

Why Do Banks Hide Losses?*

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Abstract

Despite plenty of anecdotal evidence of hidden losses in banks, there is no systematic study analyzing the economic drivers of this behavior: we simply do not get to observe what banks are hiding unless they are caught. Using a regulatory change in India that forced all commercial banks to reveal the extent of hidden losses, we uncover two key economic forces behind this behavior: lack of close supervision by the shareholders and high-powered managerial incentive contracts. Specifically, banks with higher shareholding by distant and passive Foreign Institutional Investors (FIIs) hide more and these effects become especially strong for banks where CEOs get highly compensated for reported profits. Our findings caution against using high-powered compensation contracts linked to observable performance measures as a substitute for diluted monitoring: instead of solving the agency problem, it can result in perverse misreporting incentives.

Keywords: underreporting, monitoring, incentives

JEL Classification: G21, G28

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1 Introduction

Intermediation comes with opacity. Banks specialize in making loans to opaque borrowers, and consequently, their activities become nontransparent to outsiders. Therefore, truthful reporting of banks' profitability and riskiness is vital for almost all banking regulations such as capital requirements, deposit insurance premiums, and bailout assistance, to name a few. Market discipline too becomes ineffective if banks' reported profits and risks deviate from their actual values.¹ Hence a careful examination of the economic drivers of truthful reporting is of utmost importance to the banking literature. Unfortunately, there is very limited empirical evidence on this important issue: we simply do not get to observe what banks are hiding.

While we do get to see sporadic episodes of misreporting of profits and bad loans when banks are caught by the regulators, it is rare to find systematic data on underreporting of losses by the entire banking sector of an economy.² Our paper exploits an unexpected event in the Indian banking sector, where a policy change by the central bank of India (the Reserve Bank of India, or RBI in the rest of the paper) in 2015 mandated all banks to come clean on the extent of bad loans they had been hiding in their financial reports. After a sector-wide supervisory audit, banks were now required to report both the extent of underreporting of non-performing loans (NPLs), and consequently the overreporting of profits due to inadequate provisioning against the hidden losses.³ The economic magnitude of this shock was large: collectively banks had reported profits of over \$9 billion during 2016 and 2017 before accounting for the hidden losses. Once these losses were accounted for, as

¹Pillar 3 of the Basel Committee on Banking Supervision is exclusively focused on this issue: "Pillar 3 of the Basel Framework lays out a comprehensive set of public disclosure requirements that seek to provide market participants with sufficient information to assess an internationally active bank's material risks and capital adequacy."

²For example, Wells Fargo hid \$1.2 billion of bad loans before the housing crash of 2008-09 to qualify for the FHA insurance. Regions Bank misclassified \$164 millions of losses in 2009, which was uncovered by the SEC in 2014.

³We use NPLs (non-performing loans) and NPAs (non-performing assets) interchangeably in the paper to refer to corporate loans that were in default since the RBI's documents use the term NPAs for these loans.

per the RBI's new disclosure policy, profits dropped to less than half at about \$4 billion.

The unexpected revelation of these losses that have been building up due to decisions taken in the past by the bankers provides us with an unparalleled opportunity to study the drivers of loss hiding behavior, which in turn allows us to draw some broader conclusions about the banking sector beyond the specific settings of India. Our setting is particularly attractive in teasing out economic drivers of misreporting from the bank's investment decisions since much of the bad loans were made before the regulatory change. Specifically, the regulator inspected the books of banks and uncovered instances of hidden losses for loans that were typically made years ago. Banks used various methods to hide losses such as changing the terms and conditions of loans made to a defaulting borrower to make it a "performing loan", extending new loans to pay for the old loans of borrowers close to default, and simply delaying the recognition of losses. RBI's supervisory audit uncovered these losses by inspecting the internal books of banks, comparing the loss recognition of the same borrower across banks, and evaluating the borrower's financial conditions based on public information.⁴ Overall, using a standard methodology, the process ended up with a fairly detailed assessment of the extent of loan losses banks were hiding.

What could motivate a bank to hide its losses? Theoretical literature and institutional details provide two non-mutually exclusive motivations, one driven by shareholder-regulator conflict and the other by manager-shareholder conflict. By hiding their loan losses, banks' reported-profits become higher than the true profits and the reported level of risk lower than the true risk.⁵ Together they can lower the bank's regulatory capital requirement, giving rise to the shareholder-regulator conflict. Such behavior is likely to be more prevalent when banks

⁴For example, the former Governor of the RBI, Prof. Raghuram Rajan states in his report to India's parliament: "Banks were simply not recognizing bad loans. They were not following uniform procedures – a loan that was non-performing in one bank was shown as performing in others. They were not making adequate provisions for loans that had stayed NPA for a long time. We proceeded to ensure in our bank inspections in 2015 that every bank followed the same norms on every stressed loan. We especially looked for signs of ever-greening. A dedicated team of supervisors ensured that the Asset Quality Review (AQR), completed in October 2015 and subsequently shared with banks, was fair and conducted without favor."

⁵Specifically, lower levels of non-performing loans mean lower loan loss provisioning, and hence higher profits.

have lower equity capital or when they face a lower level of supervision from the regulators.

Additionally, managers can gain from the perception of better performance either directly through higher compensation or indirectly through a better labor market reputation. Thus managers are more likely to hide losses if their compensation depends on short-term reported performance, even if it destroys long-term value for the shareholders. Managerial myopia has been analyzed extensively in the literature (see e.g., Narayanan (1985), Stein (1989) and Von Thadden (1995)). Rajan (1994) develops a model in which short-sighted bank managers try to change the market’s perception of true performance by inflating earnings or concealing losses, for example by continuing to lend to defaulters. In fact, Rajan (1994) emphasizes this agency problem can arise ‘even if the bank is well capitalized’. This line of work suggests the importance of shareholder-manager conflicts in explaining the hiding behavior.

We measure shareholder-manager conflicts by the nature and composition of the shareholders of the bank. Our proxies are motivated by the basic idea that shareholders are less likely to monitor when they are least informed about the true quality of a bank’s lending portfolio, and when they are likely to reward the managers heavily for reported performance measures. The fraction of shares held by the foreign institutional shareholders (FIIs) provides a meaningful measure of this construct in our setting. These investors are likely to have less information about the quality of loan books compared to local investors such as domestic institutions and promoters. Some of these local investors, for example, have close ties with the borrowers of the bank through cross-holdings and other independent business relationships.

Distance as a metric of information asymmetry has been well studied in the broader banking literature (e.g., Stein (2002) and Petersen and Rajan (2002)). Distant monitors are more likely to rely on hard information such as reported NPL numbers, providing incentives and opportunities to the managers for hiding losses. Brennan and Cao (1997) show theoretically and empirically that FII portfolios are more responsive to public signals of information relative to their domestic counterparts.⁶

⁶A number of papers have documented evidence of information disadvantage of foreign investors compared

The FIIs’ greater reliance on public information creates two reinforcing effects on manager’s misreporting incentives: (a) they are less likely to be caught, and (b) their stock price, and hence compensation, is likely to be high with better publicly reported performance. Thus the potential punishment from misreporting comes down, whereas potential reward goes up. As a result, we expect increased hiding for banks with higher FII shareholding. This narrative, however, is not obvious. FIIs can bring in their superior governance technology to put pressure on underperforming managers, and improve governance in the domestic firm. Aggarwal, Erel, Ferreira, and Matos (2011) and Bena, Ferreira, Matos, and Pires (2017), for example, provide evidence that higher FII ownership boosts investment and governance of non-financial firms. Our empirical analysis is therefore of independent interest as well: whether the FIIs improve the disclosure practices of their portfolio banks in emerging markets or make it worse.⁷

While the FII shareholding is our key proxy for shareholder monitoring, we also analyze the effect of concentrated shareholdings and board monitoring on the hiding behavior as in the earlier literature on corporate governance. For board specific monitoring we use standard proxies from the literature such as the size of the board and the fraction of independent directors (e.g., see Adams and Mehran (2012)).

Our main sample covers all commercial banks in India for fiscal years 2016 and 2017, i.e., two years immediately after the new disclosure requirement consequent to the RBI’s audit of the non-performing assets (NPAs) of commercial banks in 2015.⁸ We find that one standard deviation increase in the FII’s shareholding is related to a statistically significant 27.2% higher underreporting of the bank’s gross NPLs. On the other hand, there is no meaningful relationship between the domestic financial institutions (DIIs) shareholdings and

to local investors (see e.g., Kang and Stulz (1997))

⁷Boot and Macey (2003) highlight a fundamental trade-off inherent in any corporate governance mechanism: proximity versus objectivity. Proximity increases the information of the monitors, but proximate monitors can become too close to the management, losing the objectivity required for monitoring.

⁸Most of the hidden losses became public during these two years right after the policy change, providing us with a clean setting to tease out the hiding behavior before the banks could change their lending or reporting decisions in response to the new regulation itself.

hidden losses. Thus, our results are not coming from institutional shareholding; rather, it is specific to distant, foreign shareholding, who are likely to possess relatively little information and therefore incur higher monitoring costs. Lending support to the monitoring based interpretation of our results, we show that hidden losses are higher when the FII shareholding is more dispersed. We find no meaningful relation between board-level variables such as the independence of the board and the hiding behavior. The result is broadly consistent with the findings of Adams and Mehran (2012) in the context of the governance of the U.S. banks. Further, the effect of FII shareholding remains significant even after controlling for board level governance measures.

The FII shareholding is not randomly assigned, generating a genuine endogeneity concern with our study. What could be the alternative explanations behind our finding that links the FIIs to underreporting, if it is not our preferred monitoring-based explanation? A potential threat to our identification could be the hidden ability of the managers of the banks with high FII shareholdings. If banks with higher FII shareholdings have managers with poor ability to recognize losses in time, then our estimates may end up picking up that effect. We find this interpretation less plausible because the hidden losses arose mainly from the failure to recognize obvious cases of default, for example by rolling over the debt of a defaulting borrower.

To address the endogeneity concerns more directly and identify the monitoring channel, we make use of the fact that FIIs' investment in emerging markets is driven primarily by the inclusion (and weight) of a particular stock in popular Emerging Market Indices such as MSCI. Certain Indian banks are included in MSCI's India index, while others are not. We use the MSCI index inclusion as an instrument for the FII shareholding to identify the effect of the distant shareholders on the underreporting behavior. MSCI states that the inclusion of a stock in its index is mainly determined by factors such as liquidity, diversification benefits, and the market capitalization of the firm. We find a strong effect of FII shareholding on the underreporting of losses in the IV model using the MSCI index inclusion as the instrument

while controlling for the index inclusion factors in the regression model.⁹ Similar to Appel et al. (2016), our exclusion restriction relies on the idea that controlling for these factors, the inclusion of a bank in the index does not affect the underreporting except through its impact on the FII shareholdings. Further, we show that our instrument does not explain variation in the holdings of the domestic financial institutions (DIIs), proving further support to our claim that the inclusion in the MSCI index drives variation in FII's shareholding and not other institutional shareholding.

In the next set of tests, we establish a link between managerial incentives and misreporting in years leading up to the RBI's audit. In the first test, we investigate the effect of FII shareholding on the hiding behavior across the public-sector (i.e., majority government-owned) and the private-sector (i.e., not government-owned) banks of the country.¹⁰ Private bank managers earn significantly higher compensation and a large part of their compensation is performance-based.¹¹ Thus the private-public divide provides us with a natural variation in the extent of benefits managers derive from inflated short-term performance metrics. We show that private banks have higher misreporting, but it is the interaction of private banks with FII shareholding that provides the most meaningful variation in the hiding behavior. Within the set of private banks, one standard deviation higher FII shareholding is associated with about 39.4% higher misreporting. Within public sector banks, FII shareholding has no impact on misreporting.

Private and public banks also differ on dimensions other than compensation contracts. For

⁹There is a large literature on the use of index inclusion as an instrument for active versus passive monitoring. A similar instrument is used in Aggarwal et al. (2011) and Bena et al. (2017). A closely related literature uses the inclusion of companies in the Russell 1000 index as an instrument (Boone and White, 2015; Appel, Gormley, and Keim, 2016; Schmidt and Fahlenbrach, 2017). This literature provides interesting insights into the nature and extent of governance exerted by passive funds. While our focus is different, our study contributes to that literature by bringing in a new dimension to passive investing in the international context: their reliance on hard information to reward managers who are distant.

¹⁰The majority-owner of a public-sector bank is the government of India, whereas the private-sector banks are primarily owned by non-government entities. Both types of banks in our sample are publicly traded and have FII investments in them.

¹¹For example in 2015 the CEO of the largest private-sector bank, the ICICI Bank, earned 24.6 times higher compensation than the CEO of the largest public sector bank, namely the State Bank of India (SBI).

example, the public-sector banks are likely to have lower shareholder-regulator conflict. As we show, it is the interaction of FII shareholding and the private-bank status that drives our result. Hence the result is unlikely due to shareholder-regulator conflict. A common narrative is that private sector banks are able to attract better talent and are more efficient with their screening and monitoring technology. Our results show that the perceived superiority of these banks does not translate into better reporting. Our results are consistent with Subrahmanyam (2005) that talented managers may be good at both running the firm and committing fraud that goes undetected.

We directly assess the effect of managerial compensation on misreporting behavior in our next test by examining the effect of compensation policies across banks. Two results stand out. When CEOs' compensation is high, firms underreport more. Second, the effect of compensation on underreporting is considerably higher for banks with large FII shareholding. Overall these results paint a clear picture: diluted monitoring from distant shareholders combined with high compensation results in higher hiding.

To better understand the economic drivers of this behavior, we next investigate how banks responded to increased shareholdings by the FIIs in the years leading up to the regulation change. Using the panel of all bank-year observations from 2005 to 2015 and employing bank and year fixed-effects specification, we show that bank's reported profits go up and NPLs come down as the fraction of FII shareholdings goes up.¹² During the same time period, we show that CEO's compensation becomes more tightly linked to the reported NPL ratios for banks with higher FII shareholdings. This result is consistent with the idea that as the distance between the principal and agent increases, the principal is more likely to lean on hard pieces of information for decision making (see Stein (2002)). The FIIs rely on

¹²Banks often disclose these measures as the key drivers of compensation for their top management. For example, while discussing the measures used to set compensation policy, ICICI bank in its annual report for 2017-18 states that: "The main performance metrics include profits, loan growth, deposit growth, risk metrics (such as quality of assets), compliance with regulatory norms, refinement of risk management processes and customer service. The specific metrics and weightages for various metrics vary with the role and level of the individual."

reported profitability and NPLs to evaluate the local managers, and the managers respond by providing better-than-actual NPLs.

These results paint a broad picture: performance-sensitive contracts may not be a complete substitute for the lack of monitoring. In fact, without proper monitoring, linking compensation to observable performance metrics can have a deleterious impact on the agent's behavior. U.S. institutions are known to deploy high powered performance-based incentive contracts in their firms (see Hartzell and Starks (2003)). Our study shows that the effectiveness of such a practice crucially depends on the information set of these institutions.

Our paper provides a first look at how shareholder monitoring and managerial incentives affect the hiding decision using precise data on hidden loans. We build on various streams of literature in finance and accounting. First, our work connects to the literature on the measurement and monitoring of risks in banks (e.g., see Behn, Haselmann, and Vig (2016), Begley, Purnanandam, and Zheng (2017), Bushman and Williams (2015) and Plosser and Santos (2014)). Second, our paper relates to the literature on shareholder monitoring (e.g., see the survey in Edmans and Holderness (2017)) and incentives to commit fraud. Using accounting restatements, Burns and Kedia (2006) show that option-based managerial incentives are positively related to incentives to misreport. Jayaraman and Milbourn (2015) underscore the importance of audit quality in this link. Povel, Singh, and Winton (2007) develop a theoretical model linking monitoring costs and misreporting incentives.

We also contribute to the literature on the effect of investments by institutional investors, specifically foreign shareholders, on domestic firms (see e.g., Gillan and Starks (2007), Bena et al. (2017)). Our paper highlights a previously undocumented cost of FII investment: their reliance on (observable) performance-sensitive compensation contracts can facilitate untruthful reporting by the domestic firms.

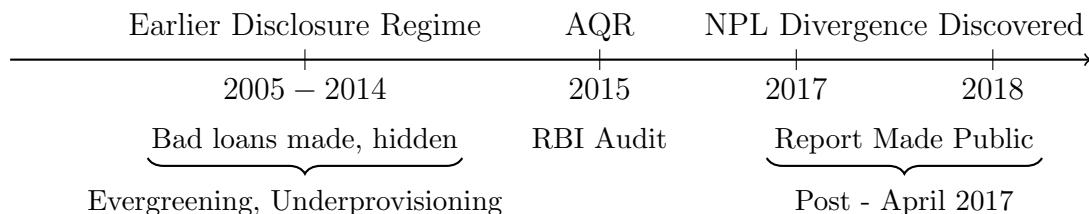
Finally, our paper relates to the literature on the detection of zombie lending and its impact on the real economy (e.g., see Caballero, Hoshi, and Kashyap (2008)). Specifically

in the Indian context, Kulkarni, Ritadhi, Vij, and Waldock (2019) study the build-up of credit to insolvent firms by Indian banks and its implication for the allocation of credit in the economy. Chari, Jain, and Kulkarni (2019) investigate the role of regulatory forbearance on the buildup of zombie loans in India. Blattner, Farinha, and Rebelo (2019) develop a measure of zombie lending for Portuguese banks to study the impact of a weak banking sector on productivity.

2 Indian Banking Sector and the Policy Change

The Indian banking sector is characterized by very large nation-wide banks that are either a private-sector bank or a public-sector one. In the public-sector banks, the Government of India is the majority, but not the only, shareholder. The private-sector banks have practically no direct government stakes. After the liberalization of the Indian economy in 1991, several regulations that earlier restricted shareholdings by foreign investors were relaxed. Over time, Foreign Institutional Investors (FIIs) have taken a considerable stake in Indian banks, both in the private-sector banks and the public-sector banks. Other prominent shareholder groups are “promoters”, “domestic financial institutions”, “corporate bodies”, and “individuals”. Promoters are either the Government of India for public sector banks or individuals for private sector banks. We provide descriptive statistics on the fraction of shares held by each of these groups later in the paper. Figure A2 provides an example of the shareholding pattern for Yes Bank, a bank in our sample.

The largest public sector bank, the State Bank of India (SBI), has an asset base of 328 billion dollars as of 2015, whereas two of the largest private sector banks ICICI Bank and HDFC Bank have assets of 104 and 94 billion dollars, respectively on the same date. All three banks, as well as most other banks in the country, have branch networks across the country. Some banks specialize in regional markets, but even these banks are generally very large.



The issue of non-performing loans has been an important issue for market participants and regulators in India for a very long time. Chari et al. (2019) provide an excellent overview of the evolution of non-performing loans in India starting from the mid-2000s. In 2015, the then Governor of RBI, Prof. Raguram Rajan, took several steps to deal with the problem of rising NPLs in Indian banks. One of the key steps was to recognize the extent of NPLs that banks truly had. This line of thinking motivated the first Asset Quality Review (AQR) by the RBI in 2015, the beginning of the process for detection and better reporting of NPLs in the country.

In its monetary policy statement dated September 29, 2015, RBI explicitly discussed the issue of underreporting of NPLs and provisions: “As a part of its supervisory process, the Reserve Bank assesses compliance by banks with extant prudential norms on income recognition, asset classification and provisioning (IRACP). There have been divergences between banks and the supervisor as regards asset classification and provisioning. In order to bring in greater transparency, better discipline with respect to compliance with IRACP norms as well as to involve other stakeholders, the Reserve Bank will mandate disclosures in the notes to accounts to the financial statements of banks where such divergences exceed a specified threshold. Instructions in this regard are being issued separately.”

RBI mandated that banks report the divergence in their publicly reported NPLs and NPLs assessed by RBI as per its supervisory audit in a specified format if the extent of underreporting exceeds some threshold. As per the RBI’s circular “In order to ensure greater transparency and promote better discipline with respect to compliance with IRACP norms, it has been decided that banks shall make suitable disclosures as per Annex, wherever either (a)

the additional provisioning requirements assessed by RBI exceed 15 percent of the published net profits after tax for the reference period or (b) the additional Gross NPAs identified by RBI exceed 15 percent of the published incremental Gross NPAs for the reference period, or both.” Thus banks that exceeded the 15% divergence level, as described above, were required to disclose the extent of divergence, called the NPA or NPL divergence, in their annual statements/financial results. RBI provided a very precise format to disclose these losses and we present one such example from Yes Bank in Appendix A. We obtain our data from these public disclosures.

Banks began to report the extent of hidden losses starting from fiscal year 2015-16, and most of the underreporting were uncovered in the first two years after the new policy, i.e., in 2015-16 and 2016-17. We collect data from the financial statements of all Indian commercial banks for both 2015-16 and 2016-17 fiscal years for our main tests. In additional analyses, we also include the divergence data from 2017-18 and 2018-19. As expected, the level of divergence came down significantly in these two years since the banks had enough time to adapt to the new regime: the regulatory shock uncovered a large number of hidden losses soon after the RBI audit, providing us with an excellent setting to analyze their economic drivers in the immediate aftermath of the policy change.

While we do not have access to the precise data and methodology used by RBI to detect the divergence, some general principles are well known. In general, a loan is divergent if it is misclassified according to RBI IRACP norms for non-performing loans¹³. In its initial AQR conducted in 2015, the RBI focused on issues such restructured loans where original terms of the loans were modified to avoid classifying a bank as an NPLs. For example, a bank can delay classifying a loan as a bad loan by continuing to lending to a defaulting borrower, i.e., by ever-greening the loan, sometimes called the ‘extend and pretend’ policy.¹⁴ Second,

¹³The full list of IRACP norms are available at https://www.rbi.org.in/Scripts/BS_ViewMasCirculardetails.aspx?id=9908

¹⁴As per RBI’s Deputy Governor Mr. N.S. Vishwanathan’s address to the industry practitioners on August 30, 2016: “During the five years to March 2015, banks have resorted to restructuring of loans in many cases to postpone recognition of non-performance, or what we now call ‘extend and pretend’, rather than using it

if a loan to the same corporate borrower was classified as NPL by one bank, other banks with similar loan terms were required to classify their loans as NPLs as well. Overall, the entire effort was geared towards cleaning up the accounts of India's bank, a policy initiative undertaken by the then governor of the bank.

While the issue of the build-up of hidden loans was debated for some time (see Chari et al. (2019)), it was not clear whether the RBI or the government will indeed conduct such an audit. The consequences of such misreporting for the top managers of the banks were also not clear. For example, no CEO of the top bank of the country was punished for the suspicion of hiding losses before the RBI's audit. Market observers attributed the changes in the RBI's policy largely to the change in its top leadership. Even from the market's perspective, the extent of NPL divergence was not completely anticipated. Figure 2 presents the average return around a window of 5 days of the announcement of NPL divergence by the banks in the first year of reporting. The divergent banks had a negative abnormal return of -6%, compared to +1% return for banks that did not report any divergence. In sum, the regime change in the RBI's audit policy provides us with a setting where the lending decisions were made under the assumption of partial or no knowledge of the detection of hidden losses and the economic consequences that followed.

3 Data and Sample

We collect data from three primary sources: annual reports of banks during 2016 and 2017, RBI's statistics on Indian Banks, and Prowess database. Data on misreporting comes from the annual reports. As discussed earlier banks were required to report both the extent of hidden NPLs and the resulting underreporting of loan loss provisions as a note to the shareholders if such losses exceeded a certain threshold. Data on financial conditions of banks

as a tool to preserve the economic value of the units as intended. As a result, until 2016 the restructured assets constituted more than 50% of the stressed assets of all scheduled commercial banks masking the actual extent of deterioration of the loan portfolios...."

and shareholding patterns come from RBI and Prowess.

Our sample covers all scheduled commercial banks of India that were required to report NPA divergence in their annual report. This covers practically the entire banking sector in the country. The only significant group that we miss from this sample is foreign banks operating in India. This group has only a minor market share in the country. Our main test linking NPL underreporting to FII shareholding is based on fiscal year 2016 and 2017 data. In total, we have 73 bank-year observations covering 37 distinct banks. Of this sample, 53 observations are for bank-years that reported NPA divergence, i.e., for these banks the extent of underreporting exceeded the 15% threshold criteria in the year. In our regression analysis, we use both an ordinary linear regression analysis and Tobit model to tease out the economic drivers of hiding.

It is worth emphasizing that the relatively smaller sample size presents some challenges in terms of the power of the tests. However, since we have the entire population of banks in India, our analysis does not have any sample selection concerns. In addition to the NPL divergence test, we also investigate the relationship between FII shareholding and the firm's performance over 2005-2015 period to understand the dynamics of firm behavior and remuneration in response to FII shareholding. These results are based on the sample of all private and public sector banks during this period, with a panel of 377 bank-year observations.

3.1 Descriptive Statistics

Table 1 provides summary statistics of key variables used in our study broken down into two periods: (i) 2016 & 2017, i.e., the main sample for our tests on NPL hiding (Panel A), and (ii) 2005-2015 period based on which we investigate firm performance and CEO remuneration in periods leading up to the policy change on disclosure of the NPLs (Panel B).

As shown in Panel A, the extent of underreporting has been quite large. Out of 37 banks in the sample, 32 reported divergence at least once. Thus 86% of banks exceeded the 15%

threshold for reporting requirements at least in one of these two years. Of the reporters, the average firms underreported 23% of its NPL and 18.5% of provisions. Figure 1 demonstrates the magnitude of underreporting on a yearly basis.

To put it in the aggregate context, during these two years banks in our sample reported aggregate profits of 9.2 billion dollars before the detection of underreporting. Once we account for the underreporting, 58% of these reported profits disappear due to additional loan loss provisions the banks were required to make on account of underreporting. In terms of aggregate NPLs, the banking sector as a whole underreported (gross) NPL of 20 billion dollars which is 172% of the reported incremental (gross) NPL during these two years. Thus our setting is economically very meaningful. Indeed, there has been an intense debate in the regulatory as well as the investment community in India about these NPL divergences and its implication for financial stability and bank lending.

Contrasting the profitability numbers in Panel A and B, it is clear that the banking sector reported much better performance during 2005-2015 period, and was under stress in 2016-2017 even before accounting for the hidden losses. Indian economy grew at an average annual growth rate of 7.73% during 2005-2015, and the banking sector grew with it. However, as pointed out earlier banks made significant amounts of bad loans during this period that started to reflect in their balance sheet in the later parts of this period.

Panel A also provides the summary statistics of our key explanatory variables. Institutional investors – domestic and foreign combined – hold about 32% of shares in banks, with FIIs holding about half (16%). Table 2 provides a more detailed breakdown of the shareholding structure across different classes of shareholders. Broadly they can be divided into three groups: promoters, institutions, and non-institutions. Promoters are the initial sponsors of these banks. For public sector banks, it is the government of India, whereas for private banks typically the promoter is an individual or a family. The median number for promoter holding is 61% because the government holds the majority stake in the public sector banks. More

important for us, there is a large cross-sectional variation, both within private and public banks, along these dimensions. FII shareholding ranges from 3.43% at the 25th percentile to 24.5% at the 75th percentiles. We exploit these variations in our tests.

4 Results

Our primary test uses an ordinary linear regression model for the subset of banks that disclose positive values of NPL divergence. The dependent variable is the log ratio of actual NPL to the reported NPL at the bank-year level. Since banks were required to disclose the amount of NPL divergence only if it exceeded a certain threshold, we also complement the linear regression model with a Tobit model.¹⁵ As discussed earlier, the value of the reporting threshold was bank-specific, 15% of incremental NPL of the bank during the year. Hence we need to transform these variables to ensure that the left censoring occurs at the same point for every bank. We do so by transforming the NPL numbers in the following manner: (Actual NPL - Reporting Threshold)/Reported NPL. For a bank that falls just at the reporting threshold, the reported NPL equals the difference between the actual NPL and the threshold value, i.e., the transformed value for such a bank equals one.¹⁶ We then take the log transform of this variable to construct our dependent variable for the Tobit regression. With the log transformed values, the left censoring occurs at zero for each bank. We provide an example of this construction method in Appendix B.

We first present the extent of underreporting by banks that exceeded the reporting threshold across different quintiles of FII shareholdings, measured at the end of 2015 fiscal year. The results are presented in Figure 3. A remarkable pattern emerges from this plot.

¹⁵We also present the estimation results from an alternative econometric approach: interval regression in Appendix A3.

¹⁶The disclosure requirement has two criteria. We construct the censored variable based only on one of the two criteria, the primary one: i.e., the divergence is above 15% of incremental NPA. The other criteria, namely the divergence exceeding 15% of net profits, complicates the economic interpretation because some banks have negative profits. This choice has only a minor impact on our analysis and inference.

For the first three quintiles of FII shareholding, which works out to shareholdings of less than 9.48%, the extent of underreporting is much lower compared to the top two quintiles. The positive relationship between FII shareholding and underreporting is almost monotonic. Compared to the lowest FII shareholding quintile, banks in the highest quintile have 58% higher underreporting.

Table 3 presents the regression results that account for the size and capital position of the bank, as well as an indicator variable that captures the year fixed effect, i.e., whether the underreporting is from fiscal year 2016 or 2017¹⁷. Panel A presents the OLS regression results for the set of banks that exceeded the 15% threshold. As seen in Column (1), increased FII shareholding is associated with significantly higher hiding of losses. For the ease of exposition, we standardize all explanatory variables by subtracting the respective mean and dividing the difference by the standard deviation of the variable¹⁸. Thus all estimates represent the effect of one s.d. change in X-variable on the Y-variable. One s.d. change in FII shareholding is associated with 27.2% higher underreporting. There is no meaningful relationship between the capital position of the bank, our key proxy for the shareholder-regulator conflict, and the hiding behavior.

Columns (2)-(3) show that it is only the FII shareholding, and not the domestic institutional shareholding, that is driving our results. For example, compared to Column (1) that uses FII shareholding as the main explanatory variable, in Column (2) that instead uses DII shareholding, the R^2 of the model drops from 46% to 21%; while the coefficient is highly significant for FII, the estimate on DII is statistically zero. Hence our results point to a special effect of foreign investors, and not simply institutional investors.

Panel B uses the entire sample, including banks that were below the underreporting threshold, in a Tobit framework¹⁹. One s.d. higher FII shareholding is associated with

¹⁷We measure FII shareholding and other explanatory variables in 2015, before the underreporting was disclosed.

¹⁸The only exception is indicator explanatory variables.

¹⁹Results using Interval Regression are similar and reported in Appendix D.

about 35.6% higher underreporting, and the result is significant at 5% level. The economic magnitude is in line with the OLS estimates discussed earlier.

In our next test, we investigate whether the concentration of FII shareholding matters for hidden losses. Concentrated holdings by shareholders are likely to increase the benefits of monitoring. When there are fewer FII shareholders for the same level of total shareholdings, the monitoring is likely to be higher. In order to capture this effect, we create a variable $\frac{1}{No. FII}$ that measures the inverse of the number of FIIs present in a bank, i.e., a measure of concentrated shareholding. We interact this variable with total FII shareholding to assess whether the positive effect of FII shareholding on the hiding behavior changes when the shareholders are less dispersed.

Results are provided in Table 4. We find a negative and significant coefficient on the interaction of FII shareholding and our concentration measure ($\frac{1}{No. FII}$). Further, the independent effect of total FII shareholding is even higher compared in this model that includes the interaction term: one s.d. increase in FII shareholding is associated with 35% higher hiding in this model compared to the corresponding estimate of 27% in the model that does not control for the interaction effect. Overall, these results show that banks hide more when their shareholders are distant and dispersed. As shown in Panel B of the Table, the Tobit estimates are even stronger.

Other monitoring devices: In our next set of tests, we focus on board monitoring using a number of proxies for this variable based on prior literature. Results are provided in Table 5. We find that board size, the duality of CEO and the chairman role, and the fraction of board outsiders do not significantly explain variation in bank hiding. We do find some evidence of regulatory monitoring on the board: banks with RBI members on the board are associated with 28.3% less underreporting. In Column (6), we include all board monitoring variables in one specification. Only RBI membership is significantly associated with bank hiding at the 5% level. We introduce FII shareholding to the model in Column (7), and its

coefficient is still positive, significant, and very close in magnitude to the original estimate. A clear pattern emerges from these findings: FII shareholding is one of the key drivers of loss hiding behavior, with board monitoring having little-to-no impact.

4.1 Instrumental Variable Regressions

A key concern with our interpretation that lack of monitoring by FIIs causes hiding behavior is that it is not the FII's shareholding but some omitted variable that drives both the FII's shareholding and hiding behavior. What could potentially be these omitted variables that explain the variation in FII shareholding and loss hiding at the same time? One natural candidate is the hidden governance characteristics that attract higher FII shareholding and at the same time also incentivize untruthful reporting. As per this alternative, FIIs invest in firms with poor governance characteristics and our estimate simply captures that correlation. This alternative explanation does not seem plausible based on earlier work that shows that FIIs are more likely to invest in firms with better governance on other observable dimensions. Hence the direction of bias should go against our findings. Further, we control for several governance variables such as board size and independence and show that the relation between FII shareholding and underreporting does not get explained by these variables.

However, if banks with higher FII shareholding are simply bad at assessing the extent of NPLs they have, then our results could be due to the hidden ability to understand NPLs. Could our results be driven by this force? We address this more directly by using an interesting driver of FII shareholding in a firm: its inclusion in broadly tracked MSCI index. The MSCI emerging market has a considerable influence on how an FII picks a stock within a country. The index provides weights based on the country, sector, and firms within the sector to provide a well-diversified benchmark to foreign investors. The inclusion is based on a number of factors, the most important of them being the size of the market capitalization, float-adjusted market capitalization, liquidity (as measured by trade volume), fraction of

shares available to foreign investors (greater than 15%), and minimum trading time. When the index changes the weights of a country or a particular stock in the country, the FII's investments in the company changes too. For example, in May 2019, the MSIC emerging market index increased its weight on Chinese Class A shares, a move that may have resulted in an outflow of almost \$1 billion from the Indian markets as per some analysts.²⁰

Motivated by these features of the index and its impact on FII's shareholding in a firm, we use the inclusion of a bank in the index as an instrument for our IV regression. The instrument, *MSCI*, is equal to 1 if the bank's stock is included in the MSCI India domestic index in May 2015 and 0 otherwise.²¹ The banks in the index at this time were HDFC bank, ICICI Bank, Kotak Bank, Axis Bank, State Bank of India, IndusInd Bank, Yes Bank, and Bank of Baroda. Note that the index includes both private and public sector banks.

The exclusion restriction relies on the assumption that the inclusion in MSCI index is not influenced by omitted variables of concern such as the hidden ability of the managers to understand and account for the true levels of NPLs. This is a plausible assumption since indices such as MSCI are often designed to capture the diversification benefit these stocks provide to an international investor and the fact that change in weight depends on a host of factors including the changes in weight across countries, sectors, and companies. A similar instrument is used in Aggarwal et al. (2011) and Bena et al. (2017). A closely related literature uses the inclusion of companies in the Russell 1000 index as an instrument (Boone and White, 2015; Appel et al., 2016; Schmidt and Fahlenbrach, 2017) for passive investing to understand whether such investments affect firm outcomes. Unlike the Russell index which relies primarily on float-adjusted market capitalization, the MSCI index relies on multiple criteria mentioned above to determine index inclusion. Following Appel et al. (2016), we control for the determinants of index inclusion in our empirical specifications²². Therefore,

²⁰See <https://economictimes.indiatimes.com/markets/stocks/news/msci-rejig-may-lead-to-1-billion-fi-outflow-from-india/articleshow/69321966.cms?from=mdr>

²¹The same set of banks in the index was constant through November 2016

²²Data on the stocks' free float shares to compute float-adjusted market capitalization is taken from Datastream. We define liquidity as the annualized traded value ratio, the liquidity measure used by MSCI.

our identification strategy is similar in spirit to Appel et al. (2016): conditional on the index inclusion criteria, we assume that the MSIC inclusion affects hiding behavior only through its impact on FII's shareholding in the bank.

We provide the IV estimation results in Table 6. Panel A produces the OLS estimates, Panel B Tobit. We document the first stage regression results, the reduced form results, and finally, the second stage results in both panels. We focus on the model specification that includes the index inclusion criteria in addition to our instrument: the indicator variable for index inclusion. As shown in Column (2) of Panel A our instrument is strong in the sense of statistical relevance. Inclusion in MSCI index is associated with 1.31 standard deviations or 18.68% higher holding by the FIIs. The first stage F-statistic for the excluded instrument is about 10 and the R^2 of the model is 82%: we have a strong, relevant instrument. Figure 4 shows the relevance of this instrument graphically by plotting the average FII shareholdings across three groups: banks included in the MSCI index, non-included private banks, and non-included public banks. Clearly, MSCI inclusion strongly affects the extent of FII shareholdings in a bank.

The reduced form estimate linking underreporting to the instrument directly shows that banks that were included in the MSCI index underreported 75.9% higher NPLs. As we mentioned earlier, MSCI index included both private-sector and public-sector banks. These banks collectively underreported significantly higher amounts of NPLs compared to all other banks. In fact, comparing MSCI included banks with the rest of public and private-sector banks, we find that it is the MSCI subsample that underreported the maximum amount of NPLs. MSCI group underreported by 64.6%, compared to 21.6% for the remaining private sector banks and 9.2% for the remaining public sector banks as shown in Figure 5. Column (6)

The first step to compute the annualized traded value ratio is to take the median daily trading value over a month. Next, MSCI takes the monthly traded value ratio by dividing the median daily trading value by the float-adjusted market capitalization at the end of the month. The annualized traded value ratio is the 12 month average of the monthly traded value ratios multiplied by 12. Foreign Room is calculated as % Maximum Foreign Investment - %Existing Foreign Investment. In India, private and public banks have a %Maximum Foreign Investment of 74% and 20%, respectively. We take % FII as % Existing Foreign Investment.

produces the second stage IV estimates: one s.d. higher FII shareholdings is associated with about 57.8% higher underreporting. The effect is statistically significant at 1%. Compared to the corresponding OLS estimate of 27%, IV estimates are slightly higher. IV estimates are also larger after controlling for determinants of index inclusion: market capitalization, float-adjusted market capitalization, liquidity, and foreign room. This is consistent with our earlier argument that active investment by the FIIs target firms that are better at governance, hence the selection bias should go against our findings. When we tease out the variation that comes from passive index based investing, we more likely recover the portion of non-information based investing and our results become slightly stronger in economic terms.

4.2 Private-sector vs. Public-sector Banks

We investigate the effect of private-sector versus public-sector banks with two key motivations. First, we want to investigate if our results are simply driven by the government’s stake in the bank instead of distant monitors. Second, private-sector banks have much stronger incentive based compensation contracts compared to their public-sector counterparts. Hence this test allows us to see whether our results are driven by banks whose managers stand to gain more from underreporting.

Table 7 documents the results. For expositional simplicity, we reproduce the estimates linking FII shareholding and underreporting in Column (1). Column (2) shows that private banks had a much higher level of underreporting, both based on OLS estimates (Panel A) and Tobit estimates (Panel B). Private banks have about 57% higher underreporting conditional on reporting their NPA divergence (Panel A). Notice the model fit of Column (1) versus Column (2). FII shareholding explains larger variation in underreporting (R^2 of 46%) than the private-public divide (R^2 of 34%). The key estimates are contained in Column (4) that includes both these variables – FII and Private – along with their interaction term. In the OLS model, the interaction term is positive and significant, whereas the individual

effects are statistically insignificant. Thus the higher level of underreporting is concentrated within private banks with high FII shareholdings. The interaction term is positive and significant in the Tobit model as well. As expected, there is a high positive correlation between FII and Private (0.8676 correlation coefficient). However, even within the set of private banks as the FII shareholding increased banks underreport more. Thus our results linking FII to underreporting are not simply explained away by the private-public divide. This points to the importance of the shareholder-manager conflict driving the results as opposed to the shareholder-regulator conflict. We explore the second possibility that it is the compensation-based incentives of private sector banks that are driving our result in our next test.

4.3 Compensation

We gather data on the total remuneration of the CEOs of all the banks in our sample. First, we hand collect the names of each bank’s CEO’s over the period 2005-2017. Second, we merge this information with the board of directors data in Prowess, which provides information on total remuneration. We begin our analysis with some univariate results. In Figure 6, we plot the average underreporting by banks that fall in different quintiles based on the remuneration of the CEO. The relationship is stark. As CEO compensation increases, the extent of misreporting increases in a monotonic fashion as well. Compared to the lowest paid CEO quintile, the higher paid CEO’s bank has 65% higher misreporting. Observations in the top two quintiles are all private sector banks.

Regression results are provided in Table 8. Banks with highly compensated CEOs underreport more. One standard deviation higher compensation is associated with about 26% higher underreporting (Column 1). As shown in Column (2), the interaction term between FII shareholding and remuneration is positive and significant. The finding shows that banks with larger FII shareholding and large remuneration are the ones that underreport more. This

result is a more direct version of our earlier result where we show that FII shareholding in private banks is the main driving force behind our results. However, the remuneration based test allows us to establish the economic channel more precisely: it captures the variation in compensation across banks and shows that when CEOs stand to gain more they hide more.

4.4 Historical Performance

We now look at how CEOs were compensated for their performance during 2005-2015, i.e., during a period when the disclosure policy was relatively less truthful, to gain further insight into the relationship between compensation contract linked to hard information and misreporting behavior. We proceed in two steps to do so. We first investigate whether banks reported better performance as FIIs increased their shareholdings. Subsequently, we investigate whether the CEOs were rewarded more for improved performance. Together, these tests allow us to link increased FII shareholding to improved hard performance and managerial incentives to hide losses.

In Table 9, we estimate the following model linking FII shareholdings to reported performance:

$$perf_{it} = \alpha_i + year_t + \beta \times FII_{it} + \epsilon_{it}$$

$perf_{it}$ measures bank i 's performance in year t , and FII_{it} is the percentage shareholding of the FIIs in that bank-year. The model includes both bank and year fixed-effects to soak away yearly variation in the performance of the banking sector as well as bank specific differences in performance. We use three measures of performance: the ratio of NPLs to total assets, the profitability of the bank as measured by its net profits scaled by total assets, and the level of outstanding loans. The model is estimated with 377 bank-year observations from 2005 to 2015, i.e., using information from the period before the RBI's regulation change.

A clear pattern emerges. As FII shareholdings increase, banks report lower levels of

NPLs (Column 1), higher profitability (Column 2), and higher growth in the lending portfolio (Column 3). A one s.d. increase in FII is associated with a 0.686% lower NPL-to-Asset ratio, 0.178% higher net profit ratio, and 15.6% more loans. Thus, FII shareholding is associated with high growth and profits, all with lower NPLs. Given our earlier results on underreporting, clearly some of this better reported performance came from hiding of the losses, rather than more prudent lending decisions. Did the CEOs benefit from this? We answer this question by investigating how CEOs were compensated during this period. We regress their (log of) annual compensation on performance metrics, including NPLs, to assess how tightly their compensation is linked to observable, reported performance metrics. Results are provided in Table 10.

We first provide a regression of compensation on key performance metrics: profitability, NPL ratio, growth rate, and asset size on the entire sample. The model includes bank and year fixed effects. CEOs get compensated more when their banks show lower NPLs. The economic magnitude of NPL is highly significant. A one s.d. lower NPL ratio (or a 3.53 drop in NPL ratio) is associated with 26.2% higher CEO compensation. The model as a whole explains a reasonable portion of variation across bank CEO's compensation with an overall R^2 of 86% and within-bank R^2 of 6%. Next, we break our sample into two groups: high and low FII shareholding based on the median value of the average of each banks' FII shareholding over the entire sample. A clear pattern emerges: these performance metrics explain a significantly higher fraction of variation in CEO compensation when FII shareholding is high: overall and within R^2 of 91% and 13%, respectively. In contrast for low FII shareholding banks, the corresponding R^2 are much lower at 40% and 1%. These results show that FIIs depend more on reported performance metrics, especially the levels of NPLs, in setting the CEO's compensation contract. As shown in Columns (2) and (3) of the Table, for the higher FII shareholding group, one s.d. lower NPLs is associated with 27.0% increase in the CEO's compensation, whereas the corresponding number is a statistically insignificant 5.5% for the lower FII shareholding group. Thus banks with higher FII shareholding link their CEO's

compensation much more tightly with these observable metrics, especially with the level of NPLs.

We explore this analysis further by estimating the following model with both the high and low FII shareholding groups together. This analysis allows us to pin down the compensation-NPL relationship as a function of the level of FII shareholding and complements the results presented above that estimate this relationship separately for the two groups.

$$comp_{it} = \alpha_i + year_t + \beta \times NPL_{it} + \gamma \times FII_{it} + \theta \times FII_{it} \times NPL_{it} + \epsilon_{it}$$

As shown in Column (4), there is a negative and significant coefficient on the interaction term (coefficient θ in the regression above), indicating that as FII shareholding increases, the CEO's compensation becomes more sensitive to the reported levels of NPLs. Column (5) supplements this analysis by showing that the CEOs of banks with higher FII shareholding were paid more. Combined with the estimates of Column (4), it is clear that the lower levels of NPLs contributed significantly to the higher compensation of these CEOs.

Together these results show that distant monitors rely more on observable metrics to compensate their managers. This is consistent with a model such as Holmstrom (1979), in which it is optimal to compensate managers in opaque firms with high pay-for-performance. Without specifying the entire "action space" of managers, however, these are suboptimal contracts if CEOs are able to manipulate accounting profits to boost their compensation (Healy (1985)). Managers, unfortunately, engaged in misreporting to show better performance to benefit from pay-for-performance contracts. Thus distant monitors should be cautious in using performance linked contracts as a substitute for information-gathering and monitoring.

4.5 Robustness Tests

We conduct a series of robustness checks to provide further support to our main claim that distant monitors coupled with performance-linked compensation contracts are the key driver of our findings. First, we re-run our earlier tests using a set of richer control variables. Our base tests so far controlled for the firm’s capitalization ratio, size, and year fixed effects. Now we include additional variables such as asset growth and the level of GNPA scaled by total assets in the model. The asset growth rate accounts for the investment opportunities of the bank, whereas the level of GNPA captures the quality of the investment portfolio itself. Table A4 in Appendix D presents these results. Our main results remain the same.

4.5.1 IV Placebo

Clearly, we cannot test the exclusion restriction of our instrument, MSCI index inclusion. However, we can rule out any mechanical relationship between the instrument and underreporting using a placebo test in the following manner: we use MSCI inclusion as an instrument for DII shareholdings. This placebo test allows us to comment on whether our instrument is picking up variation in institutional holding rather than distant monitors. We regress DII shareholding on the MSCI instrument in Table A5 in Appendix D using the same first stage specification as in our actual IV test. As expected, the coefficient is not statistically different from zero and has a very small t statistic. Furthermore, the F statistic is small and less than 1 in all specifications.

This result is useful because it shows the instrument works intuitively: MSCI index inclusion only attracts FII but not DII investment. DII shareholders, whom we have shown to be better monitors, are unaffected by MSCI inclusion. Therefore, we can at least rule out that MSCI inclusion is related to DII investors with preferences for banks with lower NPL underreporting.

5 Conclusion

We show that managers are more likely to hide losses, and thus inflate short term profits when their shareholders are distant. Distance amplifies information frictions and hinders the shareholders' ability to properly monitor the managers. Thus managers are able to engage in misreporting without facing any significant probability of getting caught. When they stand to gain from inflated performance measures, misreporting incentives go up as well. At a very broad level, our paper shows that distant monitors should use caution in relying on performance-linked compensation contracts as a substitute for monitoring: it can make the problem worse by providing the managers an incentive to engage in untruthful reporting.

Figure 1: Economic Magnitude of Underreporting

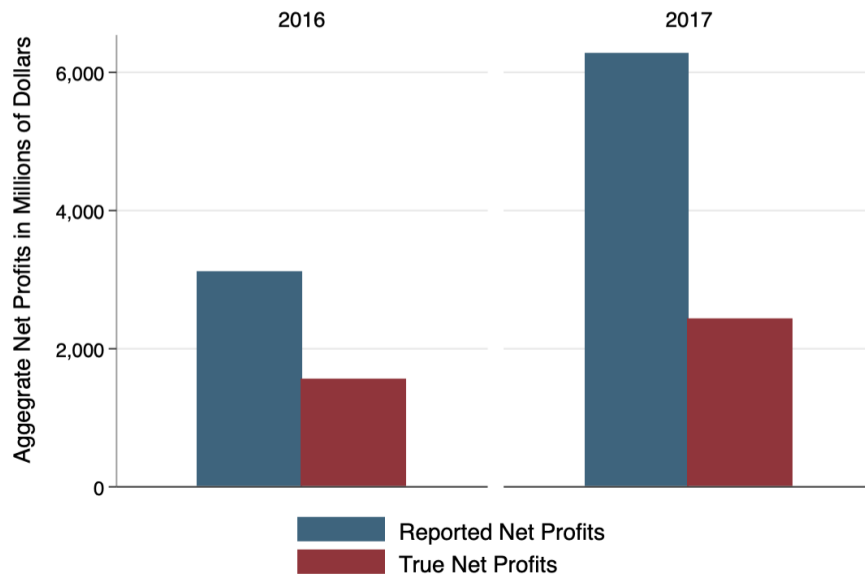


Figure 2: Event Study Reaction

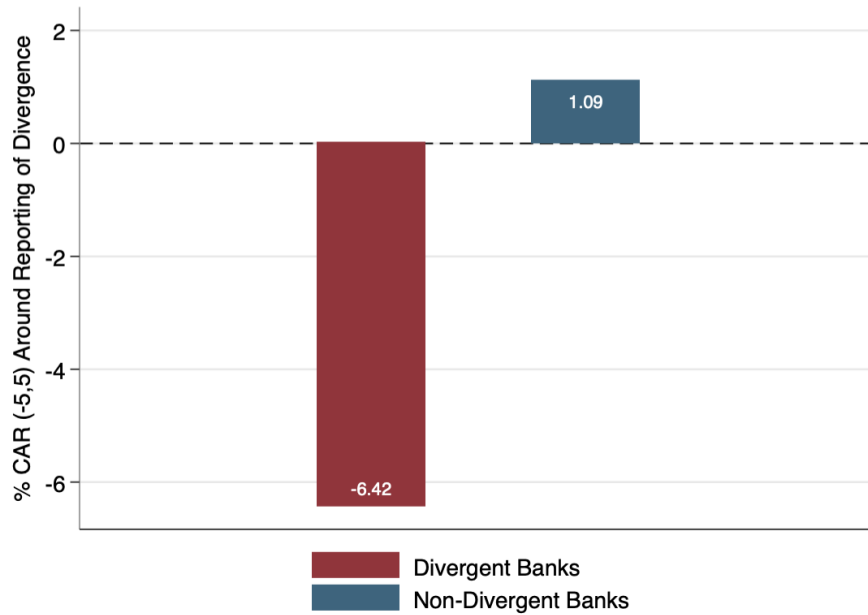


Figure 3: GNPA Underreporting by quantiles of %FII

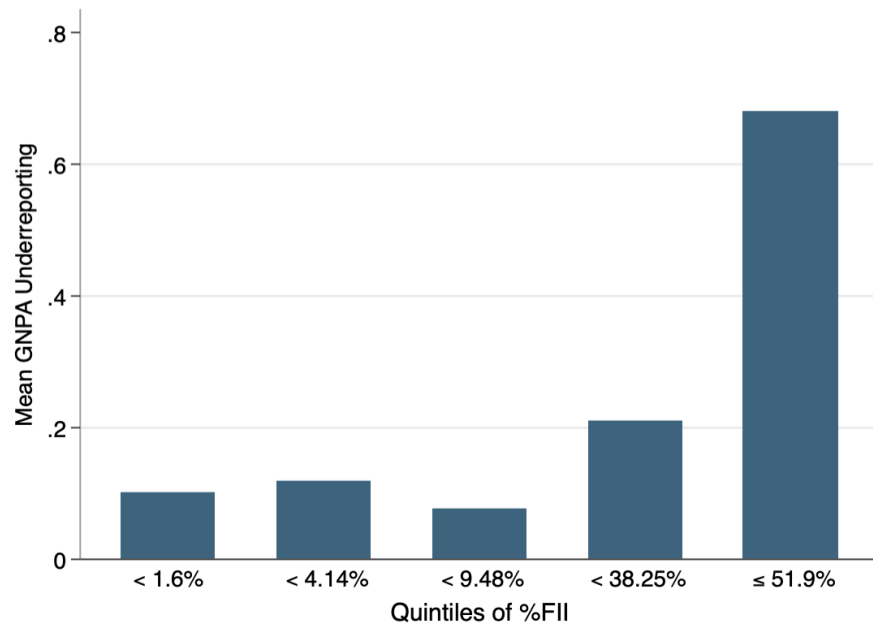


Figure 4: FII Shareholding by MSCI Inclusion Instrument

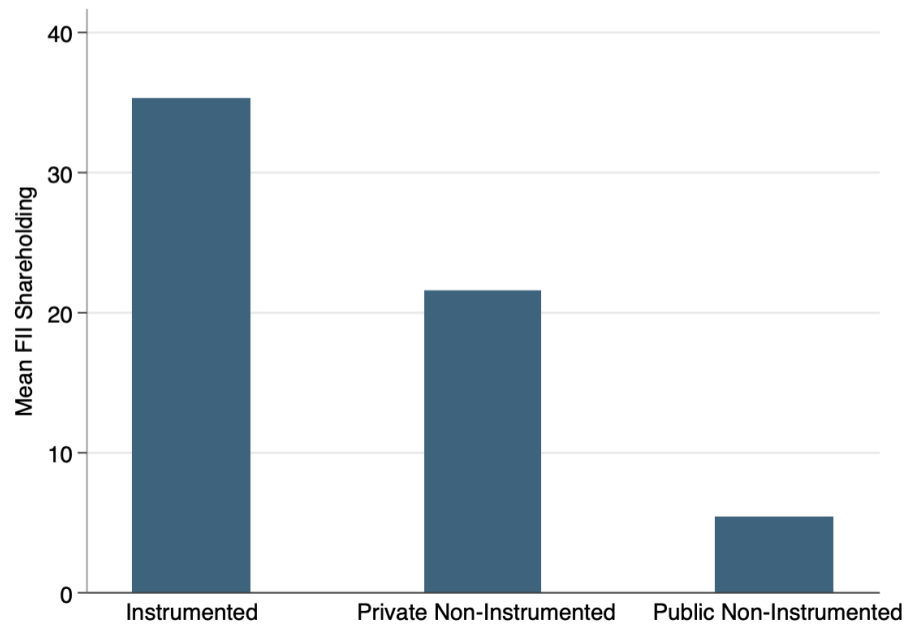


Figure 5: GNPA Underreporting by MSCI Inclusion Instrument

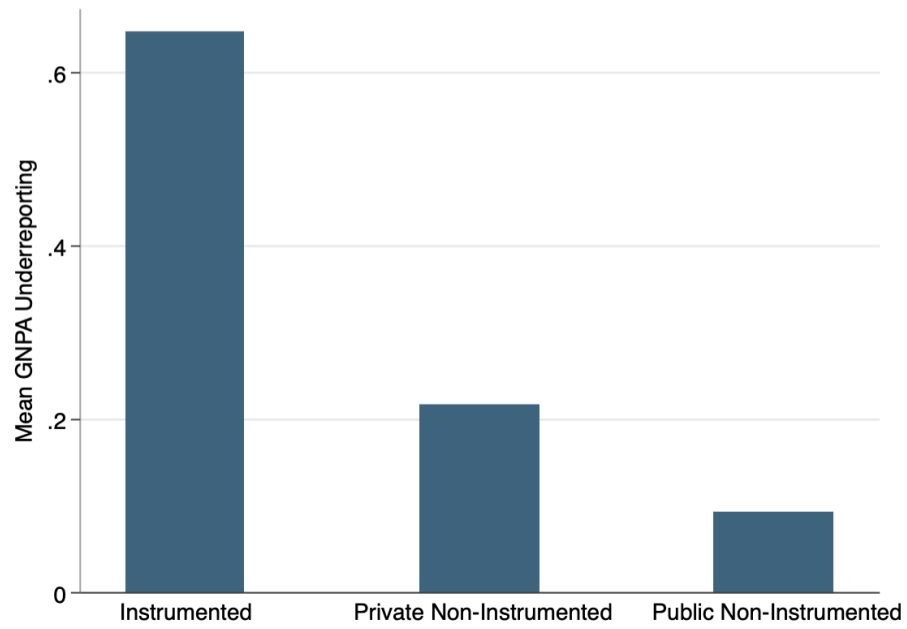


Figure 6: GNPA Underreporting by quantiles of Total Remuneration

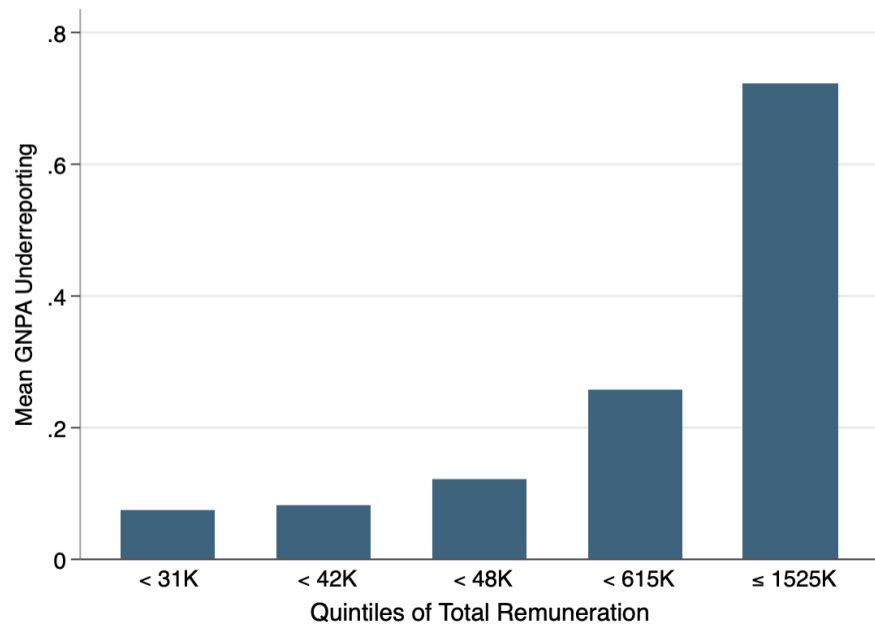


Table 1: Summary Statistics

Table 1 contains summary statistics for the banks in our sample. Panel A reports measures in 2016 and 2017 during which we observe banks underreporting. Panel B reports summary statistics over the historical period 2005-2015. *GNPAUR* and *ProvisionUR* are the amounts of GNPA and Provisions underreporting scaled by total assets. *Capital* is the Tier 1 Capital Ratio. *%Inst* and *%FII* are the percentages of bank equity owned by institutional and foreign institutional investors. $\frac{\%FII}{No. FII}$ is the average shareholding by FII. *%RBI* is the percentage of bank equity owned by RBI. *RBI Mem* is an indicator equal to 1 if board member represents the RBI. *Board Size* is the number of board members. *CEOChair* is an indicator equal to 1 if the chair is also the CEO of the Bank. *%Outsiders* and *%Audit Board Outsiders* are the fraction of board and audit board members who are outsiders to the bank. *GNPA* is the amount of gross non-performing assets scaled by total assets. *Provisions* are the amount of provisions for gross non-performing assets in millions of dollars. *NetProfit* is net profits after taxes in millions of dollars. *Total Assets* is total assets in millions of dollars. *Remun.* is the amount of total remuneration awarded to the bank's CEO in dollars. *Lev* is total debt plus total deposits divided by total assets. *TobinQ* is bank book value divided by market value of bank. *ROE* and *ROA* are the bank's return on equity and return on assets in that fiscal year. All variables are measured at the end of a bank's fiscal year.

Panel A: Observed Underreporting Period: 2016-2017

	N	Mean	SD	P10	P25	P50	P75	P90
<i>GNPAUR</i>	53	23.022	34.445	3.103	5.913	11.988	24.219	53.359
<i>ProvisionUR</i>	53	18.477	22.272	2.849	4.944	10.058	20.570	44.899
<i>Capital</i>	73	9.907	2.808	7.520	8.020	9.050	11.260	14.210
<i>%Inst.</i>	73	31.853	18.983	13.640	17.780	25.940	41.760	61.390
<i>%FII</i>	73	16.101	14.257	1.500	3.430	11.720	24.520	39.710
$\frac{\%FII}{No. FII}$	73	0.122	0.208	0.021	0.036	0.055	0.124	0.245
<i>%RBI</i>	73	40.949	35.793	0.000	0.000	61.255	70.760	80.985
<i>RBI Mem.</i>	73	0.575	0.498	0.000	0.000	1.000	1.000	1.000
<i>Board Size</i>	72	14.417	2.336	12.000	13.000	14.000	16.000	18.000
<i>CEO Chair</i>	73	0.466	0.502	0.000	0.000	0.000	1.000	1.000
<i>%Outsiders</i>	73	29.455	26.021	0.000	0.000	30.000	50.000	66.667
<i>%Audit Board Outsiders</i>	73	39.448	36.672	0.000	0.000	33.333	66.667	100.000
<i>GNPA</i>	73	0.050	0.032	0.010	0.018	0.045	0.073	0.087
<i>Provisions</i>	72	1041.093	1223.588	41.508	100.409	577.698	1572.829	2969.109
<i>Net Profit</i>	73	126.471	571.781	-422.730	-131.163	54.449	171.374	558.192
<i>Total Assets</i>	73	49749	65569	5357	15306	32622	56085	105405
<i>Remun.</i>	61	274434	406606	21589	33243	47709	176314	881708

Panel B: Historical Period: 2005-2015

	N	Mean	SD	P10	P25	P50	P75	P90
<i>Capital</i>	377	10.090	2.567	7.520	8.050	9.300	11.500	14.210
<i>%Inst.</i>	377	28.432	14.539	10.640	18.320	26.880	35.850	49.010
<i>%FII</i>	377	16.894	14.075	1.740	3.770	11.820	27.910	39.710
<i>Lev.</i>	377	0.896	0.032	0.847	0.882	0.906	0.917	0.924
<i>TobinQ.</i>	377	1.073	0.129	0.995	1.017	1.044	1.085	1.166
<i>ROA</i>	377	0.951	0.554	0.330	0.640	0.980	1.330	1.610
<i>ROE</i>	377	14.032	7.763	5.717	9.843	14.796	19.124	22.032
<i>GNPA</i>	375	0.018	0.010	0.007	0.010	0.015	0.023	0.033
<i>Provisions</i>	375	313.327	597.595	16.647	53.046	128.086	347.793	658.646
<i>Net Profit</i>	377	272.820	393.401	16.416	61.745	139.727	290.628	734.619
<i>Total Assets</i>	377	31745	42765	2542	7608	18229	37728	76413
<i>Remun.</i>	277	192103	295163	9224	28531	52022	184141	656307

Table 2: Shareholding Composition

Table 2 contain summary statistics for shareholder ownership of banks during 2016 and 2017 when we observe underreporting. Promoters, Institutions, and Non-Institutions roughly make up 100% of bank ownership. Indented variables break down these amounts into finer categories. *%IndianProm.* and *%ForeignProm.* are the percentages of bank equity owned by Indian and Foreign Promoters. *%FII* and *%DII* are the percentages of bank equity owned by foreign and domestic institutional investors. *%Mutual Fund*, *%Insurance*, and *%Bank* are the percentage of bank equity owned by domestic mutual funds, insurance funds, and banks. These are a subcategory of *%DII*. *%Corp.* is the percentage of bank equity owned by non-promoter corporate bodies. *%Individuals* is percentage of bank equity owned by non-promoter individuals. All variables are measured at the end of a bank's fiscal year.

	N	Mean	SD	P25	P50	P75
<i>Promoters</i>	73	46.829	30.246	16.720	61.260	70.760
<i>%Indian Prom.</i>	70	47.918	30.487	20.190	61.350	72.830
<i>%Foreign Prom.</i>	63	1.020	3.951	0.000	0.000	0.000
<i>Institutions</i>	73	31.853	18.983	17.780	25.940	41.760
<i>%FII</i>	73	16.101	14.257	3.430	11.720	24.520
<i>%DII</i>	73	14.539	7.026	9.730	13.850	18.720
<i>%Domestic Mutual Fund</i>	73	5.602	6.163	0.040	4.380	9.520
<i>%Domestic Insurance</i>	73	8.268	6.704	1.430	10.140	14.100
<i>%Domestic Banks</i>	73	1.748	3.513	0.110	0.210	1.700
<i>Non-Institutions</i>	73	21.201	21.628	7.400	11.520	21.510
<i>%Corp. Bodies</i>	73	3.807	5.145	0.820	1.510	5.380
<i>%Individuals</i>	73	15.352	15.914	6.010	8.350	13.330

Table 3: Shareholder Monitoring

OLS Dependent variable is $\log(\text{Actual NPL}/\text{Reported NPL})$. In the Tobit panel, the dependent variable is \log of $(\text{Actual NPL} - 0.15 \times \text{Incremental NPL})/\text{Reported NPL}$. *%FII* and *%DII* are the percentages of bank equity owned by foreign and domestic institutional investors. *Capital* is the Tier 1 Capital Ratio. All explanatory variables are measured in 2015 (prior to underreporting disclosures). All explanatory variables are standardized such that coefficients can be interpreted as the effect from a one s.d. increase. Panel A is estimated via OLS for the sample of banks we observe reporting divergences. Panel B contains results from a Tobit regression using the sample of all banks in 2016 and 2017. Observations are censored below by the 15% minimum GNPA required to report. Standard errors are clustered at the bank level.

Panel A: OLS			
	(1)	(2)	(3)
<i>%FII</i>	0.272** (2.16)		0.284** (2.27)
<i>%DII</i>		0.049 (0.55)	0.081 (1.12)
<i>Capital</i>	-0.081 (-0.94)	0.172** (2.09)	-0.096 (-1.11)
<i>Log(Assets)</i>	-0.004 (-0.16)	-0.065 (-1.35)	-0.023 (-1.08)
Year FE	Yes	Yes	Yes
Observations	53	53	53
R^2	0.458	0.207	0.488

Panel B: Tobit			
	(1)	(2)	(3)
<i>%FII</i>	0.356** (2.23)		0.360** (2.25)
<i>%DII</i>		-0.010 (-0.11)	0.035 (0.43)
<i>Capital</i>	-0.215* (-1.86)	0.051 (0.79)	-0.223* (-1.89)
<i>Log(Assets)</i>	0.012 (0.39)	-0.024 (-0.58)	0.003 (0.09)
Year FE	Yes	Yes	Yes
Observations	73	73	73
Pseudo R^2	0.222	0.018	0.227

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 4: Shareholder Concentration

OLS Dependent variable is $\log(\text{Actual NPL}/\text{Reported NPL})$. In the Tobit panel, the dependent variable is \log of $(\text{Actual NPL} - 0.15 \times \text{Incremental NPL})/\text{Reported NPL}$. $\%Inst$, $\%FII$, and $\%DII$ are the percentage of bank equity shares held by institutional, foreign institutional, and domestic institutional investors. $\frac{1}{No. FII}$ is the inverse of the number of FII shareholders. $\frac{\%FII}{No. FII}$ is the average shareholding by FII. $Capital$ is the Tier 1 Capital Ratio. All explanatory variables are measured in 2015 (prior to underreporting disclosures). Panel A is estimated via OLS for the sample of banks we observe reporting divergences. Panel B contains results from a Tobit regression using the sample of all banks in 2016 and 2017. Observations are censored below by the 15% minimum GNPA required to report. Robust standard errors are clustered at the bank level.

Panel A: OLS			
	(1)	(2)	(3)
$\%FII$	0.354** (2.45)		0.385** (2.69)
$\frac{1}{No. FII}$	-0.004 (-0.40)		-0.005 (-0.36)
$\%FII \times \frac{1}{No. FII}$	-0.320** (-2.31)		-0.408** (-2.39)
$\%DII$		0.039 (0.36)	0.118 (1.34)
$\frac{1}{No. DII}$		-0.060 (-1.18)	0.110 (1.30)
$\%DII \times \frac{1}{No. DII}$		-0.019 (-0.45)	-0.053 (-1.09)
$Capital$	-0.175 (-1.39)	0.136* (1.89)	-0.190 (-1.66)
$Log(Assets)$	-0.177* (-2.03)	-0.081 (-0.94)	-0.192* (-2.01)
Year FE	Yes	Yes	Yes
Observations	52	52	52
R^2	0.560	0.240	0.603

Panel B: Tobit			
	(1)	(2)	(3)
$\%FII$	0.477*** (2.81)		0.502*** (2.81)
$\frac{1}{No. FII}$	0.025 (1.26)		0.005 (0.21)
$\%FII \times \frac{1}{No. FII}$	-0.376** (-2.57)		-0.403** (-2.19)
$\%DII$		-0.031 (-0.30)	0.039 (0.45)
$\frac{1}{No. DII}$		-0.064 (-0.68)	0.069 (0.67)
$\%DII \times \frac{1}{No. DII}$		0.013 (0.32)	0.009 (0.15)
$Capital$	-0.351** (-2.31)	0.033 (0.35)	-0.339** (-2.29)
$Log(Assets)$	-0.206** (-2.06)	-0.040 (-0.38)	-0.187* (-1.77)
Year FE	Yes	Yes	Yes
Observations	72	72	72
Pseudo R^2	0.331	0.021	0.341

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 5: Role of the Board

OLS Dependent variable is $\log(\text{Actual NPL}/\text{Reported NPL})$. *Board Size* is the number of board members. *RBI Mem* is an indicator equal to 1 if board member represents the RBI. *CEO Chair* is an indicator equal to 1 if the chair is also the CEO of the Bank. *%Outsiders* and *%Audit Board Outsiders* are the fraction of board and audit board members who are outsiders to the bank. *%FII* is the percentage of bank equity shares held by foreign institutional investors. All explanatory variables are measured in 2015 (prior to underreporting disclosures). All continuous explanatory variables are standardized such that coefficients can be interpreted as the effect from a one s.d. increase. Underreporting is observed in years 2016 and 2017. Panel A is estimated via OLS for the sample of banks we observe reporting divergences. Panel B contains results from a Tobit regression using the sample of all banks in 2016 and 2017. Observations are censored below by the 15% minimum GNPA required to report. Standard errors are clustered at the bank level.

Panel A: OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Board Size</i>	-0.073 (-1.12)	-0.042 (-0.79)	-0.075 (-1.14)	-0.070 (-1.20)	-0.061 (-1.04)	-0.059 (-0.84)	-0.092 (-1.27)
<i>RBI Mem.</i>		-0.283** (-2.15)				-0.219** (-2.05)	-0.096 (-1.29)
<i>CEO Chair</i>			-0.098 (-1.09)			-0.078 (-0.77)	0.046 (0.76)
<i>%Outsiders</i>				0.115 (1.41)		0.173 (0.77)	0.129 (0.79)
<i>%Audit Board Outsiders</i>					0.103* (1.74)	-0.102 (-0.49)	-0.134 (-0.78)
<i>%FII</i>							0.273** (2.12)
<i>Capital</i>	0.162* (2.03)	0.068 (0.99)	0.140* (1.95)	0.096 (1.48)	0.088 (1.14)	0.046 (0.50)	-0.095 (-1.07)
<i>Log(Assets)</i>	-0.037 (-1.29)	0.006 (0.17)	-0.023 (-0.75)	-0.019 (-0.65)	-0.017 (-0.57)	0.014 (0.34)	0.017 (0.54)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	52	52	52	52	52	52	52
R^2	0.218	0.302	0.234	0.282	0.258	0.352	0.533

Panel B: Tobit

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Board Size</i>	-0.067 (-0.78)	-0.061 (-0.92)	-0.061 (-0.76)	-0.074 (-0.86)	-0.065 (-0.82)	-0.056 (-0.78)	-0.086 (-1.17)
<i>RBI Mem.</i>		-0.472* (-1.85)				-0.375 (-1.64)	-0.220 (-1.51)
<i>CEO Chair</i>			-0.227 (-1.21)			-0.107 (-0.67)	0.060 (0.46)
<i>%Outsiders</i>				0.117 (1.05)		-0.010 (-0.04)	0.031 (0.18)
<i>%Audit Board Outsiders</i>					0.179 (1.65)	0.095 (0.39)	-0.039 (-0.20)
<i>%FII</i>							0.336** (2.02)
<i>Capital</i>	0.038 (0.60)	-0.095 (-1.18)	0.004 (0.06)	-0.028 (-0.37)	-0.080 (-0.98)	-0.143 (-1.63)	-0.261** (-2.21)
<i>Log(Assets)</i>	-0.006 (-0.19)	0.055 (1.14)	0.024 (0.55)	0.015 (0.37)	0.026 (0.71)	0.072 (1.18)	0.055 (1.21)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	72	72	72	72	72	72	72
Pseudo R^2	0.023	0.112	0.050	0.044	0.063	0.129	0.268

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 6: FII instrumented by MSCI Index Inclusion

Table 6 estimates the effect of FII shareholding on NPL underreporting using an IV. The instrument, *MSCI*, is defined as 1 if the bank was included in the MSCI India domestic index in 2015 and 0 otherwise. The Columns (1) & (2) present the first stage where FII shareholding (standardized) is regressed on the instrument. Columns (3) & (4) present the reduced form regression. Columns (5) & (6) reports the second stage of the instrumented FII shareholding on NPL underreporting. *%FII* is the percentage of bank equity shares owned by foreign institutional investors. *Capital* is the Tier 1 Capital Ratio. *FreeFloatMarketCap* is the market cap computed only using free floating shares. *Liquidity* is the 12-month average trading value ratio as defined by MSCI. *ForeignRoom* is the maximum % of foreign share allowed minus existing foreign investment. OLS Dependent variable is $\log(\text{Actual NPL}/\text{Reported NPL})$. In the Tobit panel, the dependent variable is $\log(\text{Actual NPL} - 0.15 \times \text{Incremental NPL})/\text{Reported NPL}$. Underreporting is observed in years 2016 and 2017. All explanatory variables are measured in 2015 (prior to underreporting disclosures). All continuous explanatory variables are standardized such that coefficients can be interpreted as the effect from a one s.d. increase. Standard errors are clustered at the bank level.

Panel A: IV						
	First Stage		Reduced Form		Second Stage	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>MSCI</i>	1.278*** (4.62)	1.314*** (3.23)	0.502** (2.35)	0.759** (2.31)		
<i>%FII</i>					0.393*** (2.84)	0.578*** (3.26)
<i>Capital</i>	0.664*** (6.43)	0.685*** (4.05)	0.067* (1.76)	0.074 (1.19)	-0.194* (-1.75)	-0.322** (-2.05)
<i>Log(Assets)</i>	-0.194*** (-3.79)	-0.071 (-0.26)	-0.059** (-2.31)	0.022 (0.21)	0.018 (0.54)	0.063 (0.39)
<i>Liquidity</i>		0.162 (1.33)		0.045 (0.68)		-0.049 (-0.73)
<i>MarketCap</i>		-0.340 (-1.06)		-0.325* (-1.88)		-0.128 (-0.55)
<i>FreeFloatMarketCap</i>		0.295 (0.92)		0.124 (1.35)		-0.046 (-0.22)
<i>ForeignRoom</i>		0.158 (0.74)		0.064 (0.80)		-0.027 (-0.23)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	53	52	53	52	53	52
R^2	0.799	0.817	0.463	0.588	0.406	0.275
F First Stage	21.341	10.414				

Panel B: Tobit IV						
	First Stage		Reduced Form		Second Stage	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>MSCI</i>	1.144*** (4.18)	1.123*** (2.90)	0.586** (2.14)	0.833** (2.04)		
<i>%FII</i>					0.490*** (2.72)	0.714*** (3.14)
<i>Capital</i>	0.591*** (7.51)	0.607*** (4.22)	-0.013 (-0.25)	-0.054 (-0.86)	-0.308** (-2.30)	-0.483*** (-2.64)
<i>Log(Assets)</i>	-0.156** (-2.55)	-0.033 (-0.10)	-0.065 (-1.50)	0.209 (1.55)	0.019 (0.51)	0.227 (0.94)
<i>FreeFloatMarketCap</i>		0.325 (1.03)		0.178 (1.54)		-0.049 (-0.21)
<i>Liquidity</i>		0.084 (0.68)		-0.131 (-1.58)		-0.185** (-2.30)
<i>MarketCap</i>		-0.338 (-0.97)		-0.487** (-2.41)		-0.241 (-0.84)
<i>ForeignRoom</i>		0.109 (0.54)		0.166 (1.39)		0.068 (0.43)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	73	72	73	72	73	72
R^2	0.740	0.753				
Pseudo R^2			0.194	0.307		
F First Stage	17.470	8.419				

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 7: Foreign Institutional Investors and Private Banks

OLS Dependent variable is $\log(\text{Actual NPL}/\text{Reported NPL})$. In the Tobit panel, the dependent variable is \log of $(\text{Actual NPL} - 0.15 \times \text{Incremental NPL})/\text{Reported NPL}$. $\%FII$, $\%Inst$, and $\%DII$ are the percentage of bank equity shares held by institutional, foreign institutional, and domestic institutional investors. *Private* an indicator variable whether less than % 50 of the bank is owned by the state. *Capital* is the percentage of Tier 1 Capital. All explanatory variables are measured in 2015 (prior to underreporting disclosures). All continuous explanatory variables are standardized such that coefficients can be interpreted as the effect from a one s.d. increase. Underreporting is observed in years 2016 and 2017. Panel A is estimated via OLS for the sample of banks we observe reporting divergences. Panel B contains results from a Tobit regression using the sample of all banks in 2016 and 2017. Observations are censored below by the 15% minimum GNPA required to report. Robust standard errors are clustered at the bank level.

Panel A: OLS				
	(1)	(2)	(3)	(4)
$\%FII$	0.272** (2.16)		0.295 (1.52)	0.034 (0.48)
<i>Private</i>		0.569** (2.26)	-0.079 (-0.24)	-0.023 (-0.08)
<i>Private</i> \times $\%FII$				0.394** (2.12)
<i>Capital</i>	-0.081 (-0.94)	-0.073 (-1.09)	-0.068 (-0.78)	-0.076 (-0.78)
$\log(\text{Assets})$	-0.004 (-0.16)	0.089* (1.81)	-0.019 (-0.29)	-0.042 (-0.60)
Year FE	Yes	Yes	Yes	Yes
Observations	53	53	53	53
R^2	0.458	0.343	0.459	0.535

Panel B: Tobit				
	(1)	(2)	(3)	(4)
$\%FII$	0.356** (2.23)		0.310 (1.41)	-0.225 (-1.44)
<i>Private</i>		0.816** (2.15)	0.146 (0.48)	0.420 (1.51)
<i>Private</i> \times $\%FII$				0.689** (2.46)
<i>Capital</i>	-0.215* (-1.86)	-0.226* (-1.91)	-0.231** (-2.13)	-0.250** (-2.26)
$\log(\text{Assets})$	0.012 (0.39)	0.151* (1.98)	0.039 (0.69)	0.025 (0.46)
Year FE	Yes	Yes	Yes	Yes
Observations	73	73	73	73
Pseudo R^2	0.222	0.166	0.225	0.328

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 8: Interaction of Remuneration and Monitoring

OLS Dependent variable is $\log(\text{Actual NPL}/\text{Reported NPL})$. In the Tobit panel, the dependent variable is \log of $(\text{Actual NPL} - 0.15 \times \text{Incremental NPL})/\text{Reported NPL}$. *Remun* is the log of total remuneration awarded to a bank's CEO in the year of underreporting. *%FII* is the percentage of bank equity shares owned by foreign institutional investors. All continuous explanatory variables are standardized such that coefficients can be interpreted as the effect from a one s.d. increase. Underreporting is observed in years 2016 and 2017. Columns (1) & (2) present OLS results conditional on a bank reporting divergences. Columns (3) & (4) present results from a Tobit regression using the sample of all banks in 2016 and 2017. Observations are censored below by the 15% minimum GNPA required to report. Standard errors are clustered at the bank level.

	OLS		Tobit	
	(1)	(2)	(3)	(4)
<i>Remun.</i>	0.263** (2.28)		0.284* (1.88)	
<i>%FII</i>		0.068 (0.89)		0.170 (1.50)
<i>Remun.</i> \times <i>%FII</i>		0.154** (2.11)		0.196** (2.04)
<i>Capital</i>	0.008 (0.19)	-0.009 (-0.15)	-0.123 (-1.35)	-0.152 (-1.56)
<i>Log(Assets)</i>	0.025 (0.80)	-0.045 (-1.46)	0.047 (0.95)	-0.055 (-1.15)
Year FE	Yes	Yes	Yes	Yes
Observations	47	47	61	61
R^2	0.457	0.573		
Pseudo R^2			0.143	0.302

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 9: Historical Performance

Table 9 presents results from a panel regression estimated over 2005-2015. Dependent variables are 100 times GNPA scaled by Total Assets, 100 times Net Profit scaled by Total Assets, and Log(Advances). *%FII* is the percentage of bank equity shares owned by foreign institutional investors. *Capital* is the Tier 1 Capital Ratio. *Lev* is total debt plus total deposits divided by total assets. *TobinQ* is bank book value divided by market value of bank. All explanatory variables are contemporaneous with the dependent variables. All continuous explanatory variables are standardized such that coefficients can be interpreted as the effect from a one s.d. increase. Regressions include Bank FE and Year FE. All standard errors are clustered at the Bank level.

	GNPA	Net Profit	Advances
<i>%FII</i>	-0.686*** (-6.64)	0.178** (2.11)	0.156** (2.72)
<i>Capital</i>	-0.118 (-0.93)	0.142 (1.59)	0.038 (0.84)
<i>Lev.</i>	-0.368*** (-3.09)	-0.013 (-0.13)	0.129* (1.92)
<i>TobinQ.</i>	-0.232 (-1.53)	0.068 (0.91)	-0.044 (-0.77)
Year FE	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes
Observations	375	377	377
R^2	0.644	0.649	0.989

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 10: Compensation Regression by FII Groups

Table 10 presents results from a panel regression estimated over 2005-2015. Dependent variable is the log of total remuneration awarded to the Bank's CEO. The first column is estimated over the entire sample. The second and third columns are split by the median of the average of each banks' FII shareholding over the entire sample. *ROE* is the bank's return on equity in that fiscal year. *GNPARatio* is Gross NPAs divided by advances. *%FII* is the percentage of bank equity shares owned by foreign institutional investors. All explanatory variables are contemporaneous with the dependent variables. All continuous explanatory variables are standardized such that coefficients can be interpreted as the effect from a one s.d. increase. Regressions include Bank FE and Year FE. Standard errors are clustered at the bank level.

	(1) Full Sample	(2) High FII	(3) Low FII	(4) Full Sample	(5) Full Sample
<i>ROE</i>	0.017 (0.26)	0.055 (0.85)	-0.188 (-1.31)		0.084 (0.89)
<i>GNPARatio</i>	-0.262* (-1.93)	-0.270** (-2.37)	-0.055 (-0.15)	-0.293** (-2.51)	
<i>Log(Assets)</i>	0.720** (2.19)	0.797** (2.42)	0.919 (1.22)	0.394 (1.44)	0.161 (0.95)
<i>%FII</i>				0.113* (1.78)	0.220*** (3.74)
<i>GNPARatio</i> \times <i>%FII</i>				-0.194*** (-2.75)	
<i>ROE</i> \times <i>%FII</i>					0.112*** (3.04)
Bank FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
R^2	0.86	0.91	0.40	0.86	0.86
Within R^2	0.06	0.13	0.01	0.09	0.07
Observations	274	153	121	274	276

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

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Appendices

A NPL Disclosure

Figure A1: YesBank NPL Disclosure

18.5.6.3 DIVERGENCE IN ASSET CLASSIFICATION AND PROVISIONING FOR NPAs - (REF DBR. BP.BC.NO. 63/ 21.04.018/2016-17 DATED APRIL 18, 2017)

		₹ in millions
Sr. No.	Particulars	
1	Gross NPAs as on March 31, 2016 as reported by the Bank	7,489.81
2	Gross NPAs as on March 31, 2016 as assessed by RBI	49,256.81
3	Divergence in Gross NPAs (2-1)	41,767.00
4	Net NPAs as on March 31, 2016 as reported by the Bank	2,844.74
5	Net NPAs as on March 31, 2016 as assessed by the RBI	36,031.49
6	Divergence in Net NPAs (5-4)	33,186.75
7	Provision for NPAs as on March 31, 2016 as reported by the Bank	4,645.07
8	Provision for NPAs as on March 31, 2016 as assessed by RBI	13,225.32
9	Divergence in provisioning (8-7)	8,580.25
10	Reported Net Profit after Tax (PAT) for the year ended March 31, 2016	25,394.47
11	Adjusted (notional) Net Profit after Tax (PAT) for the year ended March 31, 2016 after taking into account the divergence in provisioning	19,783.84

The table above is in conformity with RBI circular issued on April 18, 2017 and as per approval from Board of Directors at its Board meeting held on April 19, 2017, the audited financial statements of the Bank for the year ended March 31, 2017, duly incorporates the current impact of divergences observed recently by RBI

B Variable Construction

Table A1: Variable Descriptions

Variable	Description	Source
GNPA Underreporting	$\text{Log}(\text{Actual NPL}/\text{Reported NPL})$	Hand Collected
Provision Underreporting	$\text{Log}(\text{Actual Provision}/\text{Reported Provisions})$	Hand Collected
Remuneration	Log of Total Remuneration awarded to the CEO	Hand Collected & Prowess
GNPA	Gross Non-Performing Assets / Total Assets	RBI Statistics
Capital	Tier 1 Capital Ratio	RBI Statistics
Net Profit	Net Profits/Total Assets	RBI Statistics
Lev.	$(\text{Total Debt} + \text{Total Deposits})/\text{Total Assets}$	Prowess
Market Cap	Closing Price \times Shares Out	Prowess
Tobin Q	Book Value/Market Cap	Prowess
% FII	FII Shares/Total Number of Shares	Prowess
% Inst.	Inst. Shares/Total Number of Shares	Prowess
% DII	DII Shares/Total Number of Shares	Prowess
% RBI	RBI Shares/Total Number of Shares	Prowess
Average % FII	FII Shares/Number of FII Investors	Prowess
ROA	Return on Assets	RBI Statistics
ROE	Return on Equity	RBI Statistics
GNPA Ratio	Gross Non-Performing Assets / Advances	RBI Statistics
Board Size	Number of Directors on Board	Prowess
RBI Mem.	Indicator if RBI member serves on the Board	Prowess
CEO Chair	Indicator if CEO is chair of the Board	Prowess
% Outsiders	Percentage of Independent Board Members	Prowess
% Audit Board Outsiders	Percentage of Independent Members on Audit Board	Prowess

Tobit Underreporting Dependent Variable: As described in the main text, the Tobit dependent variable is the log of $(\text{Actual NPL} - 0.15 \times \text{Incremental NPL})/\text{Reported NPL}$ ²³. The intuition behind this measure is that it captures the minimum NPL a bank could report before having to disclose as per the RBI mandate. Since each bank has a different minimum NPL threshold, the measure standardizes the cutoff for every bank in the sample. For example,

²³Incremental NPL is the subset of NPL that only became non-performing in the most recent reporting period

in 2016, ICICI Bank had 2.62 billion Reported NPL, 1.66 billion Incremental NPL, and 3.13 billion Actual NPL. As per the regulation, the minimum NPL ICICI Bank could report before being required to disclose is: Actual NPL minus 15% of incremental NPL = $(3.13 - .15 \times 1.66) = 2.88$ billion. Since ICICI Bank reported less than this (2.62), it was required to disclose the true amount. Therefore, the dependent variable for Tobit is $\log[(3.13 - .15 \times 1.66) / 2.62] = .095$. In general, the Tobit dependent variable has the following properties: If a bank underreports enough to exceed the 15% threshold, then log transformed variable is positive. If a bank underreports exactly at the 15% threshold amount, then log transformed variable is zero. If a bank underreports less than 15% threshold amount, then log transformed variable is negative and censored.

Shareholding Variables: All shareholding variables are annual and measured on March 31st, the end of the fiscal year for all banks in India.

C Event Study

Table A2: Event Study

Table reports cumulative abnormal returns (CAR's) around announcement of bank divergences. Expected returns are calculated using the market model (Using the India MSCI Value-Weighted Index) in a (-120,-30) estimation window. Divergences in FY2016 were announced upon the release of the 2017 annual report for all banks meeting the minimum required reporting threshold.

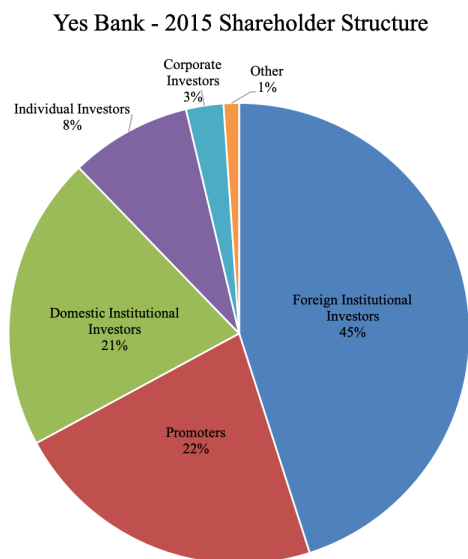
Event Window	2016 Divergent Banks	2016 Non-Divergent Banks
	CAR	CAR
(-1,1)	-0.026** (-2.65)	0.002 (0.15)
(-5,5)	-0.064*** (-3.90)	0.011 (0.46)
(-10,10)	-0.042*** (-3.78)	-0.017 (-0.94)
Observations	23	12

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

D Additional Results and Tables

Figure A2: Yes Bank Shareholder Structure



Yes Bank - 2015 Foreign Mutual Fund Holdings (Total = 17.32%)

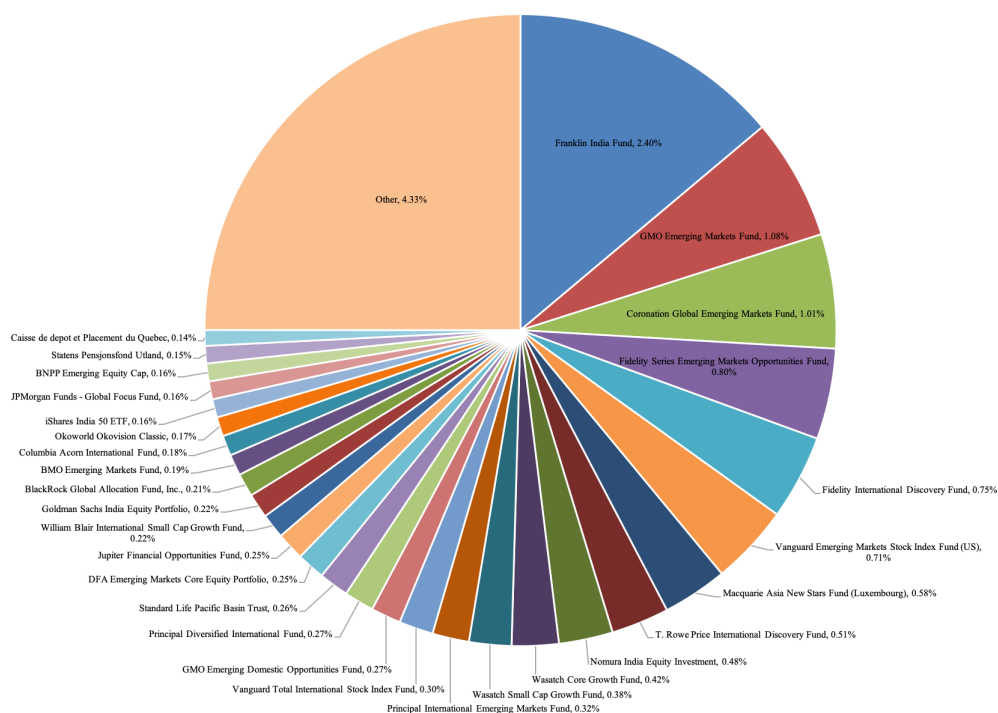


Table A3: Interval Regression

Dependent variable is $\log(\text{Actual NPL}/\text{Reported NPL})$. Interval regression bounds the amount underreporting of banks that did disclose underreporting between 0% and 15% of incremental NPL. *%FII* and *%DII* are the percentages of bank equity owned by foreign and domestic institutional investors. *Private* an indicator variable whether less than 50 % of the bank is owned by the state. *Remun.* is the log of total remuneration awarded to a bank's CEO in the year of underreporting. Underreporting is observed in years 2016 and 2017. Standard errors are clustered at the bank level.

	(1)	(2)	(3)	(4)	(5)
<i>%FII</i>	0.247** (2.22)		0.255** (2.24)	0.011 (0.17)	0.111* (1.73)
<i>%DII</i>		0.016 (0.31)	0.041 (0.78)		
<i>Private</i>				0.069 (0.37)	
<i>Private</i> \times <i>%FII</i>				0.334** (2.33)	
<i>Remun.</i>					0.032 (0.64)
<i>Remun.</i> \times <i>%FII</i>					0.132* (1.96)
<i>Capital</i>	-0.121* (-1.74)	0.051 (1.52)	-0.132* (-1.84)	-0.127* (-1.92)	-0.095* (-1.65)
<i>Log(Assets)</i>	0.003 (0.15)	-0.018 (-0.78)	-0.007 (-0.31)	-0.014 (-0.31)	-0.031 (-1.01)
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	73	73	73	73	61

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table A4: Robustness - Control Variables

Table A4 presents earlier models with richer control variables. OLS Dependent variable is $\log(\text{Actual NPL}/\text{Reported NPL})$. In the Tobit panel, the dependent variable is $\log(\text{Actual NPA} - 0.15 \times \text{Incremental NPA})/\text{Reported NPA}$. *%FII* is the percentage of bank equity shares owned by foreign institutional investors. *Remun* is the log of total remuneration awarded to a bank's CEO. *Capital* is the Tier 1 Capital Ratio. *GNPA* is the level of gross non-performing assets scaled by total assets. *TobinQ* is bank book value divided by market value of bank. All explanatory variables are measured in 2015 (prior to underreporting disclosures). All continuous explanatory variables are standardized such that coefficients can be interpreted as the effect from a one s.d. increase. Underreporting is observed in years 2016 and 2017. Columns (1), (2), and (3) present OLS results conditional on a bank reporting divergences. Columns (4), (5), and (6) present results from a Tobit regression using the sample of all banks in 2016 and 2017. Observations are censored below by the 15% minimum GNPA required to report. Standard errors are clustered at the bank level.

	OLS			Tobit		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>%FII</i>	0.215* (2.00)	-0.151** (-2.33)	-0.001 (-0.03)	0.316** (2.27)	-0.609*** (-2.95)	0.043 (0.46)
<i>Private</i>		0.379* (1.82)			1.031*** (3.18)	
<i>Private</i> \times <i>%FII</i>		0.431** (2.41)			0.925*** (3.17)	
<i>Remun.</i>			0.201** (2.68)			0.174* (1.88)
<i>Remun.</i> \times <i>%FII</i>			0.165** (2.37)			0.240** (2.65)
<i>Log(Assets)</i>	0.027 (0.53)	0.156* (1.97)	0.034 (0.68)	0.030 (0.39)	0.285*** (2.71)	0.012 (0.19)
<i>Capital</i>	-0.087 (-0.89)	-0.079 (-0.91)	0.021 (0.33)	-0.284** (-2.22)	-0.271** (-2.53)	-0.160* (-1.74)
<i>GNPA</i>	-0.036 (-0.88)	-0.042 (-1.30)	-0.031 (-1.17)	-0.133 (-1.45)	-0.165** (-2.14)	-0.120* (-1.77)
freefloat_marketcap	-0.069 (-1.06)	-0.151** (-2.24)	-0.211** (-2.24)	-0.050 (-0.78)	-0.188** (-2.49)	-0.197** (-2.11)
<i>Neg Profits</i>	0.058 (0.78)	0.013 (0.17)	0.021 (0.26)	0.022 (0.16)	0.031 (0.26)	-0.038 (-0.29)
<i>Growth</i>	0.166 (1.51)	0.117 (1.21)	0.066 (0.68)	-0.044 (-0.59)	-0.078 (-1.12)	-0.161** (-2.32)
<i>TobinQ.</i>	0.080 (1.51)	0.084 (1.43)	0.025 (0.37)	0.050 (1.18)	0.062 (1.37)	0.006 (0.12)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	52	52	46	72	72	60
R^2	0.582	0.659	0.704			
Pseudo R^2				0.298	0.481	0.463

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table A5: IV Placebo Test

Table A5 imitates the first stage of the IV regression using $\%DII$ instead of $\%FII$ as the dependent variable. The instrument, $MSCI$, is defined as 1 if the bank was included in the MSCI India domestic index in 2015 and 0 otherwise. $\%FII$, and $\%DII$ are the percentage of bank equity shares held by foreign institutional, and domestic institutional investors. $Capital$ is the Tier 1 Capital Ratio. $Capital$ is the Tier 1 Capital Ratio. $MarketCap$ is the market capitalization of a bank's common equity; $FreeFloatMarketCap$ is computed only using free floating shares. $Liquidity$ 12-month average trading value ratio as defined by MSCI. $ForeignRoom$ is the maximum % of foreign share allowed minus existing foreign investment. All explanatory variables are measured in 2015 (prior to underreporting disclosures). All continuous explanatory variables are standardized such that coefficients can be interpreted as the effect from a one s.d. increase. Underreporting is observed in years 2016 and 2017. Standard errors are clustered at the bank level.

	OLS		Tobit	
<i>MSCI</i>	-0.226 (-0.54)	-0.140 (-0.28)	-0.288 (-0.74)	0.053 (0.10)
<i>Capital</i>	0.094 (0.39)	0.515 (1.39)	0.155 (0.63)	0.488 (1.53)
<i>Log(Assets)</i>	0.271*** (2.91)	0.416 (0.79)	0.264*** (2.79)	0.823 (1.45)
<i>FreeFloatMarketCap</i>		-0.252 (-1.04)		-0.265 (-1.03)
<i>Liquidity</i>		-0.009 (-0.04)		0.064 (0.29)
<i>MarketCap</i>		-0.073 (-0.16)		-0.356 (-0.68)
<i>ForeignRoom</i>		-0.275 (-0.67)		0.210 (0.46)
Constant	-0.002 (-0.01)	-0.002 (-0.01)	0.078 (0.35)	-0.003 (-0.02)
Year FE	Yes	Yes	Yes	Yes
Observations	53	52	73	72
R^2	0.233	0.256	0.141	0.220
F	0.295	0.078	0.541	0.010

t statistics in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$