall amount of bank borrowings increases or declines following foreign bank entry. If a firm experiences a decline in bank borrowings after foreign bank entry, we include it in the 'debt-reduction' group, otherwise we include it in the 'no debt-reduction' group. In total there are 1,672 firm-year observations that do not experience credit declines, and 7,250 firm-year observations that do. If the increase in accounting quality brings economic benefits to firms by alleviating credit constraints, then we expect that the increase in timely loss recognition to be more pronounced for firms in the 'no debt-reduction' group than firms in the 'debt-reduction' group.

In fact, this is exactly what the evidence appears to indicate. While firms in both subsamples increased their timely loss recognition after foreign bank entry, the increase is more pronounced among firms not experiencing a drop in overall credit. This is seen in Table 9, columns (ii) and (iii), where the coefficient, β_7 , is almost twice the magnitude (0.319 vs. 0.165) for the non-debt reduction subsample as for the debt reduction subsample. The difference in β_7 between the two groups of firms is statistically significant at the one percent level ($t=2.88$). The result suggests more timely loss recognition was associated with better access to credit markets following foreign bank entry and that lenders value timely loss recognition when making lending decisions. The improved accounting quality, however, may not be sufficient for opaque firms to completely avoid the potential adverse outcomes of increased financial competition. As

seen in column (ii), many firms still exhibited a decline in overall bank borrowings following foreign entry despite an average improvement in accounting quality.

4.3. Robustness tests

4.3.1 Selection bias

While there is no evidence in Table 3 that the levels of timely loss recognition looked different across districts in India prior to foreign bank entry, one concern with the above identification strategy is that foreign banks selectively entered districts where levels of timely loss recognition were already trending upward or going to trend upward in the future for reasons unrelated to foreign bank entry. For example, a selection bias might occur if foreign banks choose to locate in regions of India in anticipation of future improvements in accounting quality. If this occurred, the observed correlation between accounting quality and foreign bank entry could be driven by foreign banks' location choice rather than an increase in financial competition.

The observed increases in accounting quality, however, do not appear to be driven by foreign banks' expectations of future accounting changes or some other selection bias. First, accounting standards are set at the national level in India, which makes a foreign bank's choice of location based on expectations about regional changes in accounting quality unlikely. It is also unclear why any changes in accounting regulation would affect firms heterogeneously. Second, our earlier analysis in Table 9 suggests that selection bias is not driving our results. In those estimates, the sample is restricted to only firms located in the eight districts that experience foreign bank entry during the sample time period. In doing this, we exclude the possibility that differential trends between firms located in the districts with foreign bank entry and those that never

experience such entry are driving our earlier findings. As note earlier, foreign bank entry is still positively associated with an increase in timely loss recognition in this restricted sample [Table 9, column (i)]. Third, as shown in Dell'Arricia and Marquez (2004) and Sengupta (2007), foreign banks are more likely to finance profitable domestic borrowers due to their informational disadvantage. If foreign banks' expectations of future accounting changes drive our results, we would expect the increase in timely loss recognition to be more pronounced for profitable firms than for less profitable firms. However, this is in the opposite direction to what we find in Table 5.

4.3.2 Earnings time-series model

In this section, we conduct a sensitivity test by using equation (4) to test our first hypothesis instead. Table 10 reports results of this exercise. Consistent with the results reported in Table 4, the coefficient on the main variable of interest, β_7 , is negative and statistically significant at the 5 percent level [column (i), Table 10] , suggesting that firms increase timely loss recognition after foreign bank entry. The results are also robust to including time-varying controls for firm size, leverage, and growth opportunities, and their interactions with $D\Delta NI_{t-1}$, ΔNI_{t-1} , and $D\Delta NI_{t-1} \times \Delta NI_{t-1}$ as shown in Column (ii).

[Insert Table 10 here]

VI. Conclusion

Overall, we find evidence that firms attempt to reduce their opaqueness following changes in the lending environment that may make such opaqueness more costly to the firm. In particular, we find that the average level of accounting quality, as measured by timely loss recognition, increases for firms located in the vicinity of new foreign banks

following their entry into India. The increases in accounting quality are also concentrated among firms that may have a stronger incentive to alleviate financing constraints by reducing information asymmetries and agency costs of debt. Specifically, we find that smaller, less profitable, and private firms appear to respond to changes in the lending environment the most. Private firms with greater dependence on external financing also appear to respond more than the average firm, and lenders seem to value these changes. Specifically, firms that improve the accounting quality the most were, on average, more likely to experience an increase in their debt level after foreign bank entry.

This evidence provides a new perspective to the potential effects of greater credit market competition on lending relationships and the supply of credit to informationally-opaque firms. Our evidence suggests that firms' inherent opaqueness may not be completely fixed. Instead, firms potentially disadvantaged by the greater lending competition seem to furnish additional, easily verifiable information to lenders to mitigate the adverse impact on their credit access. To the authors' knowledge, this possible adjustment by firms has been overlooked in the existing literature and provides an interesting avenue for future empirical work. The evidence also supports the argument that greater financial competition can increase the cost of being opaque, particularly among small, private, and less profitable firms.

Finally, our evidence suggests the financial market reforms may be another channel through which countries may influence firms' financial reporting. Contrary to changes in regulations regarding disclosure and auditing rules, which directly affect firms' accounting quality, our evidence suggests that an increase in lending market competition may indirectly affect financial reporting by improving firms' incentive to produce higher quality statements.

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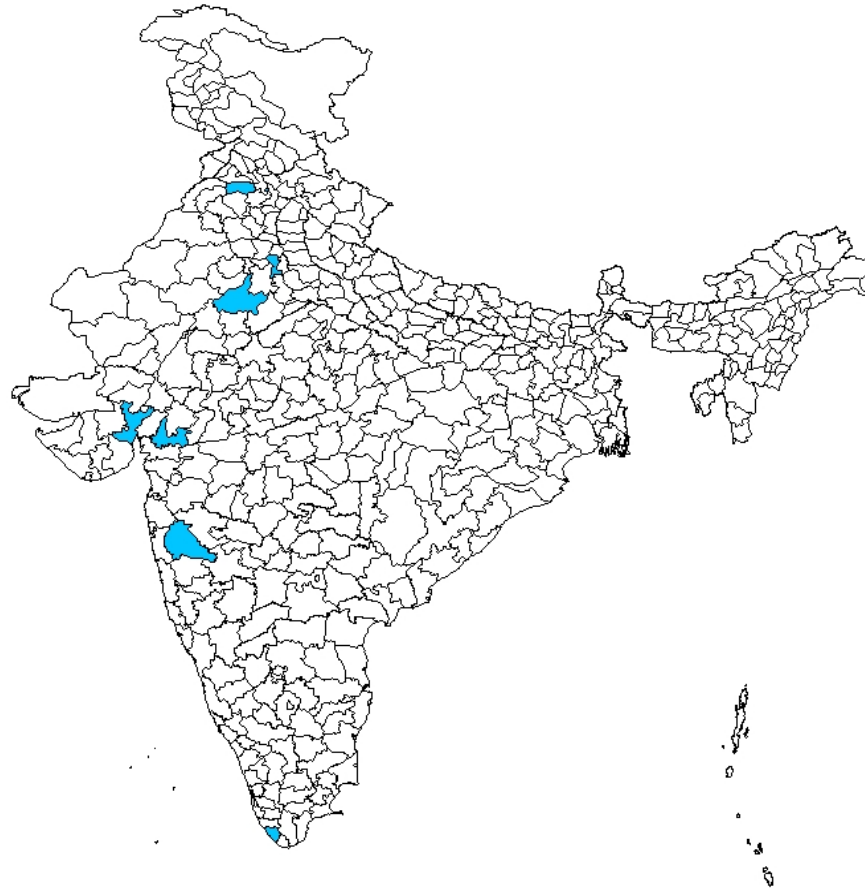


Figure 1 – Indian Districts with First Foreign Bank Entry between 1991-2001

Table 1
Number of Foreign Bank Branches in India by District and Year

District Name	State Name	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<i>Districts with Pre-Existing Foreign Bank Branches</i>														
Amritsar	Punjab	3	3	3	3	3	3	3	3	3	2	1	1	1
Bangalore Urban	Kanrataka	2	2	2	3	3	5	6	7	7	10	11	11	12
Coimbatore	Tamil Nadu	1	1	1	1	1	1	1	1	2	2	2	3	4
Darjiling	West Bengal	1	1	1	1	1	1	1	1	1	1	1	1	1
Delhi	Delhi	22	23	24	24	26	28	28	31	35	36	37	38	37
Ernakulam	Kerala	3	3	3	3	4	4	4	4	4	3	3	3	4
Greater Mumbai	Maharashtra	51	52	52	51	51	55	58	63	65	63	64	64	63
Haora	West Bengal	2	2	2	2	2	2	2	2	2	2	2	2	2
Hyderabad	Andhra Pradesh	1	1	1	1	1	2	2	2	2	4	6	8	8
Kamrup	Assam	1	1	1	1	1	1	1	1	1	1	1	1	1
Kanpur City	Uttar Pradesh	3	3	3	3	3	3	3	3	3	3	3	3	3
Kolkata	West Bengal	43	43	42	42	42	42	42	43	43	34	34	34	34
Kozhikode	Kerala	1	1	1	1	1	1	1	1	1	1			
Chennai	Tamil Nadu	11	11	11	12	12	12	14	15	16	16	16	16	16
Simla	Himachal Pradesh	1	1	1	1	1	1	1	1	1	1	1	1	1
South Goa	Goa	1	1	1	1	1	1	1	1	1	1			
Srinagar	Jammu & Kashmir	1	1	1	1	1	1	1	1	1	1	1	1	1
Vishakhapatnam	Andhra Pradesh	1	1	1	1	1	1	1	1	1	1	1	1	1
<i>Districts Receiving First Foreign Bank</i>														
Thiruvananthapuram	Kerala					1	1	1	1	1	1	1	1	1
Ahmedabad	Gujarat						2	2	3	3	5	5	8	8
Pune	Maharashtra							1	1	4	5	5	5	6
Chandigarh	Chandigarh								1	1	1	1	2	2
Gurgaon	Haryana										1	1	1	2
Vadodara	Gujarat										1	1	2	2
Jaipur	Rajasthan												1	1
Ludhiana	Punjab												1	1
Total Foreign Bank Branches		149	151	151	152	156	167	174	187	198	196	198	209	212

Notes: Number of foreign bank branches calculated using the *Directory of Bank Offices*. Bank numbers represent total branches as of March 31 each year.

Table 2
Summary statistics

This table provides summary statistics for the samples used in the study. Data is obtained from Prowess data set compiled by the Center for Monitoring Indian Economy (CMIE). ACC is accruals computed as $[(\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD) - DEP]$ scaled by total assets, where ΔCA is the change in non-cash current assets, $\Delta Cash$ is the change in cash and bank balance, ΔCL is the change in current liabilities, ΔSTD is the change in short term debt, and DEP is depreciation expense. CFO is operating cash flows (scaled by total assets), measured as the difference between ROA and ACC, where ROA is the profit after tax charges (PAT) scaled by total assets. Debt is measured using total borrowings from banks.

	Mean	Std Dev	Lower Quartile	Median	Upper Quartile
<i>Panel A: Full Sample (N=20,438)</i>					
ROA	-0.004	0.104	-0.013	0.012	0.041
ACC/Assets	-0.005	0.198	-0.074	0.000	0.059
CFO/Assets	0.000	0.186	-0.053	0.000	0.064
Total Assets (10 mn. Rp)	250.142	1281.880	11.448	31.982	107.956
Debt/Assets	0.167	0.330	0.039	0.127	0.225
<i>Panel B: Districts where foreign bank entry occurs (N=3,450)</i>					
ROA	-0.006	0.111	-0.022	0.009	0.045
ACC/Assets	-0.007	0.213	-0.085	0.000	0.061
CFO/Assets	-0.001	0.204	-0.057	0.000	0.076
Total Assets (10 mn. Rp)	276.231	2024.720	8.161	24.974	94.040
Debt/Assets	0.132	0.165	0.002	0.090	0.194
<i>Panel C: Districts with no foreign bank entry (N=16,988)</i>					
ROA	-0.004	0.103	-0.011	0.013	0.041
ACC/Assets	-0.005	0.195	-0.071	0.000	0.058
CFO/Assets	0.000	0.182	-0.053	0.000	0.062
Total Assets (10 mn. Rp)	244.844	1069.780	12.278	33.092	110.748
Debt/Assets	0.174	0.354	0.047	0.133	0.230

Table 3
Timely loss recognition prior to foreign bank entry

This table shows OLS estimate of accruals onto operating cash flows (CFO), an indicator for whether operating cash flows are negative (DCFO), and the interaction of these two variables (DCFO*CFO). Firm and year fixed effects are included along with time-varying controls for size, leverage, and sales growth interacted with each of these variables. Accruals are computed as $[(\Delta CA_t - \Delta Cash_t) - (\Delta CL_t - \Delta STD_t) - DEP_t]$ scaled by total assets, where ΔCA is the change in non-cash current assets, $\Delta Cash$ is the change in cash and bank balance, ΔCL is the change in current liabilities, ΔSTD is the change in short term debt, and DEP is depreciation expense. CFO is operating cash flows (scaled by total assets), measured as the difference between ROA and ACC , where ROA is the profit after tax charges (PAT) scaled by total assets. Standard errors are clustered at the district level.

Dependent Variable = Accruals (ACC)

	Bank Entry District		Non-Bank Entry District	
	Coeff	t-stat	Coeff	t-stat
	(i)		(ii)	
DCFO _t	0.008	0.47	0.014	0.30
CFO _t	-0.992	-18.72	-0.988	-19.11
DCFO _t * CFO _t	-0.047	-1.04	-0.027	0.73
Firm fixed effects		X		X
Year fixed effects		X		X
Additional controls		X		X
Adj-R ² (%)		84.88		80.25
N		657		2070

Table 4
Foreign bank entry and timely loss recognition

This table shows OLS estimate of accruals onto operating cash flows as done in Table 3, but also includes a control for whether a foreign bank is present in the district, BANK, and the interaction of this variable with operating cash flows (CFO), an indicator for negative operating cash flows (DCFO), and the interaction CFO*DCFO. Firm and year fixed effects are included in all specifications, and in column (ii), time-varying controls for size, leverage, and sales growth along with their interaction with CFO, DCFO, and CFO*DCFO are included. Standard errors are clustered at the district level.

Dependent Variable = Accruals (ACC)

	Coeff	t-stat	Coeff	t-stat
	(i)		(ii)	
DCFO _t	-0.008	-3.01	-0.021	-2.71
CFO _t	-0.948	-54.67	-0.943	-20.34
DCFO _t * CFO _t	0.017	0.70	0.035	0.52
BANK _t	0.012	1.26	0.008	0.93
BANK _t * DCFO _t	0.001	0.13	0.004	0.74
BANK _t * CFO _t	-0.026	-1.55	-0.033	-1.75
BANK_t * DCFO_t * CFO_t	0.081	2.92	0.106	3.49
Firm fixed effects		X		X
Year fixed effects		X		X
Additional controls				X
Adj-R ² (%)		77.07		81.72
N		20438		20438

Table 5
Firm profitability, foreign bank entry, and timely loss recognition

This table shows OLS estimate of accruals onto operating cash flows, foreign bank indicators, firm and year fixed effects, and additional time-varying controls as done in Table 4, but also divides the sample between low and high profit firms. The estimates for firms with above median ROA, measured as net profit after tax/assets, are reported in column (i), and estimates for firms with below median ROA are reported in column (ii). Standard errors are clustered at the district level.

Dependent Variable = Accruals (ACC)

	High Profit Firms <i>[ROA > median]</i>		Low Profit Firms <i>[ROA < median]</i>	
	Coeff	t-stat	Coeff	t-stat
	(i)		(ii)	
DCFO _t	0.035	5.16	-0.050	-4.85
CFO _t	-0.770	-9.97	-1.119	-49.45
DCFO _t * CFO _t	-0.226	-2.72	0.235	2.73
BANK _t	0.005	1.38	-0.006	-0.47
BANK _t * DCFO _t	0.001	0.25	0.006	0.73
BANK _t * CFO _t	-0.013	-0.55	-0.029	-1.40
BANK_t * DCFO_t * CFO_t	0.022	0.94	0.120	2.62
Firm fixed effects		X		X
Year fixed effects		X		X
Additional controls		X		X
Adj-R ² (%)		92.36		79.36
N		10223		10215

Table 6
Firm size, foreign bank entry, and timely loss recognition

This table shows OLS estimate of accruals onto operating cash flows, foreign bank indicators, firm and year fixed effects, and additional time-varying controls as done in Table 4, but also divides the sample between small and large firms. The estimates for firms with above median assets are reported in column (i), and estimates for firms with below median assets are reported in column (ii). Standard errors are clustered at the district level.

Dependent Variable = Accruals (ACC)

	Large Firms <i>[Assets > median]</i>		Small Firms <i>[Assets < median]</i>	
	Coeff	t-stat	Coeff	t-stat
	(i)		(ii)	
DCFO _t	0.011	0.90	-0.039	-3.06
CFO _t	-0.942	-24.38	-0.919	-8.93
DCFO _t * CFO _t	-0.023	-0.17	0.147	1.00
BANK _t	0.011	1.43	0.001	0.10
BANK _t * DCFO _t	-0.001	-0.20	0.002	0.25
BANK _t * CFO _t	0.019	0.75	-0.092	-2.04
BANK_t * DCFO_t * CFO_t	-0.052	-1.04	0.126	2.33
Firm fixed effects		X		X
Year fixed effects		X		X
Additional controls		X		X
Adj-R ² (%)		83.56		77.31
N		10223		10215

Table 7
Ownership, foreign bank entry, and timely loss recognition

This table shows OLS estimate of accruals onto operating cash flows, foreign bank indicators, firm and year fixed effects, and additional time-varying controls as done in Table 4, but also divides the sample between public and private firms. The estimates for public firms are reported in column (i), and estimates for private firms are reported in column (ii). Standard errors are clustered at the district level.

Dependent Variable = Accruals (ACC)

	Public Firms		Private Firms	
	Coeff	t-stat	Coeff	t-stat
	(i)		(ii)	
DCFO _t	-0.011	-1.60	-0.004	-0.35
CFO _t	-0.904	-22.22	-0.953	-13.29
DCFO _t * CFO _t	-0.055	-1.00	0.157	1.17
BANK _t	0.013	1.53	-0.001	-0.14
BANK _t * DCFO _t	-0.002	-0.51	0.021	2.05
BANK _t * CFO _t	-0.036	-1.69	-0.068	-1.76
BANK_t * DCFO_t * CFO_t	0.086	2.85	0.212	2.16
Firm fixed effects		X		X
Year fixed effects		X		X
Additional controls		X		X
Adj-R ² (%)		79.01		64.52
N		7070		13368

Table 8
External financing dependence, foreign bank entry, and timely loss recognition

This table shows OLS estimate of accruals onto operating cash flows, foreign bank indicators, firm and year fixed effects, and additional time-varying controls as done in Table 4, but also divides the sample based on their level of external financing needs. Following Rajan and Zingales (1998), we measure external financing dependence at the industry level for Indian firms using data from U.S. firms. If a firm belongs to an industry that is above median in external financing dependence among all the industries in the sample, we classify it as in high external dependence group, otherwise as in low external dependence group. The estimates for the full sample of firms are reported in columns (i) and (ii), and estimates for private firms are reported in columns (iii) and (iv). Standard errors are clustered at the district level.

Dependent Variable = Accruals (ACC)

	Full Sample				Private Firms Only			
	<i>High Dependence</i>		<i>Low Dependence</i>		<i>High Dependence</i>		<i>Low Dependence</i>	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
	(i)		(ii)	(iii)		(iv)		
DCFO _t	0.011	1.10	-0.034	-3.22	0.017	0.83	-0.025	-1.15
CFO _t	-0.907	-11.09	-1.038	-26.61	-0.871	-6.03	-1.053	-20.76
DCFO _t * CFO _t	-0.030	-0.32	0.152	1.62	-0.048	-0.27	0.209	1.18
BANK _t	0.018	2.54	0.016	1.32	0.037	2.88	0.014	0.80
BANK _t * DCFO _t	-0.003	-0.47	-0.007	-0.86	0.006	0.32	0.016	1.01
BANK _t * CFO _t	-0.009	-0.20	-0.052	-2.42	-0.144	-1.88	-0.067	-1.10
BANK_t * DCFO_t * CFO_t	0.067	1.27	0.074	1.45	0.266	3.21	0.180	1.61
Firm fixed effects	X		X		X		X	
Year fixed effects	X		X		X		X	
Additional controls	X		X		X		X	
Adj-R ² (%)	72.68		62.35		70.92		67.72	
N	6641		6761		1864		2412	

Table 9
Credit access and timely loss recognition after foreign bank entry

This table shows OLS estimate of accruals onto operating cash flows, foreign bank indicators, firm and year fixed effects, and additional time-varying controls as done in Table 4, but instead restricts the sample to only include observations from districts that experience foreign bank entry during the sample time period. In column (i), estimates for the full sample of firms are presented. Columns (ii) and (iii) divide the sample between firms that experience a decline in total bank loans during the sample period and those without a decline. The estimates for firms that experience a drop in bank loans are reported in column (ii), and estimates for all other firms are reported in column (iii). Standard errors are clustered at the district level.

Dependent Variable = Accruals (ACC)

	Only Firms in District with Foreign Entry		Firms with Debt Reduction		Firms with no Debt Reduction	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
	(i)		(ii)		(iii)	
DCFO _t	-0.024	-2.85	-0.041	-4.85	-0.024	-1.44
CFO _t	-1.000	-22.24	-0.979	-32.98	-1.042	-18.35
DCFO _t * CFO _t	0.031	0.75	0.008	0.16	0.022	0.25
BANK _t	0.006	0.79	0.008	1.74	0.013	1.49
BANK _t * DCFO _t	0.005	0.98	0.012	1.83	0.011	0.93
BANK _t * CFO _t	-0.016	-0.55	0.002	0.09	0.151	3.02
BANK_t * DCFO_t * CFO_t	0.140	4.38	0.165	4.89	0.319	3.74
Firm fixed effects		X		X		X
Year fixed effects		X		X		X
Additional controls		X		X		X
Adj-R ² (%)		84.24		71.31		78.94
N		8922		7250		1672

Table 10
Robustness test using earnings time-series approach

This table shows OLS estimate of the change in profit after tax over assets (ΔNI_t), onto the lagged change in net income over assets (ΔNI_{t-1}), an indicator for whether the lagged change in net income over assets is negative ($D\Delta NI_{t-1}$), the interaction of these two variables ($\Delta NI_{t-1} * D\Delta NI_{t-1}$), a control for whether a foreign bank is present in the district, $BANK_t$, and the interaction of $BANK_t$ with ΔNI_t , $D\Delta NI_{t-1}$, and $\Delta NI_{t-1} * D\Delta NI_{t-1}$. Firm and year fixed effects are included in all specifications, and in column (ii), time-varying controls for sales, leverage, and sales growth along with their interaction with ΔNI_t , $D\Delta NI_{t-1}$, and $\Delta NI_{t-1} * D\Delta NI_{t-1}$ are included. Standard errors are clustered at the district level.

Dependent Variable = Change in Net Income/Assets (ΔNI_t)

	Coeff t-stat		Coeff t-stat	
	(i)		(ii)	
$D\Delta NI_{t-1}$	-0.015	-7.41	-0.012	-2.24
ΔNI_{t-1}	-0.294	-6.15	-0.291	-2.78
$\Delta NI_{t-1} * D\Delta NI_{t-1}$	-0.193	-2.80	-0.234	-1.48
$BANK_t$	0.002	0.43	0.002	0.43
$BANK_t * D\Delta NI_{t-1}$	-0.008	-2.18	-0.007	-1.81
$BANK_t * \Delta NI_{t-1}$	0.136	1.35	0.144	1.40
$BANK_t * \Delta NI_{t-1} * D\Delta NI_{t-1}$	-0.334	-2.39	-0.307	-1.95
Firm fixed effects		X		X
Year fixed effects		X		X
Additional controls				X
Adj-R ² (%)		6.69		8.61
N		15340		15340

Appendix Table 1
Summary Statistics for Firms Located in Districts
with Previous Foreign Bank Entry

This table provides summary statistics for the observations dropped from the analysis, which are all firms located in districts that already had a foreign bank present prior to 1991. Data is obtained from Prowess data set compiled by the Center for Monitoring Indian Economy (CMIE). ACC is accruals computed as $[(\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD) - DEP]$ scaled by total assets, where ΔCA is the change in non-cash current assets, $\Delta Cash$ is the change in cash and bank balance, ΔCL is the change in current liabilities, ΔSTD is the change in short term debt, and DEP is depreciation expense. CFO is operating cash flows (scaled by total assets), measured as the difference between ROA and ACC, where ROA is the profit after tax charges (PBT) scaled by total assets. Debt is measured using total borrowings from banks.

Observations in districts with previous foreign bank entry (N=36,957)

	Mean	Std Dev	Lower Quartile	Median	Upper Quartile
ROA	0.004	0.113	-0.003	0.016	0.047
ACC/Assets	-0.005	0.212	-0.071	0.000	0.060
CFO/Assets	0.006	0.200	-0.049	0.000	0.075
Total Assets (10 mn. Rp)	553.918	4929.810	10.397	30.852	110.520
Debt/Assets	0.157	0.762	0.005	0.103	0.207
