Stick or Carrot: Does Exclusive Relationship with Government Banks affect Reporting Choices and Investments?*

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Abstract

The extant literature suggests that banks play an important corporate governance role, and influence firms' reporting choices and investments. Yet, we know very little about how the government banks' (GOBs) multidimensional goals influence these important corporate control decisions. Using an exogenous shock that empowers banks, but heterogeneously affects incentives to increase the level of scrutiny, I find that firms that have an exclusive relationship with GOBs (henceforth, GOB firms) misreport, inflate their earnings, and over-invest compared to other firms. Moreover, there is no significant improvement in GOB firms' performance after the shock. Rather, there is evidence of a significant increase in risk-taking, which induced them to engage in precautionary savings, compared to that of non-GOB firms. Overall, these results suggest that the GOBs' multidimensional goals allow GOB firms to misreport, and engage in sub-optimal activities. This explains why GOBs end up with a risky set of firms compared to other banks.

JEL classifications: G21; M41; G31

Keywords: Government banks; Corporate misreporting; Investment policy

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1 Introduction

Theories suggest that firms' financial reports play a fundamental role in reducing information problems[1]. However, managers may manipulate financial reports to influence the contracting parties. Studies have highlighted that managers often misreport to obtain favourable contracting terms on external finance (Dechow et al., 1996), to meet the market expectations (Kasznik and McNichols, 2002), and to avoid technical violation on loans (Franz et al., 2014).[2] By doing so, they attract greater liquidation risk, litigation risk, and reputational concerns (Evans and Sridhar, 2002; Laux and Stocken, 2012; Trueman, 1997). Extant literature studies how this misreporting trade-off is influenced when suppliers of finance have profit-maximizing objectives (Aghamolla and Li, 2018; Bushman and Piotroski, 2006; Samuels et al., 2021). Yet, little is known about how this misreporting trade-off is impacted by the government banks (GOBs) that have multidimensional goals (i.e., welfare and political objectives). Our study aims to bridge this knowledge gap. More specifically, we ask whether maintaining an exclusive relationship with GOBs would influence firms' (hereafter, GOB firms) reporting choices and their investment policies. Ours study is the first one to directly explore this question.

The theoretical literature suggests that GOBs have welfare objectives and political motives (Atkinson and Stiglitz, 2015; Banerjee, 1997; Brei and Schclarek, 2015; Stiglitz, 1993). These banks typically have lower screening and weak monitoring standards, and prefer to evergreen or forebear the distressed/bad loans due to weak incentive structure (e.g., Kulkarni et al., 2019; Tantri, 2021). Therefore, it is reasonable to expect that the misreporting incentive of GOB firms will be lower in the first place. Nonetheless, the implicit guarantee of the GOBs may cultivate the moral hazard problem in GOB firms. As a result, these firms may provide misleading financial reports and extract private benefits. On the other hand, GOBs' loan officers are public servants and subject to scrutiny by the government's anti-corruption agency on the occurrence of large bad loans. This makes them risk averse and motivates them to maintain a higher level of scrutiny to prevent borrowers' moral hazard (Banerjee et al., 2004, 2008). Overall, it is not quite apparent that how GOBs would affect the reporting choices and investment decisions of the GOB firms.

GOBs are prevalent across the world (La Porta et al., 2002a). However, studying the

[1] To be specific, the financial reports reduce the banks' cost of screening and monitoring, thereby reducing the adverse selection and moral hazard problems (Berger et al., 2005). As a result, it improves the credit allocation in the market (e.g., Healy and Wahlen (1999)).

[2] For instance, debt contracts consist of accounting-based performance covenants. The managers use these performance pricing constraints in the debt contract in order to get credit at lower interest rates. Therefore, managers have incentives to inflate the earnings. It is well established in the literature that performance pricing constraints are positively related to managers' incentives to manage earnings.

impact of GOBs on firms' decisions is challenging. It requires an institutional setting where firms largely depend on bank loans. The Indian context provides the ideal setting where the public debt market hardly exists, and bank loans are the main source of external finance for the firms. Furthermore, studying the causal impact of GOBs on the firms' reporting choices and investment policies exposes identification challenges, as the relationship is endogenous. Firms' borrowing from GOBs correlates with firms' performance. Distressed or insolvent firms (i.e., low-quality firms) may opportunistically borrow from the GOBs to engage in sub-optimal or risk-shifting activities. Moreover, the industry-specific or economy-wide (e.g., global financial crisis) exogenous shocks typically influence GOBs' objectives, at least in the short run. For example, during the global financial crisis, GOBs' objective was to provide financial support to distressed firms. As a result, they forebear/ evergreen the distressed loans (Chari et al., 2021). Therefore, industry and economic shocks may not be considered as an ideal exogenous shock to explore this relationship.

To overcome this concern, we exploit the Securitization and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002 (henceforth, SARFEASI Act, 2002) as an exogenous shock that differentially impacts banks' incentives to increase scrutiny. The act grants sweeping powers to lenders to liquidate the assets on non-repayment without any court intervention. Given that the act is unlikely to affect all kinds of banks' objectives function. Therefore, profit-maximising banks would use this law to improve the loans' performance, thereby increasing the scrutiny. However, GOBs may not do so since they have welfare objectives (La Porta et al., 2002a), and have a disutility from the liquidation of assets (Brei and Schclarek, 2015). Therefore, the act provides a unique laboratory setting to investigate whether maintaining an exclusive relationship with GOBs would influence GOB firms' incentives to misreport. Since, the expected opportunistic switching to become a GOB firm in the post-policy period poses a threat to the identification, I use the pre-policy bank-firm relationship to make it exogenous.

The SARFEASI act provides greater power to lenders (lower enforcement cost), which means i) it may increase their willingness to supply credit (e.g., Bae and Goyal, 2009; Qian and Strahan, 2007), and ii) it may increase agents' liquidation risk, litigation risk, and reputational concerns[3], i.e., firms' ex-post costs (Bushman and Piotroski, 2006). As a consequence, this may potentially impact borrowers in two ways. First, firms may provide true or inflated financial reports to raise capital at lower cost (Dechow et al., 1996). Second, self-interested and career-concerned managers may, ex-ante, in-

[3]In creditors' friendly regime, financially distressed firms face a greater threat of premature liquidation (Vig (2013)). The agents are exposed to high litigation risk due to low litigation costs (Aghamolla and Li (2018)). As a result, the self-interested and career-concerned managers will have higher reputation concerns, as it will adversely affect future job prospects.

flate their earnings to avoid technical default or bankruptcy (i.e., ex-post costs) (e.g., Adler et al., 2013; Dichev and Skinner, 2002). An earlier study shows that demand for credit is significantly reduced due to a considerable rise in liquidation risk after the implementation of the Act (Vig, 2013). This suggests that the first channel is unlikely to work. Rather, the second channel is more likely to be in operation — firms perhaps manipulate their earnings to avoid ex-post cost of defaulting. Importantly, firms' incentives and ability to manipulate their reports depend on the objectives of the suppliers of finance (e.g., Burns et al., 2010; Leuz et al., 2003). GOBs with welfare objectives, compared to profit-maximising banks, are less likely to increase the scrutiny when lenders are empowered. Therefore, GOB firms have greater ability and incentives to inflate their earnings and extract private benefits than their non-GOB counterparts.

However, as explained above, this relationship is not so obvious since managers at GOBs are government employees, and their actions are subject to the scrutiny of the government's anti-corruption agency, known as Central Vigilance Commission (CVC). Whenever accounts turn bad due to suspicion of negligence, the vigilance department investigates employees for corruption and can charge them with criminal conspiracy against borrowers (i.e., high default penalty). This stigma[4] makes loan officers risk-averse and reduces lending (Banerjee et al., 2004, 2008). Perhaps, it increases loan officers' bias towards the liquidation over continuation. Moreover, GOBs' incentive structure rewards little for improvement in loan performance but poses huge penalties for bad loans (Banerjee et al., 2008; Tantri, 2021). Therefore, GOB officers may exploit SARFEASI Act to reduce bad loan penalties. Hence, the expected increase in GOBs' scrutiny is likely to increase the cost of misreporting of GOB firms, resulting in lower moral hazard. Given these competing arguments, the impact of GOBs lending relationship on the GOB firms' incentives to misreport remains an empirical question.

To explore the impact of GOBs on GOB firms' reporting choices and investment policies, I employ a quasi-natural experiment methodology, the Difference-in-Difference (DID) approach around an exogenous shock, SARFEASI Act 2002. To tease out the differential effects of the Act on the firms that had exclusive lending relationships with GOBs, I assign GOB firms to the treatment group, and other non-GOB firms to the control group. Since the SARFEASI Act does not affect GOBs' objectives and incentive structure of loan officers, it is reasonable to expect that GOBs are less likely to increase scrutiny after the implementation of the act for improving their loan performance (i.e., government organisations typically maintain status quo). Rather, they may continue

[4]A typical vigilance case goes on for years, and the employees undergo trauma and frustration during these years. During this time, the managers do not get promotions. For more details- https://www.thehindubusinessline.com/money-and-banking/Take-public-sector-bank-staff-out-of-CVC-purview/article20532446.ece

evergreening or forbearing the loans, which not only reduces loan officers' probability of default penalty (Chari et al., 2021; Kulkarni et al., 2019; Tantri, 2021), but also reduces government's fiscal burden of capital infusion (Acharya, 2020). On the other hand, profit-maximising banks face none of these binding constraints. Therefore, they may use the policy to improve loan performance by increasing the scrutiny. Taken together, the disciplinary effect of empowering creditors by the Act on the GOB firms is likely to be lesser than that of non-GOB firms. Advancing this view, I conjecture that GOB firms are more likely to misreport their earnings than non-GOB firms.

Furthermore, Bar-Gill and Bebchuk (2002) predicts the ramifications of misreporting on firms' investment decisions. That is, firms inflate their earnings to get pooled with better-performing firms, and, correspondingly, mimic the investment strategy of such firms. Therefore, I anticipate that, compared to non-GOB firms, GOB firms misreporting their earnings are likely to engage in sub-optimal activities such as over-investment and risk-shifting to give more consistent signals about their quality.

My findings corroborate the conjectures. First, I find that GOB firms misreport their earnings. To be specific, I find that GOB firms inflate their earnings greater than that of non-GOB firms, in the post-policy period. Second, I find that GOB firms increase investments more than non-GOB firms. On further exploration, I find that, compared to non-GOB firms, GOB firms do over-invest and engage in greater risk-taking activities in the post-policy period. However, these activities do not result in significant improvement in GOB firms' performance when compared with non-GOB firms. Interestingly, I find that GOB firms increase cash holdings and investment in short-term assets more than that of non-GOB firms.

These findings indicate that GOB firms misreport their earnings and over-invest to mimic a high-quality or better-performing firm. The insignificant increase in firms' performance indicates that managers perhaps invest in sub-optimal investment projects. Importantly, they are able to engage in such activities due to lax screening and poor monitoring standards of GOBs. Moreover, GOB firms' increase in cash holding and investment in short-term assets indicates that managers are not only keeping the buffer to absorb any adverse shocks but it also enabling them to mimic a safe firm. Such behaviour of GOB firms is consistent with risky firms (Acharya et al., 2012).

The study establishes a new link between the accounting and banking literature by documenting that welfare-maximizing GOBs will affect firms' misreporting trade-offs differently than that of profit-maximizing banks. I show that multidimensional goals of GOBs may allow GOB firms to manipulate their earnings. However, the extant literature typically explores the impact on the quality of financial reports due to investors' protection (Bushman and Piotroski, 2006), public scrutiny (Franz et al., 2014; Samuels et al., 2021), institutional ownership (Burns et al., 2010), accounting conservatism

(Aghamolla and Li, 2018), meeting or beating market expectation (Kasznik and McNichols, 2002), avoiding technical violation (DeFond and Jiambalvo, 1994; Dichev and Skinner, 2002), and raising external finance (Dechow et al., 1996). It is worth noting that these studies implicitly assume that suppliers of finance have profit-maximizing objectives or at least do not have any welfare and political goals. Furthermore, I also add to the literature that explores the real effects of firms' misreporting (Bar-Gill and Bebchuk, 2002; Kedia and Philippon, 2009). I document that GOB firms are more likely to do over-investment and engage in risk-taking activities than non-GOB firms.

The study also contributes to the financial intermediation literature that explores the impact of GOBs' objectives on the behaviour of firms associated with them (e.g., Carvalho, 2014; Kariya, 2021; Khwaja and Mian, 2005; Kumar, 2020; Sapienza, 2004; Srinivasan and Thampy, 2017). One view suggests that GOBs reduce financial constraint and lower pre-mature liquidation risk of GOB firms (Kariya, 2021; Srinivasan and Thampy, 2017). However, the alternative view argues that the political motives of GOBs lead to credit misallocation and adversely affect economic outcomes (Carvalho, 2014; Khwaja and Mian, 2005). I contribute to this ongoing debate, especially the latter strand of literature, by showing the economic cost of GOBs' multidimensional goals and weak invective structure on the firms' reporting choices and investment policies.

Further, the study contributes to the law and finance literature by documenting the impact of strengthening creditors' rights on the GOBs' scrutiny. From prior literature, we know that empowering profit-maximizing lenders would normally discipline the firms (e.g., Bae and Goyal, 2009; La Porta et al., 1998; Vig, 2013). However, we know very little about its impact on GOB firms. The present study provides the robust empirical evidence that relatively lower scrutiny by GOBs, after strengthening of creditors' rights, enables the GOB firms to misreport the earnings and engage in sub-optimal investments. The closest paper to the study shows the economic benefit of firms' relationship with GOB (Kariya, 2021). This study concludes that GOB firms experience lower liquidation risk than other firms after the creditors are empowered.

Finally, the paper adds to the stream of literature that explores the relationship between corporate cash-holding and the riskiness of the firm (e.g., Acharya et al., 2012). We document that GOB firms' misreporting, over-investment and higher risk-taking in the strengthening of creditors' rights regime induces them to hold a higher level of cash and short-term investments.

The paper proceeds as follows: Section 2 provides the institutional background, section 3 discusses related literature and develops the hypothesis, section 4 explains the empirical methodology, section 5 details the data along with descriptive statistics, section 6 presents the empirical results. Finally, section 7 concludes the study.

2 Institutional Background

2.1 Indian Banking system

The central bank of India, the Reserve Bank of India (RBI), regulates the banking system. The banks are required to have an RBI charter to conduct business in India. Currently, there are mainly three types of banks that deal with the corporate sector, namely government-owned banks (GOBs), privately owned banks (POBs), and foreign banks (FB). Out of these, GOB holds the majority, more than 70% of the market share, as shown in Figure 1. Since the public bond market hardly functions in India, incentives and objectives of the GOBs would have a significant impact on companies' corporate control decisions. There is considerable evidence which suggests that political and bureaucratic involvement in GOBs' boards not only impact the bank policies (such as risk management and lending policy) but also influence the day-to-day functioning of the banks (e.g., Berry, 1994; Ghosh, 2000; Kumar, 2020). As a result, it undermines GOBs' operational flexibility and weakens the incentives to improve loan performance, leading to lower productivity of GOB employees compared to private banks counterparts (Banerjee et al., 2004, 2008).[5] Hence, it makes the Indian context an ideal institutional setting to explore the impact of welfare-maximizing GOBs on the companies' reporting choices and other important corporate control decisions such as investment policy, risk-taking, and cash holding policy.

2.2 SARFEASI Act 2002

Prior to the 1990s, Indian banks were reeling from an inefficient debt recovery system and had large amounts of non-performing assets (NPA). Somewhere around 25-30% of loans turned bad, and banks had to write off significant losses owing to long delays in the debt resolution process due to the highly rigid judicial process and bureaucratic delays[6]. In the case of non-repayment of loans, the banks had to file a civil suit against the borrowers in civil courts, which often led to considerable delays. Consequently, a significant amount of capital was tied to NPA, whose value was lost over the course of a lengthy judicial process, which, in turn, had ramifications on the banks' performance.

The concerns over the health of Indian banks engendered the government of India (GOI) to introduce financial sector reforms during the 1990s. In the midst of reforms, the government introduced two important reforms to speed up the debt recovery pro-

[5] *"India's Banks Are Seen as Antiquated and Unproductive"– The New York Times, 2007* –https://www.nytimes.com/2007/03/23/business/worldbusiness/23india.html

[6] https://frontline.thehindu.com/economy/article30161418.ece

cess and shifted from a pro-debtor regime to a pro-creditors regime. First, the government established special tribunals aiming to process debt recovery suits by passing legislation in 1993- Debt Recovery Tribunals Act (DRT Act). These tribunals were granted considerable flexibility to streamline the debt recovery suits of banks and financial institutes for claims worth over ₹1 million. Second, the government passed the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act in 2002. The Act granted considerable powers to the creditors as it allowed secured creditors to seize the collateral assets of the defaulting borrowers without going through lengthy court procedures. It applies to all old and new secured debt contracts, a secured lender can use provisions of the SARFAESI, meeting the following two conditions: first, loans are required to be in default for more than six month; second, lenders are required to give 60 days' notice upon non-repayment. It is worth noting that the SARFAESI is applied to banks.

The SARFAESI changed the Indian legal and institutional framework to a pro-creditors regime from a pro-debtor regime by empowering the secured creditors. It essentially altered the process of security interest enforcement, and shifted the burden of proof to debtors from creditors. In the post-SARFAESI regime, a lender, after giving 60 days' notice to borrowers for meeting their obligation, is entitled to seize the collateral asset when obligations are not met. The secured lender can takeover the management of security or the business itself. It is worth noting that the borrowers can appeal to the debt recovery tribunal that too secondary appellate level only after the lender appropriates the security. Moreover, borrowers need to deposit 75% (later dropped to 25%) of the defaulted loan amount with DRT to appeal against the court orders.

The SARFAESI significantly improved the debt recovery system by strengthening the rights of the creditors, resulting in a significant reduction in banks' NPAs, as shown in Figure 2. Vig (2013) shows that such a turnaround in the Indian legal system increases the liquidation risk of the companies, leading to a reduction in demand for secured loans. Therefore, I use this policy as an exogenous shock that enhances lenders' power and incentives to increase the scrutiny and reduce NPAs. The GOBs have welfare objectives and low-powered incentives, as a result, they are less likely to increase scrutiny. Therefore, GOB firms are less likely to experience higher bank scrutiny after the policy implementation. On the other hand, profit-maximizing banks are more likely to exploit this policy to improve loan performance by increasing scrutiny. As a result, firms other than GOB firms are likely to experience higher scrutiny after the enforcement of the policy. Thus, the policy provides an ideal exogenous shock that deferentially impacts banks' incentives to increase scrutiny. In this paper, I use this policy to investigate the impact of GOBs' welfare-maximizing objectives on the GOB firms' reporting choices and other corporate control decisions compared to non-GOB

firms' counterparts.

3 Related literature and Hypothesis Development

3.1 Government banks and credit market

Government banks typically operate in the economies to address market failures. These banks are prevalent across the world, especially in the emerging economies (La Porta et al., 2002a). There are three prominent views that explain the role of government in the credit markets– social view, political view, and agency view. The social view suggests that government banks have welfare objectives beyond profit-maximization, as a result, they typically allocate capital to socially profitable projects that are unviable for profit-maximizing banks (Atkinson and Stiglitz, 2015). Therefore, welfare-maximizing GOBs are most likely to ease the entrepreneurs' financial constraints (Srinivasan and Thampy, 2017), and contribute towards economic growth (Banerjee and Duflo, 2014; Stiglitz, 1993).

Next, the political view suggests that politicians influence the GOBs' lending to maximize their political goals (Kumar, 2020; Shleifer and Vishny, 1994). For instance, politicians induce GOBs to direct the credit to the firms before elections to generate employment and win electoral support (Carvalho, 2014). Finally, the agency view suggests that GOBs' multidimensional non-measurable goals not only result in corruption and misgovernance, but also lead to low-powered incentives of bank officials (Banerjee, 1997; Tirole, 1994). By construction, GOBs are exposed to agency conflicts and bureaucratic corruption, which may lead to resource misallocation (e.g., Cole, 2009). Moreover, bank officials may exert low effort or divert funds for personal benefits, such as providing credit to a specific interest group while considering future job prospects.

The extant literature looks into the impact of government banks' objectives on firms' borrowings. However, the impact of GOBs on the borrowers' misreporting trade-offs, and thereby corporate control decisions is rarely explored in the literature. In this paper, I study the impact of GOBs' welfare maximizing objectives on GOB firms' reporting choices and investment decisions to fill this gap in the literature.

3.2 Managers' incentive to misreport

Studies have highlighted that managerial incentives to misreport, i.e., cost and benefit trade-off of misreporting, plays an important role in dissipating managers' pri-

vate information about firms in financial reports (Ball et al., 2000a,b, 2003; Bushman and Piotroski, 2006). The misreporting trade-off allows to understand the underlying incentives of misreporting. Studies have found that managers manipulate earnings to influence the contracting parties, raise funds at a lower cost, meet or beat market expectations, influence the regulators, avoid technical default, and get friendlier debt contract terms[7]. Overall, extant literature explores the incentives of managers to manage earnings in several contexts. Yet, we know little about the potential impact of GOBs on the managers' incentives to misreport. In this paper, I fill this gap in the literature by studying these potential effects.

3.2.1 Scrutiny and managers' incentive to misreport

Economic theories suggest that a firm is a nexus of contracting relationships. These contracts essentially allow, to some extent, mitigating the agency conflicts among various contracting parties (Jensen, 1986; Jensen and Meckling, 1976). More importantly, financial reports are an integral part of these contracts as these provide essential information to write contracts (Watts and Zimmerman, 1986), particularly in the case of contracts between the firm and its lenders (Smith and Warner, 1979). The quality of financial reports is a crucial part of efficient contracting to reduce the agency costs. In a given contract, parties maximize their utility. Naturally, it is optimal for self-interested agents to withhold unfavourable information to extract private benefits (e.g., Verrecchia, 2001). Therefore, disciplining agents becomes imperative to get quality financial reports that reflect true economic performance for mitigating the governance and debt-related agency conflicts.

The conventional wisdom suggests that greater legal protection to the suppliers of finance or principal (in our case, creditors) leads to higher firms' scrutiny, which disciplines managers and prevents managerial opportunism[8] (e.g., La Porta et al., 2008, 2002b; Leuz et al., 2003). Consequently, it increases lenders' demand for accounting conservatism (Aghamolla and Li, 2018), thereby improves the quality and timeliness of accounting information (Bushman and Piotroski, 2006). Moreover, lenders rely

[7] See (Dechow and Skinner, 2000; Healy and Wahlen, 1999; McNichols, 2000) for the overview of the literature.

[8] This is the case due to, first, it increases the threat of firms' premature liquidation, litigation risk, and reputational concerns for the managers' Watts (2003a,b). Second, it increases the threat of severe repercussions for defaulting, such as prompt or accelerating repayment and a rise in the interest rate on loans Nikolaev (2010). This is the case due to creditors' threat increases, with the rising efficiency of the legal system and power of the creditors[9]. Third, it increases creditors' threat to cut-off future access to finance, defaulting even once. Fourth, strengthening creditors' rights increases the credit supply. Hence, it increases borrowers' incentives to present true economic performance to reduce information asymmetry and build a reputation among lenders. As a result, it increases access to finance and lowers the cost of credit Diamond and Verrecchia (1991). In sum, empowering creditors should improve the managerial incentive to show a firm's true economic position.

on accounting information and use accounting-based covenants in the debt contract– act as effective "tripwires" which are likely to reduce agency costs and renegotiation costs[10] (Smith and Warner, 1979). In sum, greater scrutiny is expected to improve the quality of financial reports and increase contracting parties' reliance on accounting information, which is likely to increase the earnings response coefficient (ERC) (Collins and Kothari, 1989; Teoh and Wong, 1993).

In contrast, the debt covenant hypothesis suggests that agency conflicts (between shareholders and lenders) influence managers' accounting choices due to considerably high ex-post cost associated with covenant violations (Graham et al., 2005; Sweeney, 1994)– such as unable to access credit in future and higher interest cost on existing and future loans (Roberts and Sufi, 2009; Sufi, 2009). According to this view, managers' incentives to manipulate the earnings are higher when the ex-post cost of covenant violations or technical default is considerably greater– particularly when firms experience higher scrutiny[11] (Franz et al., 2014). Moreover, Fischer and Verrecchia (2000) show that a rise in benefits to misreport relative to its cost increases managers' bias, resulting in the lower information content of the reports. A recent paper of Samuels et al. (2021) shows that increasing public scrutiny increases the ERC, resulting in greater managers' incentives to misreport initially, but reduces after reaching the peak. Therefore, a rise in valuation benefits may increase the managerial incentive to manipulate earnings. Alternatively, an increase in scrutiny spurs the managers' ex-post cost of debt-covenant violations and technical default, which induces them to misreport to avoid such costs.

Given these competing views, the relationship between suppliers of finance scrutiny and managerial incentive to misreport is unclear. Moreover, the underlying assumption under these views is that suppliers of finance have profit maximization objectives. Nevertheless, in emerging economies, GOBs dominate the credit market. These banks have welfare objectives and political motives that are beyond profit-maximization objectives (La Porta et al., 2002a; Sapienza, 2004). Such objectives essentially yields agency problems, low-powered incentives, and governance issues in the GOBs. Consequently, GOBs have lax screening and poor monitoring standards than those of private banks. It implies that firms that maintain exclusive relationships with GOBs experience lower scrutiny than other firms. Therefore, GOB firms have greater scope to withhold unfavourable information in the financial reports, engage in risk-shifting activities, and invest in projects to extract private benefits than other firms.

Importantly, firms in emerging economies largely depend on bank loans for external

[10] Armstrong et al. (2010); Fields et al. (2001) provides an excellent review of the related literature.

[11] This is likely to be the case when lenders have excessive powers or managers face high litigation risk due to greater regulatory vigilance– for instance, in the post-Sarbanes–Oxley Act regime.

finance. Therefore, lower scrutiny of GOBs perhaps distorts firms' incentives and increases resource misallocation, which may increase the fragility of the financial system and result in a crisis. Given the importance, the literature rarely explores the impact of GOBs' lax screening and inefficient (or lower) monitoring on the borrowing firms' incentives to misreport and its real implications on investments and risk-taking, especially for those firms that maintain exclusive relationships with GOBs.

3.3 Hypothesis Development

The above discussions on managers' incentives to misreport and government banks' objectives suggest that firms who exclusively borrow from GOBs have greater scope to engage in sub-optimal activities compared to other firms. This is primarily due to the lax screening and poor monitoring standards of welfare-maximizing GOBs, as well as the low-powered incentives of GOB managers. Therefore, it is reasonable to expect that firms that maintain exclusive relationships with GOBs are likely to experience lower liquidation, litigation, and reputation concerns (lower scrutiny) compared to firms that do not maintain exclusive relationships with GOBs or borrow from several banks. Advancing this view, I argue that firms having an exclusive relationship with GOBs are more likely to misreport their earnings than other firms that do not maintain an exclusive relationship with GOBs. This materializes into the first hypothesis.

Hypothesis 1

H1. Firms that exclusively borrow from government-owned banks are likely to misreport the earnings more compared to other firms.

I test this hypothesis using an exogenous event, i.e., the SARFEASI Act of 2002 (policy). This policy intervention provides a unique opportunity to establish causal claims as it significantly impacts firms' incentives to misreport. The act significantly increases borrowers' liquidation risk (Vig, 2013), i.e., ex-post cost of default penalty. That, in turn, increases the borrowers' incentives to manipulate the earnings either to raise capital (Dechow et al., 1996), or to avoid ex-post cost (Franz et al., 2014). However, the former is less likely to be the case as we know that the act reduced the demand for loans (Vig, 2013). Therefore, firms most probably manage their earnings to avoid any ex-post cost. Nonetheless, the firms' ability to manipulate depends on the scrutiny of the suppliers of finance, i.e., banks. Since GOBs' multidimensional goals and weak incentive structure act as deterrents to increase scrutiny and improve the loan performance after the act, GOB firms have greater flexibility to misreport to avoid the ex-post cost compared to other firms. Moreover, Franz et al. (2014) suggests that firms upwardly manipulate their earnings when the ex-post cost of default

significantly increases. Given this premise, building on H1, I predict: GOB firms are more likely to inflate their earnings than non-GOB firms in the post-policy regime. It implies that GOB firms are more likely to avoid the increase in the ex-post cost on technical default in the post-policy regime. Interestingly, this is in line with the GOBs' loan managers' incentive structure, which poses huge penalties on borrowers' default and rewards very little on loan performance improvements (Banerjee et al., 2008). In other words, if GOB firms inflate their reports to prevent technical violation/ default, this correspondingly reduces the probability of incurring large default penalties by loan officers' or vigilance probes, in the post-policy period. Therefore, it is reasonable to expect GOB firms to have greater flexibility in managing their earnings to avoid the increase in ex-post cost than non-GOB firms.

Further, the theory of Bar-Gill and Bebchuk (2002) predicts that firms that overstate their financial reports are more likely to invest in inefficient investment projects. Kedia and Philippon (2009) similarly predicts that firms overstate their earnings to get pooled with better-performing firms will mimic the investment strategy of such firms. That is, these firms will sub-optimally invest, and provide a consistent signal to back reported profits. This misallocation of resources is known as the economic cost of misreporting[12].

Since GOB firms have greater flexibility to misreport in post-SARFEASI regime and face lower liquidation risk during that period (Kariya, 2021), these firms may engage in value-destroying and risk-shifting activities. On the other hand, profit-maximizing banks perhaps increase the scrutiny to improve loan performance. Therefore, it prevents other firms from engaging in sub-optimal activities. Based on the discussion and theories, it is reasonable to expect that GOB firms are likely to misreport to get pooled with better-performing firms, thereby investing in inefficient projects, i.e., over-investment or engaging in empire-building activities, compared to non-GOB firms. Consequently, given the H1, this motivates the second hypothesis.

Hypothesis 2

H2. In post-SARFEASI regime, GOB firms are more likely to invest in inefficient investment projects compared to other firms.

Building on the above, if GOB firms are misreporting and investing in inefficient investment projects, it is reasonable to conjecture that GOB firms are less likely to perform better, if not worse, by engaging in sub-optimal activities compared to other firms, in the post-SARFEASI regime.

[12]Such distortion will be notably greater where the GOBs dominate credit markets. This is the case because GOBs officials' low-powered incentives lead to lax credit screening and monitoring of the borrowers.

Finally, GOB firms' manipulation of financial reports and over-investments are likely to increase the riskiness of these firms more than other firms, in the post-SARFEASI regime. The economic logic suggests that GOB firms are likely to engage in some sort of precautionary measures. Advancing this view, I expect that an increase in GOB firms' riskiness may induce them to keep higher cash holdings and invest in short-term securities to keep a buffer against adverse shocks than that of other firms, in the post-SARFEASI regime.

4 Empirical Methodology

The paper empirically examines whether maintaining an exclusive relationship with GOBs impact the GOB firms' reporting choices and investment decisions. I exploit the introduction of the SARFEASI Act of 2002 as an exogenous shock. It essentially empowers creditors to appropriate the collateral asset on non-repayment without court's intervention. Crucially, it increases the incentives of profit-maximization banks to increase scrutiny and improve loan performance. That, in turn, curtails the firms' incentives to engage in inefficient activities. On the other hand, the SARFEASI Act does not affect the incentive structure of managers of GOBs. Moreover, it does not alter multidimensional goals of GOBs. Therefore, GOBs are less likely to increase scrutiny on the borrowers to improve loan performance. As a result, GOB firms have a greater scope of manipulating the reports to avoid ex-post cost than that of other firms. I use SARFEASI to tease out the real economic cost of welfare-maximizing GOBs. I employ a quasi-natural experiment methodology, a difference-in-difference (DID) approach. The DID approach is appropriate to establish causality in the quasi-natural settings, similar to the settings in the present study.

In a typical DID framework, one can compare the effect of an exogenous event (policy intervention) on groups affected by the event (treatment group) with those that are unaffected (control group), while eliminating estimation bias from self-selection and reverse-causality problems. While taking a simple difference to observe the aggregate effect of the event (policy intervention) on the variable of interest (say, financial misreporting), i.e. subtracting the treated firms' misreporting after the policy intervention from misreporting before the policy intervention, would result in a bias occurring from observable and unobservable factors. Therefore, an appropriate control group is required to capture (or absorb) common economic variations or shocks and validate the parallel trend assumption. It enables the researchers to establish causal claims. Finally, comparing the difference in the control group with the difference in the treated group provides certain policy implications for the treated firms, and enables the researchers to establish causal claims.

Since the SARFEASI Act applies to all firms simultaneously, it does not provide natural treatment and control groups for the analysis. The reform, however, is unlikely to impact the firms homogeneously, as highlighted above. Thus, I exploit the reform's natural heterogeneous effects on the firms to construct treatment and control groups (e.g., Vig, 2013). Specifically, firms that exclusively borrow from GOBs are likely to experience lower scrutiny because the act does not affect GOBs' objectives and incentive structure. As a result, GOB firms may behave opportunistically compared to other firms. I utilize the pre-reform cross-sectional firm-bank relationship to classify these firms into two groups. Specifically, firms that exclusively borrow from GOBs in the year prior to reform are considered the treatment group, and firms that do not exclusively borrow from the GOBs in the year before the reforms are assigned to the control group.

To test my hypothesis, I performed DID estimation using the following specification:

$$Y_{i,s,t} = \tau_t + \beta_{st} + \delta_i + \alpha_1 Post_t * GOB_i + \alpha_2 \Gamma_{i,t} + \epsilon_{i,s,t} \tag{1}$$

where $Y_{i,s,t}$ is an outcome variable for firm i, in industry s, at time t. $Post_t$ is a dummy variable that takes value 1 for years 2002-2005, and 0 otherwise, for the post-SARFEASI Act period. GOB_i is a dummy variable that takes the value 1 for the treated firms (i.e., GOB firms) and 0 otherwise. The variable of interest is the coefficient, α_1 of interaction term $Post_t * Treat_i$ that captures the causal effect of SARFEASI on the outcome variable of interest. τ_t and δ_i are years and firm fixed effects to control the effects on the outcome variables owing to aggregate macroeconomic shocks and time-invariant firms heterogeneity, respectively. β_{st} is to control time-varying industry-specific economic shocks. $\Gamma_{i,t}$ is a set of control variables which includes size, leverage, sales growth, interest expense, return on assets, and cash holding. I cluster standard errors at the firm level.

4.1 Earnings Management proxies

I use accrual-based earnings management (AEM) models estimated cross-sectionally using industry year observations. The approach allows to partly control for the industry-wide economic variations that bias the accrual estimations while allowing intertemporal coefficient variation (e.g., DeFond and Jiambalvo, 1994).

I use five models to estimate expected discretionary accruals as AEM proxies. These measures include modified version of Jones (1991) model developed by Dechow et al. (1995) - AEM_1, performance adjusted accruals of Kothari et al. (2005) -AEM_2, cash-flows adjusted accruals of Ball and Shivakumar (2008) -AEM_3, working capital version

of Jones (1991) -AEM_4, and conditional conservatism model of Ball and Shivakumar (2006) -AEM_5. However, for my baseline analysis, I use the first two approaches- AEM_1 and AEM_2, and keep other approaches as robustness measures - AEM_3, AEM_4, and AEM_5.

I follow the approach of Dechow et al. (1995) for estimating the modified Jones (1991) model to compute discretionary accruals (AEM_1). It captures the part of income accruals driven by managerial discretion rather than true economic performance. The absolute value of the measure captures the magnitude of misreporting, whereas signed version, positive (negative) value of AEM_1 show income increasing (decreasing) earnings management. I estimate the following regression specification using the industry-year observations to extract the coefficients, a_1, a_2, a_3, from Equation 2.

$$\frac{TAC_{i,t}}{TA_{i,t-1}} = a_1 \frac{1}{TA_{i,t-1}} + a_2 \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{TA_{i,t-1}} + a_3 \frac{PPE_{i,t}}{TA_{i,t-1}} + \epsilon_{i,t} \tag{2}$$

I then use the estimated coefficients and compute the AEM_1 for each firm as follows:

$$AEM_{1,i,t} = \frac{TAC_{i,t}}{TA_{i,t-1}} - \left[\hat{a_1} \frac{1}{TA_{i,t-1}} + \hat{a_2} \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{TA_{i,t-1}} + \hat{a_3} \frac{PPE_{i,t}}{TA_{i,t-1}} \right] \tag{3}$$

where $TAC_{i,t}$ is total accruals of firm i at year t, $\Delta REV_{i,t}$ is change in net revenue, $\Delta REC_{i,t}$ is change in net accounts receivables, $PPE_{i,t}$ is property, plant, and equipment, and $TA_{i,t-1}$ is beginning of the year total assets.

The second proxy for discretionary accruals, AEM_2, is performance-adjusted discretionary accruals to address the concerns raised by Kothari et al. (2005). I estimate AEM_2 by following the approach of Chen et al. (2008). This measure adjusts for the companies' performance while estimating the discretionary accruals and improves the reliability of the AEM (Dyreng et al., 2022). It captures the part income driven by managerial discretion rather than true economic performance. The absolute value of the measure captures the magnitude of misreporting, whereas signed version, positive (negative) value of AEM_2 show income increasing (decreasing) earnings management. I control for the firm's contemporaneous performance and estimate the following model for each industry-year using ordinary least squares estimation.

$$\frac{TAC_{i,t}}{TA_{i,t-1}} = b_1 \frac{1}{TA_{i,t-1}} + b_2 \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{TA_{i,t-1}} + b_3 \frac{PPE_{i,t}}{TA_{i,t-1}} + b_4 \frac{EBXI_{i,t}}{TA_{i,t-1}} + \epsilon_{i,t} \tag{4}$$

I then use the estimated coefficients, b_1, b_2, b_3, b_4, from Equation 4 and compute the

performance adjusted AEM_2 for each firm i as follows.

$$AEM_{2,i,t} = \frac{TAC_{i,t}}{TA_{i,t-1}} - \left[\hat{b_1}\frac{1}{TA_{i,t-1}} + \hat{b_2}\frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{TA_{i,t-1}} + \hat{b_3}\frac{PPE_{i,t}}{TA_{i,t-1}} + \hat{b_4}\frac{EBXI_{i,t}}{TA_{i,t-1}}\right] \quad (5)$$

where $TAC_{i,t}$ is total accruals of firm i at year t, $\Delta REV_{i,t}$ is change in net revenue, $\Delta REC_{i,t}$ is change in accounts receivables, $PPE_{i,t}$ is property, plant, and equipment, $EBXI_{i,t}$ is earnings before extraordinary items, and $TA_{i,t-1}$ is beginning of the year total assets.

4.2 Abnormal Investment proxies

I proxy firms' abnormal (over or under) investment as the investment that differs from the expected level of the firms' investment opportunities. I use three measures to compute the expected level of firm's investment. To be specific, I estimate the firms' abnormal investments using three measures. First, I compute abnormal investment, $ABInvest_1$, of the firm using the level of investment in the same industry in a particular year. Second, I follow the approach of Biddle et al. (2009) to estimate abnormal investment, $ABInvest_2$, of the companies. They argue that growth opportunities determine companies' investment policies. The companies over (under)-invest when they invest more (less) than growth opportunities, estimated by the sales growth. I estimate coefficients from the following model for each industry-year using the ordinary least squares estimation approach.

$$Investment_{i,t} = \delta + \delta_1 SalesGrowth_{i,t-1} + \epsilon_{i,t} \quad (6)$$

where $Investment_{i,t}$ is the total investment of firm i in year t normalized by the firm's beginning of the year total assets. $SalesGrowth_{i,t-1}$ is growth in the sales of the firm i in year t from $t-1$. $\epsilon_{i,t}$ the sign and magnitude of the residuals provide the under or over-investment by the firms. The positive (negative) sign suggests the over (under) investment by the firm in a particular year.

Since the availability of internal financing (measured by cashflows) of the firm would impact the level of investment. Therefore, I control the cash flow (CFO) of the firm for the third proxy of abnormal investment, $ABInvest_3$ (e.g., McNichols and Stubben, 2008). I run the following model to estimate the coefficients for each industry-year using the ordinary least squares method.

$$Investment_{i,t} = \tau + \tau_1 SalesGrowth_{i,t-1} + \tau_2 CFO_{i,t} + \epsilon_{i,t} \quad (7)$$

where $Investment_{i,t}$ is the total investment of firm i in year t normalized by the firm's

beginning of the year total assets. $SalesGrowth_{i,t-1}$ is growth in the sales of the firm i in year t from $t-1$. $CFO_{i,t}$ is cash flow from operating activities. $\epsilon_{i,t}$ provides the desired estimation of abnormal (under or over) investment of the firms.

5 Data and Sample

I primarily extract Indian firm-level data from the Prowess database maintained by Centre for Monitoring Indian Economy (CMIE). The database is widely used by the researchers (e.g., Aghamolla and Li, 2018; Gopalan et al., 2018, 2007; Manchiraju and Rajgopal, 2017; Vig, 2013) to conduct study on Indian firms. It covers the financial information of listed and unlisted non-financial companies. The database not only contains the firm's balance sheet, income statement, and cash flow statement data but also has useful identifiers such as the firm's address, year of incorporation, industry classification, business group affiliation, and ownership. Importantly, it contains the firm's banking relationship with a different set of bankers on a yearly basis.

To define firms' banking relationship, I follow Srinivasan and Thampy (2017). First, I assign all the banks in the database into three categories: government-owned banks, private banks, and foreign banks. Second, I use the list of banks with whom firms have a relationship in a particular financial year, I categorize the firms into two groups: GOB firms and other firms. A firm that has an exclusive relationship with GOBs in a particular year is classified as a GOB firm, otherwise, other firms. That means GOB firms would have all the GOBs with whom they have a banking relationship. In the case of other firms, the firms can either have exclusive relationships with private or foreign banks, or have a banking relationship with all the banks. Moreover, for firms' industry classification, I map the National Industrial Classification (NIC) codes to Fama-French industry classifications.

In the study, I use all non-financial and non-utility companies available in the database during the period of 1998 to 2005. That is four years prior to the SARFEASI Act (1998 to 2001) and four years after the act (2002 to 2005). My full sample consists of firms with no missing data on the main variables, including total assets, debt, revenue, earnings before extraordinary items, accounts receivables, property, plant and equipment (PPE), and net income. In addition, a firm is required to have at least ₹10 million of total assets, positive leverage, revenue, and book value of equity capital. Importantly, I also require a firm to have data on banking relationships, particularly prior to the act, i.e., in the year 2001. These data restrictions provide a sample of 18,466 firm-year observations of the non-financial and non-utility private firms (listed and unlisted). The observations may vary in some of the analysis owing to missing data on some

variables. The detailed definition of the variables is provided in Table A1, and the distribution of the sample by industry is provided in the Table A2.

5.1 Descriptive Statistics

Table 1 reports the descriptive statistics of the key variables in the sample. The full sample consists of 18,466 firm-year observations of 2,833 unique firms within the sample period of 1998 to 2005. I report the mean, median, 25 percentile, 75 percentile, and standard deviation of the key variables. The mean (median) of total accruals (TAC) is 1.014 (0.802) and that of revenue (REV) is 0.99 (0.799). This indicates that the average firm has a high percentage of accruals and revenue to the beginning of the year total assets. The mean (median) sales growth (SaleGrowth) of 0.006 (0.063) shows that the average firm has relatively low year-on-year sales growth. The mean (median) of working capital is 0.22 (0.216) of the beginning of the year total assets. The mean (median) of cash flow from operating activities (CFO) is 0.282 (0.077) of the beginning of the year total assets. The average (median) size of the firms in the sample is 5.98 (5.85). The mean (median) leverage of the firm is 0.712 (0.59), with a mean (median) interest expense of 0.117 (0.085). The mean (median) cash holding of the firm is 0.037 (0.019) of the beginning of the year total assets. The sample firms have a relatively low mean (median) return of assets of -0.003 (0.013). The mean (median) investments of the firms are relatively low, about 0.05 (0.017) of the beginning of the year total assets. The mean (median) natural logarithm of firm's age is 2.984 (2.89). The mean (median) AEM_1 and AEM_2 of the firms in the sample are 1.124 (0.986) and 1.004 (0.863), respectively. Overall, the mean, median, 25 percentile, and 75 percentile values of the variables are comparable and standard deviations are low. Therefore, the analysis is less likely to be affected by the outliers.

Table 2 presents the descriptive statistics of GOB firms and NoN-GOB firms of the key variables. The full sample consists of 9,945 firm-year observations of GOB firms and 8,521 firm-year observations of non-GOB firms. The table reports the mean, median, and standard deviation of the key variables of GOB firms and non-GOB firms. Followed by the difference in the mean analysis. Firm-year observations in the treatment (GOB firms) and control (non-GOB firms) groups are fairly balanced. Moreover, the value of key variables mean, median, and standard deviation of GOB and non-GOB firms are comparable.

6 Empirical Results

6.1 Main Results

In this section, I report the impact of the SARFEASI Act 2002 (policy) on the GOB firms' AEM practices using the DID approach with the baseline regression specification Equation 1. Table 3 reports the impact of the policy on firms' reporting decisions.

Columns 1 and 2 report the impact of policy on firms' misreporting, using the first proxy, $|AEM_1|$, whereas columns 3 and 4 report the same using the second proxy, $|AEM_2|$. The main variable of interest here is $(Post \times GOB)$, which estimates the direct impact of the policy on GOB firms' misreporting proxies compared to that of non-GOB firms. In both cases, this interaction term is positive and significant. Values of the coefficients suggest that from the pre to post policy intervention phase, GOB firms increase their misreporting by more than 5 percent compared to other firms. The results are robust when we apply a two-way fixed effect model with or without control variables. The results without control variables essentially addresses the concerns that the covariates can potentially bias the estimated coefficient in the DID framework. The effects are significant at a 1% significance level. The results substantiate Hypothesis H1, and provide empirical support to the argument that compared to non-GOB firms, GOB firms misreport their earnings, perhaps to avoid the rise in ex-post cost after the policy implementation. Therefore, I argue that GOB firms are able to do so, possibly owing to GOBs' multidimensional goals and weak incentives (Banerjee, 1997; Cole, 2009).

I further explore which type of earnings management GOB firms adopt after the policy implementation, compared to non-GOB firms. Since SARFEASI empowers lenders with sweeping rights to appropriate the collateralized asset in case of non-repayment, a significant increase in firms' ex-post cost of default penalty is inevitable. The economic theory suggests that shareholders prefer earnings management when the cost of misreporting is less than the cost associated with default (Verrecchia, 2001). Therefore, it is optimal for firms to inflate their earnings to avoid such costs, though the ability to do so depends upon lenders' scrutiny. From the above results, we know that GOB firms face less scrutiny, therefore, manage their earnings more. Taken together, I conjecture that GOB firms are more likely to upwardly manage earnings than that of non-GOB firms.

To test this conjecture, I employ the baseline regression specification, Equation 1, with signed misreporting proxies, AEM_1 and AEM_2. I report the results in Table 3 of columns 5 to 8. The estimated coefficients on signed misreporting proxies with control

variables and two-way firm and year fixed effects suggest that GOB firms upwardly manage earnings at least 5.2 percent more than non-GOB firms, after the implementation of the policy. These effects are significant at 1% significance level. It implies that GOB firms inflate their earnings perhaps to avoid the ex-post cost and mimic better-performing firms. The results confirm the prediction, and lends support to the argument that GOB firms inflate their earnings greater than non-GOB firms to avoid increased default penalty following the policy intervention. These results are consistent with the finding of (Dyreng et al., 2022; Franz et al., 2014). Therefore, I argue that GOBs' multidimensional goals and weak incentives allow GOB firms to provide misleading inflated financial reports than non-GOB firms. That, in turn, perhaps increases the mis-allocation of resources. The question of interest here is how does GOB firms' misreporting after the policy implementation impact their investment policy compared to non-GOB firms. I explore this question in the following section.

Overall, the results adds to the findings of (Chari et al., 2021; Kulkarni et al., 2019; Tantri, 2021). These studies highlight that economic cost of GOBs' weak incentive structure and welfare-maximizing objectives. Our results essentially show that GOB firms perhaps exploit these inefficiencies of GOBs to misreport their earnings in order to curtail the chance of default penalty after the policy implementation. Therefore, our results also support the *covenant-based hypothesis*, according to which firms manipulate their earnings to avoid a technical violation, particularly when the default penalty is significantly greater (Dyreng et al., 2022; Franz et al., 2014).

6.2 Exploring the impact on investments

In this section, I explore the impact of the SARFEASI Act on the firms' investment policies. Since financial reports fundamentally facilitate the appropriate allocation of resources, there is a growing body of literature that explores the implications of the reporting choices on the investment policy (see, Roychowdhury et al., 2019). In this regard, theories of Bar-Gill and Bebchuk (2002); Kedia and Philippon (2009) argue that misreporting firms are likely to mimic high-performing firms' investment strategy, thereby invest in inefficient investment projects. Thus, it's interesting to investigate two pertinent questions: Do GOB firms increase investment after the policy intervention compared to non-GOB firms? If so, is this increase in investment by GOB firms greater or lesser than the required level of investment?

Given the empirical settings, I examine whether there is a difference in the GOB firms' investments vis-a-vis non-GOB firms after the implementation of the policy compared to the pre-policy period. In Table 4, I employ the baseline DID specification and summarise the impact on GOB firms' investments versus non-GOBs after the policy im-

plementation. In columns 1 and 2, I provide the results for the $Invest_1$ with firm and year fixed effects, and industry-year fixed effects, respectively. The main variable of interest is ($Post \times GOB$), which measures the impact on GOB firms' investments after the policy implementation, compared to non-GOB firms. The estimated coefficients suggest that GOB firms have significantly increased investment by 2.6% after the policy implementation, compared to non-GOB firms. The results are robust to industry-year fixed effects as well, the coefficient 2.8% is higher and remains highly significant. These coefficients are statistically significant at the 1% level of significance.

The results indicate that after the implementation of the policy, the GOB firms benefit from lower scrutiny by the GOBs, which allows them to invest considerably more, compared to non-GOB firms. These results are consistent with the findings of (Kariya, 2021; Srinivasan and Thampy, 2017). These studies find that GOB firms are less financially constrained and experience lower liquidation risk, resulting in higher investments compared to non-GOB firms.

Since GOB firms are upwardly misreporting the earnings and have a higher level of investments after the policy implementation than other non-GOB firms, it indicates that GOB firms perhaps mimic high-performing firms. Thereby, they are likely to invest more than the required level of investments. Therefore, I anticipate that GOB firms are more likely to over-invest than non-GOB firms, in the post-policy regime.

To test my conjecture, in Table 4, I run the baseline regression model, Equation 1, and use three proxies of abnormal investment, $ABInvest_1$, $ABInvest_2$, and $ABInvest_3$. Column 3 reports results for simple industry-adjusted investments ($ABInvest_1$), column 4 reports results for growth opportunities adjusted firms' investment ($ABInvest_2$), followed by results for growth opportunities and cashflow adjusted firms' investment ($ABInvest_2$) in column 5. The main variable of interest is ($Post \times GOB$), which measures the GOB firms' over or under-investments after the policy implementation, compared to non-GOB firms. The estimated coefficient suggests that GOB firms invest 2.4% more than the expected level of investment in the industry after the policy implementation, compared to non-GOB firms. Second, I find that GOB firms invest 2.3% more than growth opportunities adjusted investment after the policy implementation, compared to non-GOB firms. Lastly, I find that GOB firms invest 2.9% more than growth opportunities and cash flow adjusted investments after the policy implementation, compared to the non-GOB firms. These effects are significant at 1% significance level.

The results validate hypothesis H2, and provide support to the argument that compared to non-GOB firms, GOB firms are likely to invest in inefficient investment projects, following the policy implementation. It indicates that GOB firms benefit from lower GOBs scrutiny, which allows them to engage in sub-optimal activities such as over-investment, compared to non-GOB firms' counterparts. The results add to the

finding of (Balakrishnan et al., 2014; Biddle and Hilary, 2006; Biddle et al., 2009). These studies find that reporting quality would have ramifications on investment decisions.

6.3 Robustness Tests

In this section, I implement a battery of robustness tests to address the potential endogeneity concerns of the study. First, I perform a test to validate the parallel trend assumption. Second, I perform a placebo test to validate that the effect is driven by the policy on treatment and control group. Third, I use alternative measures of the key variables to show the robustness of the results. Fourth, I perform sub-sample analysis by taking only publicly listed firms to validate the robustness of the results. Fifth, I test the robustness of the results with the most comparable treatment and control firms.

6.3.1 Parallel trend assumption

The foremost concern with the identification strategy is that the GOB firms and non-GOB firms perhaps trended differently prior to the implementation of the policy in 2001. Therefore, it is imperative to analyse the time trends of key variables of interest, years prior to the policy. The validity of parallel trends (i.e., similar trends) is crucial to establish a causal relationship between the variables. The assumption requires that GOB and non-GOB firms should follow similar time trends prior to the policy. Therefore, I follow Muralidharan and Prakash (2017) approach to test the validity of the parallel trend assumption for the key variables of interest for GOB firms versus non-GOB firms prior to the policy implementation in 2002, i.e., 1998 to 2001. In Table 5, I validate the parallel trend assumption on the key variables of interest. The main variable of interest is the interaction term, $Year \times GOB$, which shows the differences in the key variables for the GOB firms versus non-GOB firms prior to the implementation of the policy. The assumption is valid if the interaction term remains insignificant. In all columns, the results suggest that GOB firms and non-GOB firms had similar time trends till the implementation of the policy.

6.3.2 Placebo test: Treatment and control group- Falsification test

A possible concern with the estimated coefficients on the interaction term $Post \times GOB$ is that the observed effects are not necessarily that of the implementation of the policy. The identification strategy assumes that in the absence of policy implementation, GOB firms and non-GOB firms would not attain such a high and significant impact as

I observe on the main interaction term for the key variables of interest. To test such an assumption, one needs to have a counterfactual of the treated firms, which never occurs. Therefore, I perform a falsification test to validate the identification strategy as the second-best approach. To be specific, I randomly assign the treatment and control firms instead of the firm's original banking relationship and run the baseline regression equation on the artificially generated data. I performed this procedure 10,000 times for key outcome variables of interest. Importantly, the analysis will ensure that the estimated coefficient on the interaction term is not spurious.

The plot of the estimated coefficients from artificially generated data is shown in Figure 3. The comparison between the distribution of the estimated coefficient and the coefficient estimated on the key variables of interest with the original treatment and control firms would ensure that the relationship is not spurious. Specifically, the null hypothesis is that the estimated coefficient should be centred around zero of the non-parametric distribution. In all the plots, I find the mean and median of coefficients from artificial data are near zero, but the main estimated coefficient for all the key variables lies in the extreme right tail. Therefore, I reject the null hypothesis. It indicates that the identification strategy is valid. Indeed, the effect of policy on the GOB firms' key variables of interest than that of non-GOB firms is not spurious, and it is driven by the policy.

6.3.3 Alternative measures of earnings management

Here, I use three alternative measures to estimate the AEM. These measures include the cashflow adjusted discretionary accruals of Ball and Shivakumar (2008), AEM_3, working capital version of modified Jones (1991) model, AEM_4, and conditional conservatism model of Ball and Shivakumar (2006), AEM_5.

Studies highlight an asymmetric relationship between accruals and the cash flow of the firms. I follow Ball and Shivakumar (2008) to estimate AEM_3, which essentially considers the asymmetric relationship between accruals and cash flow of the firms to estimate the discretionary part of the total accruals. Since the baseline earnings management models do not consider this asymmetric relationship, it is natural to test whether our results are robust when the asymmetric relationship between these two variables is considered in the estimation model. To test the robustness of the results in different specifications, I use AEM_4, a simple working capital version of Jones (1991) model. According to this model, working capital needs should be driven by the changes in firms' sales. Therefore, the unexplained part is considered earnings management.

Moreover, there is a growing body of accounting conservatism literature which argues

that managers recognise the bad news immediately, whereas they require a greater degree of verification to recognise the good news in the financial reports (Basu, 1997). Importantly, (Aghamolla and Li, 2018) shows that lenders' contract enforcement cost significantly impacts the accounting conservatism. Therefore, I estimate accruals earnings management, AEM_5, to adjust the expected level of accruals influenced by accounting conservatism to examine the robustness of the results.

Following is the baseline earnings management estimation approach, as in subsection 4.1, I estimate the following cross-sectional linear regression models for each industry-year and extract the coefficients from Equation 8, Equation 9, and Equation 10. Using the estimated coefficients, I estimate the discretionary part of accruals, which yields the AEM_3, AEM_4, and AEM_5 estimates at the firm-year level.

$$\frac{TAC_{i,t}}{TA_{i,t-1}} = \alpha_1 + \alpha_2 \frac{CFO_{i,t-1}}{TA_{i,t-1}} + \alpha_3 \frac{CFO_{i,t}}{TA_{i,t}} + \alpha_4 \frac{CFO_{i,t+1}}{TA_{i,t+1}} + \alpha_5 \frac{PPE_{i,t}}{TA_{i,t-1}} + \alpha_6 \frac{\Delta REV_{i,t}}{TA_{i,t-1}} + \epsilon_{i,t} \tag{8}$$

$$\frac{WC_{i,t}}{TA_{i,t-1}} = \beta_1 \frac{1}{TA_{i,t-1}} + \beta_2 \frac{\Delta REV_{i,t}}{TA_{i,t-1}} + \epsilon_{i,t} \tag{9}$$

$$\frac{TAC_{i,t}}{TA_{i,t-1}} = \alpha_1 + \alpha_2 \frac{CFO_{i,t}}{TA_{i,t-1}} + \alpha_3 DCFO_{i,t} + \alpha_4 DCFO_{i,t} \times \frac{CFO_{i,t}}{TA_{i,t-1}} + \alpha_5 \frac{PPE_{i,t}}{TA_{i,t-1}} + \alpha_6 \frac{\Delta REV_{i,t}}{TA_{i,t-1}} + \epsilon_{i,t} \tag{10}$$

where i indexes firm, t indexes year, $CFO_{i,t}$ is the cash flow from the operating activities. $PPE_{i,t}$ is the property, plant, and equipment of the firm. $REV_{i,t}$ is the net revenue of the firm. WC is the working capital of the firm, defined as current assets minus current liabilities. $DCFO_{i,t}$ is a dummy variable that takes the value 1 when firm i has negative $CFO_{i,t}$. $TA_{i,t-1}$ is the beginning of the year total assets of the firm.

In Table 6, I run the baseline regression model with three alternative proxies of AEM, i.e., AEM_3, AEM_4, AEM_5, and report the results of the impact of the policy on these AEM measures for GOB firm versus non-GOB firms. The main variable of interest is the interaction term, $Post \times GOB$, which measures the impact on the GOB firms' reporting quality after the policy implementation, compared to that of non-GOB firms. I find that GOB firms significantly misreport their earnings after the policy, compared to non-GOB firms, as shown in columns 1 to 6. Therefore, it implies that the results are robust even when I consider the asymmetric relation of cash flow and accruals while estimating AEM, the working capital version of Jones (1991) model to estimate AEM, and accounting conservatism adjusted earnings management.

6.3.4 Alternative measures of Investment

Here, I use alternative measures of investment and abnormal investment. In the case of investment, I use two different measures, i.e., $Invest_3$ and $Invest_4$. $Invest_3$ is defined as the natural logarithm of property, plant, and equipment (PPE) at t divided by PPE_{t-1}. $Invest_4$ is defined as the change in PPE from year t-1 to t normalised by the

beginning of the year total assets. In Table 7, I perform the baseline regression model and report the results of the impact of policy on $Invest_2$ in columns 1 and 2. I observe that GOB firms significantly invest more than that of non-GOB firms after the policy implementation. These effects are statistically significant at a 1% significance level.

In case of abnormal investment, I use a similar approach as in the main analysis and estimate the abnormal investment with the alternative measure of investment, $Invest_2$. Table 7, columns 3 and 4 report the results on the main variable of interest $Post \times GOB$. I find similar results, that is, GOB firms significantly over-invest than that of non-GOB firms, in the post-policy period.

6.3.5 Publicly listed companies only

In this section, I explore the validity of the results using a sub-sample that includes only publicly listed firms. The idea is to test whether the small sample of unlisted firms drives the findings of the study. I perform our baseline regression specification with the main proxy of reporting quality and investment policy and report the results in Table 8 and Table 9, respectively.

The results in the Table 8 validate the main results that the GOB firms benefit from the lower scrutiny of the GOBs after the policy implementation, which allows them to misreport and inflate their earnings, compared to non-GOB firms. Moreover, the results in Table 9 indicate the validation of the main results that GOB firms invest more and do over-invest after the implementation of the policy, compared to non-GOB firms. Overall, the results further substantiate the main argument that GOB firms misreport their earning and follow the investment strategy of the better-performing firms to get pooled with them. The multidimensional goals and weak incentives of GOBs allow GOB firms to engage in sub-optimal activities compared to non-GOB firms.

6.3.6 PSM-DID approach

A potential concern with the main results is that the fundamental difference between GOB firms and non-GOB firms could be driving the estimated coefficients on the key outcome variable of interest. I, therefore, perform a non-parametric approach, propensity score matching (PSM), to address potential endogeneity concerns arising from the fundamental differences. PSM methodology is primarily used to generate the most comparable treatment and control firms and perform a 'like-for-like 'comparison. To make the GOB firms and non-GOB firms ex-ante comparable, I employ a combination of nearest neighbour matching and caliper matching with a maximum distance of 5% propensity score standard deviation of non-GOB firms to GOB firms

(Caliendo and Kopeinig, 2008). The approach finds the nearest possible match for GOB firms to non-GOB firms within the caliper radius, the approach is similar to Tykvová and Borell (2012). It finds out the many control firms within the caliper ranges for each treated firm. To be specific, I match the size of each GOB firm with non-GOB firms in the year prior to the policy (i.e., one year prior to the policy). Since the treatment group is greater than the control group, I do not find all the matches for the treated firms. I observe that the quality of the match is good as there seems to be no observable difference between the treatment and control firms, as shown in the diagnostic test in Table A4 and Table A5.

Next, I perform the baseline regression specification with highly comparable treatment and control firms. The estimated coefficient on the interaction term in Table 10 reveals and again confirms that GOB firms' misreport their earnings after the implementation of the policy, compared to their non-GOB counterparts. Thus, the main results are robust to the observable difference in the treatment and control firms.

6.4 Implications: Corporate performance, risk-taking, cash holding, and short-term investments

While previous sections explore the impact of the policy on the firms' misreporting and investments, in the present section, I focus on firms' performance, risk-taking, cash holding policy, and short-term investments. Here, the idea is to provide suggestive evidence about the impact of misreporting and over-investment of GOB firms on their performance, and associated adjustments by these firms on other important corporate control decisions. In Table 11, Table 12, and Table 13 report the results of the impact on corporate performance, corporate risk-taking, and other important corporate control decisions after the policy implementation, respectively.

I run the baseline regression model, Equation 1 with two proxies of firm performance, i.e., return on assets and sales growth on the firms in Table 11. The main coefficient of interest ($Post \times GOB$) which estimates the performance of GOB vis-a-vis non-GOB firms following the policy implementation. All the columns of Table 11 suggest that GOB firms do not significantly perform better after the policy implementation, compared to non-GOB firms. The results not only indicate that GOB firms perhaps misallocate the resources but also suggest that non-GOB firms are not performing better, perhaps due to higher risk aversion (Vig, 2013) and greater funding constraints (Srinivasan and Thampy, 2017), in the post-policy regime. The results are consistent with findings of the (Dyreng et al., 2022). They show that firms that misreport their earnings to avoid covenant violation are less likely to perform better than firms that do not misreport their earnings.

Next, I explore GOB firms' risk-taking activities after the policy implementation compared to non-GOB firms. Here, the main motive is to understand the corporate activities after the policy. From the earlier evidence, we know that GOB firms over-invest compared to non-GOB firms, following the policy implementation. If GOB firms invest in risky projects, then these firms' operating earnings will exhibit greater volatility (Koirala et al., 2020), compared to non-GOB firms. Moreover, the lower scrutiny faced by the GOB firm may allow them to engage in risky activities after the policy compared to non-GOB firms. Taken together, I conjecture that GOB firms are more likely to engage in riskier activities than that of non-GOB firms. Following the literature, I use operating earnings volatility as a proxy for the risk-taking activities, and use this measure as a dependent variable in the baseline regression specification, Equation 1. Table 12 reports the results of GOB firms' risk-taking after the policy implementation, compared to non-GOB firms. Column 1 reports the results on firms' risk-taking using a two-way firm and year fixed effects, followed by results on firms' risk-taking using a two-way firm and Industry-year fixed effects in column 2. The main coefficient of interest, ($Post \times GOB$), suggests that GOB firms engage in higher risk-taking activities than that of non-GOB firms, in the post-policy period. These effects are statistically significant at a 5% significance level. Taking the previous results on performance together, it indicates that GOB firms perhaps invest in inefficient risky investment projects or, at least, do not invest in risky value-enhancing investment projects.

Finally, I explore the implication of the GOB firms' inefficient activities on other corporate control decisions than that of non-GOB firms after the policy implementation. Here, the idea is to study the firms' liquidity management decisions after the policy, which will help to understand the short-term decision-making of the firms. Following the previous results, it is evident that GOB firms are misreporting and engaging in risky activities, indicating an increase in their credit risk which may induce liquidity management to absorb the adverse shocks (Acharya et al., 2012). If that is the case, I expect that GOB firms are likely to increase the proportion of liquid assets more than that non-GOB firms after the policy implementation. Following the literature, I use the firms' cash holdings and investments in short-term assets to explore the impact on liquidity management after the policy. Table 13 provides the results of the impact of the policy on the firms' cash holding in columns 1 and 2, followed by the impact on short-term investments in columns 3 and 4. The main interaction term ($Post \times GOB$) suggests that GOB firms positively increase the cash holding and investment in short-term securities after the implementation of the policy, compared to non-GOB firms. These effects are statistically significant at a 5% significance level. Also, the results are robust to industry-year fixed effects. These results are in line with the finding of

(Acharya et al., 2012).

Overall, the results highlight that GOB firms misallocate resources by investing in inefficient, risky investment projects, resulting in insignificant improvement in firms' performance after the policy, compared to other firms. Moreover, a considerable increase in GOB firms' risk-taking activities induces them to increase their cash holdings and investment in short-term securities more than non-GOB firms. Most probably, this is to keep a liquidity buffer for absorbing the losses when investments turn out to be bad, in the post-policy period. Such activities of the GOB firms resemble the risky firms according to the theory of (Acharya et al., 2012). Hence, I argue that the multidimensional goals of the GOBs perhaps allow the GOB firms to engage in risk-taking and sub-optimal activities.

7 Conclusion

I explore the impact of GOBs' welfare-maximizing goals on firms' reporting choices and investment decisions. The study overcomes the identification problem exposed by the endogenous firm-bank relationship, using a unique Indian setting, in two ways. First, I exploit the introduction of SARFAESI Act 2002 as an exogenous shock, which brought heterogeneous variation in bank-level scrutiny, as well as a significant increase in the ex-post technical default cost. Second, I use the pre-policy firm-bank relationship to make it exogenous. Using the difference-in-difference approach, I find that GOB firms misreport and inflate their earnings after the implementation of the policy than that of other non-GOB firms. I also find that GOB firms significantly increase investments, but the level of investment is significantly higher than the level of expectation. Therefore, the study provides evidence of GOB firms' over-investment compared to non-GOB firms' counterparts, in the post-policy regime. These results indicate that lower scrutiny of GOBs relative to other banks after the policy intervention allows GOB firms to inflate their earnings and over-invest to mimic better-performing firms.

Further, I explore the implications of misreporting and over-investment of GOB firms on their performance, risk-taking activities, cash holding policy, and investment in short-term securities. As expected, I did not find a significant increase in the performance of GOB firms despite considerably higher investments in the post-policy period, compared to non-GOB firms. Interestingly, I find that compared to non-GOB firms, GOB firms engage in greater risk-taking activities, and significantly increase their cash holding and investment in short-term assets in the post-policy period. These results indicate that GOB firms perhaps notably increase their investments in risky

projects, which induces them to keep precautionary liquid assets as a buffer against bad economic outcomes. Moreover, by doing this, it enables GOB firms to mimic like safe firms, because firms with higher cash holding and liquid assets are considered to be relatively safer firms.

Since GOBs are quite prevalent worldwide, findings from this study would provide important policy insights to policymakers, regulators, and accounting standard-setters, especially in the context of emerging economies.

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8 Tables

Table 1: Descriptive statistics

Variable	N	Mean	25%	Median	75%	SD
TAC	18466	1.014	0.438	0.802	1.286	1.09
REV	18466	0.99	0.443	0.799	1.252	1.057
SaleGrowth	18466	0.021	-0.118	0.063	0.219	0.356
WorkingCapital	18466	0.22	0.082	0.216	0.359	0.269
CFO	16502	0.282	0.009	0.077	0.164	6.263
Size	18466	5.98	4.889	5.85	7.017	1.43
Leverage	18466	0.712	0.329	0.59	0.871	0.714
InterestExpense	17598	0.117	0.056	0.085	0.119	1.061
CashHolding	18195	0.037	0.008	0.019	0.04	0.07
ROA	18466	-0.003	-0.037	0.013	0.047	0.142
$Invest_1$	18437	0.076	0.002	0.03	0.101	0.262
Age	18435	2.984	2.485	2.89	3.497	0.714
AEM_1	18466	1.124	0.642	0.986	1.421	0.838
AEM_2	18466	1.004	0.532	0.863	1.288	0.815
$\|AEM_1\|$	18466	1.134	0.645	0.987	1.422	0.825
$\|AEM_2\|$	18466	1.019	0.537	0.865	1.29	0.795

Note: The table shows descriptive statistics of the sample; mean, median, 25% and 75% percentiles, and standard deviation of some of the key variables that are used in the analysis. The definition of all variables is provided in the Table A1.

Table 2: Descriptive statistics: GOB and Non-GOB firms

	GOB				NoN-GOB			
Variable	N	Mean	Median	SD	N	Mean	Median	SD
TAC	9945	1.069	0.865	0.989	8521	0.95	0.746	1.195
REV	9945	1.038	0.853	0.945	8521	0.934	0.747	1.173
SaleGrowth	9945	0.02	0.061	0.357	8521	0.023	0.065	0.354
CashFlow	8843	0.172	0.069	4.186	7659	0.409	0.088	8.017
WorkingCapital	9945	0.223	0.231	0.263	8521	0.216	0.197	0.275
Size	9945	5.639	5.524	1.223	8521	6.377	6.366	1.547
Leverage	9945	0.711	0.59	0.702	8521	0.714	0.59	0.729
InterestExpense	9490	0.1	0.082	0.304	8108	0.136	0.089	1.528
CashHolding	9797	0.035	0.018	0.059	8398	0.04	0.021	0.08
ROA	9945	-0.008	0.011	0.142	8521	0.003	0.015	0.141
Age	9936	2.947	2.89	0.681	8499	3.027	2.944	0.749
AEM_1	9945	1.201	1.048	0.87	8521	1.036	0.921	0.79
AEM_2	9945	1.08	0.927	0.849	8521	0.915	0.796	0.764
$\|AEM_1\|$	9945	1.208	1.048	0.86	8521	1.049	0.922	0.772
$\|AEM_2\|$	9945	1.092	0.928	0.833	8521	0.935	0.8	0.739

Note: The table shows descriptive statistics of firms based on their banking relationship using a full sample. The firms are divided into two groups: the GOB firms and non-GOB firms. The firms are divided into these groups based on their banking relationship in the year prior to the policy— i.e., in the year 2001. The table presents the number of observations, mean, median, and standard deviation of key variables for both groups of firms, GOB and non-GOB firms. The definition of all variables is provided in the Table A1.

Table 3: Impact of SARFEASI Act on GOB firms reporting

Dependent Variables:	$\lvert AEM_1 \rvert$		$\lvert AEM_2 \rvert$		AEM_1		AEM_2	
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables								
Post × GOB	0.053***	0.051***	0.052***	0.055***	0.060***	0.052***	0.059***	0.057***
	(0.019)	(0.019)	(0.018)	(0.018)	(0.019)	(0.019)	(0.018)	(0.018)
Size		0.004		0.036*		-0.006		0.027
		(0.022)		(0.022)		(0.024)		(0.024)
SaleGrowth		-0.304***		-0.267***		-0.312***		-0.295***
		(0.018)		(0.016)		(0.018)		(0.016)
Leverage		0.089***		0.063***		0.056**		0.038
		(0.024)		(0.022)		(0.027)		(0.025)
ROA		0.534***				0.330***		
		(0.114)				(0.108)		
CashHolding		0.223		0.269*		0.150		0.084
		(0.172)		(0.159)		(0.163)		(0.149)
InterestExpense		-0.000		0.002		0.000		0.002
		(0.002)		(0.002)		(0.002)		(0.002)
Fixed-effects								
Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics								
Observations	18,466	17,399	18,466	17,399	18,466	17,399	18,466	17,399
R^2	0.75757	0.77693	0.74483	0.76253	0.75196	0.77072	0.73619	0.75629
Adjusted R^2	0.71351	0.73464	0.69845	0.71752	0.70688	0.72725	0.68824	0.71010

Note: The table reports the effect of the policy on the GOB firms' misreporting and the direction of misreporting than that of non-GOB firms. I use two proxies, AEM_1 and AEM_2, to estimate firm's misreporting, and use these variables as the dependent variables in Equation 1. The coefficient of interest is *Post × GOB* which estimate the direct effect of the policy on the GOB firms' misreporting than that of non-GOB firms. The columns 1 to 4 reports the results with absolute values of the proxies, followed by results with signed proxies of misreporting in columns 5 to 8. Columns 1 and 2 report the results with unsigned $\lvert AEM_1 \rvert$ using the two-way fixed effect model without control variables and with control variables, respectively. Similarly, I report results with $\lvert AEM_2 \rvert$ in columns 3 and 4, signed AEM_1 in columns 5 and 6, followed by signed AEM_2 in columns 7 and 8. The control variables includes size, leverage, return on assets (ROA), cash holding, interest expense, and sales growth. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 4: Impact of SARFEASI Act on GOB firms Investments

Dependent Variables:	$Invest_1$		$ABInvest_1$	$ABInvest_2$	$ABInvest_3$
Model:	(1)	(2)	(3)	(4)	(5)
Variables					
$Post \times GOB$	0.026***	0.028***	0.024***	0.023***	0.029***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
$Size$	0.169***	0.168***	0.165***	0.145***	0.162***
	(0.014)	(0.014)	(0.014)	(0.012)	(0.014)
$Leverage$	0.113***	0.113***	0.112***	0.097***	0.115***
	(0.017)	(0.017)	(0.017)	(0.015)	(0.015)
ROA	0.290**	0.288**	0.286**	0.204**	0.160***
	(0.118)	(0.119)	(0.119)	(0.097)	(0.037)
$Cash$	0.218**	0.231**	0.218**	0.201**	
	(0.101)	(0.104)	(0.101)	(0.091)	
$SaleGrowth$	0.060***	0.059***	0.059***		
	(0.012)	(0.011)	(0.012)		
$InterestExpense$	0.007	0.006	0.007	0.006	0.006
	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)
Age	-0.066**	-0.052*	-0.063**	-0.038	-0.063**
	(0.029)	(0.029)	(0.028)	(0.028)	(0.029)
Fixed-effects					
Firm	Yes	Yes	Yes	Yes	Yes
Year	Yes		Yes	Yes	Yes
Industry-Year		Yes			
Fit statistics					
Observations	17,360	17,360	17,370	17,370	17,569
R^2	0.31503	0.32480	0.30739	0.26552	0.27746
Adjusted R^2	0.18503	0.18639	0.17592	0.12615	0.14187

Note: The table reports the GOB firms' investments after the policy implementation than that of non-GOB firms. I employ the baseline regression specification, Equation 1 and use investment and abnormal investment as dependent variables. The main coefficient of interest is $Post \times GOB$ which estimates the direct effect of the policy on the firms' investments compared to non-GOB firms. For firms' level of investment, I use $Invest_1$. For firms' abnormal investment, I use three proxies $ABInvest_1$, $ABInvest_2$, and $ABInvest_3$ that is industry adjusted level of investment, growth opportunities adjusted investment, and growth opportunities and cash flow adjusted investment, respectively. Columns 1 and 2 report the results for $Invest_1$ with control variables firm year fixed effects and firm industry-year fixed effects, respectively. Followed by results on the firms' abnormal investment, $ABInvest_1$ in column 3, $ABInvest_2$ in column 4, and $ABInvest_3$ in column 5. Since abnormal investment is estimated at industry-year level, I do not use the Industry-year fixed effects in columns 3 to 5. The control variables include size, leverage, return on assets (ROA), cash holding, interest expense, age, and sales growth. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 5: Parallel trends

Dependent Variables:	$\lvert AEM_1 \rvert$	$\lvert AEM_2 \rvert$	AEM_1	AEM_2	$Invest_1$	$ABInvest_1$	$ABInvest_2$	$ABInvest_3$
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables								
Year × *GOB*	0.015*	0.009	0.013	0.006	0.005	0.004	0.003	0.000
	(0.009)	(0.008)	(0.009)	(0.009)	(0.005)	(0.005)	(0.005)	(0.004)
Year	0.009	0.000	0.011*	0.002	-0.036***	-0.025***	-0.033***	-0.013*
	(0.007)	(0.006)	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.007)
Size	0.072**	0.010	0.071*	0.001	0.196***	0.187***	0.171***	0.051
	(0.036)	(0.032)	(0.036)	(0.032)	(0.027)	(0.027)	(0.027)	(0.056)
Leverage	0.108***	0.129***	0.104***	0.134***	0.198***	0.186***	0.193***	0.246***
	(0.034)	(0.031)	(0.035)	(0.032)	(0.035)	(0.034)	(0.035)	(0.067)
ROA	0.360**		0.364**		0.349***	0.340***	0.334***	1.102
	(0.158)		(0.159)		(0.109)	(0.109)	(0.118)	(0.691)
CashHolding	-0.056	0.009	-0.056	-0.030	0.087	0.088	0.098	0.447*
	(0.096)	(0.071)	(0.100)	(0.085)	(0.086)	(0.089)	(0.089)	(0.240)
SaleGrowth	-0.280***	-0.219***	-0.286***	-0.227***	0.023	0.022	0.038***	-0.040
	(0.021)	(0.018)	(0.021)	(0.018)	(0.014)	(0.014)	(0.014)	(0.039)
InterestExpense	-0.001	0.000	-0.001	0.000	0.003	0.003	0.003	0.007
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.007)
Fixed-effects								
Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics								
Observations	8,646	8,646	8,646	8,646	8,639	8,646	8,646	8,646
R^2	0.85050	0.84066	0.84917	0.83977	0.42893	0.42145	0.40961	0.61143
Adjusted R^2	0.78829	0.77440	0.78642	0.77315	0.19120	0.18074	0.16398	0.44976

Note: The table reports the validity of parallel trend assumption for key variables of interest. I follow the procedure of Muralidharan and Prakash (2017) to test the validity of the parallel trend assumption. To be specific, I employ regression specification: $Y_{i,t} = \delta_i + \alpha_1 Year_t \times GOB_i + \alpha_2 \Gamma_{i,t-1} + \epsilon_{i,t}$ to test parallel trend assumption. Here, $Y_{i,t}$ is the key variable of interest, δ_i is the firm fixed effect, $Year_t$ takes the values 1998 to 2001- (pre-policy period), GOB_i is the dummy variable which takes value 1 for GOB firms, and otherwise zero for other firms, non-GOB firms. The main coefficient of interest is α_1 on the interaction term, $Year_t \times GOB_i$, which estimates the differences in the trends on the key variable of interest for GOB firms versus non-GOB firms, in the pre-policy regime. $\Gamma_{i,t-1}$ is a set of control variables which include size, leverage, return on assets, cash holding, sales growth, and interest expense. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 6: Impact of SARFEASI Act on GOB firms reporting: Alternative measures

Dependent Variables:	$\lvert AEM_3 \rvert$		$\lvert AEM_4 \rvert$		$\lvert AEM_5 \rvert$	
Model:	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
Post × GOB	0.073***	0.067***	0.022***	0.019***	0.073***	0.072***
	(0.023)	(0.024)	(0.007)	(0.006)	(0.024)	(0.025)
Size		-0.014		0.024**		0.017
		(0.022)		(0.010)		(0.022)
SaleGrowth		-0.282***		0.019***		-0.284***
		(0.020)		(0.005)		(0.020)
Leverage		0.088***		0.090***		0.101***
		(0.020)		(0.015)		(0.027)
CashHolding		0.277*		0.964***		0.351**
		(0.164)		(0.063)		(0.159)
ROA		0.654***		0.199***		0.496***
		(0.075)		(0.049)		(0.118)
InterestExpense		0.006		0.001		0.000
		(0.006)		(0.002)		(0.002)
Fixed-effects						
Firm	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics						
Observations	18,466	17,399	18,466	17,399	18,466	17,399
R^2	0.61177	0.62338	0.63372	0.74413	0.65575	0.66916
Adjusted R^2	0.54121	0.55197	0.56715	0.69561	0.59318	0.60643

Note: The table reports the impact of policy on the GOB firms' misreporting using three alternative measures of misreporting, compared to non-GOB firms. I use $\lvert AEM_3 \rvert$, $\lvert AEM_4 \rvert$, and $\lvert AEM_5 \rvert$ as alternative measures and employ the baseline regression specification, Equation 1. The main variable of interest is *Post × GOB* which estimates the direct effect of the policy on GOB firms' misreporting than that of non-GOB firms. Columns 1 and 2 report the results for $\lvert AEM_3 \rvert$ using firm and year fixed effects without and with control variables, respectively. Columns 3 and 4 report the results for $\lvert AEM_4 \rvert$ using firm year fixed effects without and with control variables, respectively. Finally, columns 5 and 6 reports the results for $\lvert AEM_4 \rvert$ using firm year fixed effects without and with control variables, respectively. The control variables include size, leverage, sale growth, cash holding, return on assets, and interest expense. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 7: Impact of SARFEASI Act on GOB firms Investments (Alternative Measures)

Dependent Variables:	$Invest_2$		$ABInvest_4$	$ABInvest_5$
Model:	(1)	(2)	(3)	(4)
Variables				
$Post \times GOB$	0.023***	0.026***	0.021***	0.027***
	(0.008)	(0.008)	(0.008)	(0.009)
$Size$	0.159***	0.157***	0.141***	0.183***
	(0.014)	(0.014)	(0.013)	(0.015)
$Leverage$	0.110***	0.110***	0.117***	0.121***
	(0.017)	(0.017)	(0.017)	(0.021)
ROA	0.281**	0.280**	0.286**	0.515**
	(0.120)	(0.121)	(0.122)	(0.203)
$Cash$	0.224**	0.237**	0.275***	
	(0.094)	(0.097)	(0.102)	
$SaleGrowth$	0.061***	0.060***		
	(0.012)	(0.011)		
$InterestExpense$	0.007	0.006	0.007	0.008
	(0.004)	(0.004)	(0.005)	(0.006)
Age	-0.063**	-0.048*	-0.011	-0.095***
	(0.029)	(0.029)	(0.030)	(0.032)
Fixed-effects				
Firm	Yes	Yes	Yes	Yes
Year	Yes		Yes	Yes
Industry-Year		Yes		
Fit statistics				
Observations	17,360	17,360	17,370	17,569
R^2	0.31342	0.32330	0.26935	0.32846
Adjusted R^2	0.18311	0.18459	0.13071	0.20243

Note: The table reports the GOB firms' investments after the policy implementation than that of non-GOB firms, using alternative measures. I employ the baseline regression specification, Equation 1 and use investment and abnormal investment as dependent variables. The main coefficient of interest is $Post \times GOB$ which estimates the direct effect of the policy on the firms' investments compared to non-GOB firms. For firms' level of investment, I use $Invest_2$. For firms' abnormal investment, I use two proxies $ABInvest_4$, and $ABInvest_5$ that is industry adjusted level of investment, growth opportunities adjusted investment, and growth opportunities and cash flow adjusted investment, respectively. Columns 1 and 2 report the results for $Invest_2$ with control variables firm year fixed effects and firm industry-year fixed effects, respectively. Followed by results on the firms' abnormal investment, $ABInvest_4$ in column 3, and $ABInvest_5$ in column 5. Since abnormal investment is estimated at industry-year level, I do not use the Industry-year fixed effects in columns 3 and 4. The control variables include size, leverage, return on assets (ROA), cash holding, interest expense, age, and sales growth. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 8: Impact of SARFEASI Act on GOB firms reporting: Publicly listed firms only

Dependent Variables:	$\lvert AEM_1 \rvert$	$\lvert AEM_2 \rvert$	AEM_1	AEM_2
Model:	(1)	(2)	(3)	(4)
Variables				
Post × GOB	0.054***	0.055***	0.051***	0.054***
	(0.019)	(0.018)	(0.019)	(0.019)
Size	0.003	0.033	0.013	0.045**
	(0.021)	(0.020)	(0.022)	(0.021)
SaleGrowth	-0.301***	-0.263***	-0.310***	-0.292***
	(0.018)	(0.016)	(0.018)	(0.016)
Leverage	0.070***	0.044***	0.073***	0.055***
	(0.018)	(0.015)	(0.018)	(0.016)
ROA	0.522***		0.333***	
	(0.114)		(0.112)	
CashHolding	0.208	0.246*	0.177	0.101
	(0.162)	(0.149)	(0.164)	(0.148)
InterestExpense	-0.000	0.002	-0.000	0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Fixed-effects				
Firm	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Fit statistics				
Observations	16,773	16,773	16,773	16,773
R^2	0.77933	0.76675	0.77462	0.76150
Adjusted R^2	0.73788	0.72296	0.73229	0.71673

Note: The table reports the results of the impact of policy on the GOB firms misreporting versus non-GOB firms with publicly listed firms sample only. I use the main two proxies, AEM_1 and AEM_2, to estimate firms' misreporting and employ baseline regression specification, Equation 1. The coefficient of interest is *Post × GOB* which estimates the direct effect of the policy on the GOB firms' misreporting than that of non-GOB firms. Columns 1 and 2 report the results with unsigned $\lvert AEM_1 \rvert$ and $\lvert AEM_2 \rvert$ using a two-way fixed effect model with control variables, respectively. Followed by results with signed AEM_1 and AEM_2 using a two-way fixed effect model with control variables in columns 3 and 4. The control variables include size, leverage, return on assets (ROA), cash holding, interest expense, and sales growth. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 9: Impact of SARFEASI Act on GOB firms Investment: Publicly listed firms only

Dependent Variables:	$Invest_1$	$Invest_2$	$ABInvest_1$	$ABInvest_2$	$ABInvest_3$
Model:	(1)	(2)	(3)	(4)	(5)
Variables					
$Post \times GOB$	0.030***	0.017**	0.017***	0.017**	0.012**
	(0.008)	(0.007)	(0.007)	(0.007)	(0.006)
$Size$	0.169***	0.145***	0.143***	0.134***	0.130***
	(0.014)	(0.017)	(0.017)	(0.016)	(0.015)
$Leverage$	0.114***	0.156***	0.154***	0.155***	0.112***
	(0.017)	(0.043)	(0.043)	(0.041)	(0.021)
ROA	0.291**	0.785	0.782	0.761	0.097***
	(0.122)	(0.511)	(0.511)	(0.493)	(0.034)
$Cash$	0.237**	0.518*	0.521*	0.517*	0.142**
	(0.107)	(0.298)	(0.299)	(0.295)	(0.066)
$SaleGrowth$	0.058***	-0.012	-0.012		
	(0.012)	(0.034)	(0.034)		
$InterestExpense$	0.006	0.014	0.014	0.014	0.006
	(0.005)	(0.014)	(0.014)	(0.014)	(0.006)
Age	-0.057*	-0.045	-0.044	-0.027	-0.025
	(0.030)	(0.031)	(0.030)	(0.026)	(0.019)
Fixed-effects					
Firm	Yes	Yes	Yes	Yes	Yes
Industry-Year	Yes	Yes	Yes	Yes	Yes
Fit statistics					
Observations	16,736	16,736	16,746	16,746	16,746
R^2	0.32394	0.44388	0.44081	0.43364	0.33316
Adjusted R^2	0.18623	0.33060	0.32689	0.31830	0.19737

Note: The table reports the results of the impact of policy on the GOB firms' investment and abnormal investment than that of non-GOB firms with publicly listed firms sample only. Using the main proxies of investment and abnormal investment, $Invest_1$ and $Invest_2$, and $ABInvest_1$, $ABInvest_2$, and $ABInvest_3$, respectively, I employ the baseline regression specification, Equation 1. The coefficient of interest is $Post \times GOB$ which estimates the direct effect of the policy on the GOB firms' investment and abnormal investments than that of non-GOB firms. Columns 1 and 2 report the results on firms' investments- $Invest_1$ and $Invest_2$, followed by results on firms' abnormal investment- $ABInvest_1$, $ABInvest_2$, and $ABInvest_3$, in columns 3 to 5. All the specifications contain control variables, firm and industry-year fixed effects. The control variables include size, leverage, return on assets, cash holding, sales growth, interest expense, and age of the firm. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 10: Impact of SARFEASI Act on GOB firms reporting: with matched sample

Dependent Variables:	$\lvert AEM_1 \rvert$	$\lvert AEM_2 \rvert$	AEM_1	AEM_2
Model:	(1)	(2)	(3)	(4)
Variables				
$Post \times GOB$	0.056^{***}	0.063^{***}	0.066^{***}	0.075^{***}
	(0.021)	(0.021)	(0.022)	(0.021)
Fixed-effects				
Firm	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Fit statistics				
Observations	12,106	12,106	12,106	12,106
R^2	0.76408	0.74811	0.75753	0.73798
Adjusted R^2	0.72549	0.70690	0.71787	0.69512

Note: The table reports the results of the impact of policy on the GOB firms misreporting versus non-GOB firms with the most comparable sample of treatment and control firms. I use a propensity score matching approach to get the most comparable treatment and control firms. Specifically, I match the treatment and control firms based on the size, using a combination of nearest neighbourhood matching and caliper matching (e.g., Caliendo and Kopeinig, 2008; Tykvová and Borell, 2012). Table A4 and Table A5 suggest matching is successful, and show that treatment and control firms are quite alike on key variables such as size, return on asset, leverage, interest expense, and cash holding. Further, I use the main two proxies, AEM_1 and AEM_2, to estimate the firms' misreporting and employ baseline regression specification, Equation 1. The coefficient of interest is $Post \times GOB$ which estimates the direct effect of the policy on the GOB firms' misreporting than that of non-GOB firms. Columns 1 and 2 report the results with absolute values of the proxies, followed by results with signed proxies of misreporting in columns 3 and 4. Columns 1 and 2 report the results with unsigned $\lvert AEM_1 \rvert$ and $\lvert AEM_2 \rvert$ using a two-way fixed effect model with control variables, respectively. Followed by results with signed AEM_1 and AEM_2 using a two-way fixed effect model with control variables in columns 3 and 4. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 11: Impact of SARFEASI Act on GOB firms Performance

Dependent Variables:	*ROA*		*SaleGrowth*	
Model:	(1)	(2)	(3)	(4)
Variables				
Post × GOB	0.002	0.000	0.005	0.004
	(0.004)	(0.004)	(0.010)	(0.010)
Size	0.017***	0.017***	0.107***	0.105***
	(0.006)	(0.006)	(0.011)	(0.011)
Leverage	-0.039***	-0.039***	0.084***	0.083***
	(0.008)	(0.008)	(0.013)	(0.013)
CashHolding	0.365***	0.366***	0.152*	0.160*
	(0.132)	(0.136)	(0.085)	(0.088)
SaleGrowth	0.065***	0.064***		
	(0.003)	(0.003)		
InterestExpense	0.002	0.002	0.002	0.002
	(0.003)	(0.003)	(0.002)	(0.002)
Age	0.014	0.019	-0.269***	-0.250***
	(0.012)	(0.013)	(0.032)	(0.032)
ROA			0.656***	0.640***
			(0.097)	(0.095)
Fixed-effects				
Firm	Yes	Yes	Yes	Yes
Year	Yes		Yes	
Industry-Year		Yes		Yes
Fit statistics				
Observations	17,370	17,370	17,370	17,370
R^2	0.56803	0.57436	0.31296	0.32563
Adjusted R^2	0.48607	0.48714	0.18261	0.18744

Note: The show the impact of the policy on the firms' performance. I use two proxies for firms' performance, which include return on assets (ROA) and sales growth. I employ the baseline regression specification, Equation 1, using these variables as dependent variables. The main variable of interest is *Post × GOB* which directly estimates the effect of the policy on GOB firms' ROA and sales growth, compared to non-GOB firms. Columns 1 and 2 report the results with return on assets with firm year fixed effects, and firm industry-year fixed effects. Followed by the results on sales growth with firm year fixed effects, and firm industry-year fixed effects. The control variables include firms' size, leverage, cash holding, sales growth, interest expense, age, and ROA. I do not control for ROA when the dependent variable is ROA, similarly for sales growth. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 12: Impact of SARFEASI Act on GOB firms risk-taking

Dependent Variable:	*Earnings – Volatility*	
Model:	(1)	(2)
Variables		
Post × GOB	0.576**	0.488**
	(0.238)	(0.240)
Size	-1.655***	-1.632***
	(0.294)	(0.294)
SaleGrowth	0.608***	0.543***
	(0.163)	(0.163)
Leverage	1.004***	0.970***
	(0.352)	(0.356)
CashHolding	6.974***	6.765***
	(1.578)	(1.568)
InterestExpense	0.070	0.056
	(0.070)	(0.072)
Fixed-effects		
Firm	Yes	Yes
Year	Yes	
Industry × Year		Yes
Fit statistics		
Observations	17,091	17,091
R^2	0.48587	0.49538
Adjusted R^2	0.38748	0.39101

Note: The table reports the impact of the policy on the companies' risk-taking. I proxy corporate risk-taking with the earnings volatility of the firms. I perform the baseline regression, Equation 1 using firms' earnings volatility as the dependent variables. The main coefficient of interest is *Post × GOB* which estimates the direct effect of the policy on the GOB firms' risk-taking, compared to non-GOB firms. Column 1 reports the results for firms' earnings volatility with firm year fixed effects, followed by the results for firms' earnings volatility using firm industry-year fixed effects in column 2. All the columns include control variables: size, leverage, sales growth, interest expense, and cash holding. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Table 13: Impact of SARFEASI Act on GOB firms Cash Holding and Short-term investments

Dependent Variables:	*CashHolding*		*ShortInvestment*	
Model:	(1)	(2)	(3)	(4)
Variables				
Post × GOB	0.004**	0.004*	0.096**	0.076**
	(0.002)	(0.002)	(0.043)	(0.038)
Size	0.010***	0.008**	-1.064***	-1.078***
	(0.003)	(0.003)	(0.158)	(0.167)
Leverage	0.014***	0.014***	0.103***	0.099***
	(0.005)	(0.005)	(0.021)	(0.021)
ROA	0.102***	0.100***	0.561***	0.552***
	(0.023)	(0.023)	(0.139)	(0.135)
SaleGrowth	0.004**	0.004**	0.088***	0.084***
	(0.002)	(0.002)	(0.016)	(0.016)
InterestExpense	0.001	0.001	-0.001	-0.000
	(0.001)	(0.001)	(0.004)	(0.003)
Age	-0.010	-0.008	-0.325***	-0.242**
	(0.008)	(0.008)	(0.102)	(0.121)
CashHolding			1.549***	1.522**
			(0.573)	(0.603)
Fixed-effects				
Firm	Yes	Yes	Yes	Yes
Year	Yes		Yes	
Industry-Year		Yes		Yes
Fit statistics				
Observations	17,370	17,370	17,370	17,370
R^2	0.52133	0.53927	0.76703	0.77138
Adjusted R^2	0.43051	0.44486	0.72281	0.72452

Note: The table reports the impact of the policy on the firm's cash holding policy and short-term investment. I perform the baseline regression, Equation 1 using firms' cash holding and short-term investment as the dependent variables. The main coefficient of interest is *Post × GOB* which estimates the direct effect of the policy on the GOB firms' cash holding and short-term investment, compared to non-GOB firms. Columns 1 and 2 report the results for cash holding with firm year, and firm industry-year fixed effects, respectively. Columns 3 and 4 report the results for short-term investment with firm year and firm industry-year fixed effects, respectively. All the columns include control variables: size, leverage, return on assets (ROA), sales growth, interest expense, age, and cash holding. The definition of all variables is provided in the Table A1. Robust standard errors clustered at the firm level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.

9 Figures

Figure 1: Total banks advances

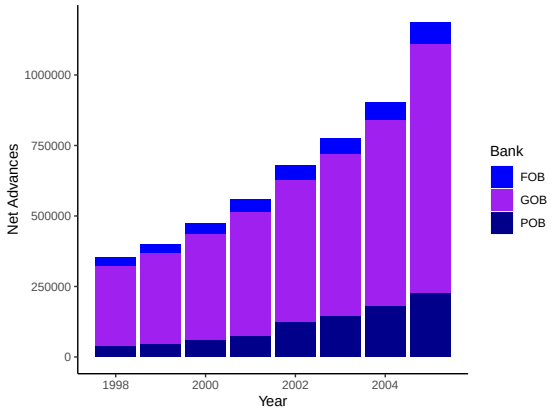
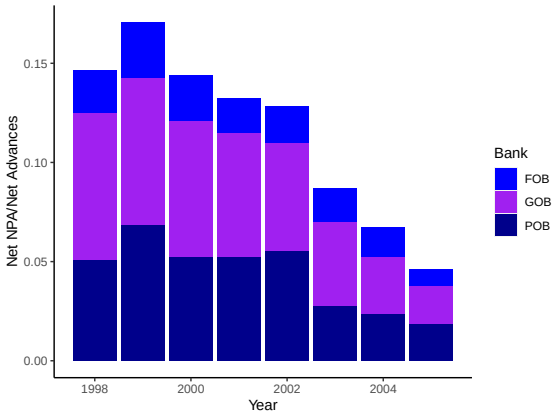
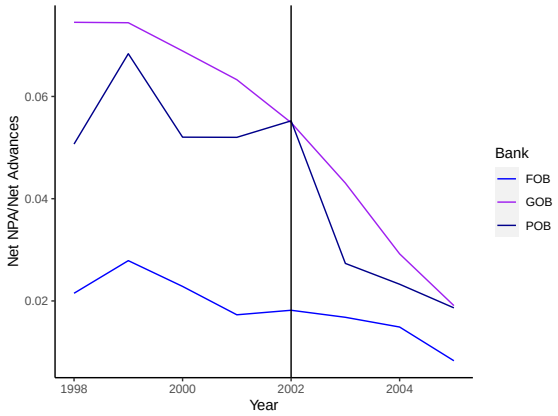


Figure 2: Non-performance assets (NPA) of Banks



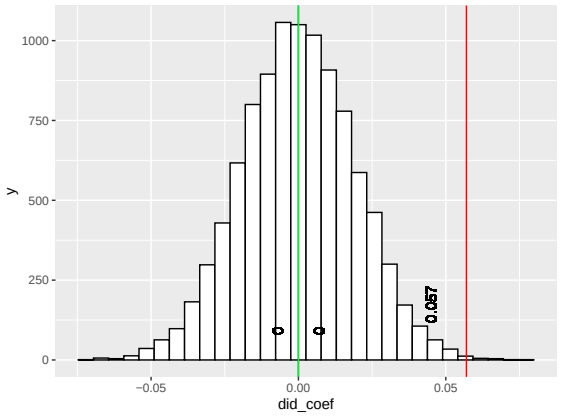
(a) Ratio of Net NPA and Net advances of the banks



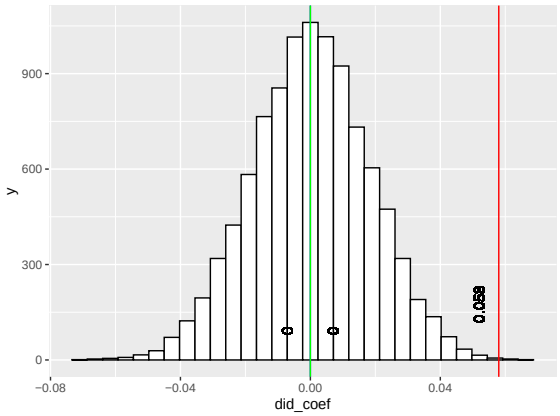
(b) Ratio of Net NPA and Net advances of the banks

Figure 3: Treatment and control group - Falsification test

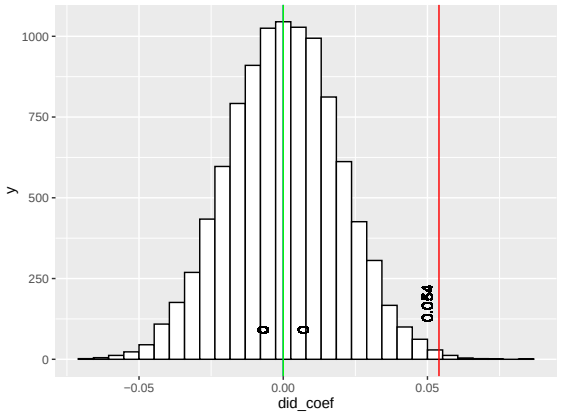
In this figure, I plot the estimated coefficients from the baseline regression specification with each of the artificially generated sample of treatment and control groups. I compare the distribution of the coefficients from ariticial sample with our main regression estimates. I find that in all the plots the estimated coefficient of our main regression lies on extreme right of each of the distribution.



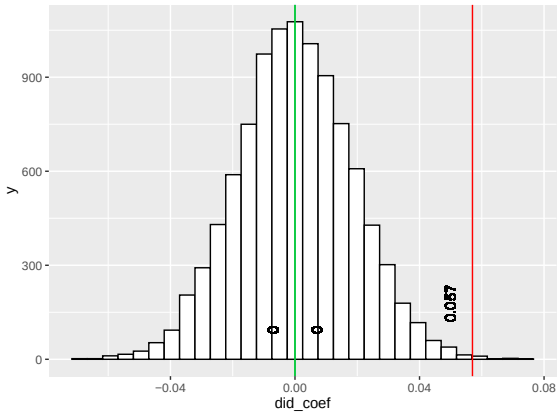
(a) $|AEM_1|$



(b) $|AEM_2|$



(c) AEM_1



(d) AEM_2

A Appendix

Table A1: Variable definitions

Variable Name	Description
GOB	is an indicator variable that takes value 1 if firm borrows exclusively from Government Owned Banks in 2001, and 0 otherwise.
Post	is an indicator variable that takes value 1 for post-SARFEASI act (i.e., post 2001), and 0 otherwise.
TA	is total asset of the firm.
EBXI	is earnings before extraordinary items of firm.
CFO	is cash flow from operating activities of firm.
TAC	is total accruals of firm is measured as earnings before extraordinary items less cash flow from operating activities normalised by the beginning of the year total assets.
REV	is net revenue of firm scaled by the beginning of the year total assets.
REC	is trade and bill receivable of the firm scaled by the beginning of the year total assets.
SaleGrowth	is growth in sales of the firm in year t from year $t-1$.
PPE	is property, plant, and equipment of the firm.
Size	is size of the firm measured by natural logarithm of total assets.
CashHolding	Cash holding of the firm i is defined as cash holding scaled by beginning of the year total asset.
Leverage	is leverage of firm is measured as firm's total debt scaled by beginning of the year total assets.
ROA	is return on assets of the firm is defined as earnings before extraordinary items scaled by the beginning of the year total asset.
Age	is age of the firm is the natural logarithm of the number of years the firm at year t is in operation from the year of incorporation.

Continued on next page

Table A1 – (continued)

Variable Name	Description
InterestExpense	is the interest expense of the firm is defined as firm's total interest expense scaled by beginning of the year total assets.
WorkingCapital	is working capital of firm, measured as firm's current asset minus current liability scaled by beginning of the year total assets.
$Invest_1$	is investment of the firms, I follow the approach of Gopalan et al. (2007) and measured as $log\left(\frac{FixedAssets}{FixedAssets_{t-1}}\right)$.
$Invest_2$	is second proxy of investment of the firms, defined as change in fixed asset of the firm from year $t-1$ to t scaled by the beginning of the year total assets.
$Invest_3$	is third proxy of firms' investment, measured as $log\left(\frac{PPE}{PPE_{t-1}}\right)$.
$Invest_4$	is fourth proxy of firms' investment, defined as change in property, plant, and equipment of the firm from year $t-1$ to t scaled by the beginning of the year total assets.
ShortInvestment	is short-term investment of the firm, defined as short-term investment excluding cash holdings scaled by beginning of the year total asset.
AEM_1	is first measure of accrual earnings management using modified Jones (1991) model, which is estimated from the specification: $\frac{TAC_{i,t}}{TA_{i,t-1}} - [\hat{a_1}\frac{1}{TA_{i,t-1}} + \hat{a_2}\frac{\Delta REV_{i,t}-\Delta REC_{i,t}}{TA_{i,t-1}} + \hat{a_3}\frac{PPE_{i,t}}{TA_{i,t-1}}]$ by following the approach of Dechow et al. (1995).
AEM_2	is performance adjusted accruals, and second measure of accrual earnings management, which is estimated from the specification: $\frac{TAC_{i,t}}{TA_{i,t-1}} - [\hat{b_1}\frac{1}{TA_{i,t-1}} + \hat{b_2}\frac{\Delta REV_{i,t}-\Delta REC_{i,t}}{TA_{i,t-1}} + \hat{b_3}\frac{PPE_{i,t}}{TA_{i,t-1}} + \hat{b_4}\frac{EBXI_{i,t}}{TA_{i,t-1}}]$ by following the procedure of Chen et al. (2008).

Continued on next page

Table A1 – (continued)

Variable Name	Description
AEM_3	is cashflow adjusted accruals, and third measure of accrual earnings management, which is estimated from the specification: $\frac{TAC_{i,t}}{TA_{i,t-1}} - [\hat{\alpha_2}\frac{CFO_{i,t-1}}{TA_{i,t-1}} + \hat{\alpha_3}\frac{CFO_{i,t}}{TA_{i,t}} + \hat{\alpha_4}\frac{CFO_{i,t+1}}{TA_{i,t+1}} + \hat{\alpha_5}\frac{PPE_{i,t}}{TA_{i,t-1}} + \hat{\alpha_6}\frac{\Delta REV_{i,t}}{TA_{i,t-1}}]$ by following the approach of Ball and Shivakumar (2008).
AEM_4	is working capital version of Jones (1991) model, and fourth measure of accrual earnings management, which is estimated from specification: $\frac{WC_{i,t}}{TA_{i,t-1}} - [\hat{\beta_1}\frac{1}{TA_{i,t-1}} + \hat{\beta_2}\frac{\Delta REV_{i,t}}{TA_{i,t-1}}]$.
AEM_5	is conditional conservatism accruals, and fifth measure of accrual earnings management, which is estimated from the specification: $\frac{TAC_{i,t}}{TA_{i,t-1}} - [\hat{\alpha_2}\frac{CFO_{i,t}}{TA_{i,t-1}} + \hat{\alpha_3}DCFO_{i,t} + \hat{\alpha_4}DCFO_{i,t} \times \frac{CFO_{i,t}}{TA_{i,t-1}} + \hat{\alpha_5}\frac{PPE_{i,t}}{TA_{i,t-1}} + \hat{\alpha_6}\frac{\Delta REV_{i,t}}{TA_{i,t-1}}]$ by following the approach of Ball and Shivakumar (2006).
$ABInvest_1$	is industry adjusted investment, defined as difference between the investment of the firm and median investment in the firm's industry
$ABInvest_2$	is growth opportunities adjusted firms' investment, estimated from specification: $\frac{Invest_{2,i,t}}{TA_{i,t-1}} - [\hat{\delta_1}SalesGrowth_{i,t-1}]$ by follow the approach of Biddle et al. (2009).
$ABInvest_3$	is growth opportunities and cash flow adjusted level of firms' investment, estimated from specification: $\frac{Invest_{2,i,t}}{TA_{i,t-1}} - [\hat{\tau_1}SalesGrowth_{i,t-1} + \hat{\tau_2}CFO_{i,t}]$ by following the approach of McNichols and Stubben (2008).
$ABInvest_4$	is growth opportunities adjusted level of firms' investment which is estimated from specification: $\frac{Invest_{4,i,t}}{TA_{i,t-1}} - [\hat{\delta_1}SalesGrowth_{i,t-1}]$ by following Biddle et al. (2009) approach. In this specification, I replace the $Invest_2$ with $Invest_4$, and consider as fourth measure.
$ABInvest_5$	is growth opportunities and cash flow adjusted level of firms' investment which is estimated from specification: $\frac{Invest_{4,i,t}}{TA_{i,t-1}} - [\hat{\tau_1}SalesGrowth_{i,t-1} + \hat{\tau_2}CFO_{i,t}]$ by following the McNichols and Stubben (2008) approach. In this specification, I replace the $Invest_2$ with $Invest_4$, and consider as fifth measure.

Notes: The table reports the definition of all the variables used in the analysis. The source of the data is CMIE provess database.

Table A2: Industry Distribution

Industry	Firm-Year	Firm_year_%	Firms	Firms_%
Agriculture	251	1.359%	39	1.377%
Automobile	836	4.527%	112	3.953%
Chemical	2107	11.410%	311	10.978%
Communication	88	0.477%	12	0.424%
Construction	1316	7.127%	198	6.989%
Consumer Good	770	4.170%	111	3.918%
Diversified	881	4.771%	141	4.977%
Electronics and Equipments	653	3.536%	98	3.459%
Entertainment	95	0.514%	18	0.635%
Food Products	1377	7.457%	216	7.624%
Hotel and Restaurants	285	1.543%	46	1.624%
Machinery	623	3.374%	89	3.142%
Metal	1552	8.405%	224	7.907%
Minerals Products	366	1.982%	56	1.977%
Misc Items	173	0.937%	29	1.024%
Paper and Business Supplies	478	2.589%	72	2.541%
Power Generation	62	0.336%	9	0.318%
Retail	153	0.829%	23	0.812%
Rubber and Plastic Products	686	3.715%	97	3.424%
Services	1543	8.356%	277	9.778%
Textile	2051	11.107%	299	10.554%
Transportation	308	1.668%	50	1.765%
Wholesale	1739	9.417%	296	10.448%
Wood Products	73	0.395%	10	0.353%

Note: The table reports the industry wise distribution of firm-year and firms observations in the final sample.

Table A3: Distribution of Firm-Year Observations by years

Year	Firm-Year	Percentage
1998	2045	11.074%
1999	2176	11.784%
2000	2323	12.580%
2001	2451	13.273%
2002	2417	13.089%
2003	2385	12.916%
2004	2325	12.591%
2005	2344	12.694%

Note: The table reports the distribution of firm-year observations by year in the final sample.

Table A4: Post match balance

	GOB	non-GOB	Difference	t-value	p-value
Size	5.942	5.891	-0.051	-0.833	0.405
Leverage	0.711	0.689	-0.022	-0.784	0.433
ROA	-0.017	-0.015	0.002	0.347	0.728
SaleGrowth	0.010	0.006	-0.004	-0.125	0.900
CashHolding	0.036	0.031	-0.005	-1.856	0.064
InterestExpense	0.115	0.104	-0.011	-1.244	0.214

Table A5: Pre-match Propensity Score Regression and Post-match Diagnostic Regression

Dependent Variable:	Dummy=1 for GOB firms; 0 for non-GOB firms	
	Pre-Match	Post-Match
Model:	(1)	(2)
Variables		
Size	-0.100***	-0.008
	(0.013)	(0.014)
Leverage	-0.017	-0.030
	(0.025)	(0.028)
SaleGrowth	-0.008	-0.003
	(0.012)	(0.019)
ROA	0.060	0.037
	(0.084)	(0.107)
CashHolding	-0.243	-0.292
	(0.164)	(0.196)
InterestExpense	-0.001**	-0.089
	(0.001)	(0.064)
Fixed-effects		
Industry	Yes	Yes
Fit statistics		
Observations	2,334	1,698
Squared Correlation	0.10691	0.04070
Pseudo R^2	0.07822	0.02860
BIC	3,342.6	2,619.4

Robust standard errors clustered at the industry level are reported in parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels, respectively.