

Regulatory Forbearance: An Emergency Medicine, Not Staple Diet!

07
CHAPTER

“Those who do not learn from history are condemned to repeat it.”

— George Santayana, Spanish philosopher

The current regulatory forbearance on bank loans has been necessitated by the Covid pandemic. This chapter studies the policy of regulatory forbearance adopted following the 2008 Global Financial Crisis (GFC) to extract important lessons for the current times. Regulatory forbearance for banks involved relaxing the norms for restructuring assets, where restructured assets were no longer required to be classified as Non-Performing Assets (NPAs henceforth) and therefore did not require the levels of provisioning that NPAs attract. During the GFC, forbearance helped borrowers tide over temporary hardship caused due to the crisis and helped prevent a large contagion. However, the forbearance continued for seven years though it should have been discontinued in 2011, when GDP, exports, IIP and credit growth had all recovered significantly. Yet, the forbearance continued long after the economic recovery, resulting in unintended and detrimental consequences for banks, firms, and the economy. Given relaxed provisioning requirements, banks exploited the forbearance window to restructure loans even for unviable entities, thereby window-dressing their books. The inflated profits were then used by banks to pay increased dividends to shareholders, including the government in the case of public sector banks. As a result, banks became severely undercapitalized. Undercapitalization distorted banks' incentives and fostered risky lending practices, including lending to zombies. As a result of the distorted incentives, banks misallocated credit, thereby damaging the quality of investment in the economy. Firms benefitting from the banks' largesse also invested in unviable projects. In a regime of injudicious credit supply and lax monitoring, a borrowing firm's management's ability to obtain credit strengthened its influence within the firm, leading to deterioration in firm governance. The quality of firms' boards declined. Subsequently, misappropriation of resources increased, and the firm performance deteriorated. By the time forbearance ended in 2015, restructuring had increased seven times while NPAs almost doubled when compared to the pre-forbearance levels. Concerned that the actual situation might be worse than reflected on the banks' books, RBI initiated an Asset Quality Review to clean up bank balance sheets. While gross NPAs increased from 4.3% in 2014-15 to 7.5% in 2015-16 and peaked at 11.2% in 2017-18, the AQR could not bring out all the hidden bad assets in the bank books and led to an under-estimation of the capital requirements. This led to a second round of lending distortions, thereby exacerbating an already grave situation.

The prolonged forbearance policies following the GFC thus engendered the recent banking crisis that brought down investment rates and thereby economic growth in the country. The first lesson for policymakers is to treat emergency measures as such and not to extend them even after recovery: when an emergency medicine becomes a staple diet, it can be counterproductive. Second, while the learnings from the previous episode must be employed to avoid a recurrence, ex-post analysis of complex phenomena must be disciplined by the insights highlighted in Chapter 7 of the Survey. Specifically, to enable policymaking that involves an exercise of judgement amidst uncertainty, ex-post inquests must recognise the role of hindsight bias and not make the mistake of equating unfavourable outcomes to either bad judgement, or worse, malafide intent.

INTRODUCTION

7.1 To address the economic challenges posed by the Covid-19 pandemic, financial regulators across the world have adopted regulatory forbearance. India is no exception. Emergency measures such as forbearance prevent spillover of the failures in the financial sector to the real sector, thereby avoiding a deepening of the crisis. Therefore, as emergency medicine, forbearance occupies a legitimate place in a policy maker's toolkit; see Box 1 for an explanation of the economic rationale for forbearance. However, caution must be exercised so that emergency medicine does not become a staple diet because borrowers and banks can easily get addicted to such palliatives. When emergency medicine becomes a staple diet, the negative side effects may not only be large but may also last for a while. Therefore, carefully examining and understanding the implications of previous forbearance episodes is relevant to guide future policy. In 2008, anticipating the global financial crisis, RBI introduced the policy of regulatory forbearance. It relaxed the norms for restructuring stressed assets - downgrading the asset to non-performing status was no longer mandatory and required no additional provisioning; see Box 2 for the description and timeline of the same. This chapter studies the impact of the 2008 forbearance policy on banks, firms, and the economy in general to glean important lessons for the current times. As Spanish philosopher George Santayana cautioned, "Those who do not learn from history are condemned to repeat it."

Box 1: Economic Rationale for Forbearance

The following illustration describes banks' choices while dealing with a stressed asset with and without forbearance. In this context, we must keep in mind that when a bank creates additional provisions to account for loan losses, the bank's profits decline and thereby lead to a reduction in the bank's equity capital. Therefore, the incentives to provision for bad loans gets significantly impacted by regulatory forbearance.

Without Forbearance

- If the project is viable, the bank would restructure the asset and downgrade it to a Non-Performing Asset (NPA) and provision for the same.

With Forbearance

- If the project is viable, the bank would restructure the asset. As restructured assets do not require the same level of provisioning as NPAs, inadequate provisions are made.

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|--|---|
| <p>2. If the project is unviable, the bank would not restructure the loan and declare the asset as non-performing. Crucially, banks do not gain by restructuring unviable projects in this case.</p> | <p>2. Capital-starved banks now have an incentive to restructure even unviable projects to reduce provisioning and avoid the consequent hit on capital.</p> |
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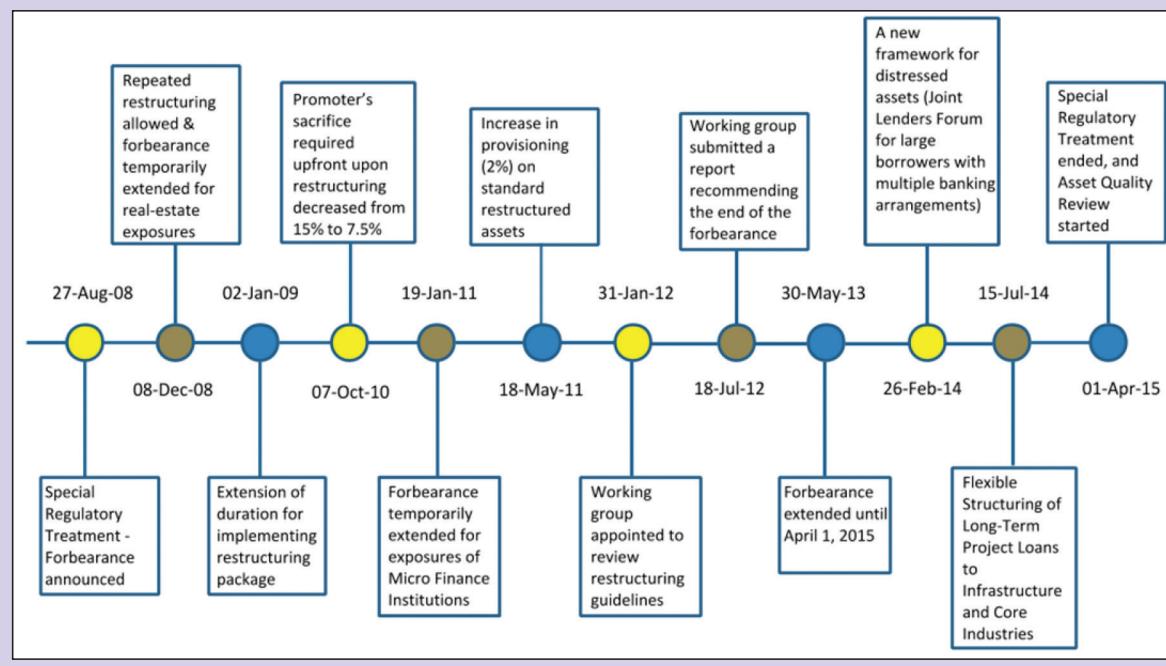
Absent forbearance, a bank must decide to restructure based on the viability of the firm/project because the cost of restructuring an unviable firm is significant. But, with forbearance, banks do not suffer any near-term cost from restructuring. Therefore, banks prefer restructuring, as this choice allows them to declare fewer NPAs and avoid the costs due to loan provisioning. Forbearance thus incentivizes banks to take risks by restructuring stressed assets even if they are unviable. Capital-constrained entities are particularly susceptible to investing in risky projects, a phenomenon called risk-shifting in academic literature (Jensen and Meckling, 1976). Consider the case where a bank has a large outstanding against a borrower who is on the verge of default. If the borrower defaults, the bank would have to recognize the debt as NPA, incur a loss, and possibly re-capitalize on account of the depleted capital. Given the borrower's solvency concerns, lending a fresh loan, or restructuring its current loan(s) is extremely risky and may result in further losses for the bank. However, in the unlikely case that the fresh credit helps the borrower recover, banks would get back all their debt with interest and therefore face no reduction in capital. Notice that the recognition of loss impacts equity holders. They get no return on their investments and are forced to recapitalize to maintain sufficient capital adequacy. In such a scenario, a capital-starved bank, where equity owners have little "skin in the game", is likely to continue lending to the risky borrower. With low capital, equity owners have little to lose from the fresh lending in the likely scenario where the borrower fails. However, the unlikely case of firm revival would result in a significant upside for them. Depositors do not have any marginal upside in the case of risky investment but may incur some costs if the firm fails. Hence equity owners gain if the risks pay off and if the risks fail the cost would be borne by the depositors, bondholders, and/or the taxpayers. Forbearance further allows equity owners to restructure loans without any additional cost. Capital-constrained banks, therefore, choose to restructure even unviable projects when the opportunity arises under a forbearance regime, thereby shifting risk away from equity holders to depositors and taxpayers.

The above phenomenon of forbearance-induced risk-shifting is apparent in the case of privately held banks where equity owners could act in their own interests. In a few Indian banks, promoters administer management and decision-making, directly or indirectly, by virtue of their controlling shareholding and/or management rights. Given their controlling stake, perverse incentives of promoter-managers in the presence of forbearance are understandable. However, most Indian banks are widely held or controlled by the government, and hence, their incumbent managements do not own sizeable stakes in these institutions. How forbearance distorts banks' incentives in this context, therefore, needs an explanation. The rationale includes two key points. First, guided by their personal career concerns, the incumbent bank managers always have incentives to report strong performances during their tenure. Sarkar, Subramanian, and Tantri, 2019 show that bank CEOs' post-retirement career benefits, such as future corporate board memberships,

are associated with distortionary practices during their tenure. Forbearance provides incumbent managers an opportunity to window-dress their balance sheets, show good performance during their tenure, and thereby enhance post-retirement career benefits. Consequently, bank managers resort to distortionary practices under forbearance. Second, banks' management may use forbearance as a shield to cover up outright corruption and nepotism. The events with the Punjab National Bank or recent allegations of deceit against former bank CEOs corroborate this possibility. Notice that forbearance allows banks to hide bad loans by delaying the recognition of losses. Bank managers, therefore, foresee very little downside in making unviable loans to connected parties, against the upside of making quick personal gains.

Box 2: Regulatory Forbearance provisions

1. As per regulations prevalent before August 2008, non-industrial non-SME accounts classified as 'standard assets' were to be re-classified as 'sub-standard assets' upon restructuring. The new relaxed norms entitled borrowers to retain the same asset classification upon restructuring, subject to a few conditions.
2. Since accounts would no longer be classified as sub-standard on restructuring, banks were no longer required to make the general provision on total outstanding for substandard assets.
3. The relaxed norms were extended to already restructured loans as well. Note, before 2008, only loans with no prior history of restructuring were considered for restructuring. Below is a timeline of announcements relating to the forbearance regime of 2008-2015:

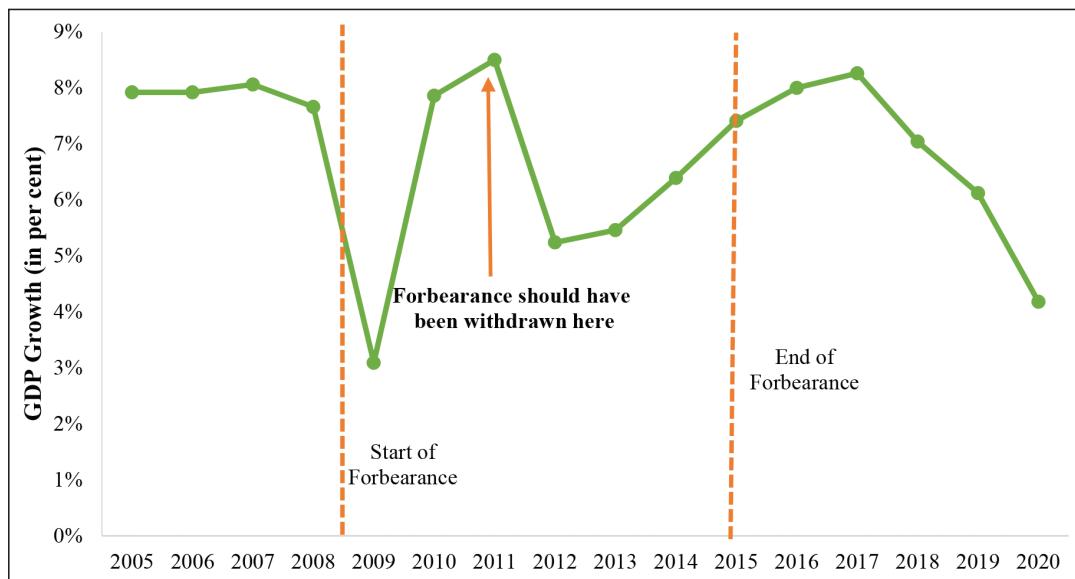


THE ORIGINAL SIN: THE SEVEN-YEAR FORBEARANCE!

7.2 The forbearance policies had desired short-term economic effects. GDP growth recovered from a low of 3.1% in FY2009 to 8.5% within two years, as shown in Figure 1. There was

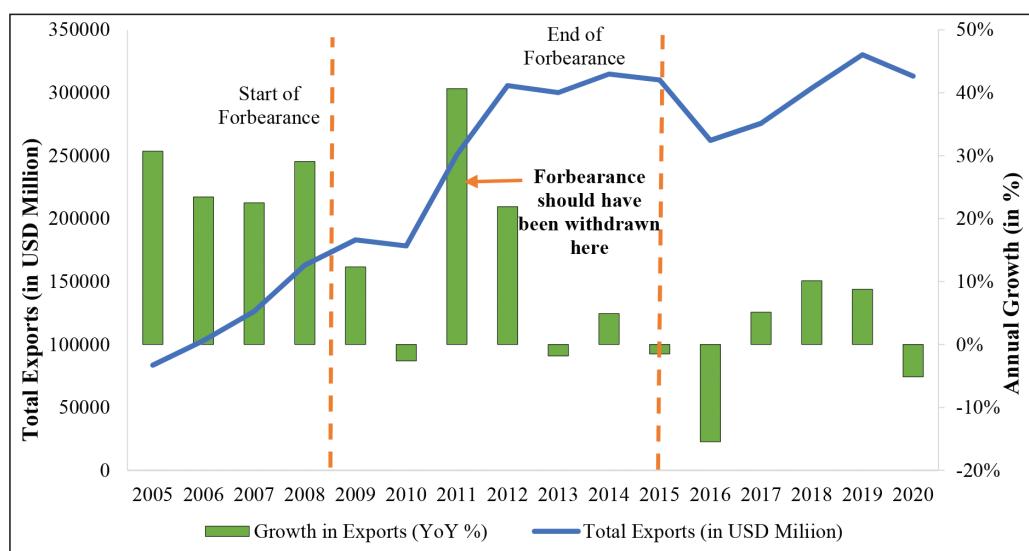
a marked improvement in other economic indicators ranging from exports to the Index of Industrial Production (IIP), as highlighted in Figures 2 and 3. Figure 4 shows that the growth in total revenue of listed firms also recovered from a low of 4.88% during the crisis to a high of over 20% in 2011. As shown in Figure 5, growth in bank credit, which had fallen from 22.3% in FY2008 to 16.9% in FY2010, recovered quickly to 21.5% in FY2011. The time was therefore ripe to withdraw the forbearance; after all the emergency medicine had worked in restoring the health of the economy. However, the central bank decided to continue with the same. As shown in Box 2, the forbearance continued for five more years till 2015, even when its withdrawal was recommended – a clear case of emergency medicine that was chosen to be made into a staple diet.

Figure 1: Growth rate of Real GDP



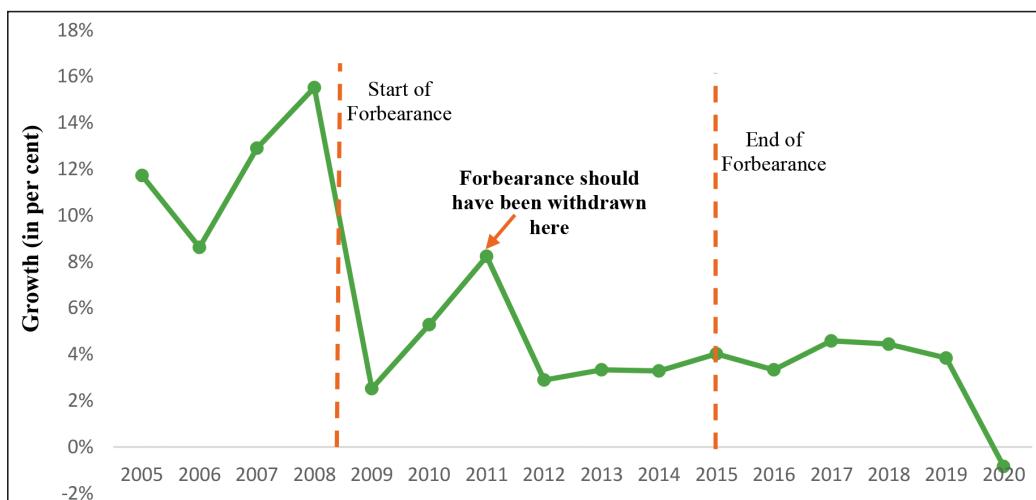
Source: NSO

Figure 2: Growth in Exports



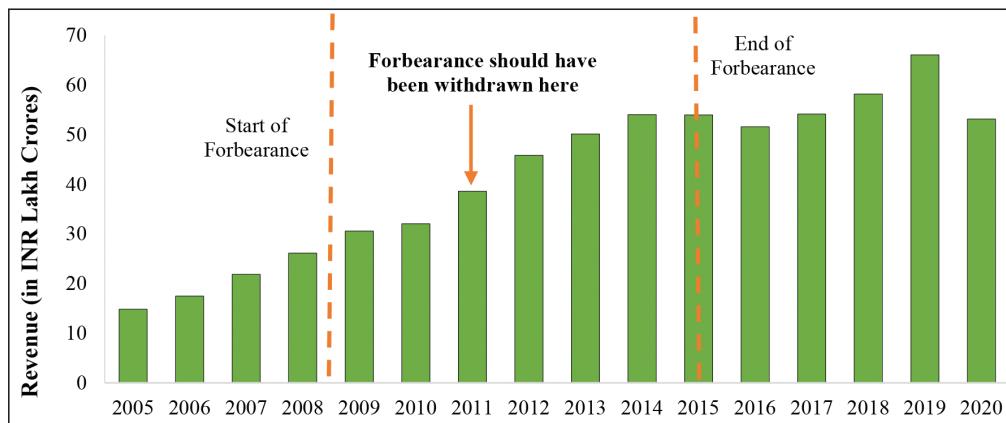
Source: Department of Commerce

Figure 3: Growth in Industrial Production (IIP)



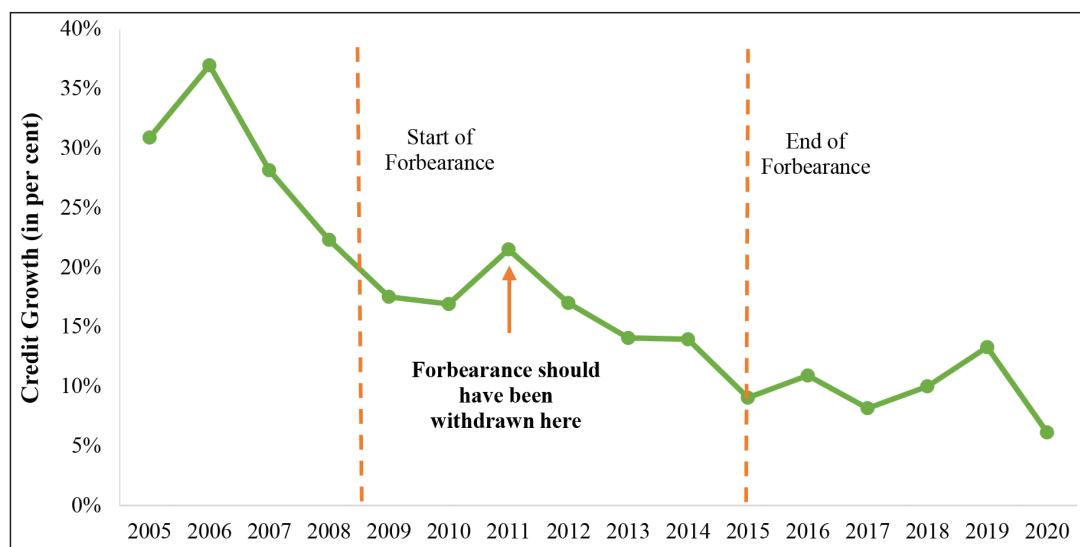
Source: NSO

Figure 4: Firms Revenues as a proxy for borrowers' health



Source: Ministry of Corporate Affairs

Figure 5: Growth in Outstanding Credit of Banks



Source: RBI Table on Annual Account of SCBs

7.3 During the period of the global financial crisis (GFC), the policy worked well with banks selecting genuinely distressed, but viable in the long-run, borrowers for restructuring. Box 3 explains the careful panel regressions undertaken to control for various confounding factors. The results show that, during the GFC, banks more likely to benefit from forbearance do not differ in their selection of restructuring choices when compared to a bank with a lower likelihood of utilizing forbearance. The propensity to restructure any given borrower, including unviable ones is, however, significantly higher in the years after the crisis. Evidently, once the banks got a signal about the continuation of forbearance despite the economic recovery, several types of distortions crept in. As pointed out earlier, emergency medicine indeed became a staple diet. For instance, figures 6 and 7 show that the proportions of loans restructured increased significantly during this period. The share of restructured loans increased from 0.74% in FY2008 to 6.94% in FY2015, as shown in figure 6. The increase in the share of restructured loans among public sector banks was much higher, from 0.82% to 8.49%. However, the private sector banks also saw their share of restructured loans increase from 0.64% to 2.87%. On the contrary, as shown in figure 8, the reported gross NPAs of banks increased only modestly from 2.2% in FY2008 to 4.3% in FY2015. It appears that the banks used the option of restructuring loans that were on the verge of defaulting without regard to the viability of such loans, as shown subsequently in Section 8.27. During the forbearance window, the proportion of firms in default increased by 51% after their loan(s) got restructured. In the pre-forbearance era, there was only a marginal 6% increase in the likelihood of defaults after restructuring. Forbearance thus helped banks to hide a lot of bad loans.

Box 3: Difference-in-Difference Framework to Show Distortion in Banks' Incentives

Mannil, Nishesh, and Tantri (2020) use a difference-in-difference methodology to test whether and when forbearance induces lending distortions among banks. This strategy estimates the lending activity by a bank in the counterfactual scenario of forbearance not being available. The difference in the actual lending activity in the presence of forbearance and the one under this counterfactual scenario is therefore a consequence of forbearance.

To this end, banks are classified into two separate groups - B1 and B2, such that the two types of banks are similar in all respects except for their susceptibility to exploiting the forbearance policies. Precisely, banks in B1 have a higher proportion of borrowers that are adversely hit by the crisis. This naturally increases the likelihood of B1, relatively, exploiting the use of regulatory forbearance measures. By a thorough comparison of attributes such as ownership, capital, NPA, and age, Mannil, Nishesh, and Tantri (2020) show that the two categories of banks thus formed are otherwise similar.

Banks in B1, on average, would have a higher share of loans restructured during the crisis on account of the higher shock faced by their borrowers. Therefore, a comparison of B1 and B2 on aggregate outcomes would not be appropriate to understand the distortions forbearance can induce. Subsequently, Mannil, Nishesh, and Tantri (2020) use a firm-level fixed effects estimate that compares outcomes within a given firm and between the two types of banks. If for the same firm, banks in B1 exhibit a higher restructuring activity during forbearance, it implies that these banks, on average, are relatively less prudent in selecting cases for restructuring and are likely to restructure even unviable projects. Because B1 and B2 are

otherwise similar, any difference in their propensity to restructuring could be attributed to their varying susceptibility to exploiting forbearance. With this strategy for identification of the causal effects, the lending activity of banks over the years 2002-2015 is analyzed. The years are split into three groups: the pre-forbearance period of 2002-2008, the crisis period of 2009-2011, and the post-crisis period of 2011-2015. Organizing the data at a firm-bank-year level, the following regression is estimated:

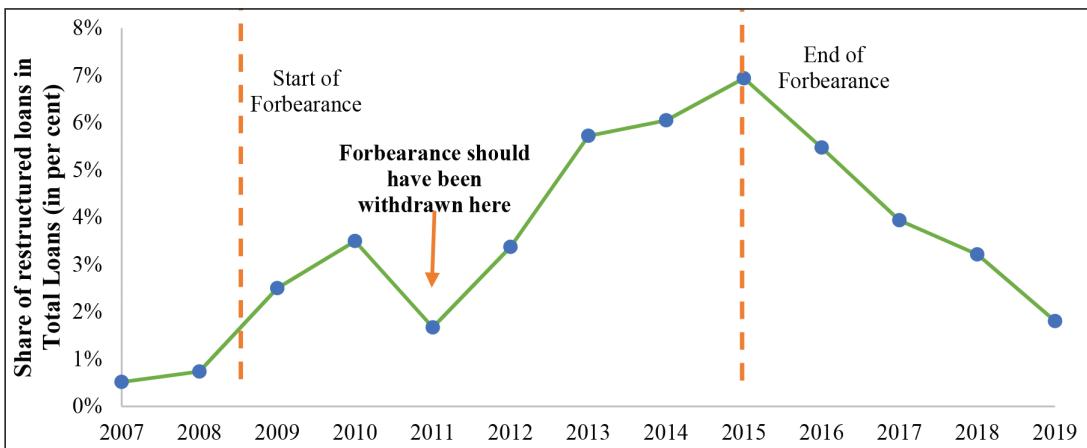
$$\text{Restructured Loan Amount}_{ijt} = \alpha + \beta_1 \times \text{Treatment}_j \times \text{Crisis}_t + \beta_2 \times \text{Treatment}_j \times \text{PostCrisis}_t + \beta_3 \times X_{it} + \delta_{it} + \nu_j + \epsilon_{ijt}$$

VARIABLES	Restructured Loan Amount (in INR Million)	
	(1)	(2)
Treatment X Crisis (2009-2011)	9.070 (12.952)	10.130 (13.675)
Treatment X Post-Crisis (2012-2015)	34.582** (16.735)	35.952** (17.642)
Bank Controls	No	Yes
Observations	237,690	237,690
R-squared	0.183	0.183
(Firm, Year) Fixed Effects	Yes	Yes
Bank Fixed Effects	Yes	Yes

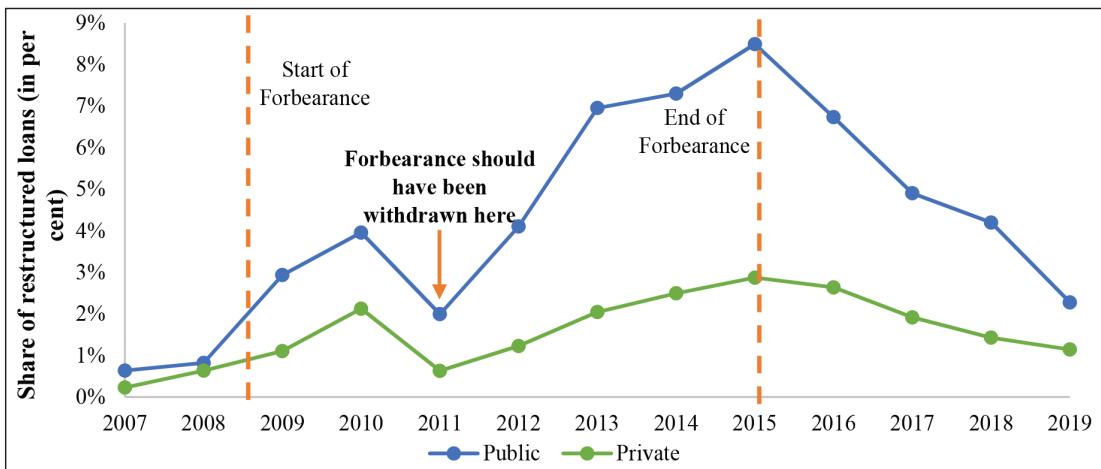
Table 1: The table shows the difference-in-difference estimate described in the equation above. Restructured loan amount measures the total amount of loan restructured by the bank j for the borrower i in the year t . Treatment is an indicator variable that takes the value of 1 for banks that have above-median exposure to crisis-hit borrowers and 0 otherwise. Crisis (Post-crisis) is another indicator variable that takes the value of 1 for years 2009 – 2011 (2012 – 2015) and 0 otherwise, included in column 2, refers to the bank-specific time-varying controls, namely the bank's proportion of government ownership, the proportion of foreign institutional ownership, and the CEO tenure. refers to (firm, year) fixed effects which ensure that restructuring activity is compared within a (firm, year).stands for bank fixed effects to absorb any unobserved variations across banks. ** represents a 5% level of statistical significance. Standard errors, clustered at the bank level, are reported in the parenthesis.

Source: Mannil, Nishesh, and Tantri (2020).

The coefficients denote the average difference in restructuring amount compared to the pre-forbearance period (2002-08), between the two types of banks. The coefficients are statistically indistinguishable from zero during the crisis period (2009-11). This suggests that the restructuring activity by the two types of banks does not differ during the crisis phase. Note that, rather than comparing total restructuring, the framework compares restructuring propensity vis-à-vis a given firm. Hence, there are no signs of distortions during the crisis. The coefficients, however, become positive in the post-crisis period with a statistical significance of 5%. This indicates that banks more likely to utilize forbearance became imprudent in the selection of firms for restructuring after the crisis dissipated. Thus, the prolonged nature of forbearance seems to have distorted banks' incentives only after the end of the crisis.

Figure 6: Higher Restructuring during Forbearance

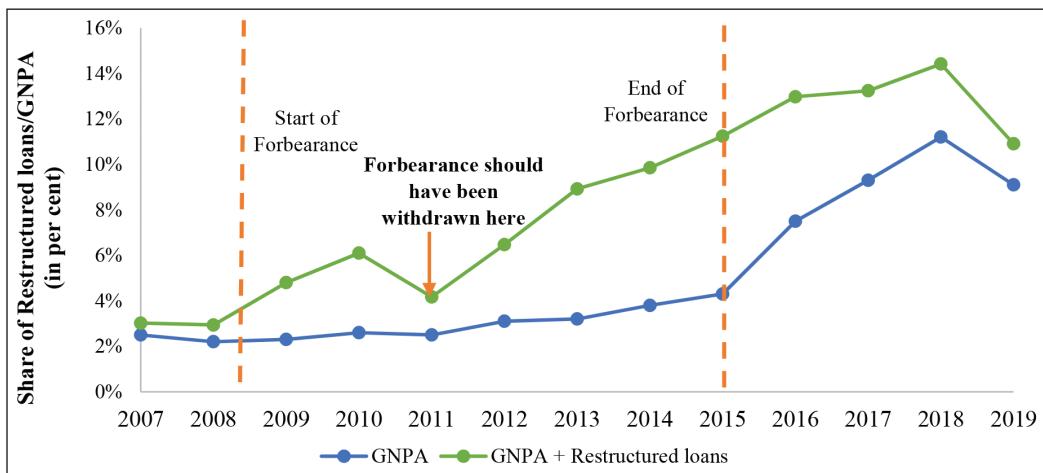
Source: RBI STRBI Table No 13 on Loans subjected to restructuring

Figure 7: Higher Restructuring by PSBs

Source: RBI STRBI Table No 13 on Loans subjected to restructuring

Public: Restructured loans as a share of total loans for public sector scheduled commercial banks

Private: Restructured loans as a share of total loans for private sector scheduled commercial banks

Figure 8: Gross Non-performing Assets and Restructured loans

Source: RBI STRBI Table No 58 on Gross and Net NPAs of SCBs.

GNPA: Gross NPA as a share of total loans

GNPA + Restructured loans: Sum of Gross NPA and Restructured loans as a share of total loans

7.4 The P. J. Nayak Committee (2014), constituted by RBI, highlighted in its report submitted in May 2014 the twin concerns stemming from the forbearance regime: ever-greening of loans by classifying NPAs as restructured assets and the resultant undercapitalization of banks. For instance, it stated, “the existing tier-I capital for public sector banks is overstated because of the regulatory forbearance which RBI provides on restructured assets. Without forbearance these assets would be categorized as NPAs, the restructuring being a response to likely imminent default. As a consequence, provisioning would rise, and tier-I capital would fall.” (pp. 27) Thus, in essence, many banks were undercapitalized during the forbearance period. The report had estimated that if regulatory forbearance were withdrawn immediately in May 2014 and a prudent 70% provision cover were provided for restructured assets, tier-1 capital of the public sector banks would be written down by INR 2.78 lakh crores. As we highlight later in Section 8.6-8.8, early resolutions of banking crises limit the damage from the same to the economy. Yet, RBI dragged its feet in biting the bullet while attempting to persuade banks to recognize that the distinction between NPAs and restructured assets is nothing but accounting sleight of hand (Rajan, 2014 pp. 4). The consequent result was a further exacerbation of the situation.

7.5 Once the forbearance policy was discontinued in 2015, RBI conducted an Asset Quality Review to know the exact amount of bad loans present in the banking system. As a result, banks' disclosed NPAs increased significantly from 2014-15 to 2015-16. In the absence of forbearance, banks preferred disclosing NPAs to the restructuring of loans. Thus, the roots of the present banking crisis go back to the prolonged forbearance policies followed between 2008 and 2015.

COST OF EXTENDED FORBEARANCE VERSUS EARLY RESOLUTION OF BANKING CRISES: INTERNATIONAL EVIDENCE

7.6 The pattern of evolution of non-performing loans over time across G20 countries provides valuable insights on the costs of extended forbearance versus early resolution of banking crises. For this purpose, the year in which a country reached its peak NPA after the global financial crisis is identified. The countries that reached their peak NPA during 2009 and 2010 (2009-2010) are called “Early Resolvers”. These countries were likely early enough to recognize the bad loan problem and take the necessary steps to address it. Their share of non-performing loans started declining after 2009-10. These include countries like the United States, which immediately recognized toxic assets and launched a recapitalization program.

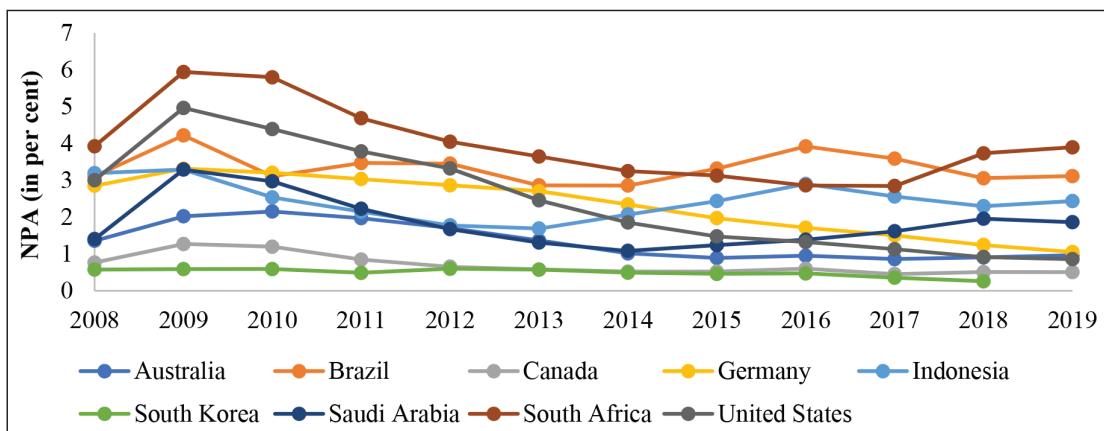
7.7 In contrast, “Late Resolvers” correspond to the countries that reached their peak NPAs in 2015-19, i.e. up to a decade post the crisis. As shown in the case of India, where a prolonged policy of regulatory forbearance allowed banks to delay recognition of actual NPAs, a delay in taking actions to recognize and resolve bad loans may have caused the NPAs to culminate many years after the crisis. Some important patterns between the “Early Resolvers” and the “Late Resolvers” present interesting insights.

7.8 First, as seen in Table 2 and Figures 9-10, the “Late Resolvers” ended up with much higher peak NPAs than the “Early Resolvers.” In fact, on average, NPAs for the late resolvers were more than thrice that for the early resolvers (figure 11). Second, and more crucially, the impact on GDP growth for the late resolvers (-1.7% on average) was significantly worse than that for the early resolvers (-0.8% on average), as shown in Table 3.

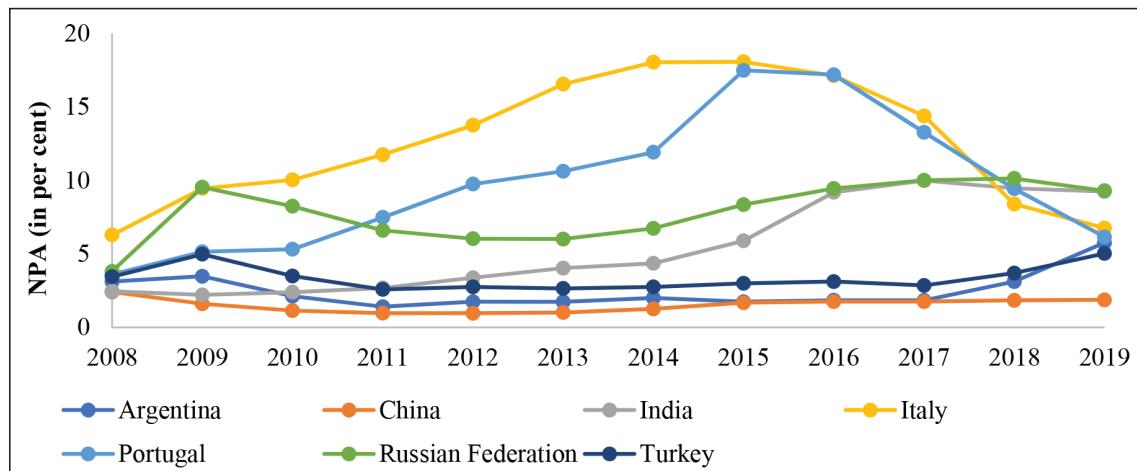
Table 2: NPA ratio of countries and when that peaked after the Global Financial Crisis

Early Resolvers (2009-2010)		Late Resolvers (2015-2019)	
	Peak NPA as % of assets		Peak NPA as % of assets
Brazil	4.21	Argentina	5.75
Canada	1.27	China	2.40
Germany	3.31	India	9.98
Indonesia	3.29	Italy	18.06
Saudi Arabia	3.29	Portugal	17.48
South Africa	5.94	Russia	10.12
United States	4.96	Turkey	5.02
Australia	2.15		
South Korea	0.59		
Average	3.22	Average	9.83

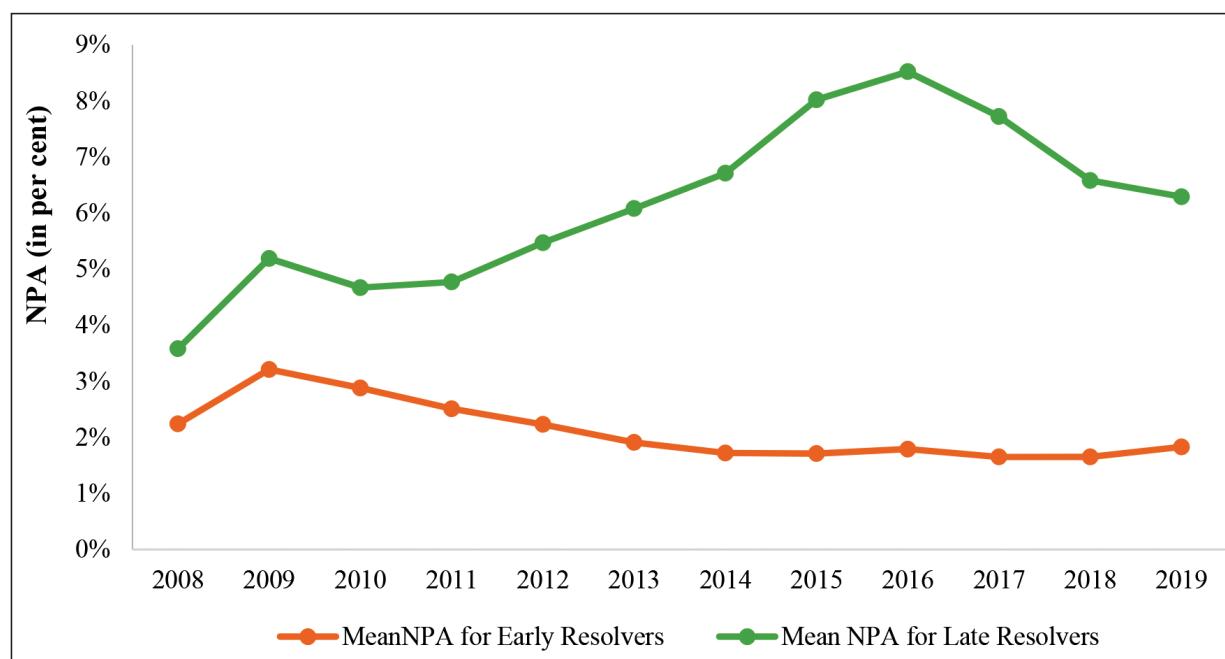
Source: IMF

Figure 9: NPA trends for “Early Resolvers”

Source: IMF Financial Soundness Indicators

Figure 10: NPA trends for “Late Resolvers”

Source: IMF Financial Soundness Indicators

Figure 11: NPA trends for Early Resolvers vs Late Resolvers

Source: IMF Financial Soundness Indicators

Table 3: Difference in post and pre-crisis GDP for Early Resolvers vs Late Resolvers

Early Resolvers	Average GDP growth rate (in %)			Late Resolvers	Average GDP growth rate (in %)		
	Pre-crisis 1998-07	Post-crisis 2008-19	Difference		Pre-crisis 1998-07	Post-crisis 2008-19	Difference
Australia	3.59	2.53	-1.06	Argentina	2.82	0.99	-1.83
Brazil	2.99	1.57	-1.42	China	10.01	7.97	-2.04
Canada	3.19	1.66	-1.53	India	7.16	6.85	-0.31
Germany	1.63	1.22	-0.41	Italy	1.51	-0.32	-1.83
Indonesia	2.81	5.54	2.73	Russia	5.85	1.44	-4.41
South Korea	5.18	3.08	-2.11	Turkey	4.38	4.55	0.17
Saudi Arabia	3.01	3.23	0.21	Portugal	2.1	0.43	-1.68
South Africa	3.73	1.54	-2.19				
United States	3.11	1.70	-1.41				
Average	3.25	2.45	-0.80	Average	4.83	3.13	-1.70

Source: IMF

7.9 The following sections explore in detail the consequences of a prolonged forbearance policy. The discussion is divided into four broad sections. The first section discusses the impact on lending practices of banks, the second section highlights the impact on the borrowers, the

third section examines the clean-up phase, and finally, the concluding section discusses the policy implications.

ADVERSE IMPACT OF FORBEARANCE ON BANK PERFORMANCE AND LENDING

Undercapitalization of Banks

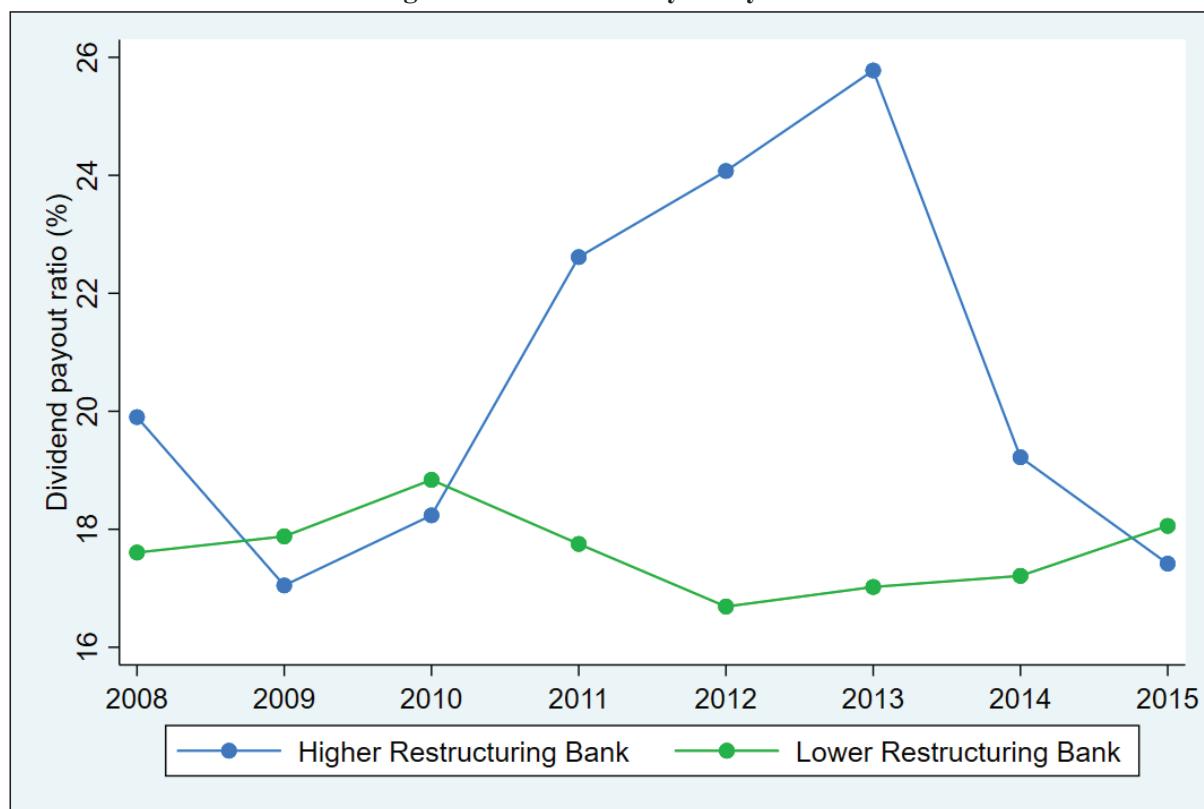
7.10 Banks are in the business of converting illiquid loans into liquid liabilities (Diamond and Dibvyg, 1983). In other words, while banks issue deposits repayable on demand or after a specific period, they lend to projects with long gestation periods. Therefore, they face risks both from (i) the mismatch in timing of their inflows and unexpected outflows (referred to as liquidity mismatch) and (ii) also due to unexpected surge in borrower default. Normal defaults and regular outflows are usually priced in and provided for within the regular asset-liability management (ALM) framework. Capital provides a cushion that helps banks navigate through times of abnormal depositor withdrawals and increased losses on the lending portfolio.

7.11 A policy of prolonged forbearance has the effect of overstating the actual capital and creating a false sense of security. Consider a bank with a capital adequacy ratio of 12% before forbearance¹. Assume that during the crisis, the bank restructures 10% of its books. Absent forbearance, the bank would make provisions for such restructurings, and the capital would be reduced to the extent of such provisioning. To operate further, the bank will have to meet the regulatory threshold by raising fresh capital. However, with forbearance, the bank can restructure troubled loans and still report the capital adequacy ratio at 12%. Viewed differently, forbearance lets undercapitalized banks operate without raising capital. Inadequate capital is similar to owners not having adequate skin in the game. A long literature in finance, starting from Myers (1976), has discussed the implications of inadequate “skin in the game” among the incumbents running any organization.

7.12 Several implications follow. First, since equity capital is privately expensive to the owners of banks, the banks may use the forbearance window to withdraw their capital. For instance, in the illustration above, the bank can keep reporting healthy capital figures while the true numbers, without forbearance, might actually be lower than the regulatory threshold. If forbearance is continued for an extended period, the bank may consider the capital above the regulatory minimum as “excess” and start repaying capital to the incumbent owners as dividends (Mannil, Nishesh, and Tantri, 2020). Thus, the usual pecking order of finance (Myers (1977), Modigliani & Miller (1958)), where debt is repaid before equity, gets reversed. Eventually, when forbearance gets withdrawn, either depositors or the taxpayers are called upon to foot the bill.

7.13 The phenomenon described above transpired in the Indian banking sector during forbearance. Banks that benefited more from forbearance increased their dividend payments to incumbent management, including the government. As seen in figure 12, the difference in the average dividend payout ratio between banks with a higher share of restructured loans and banks with a lower share of restructured loans was as high as 9% in 2012-13.

¹ Banks in India are required to maintain a capital adequacy of 9%. We ignore other types of statutory capital buffers required as the example is for illustration purpose only.

Figure 12: Dividend Payout by Banks

Source: CMIE Prowess

Higher (Lower) Restructuring Bank: Average dividend payout by banks with above-median (below-median) share of restructured loans

7.14 Further, banks with a high share of restructured loans raised less fresh capital than banks with a low share of restructured loans. The former raised only 1.67% of their average assets as fresh capital during the forbearance period compared to 2.04% by the latter. More dividend payments and less capital infusion exacerbated the undercapitalization of banks with higher restructuring. The combined effect of higher dividends and lower fresh capital led to a stark difference in the Capital Adequacy Ratio (CAR) between the two types of banks. CAR was lower by close to 2.5 percentage points for banks with a higher share of restructured loans when compared to banks with fewer restructured assets in 2014-15. Thus, forbearance left several banks undercapitalized.

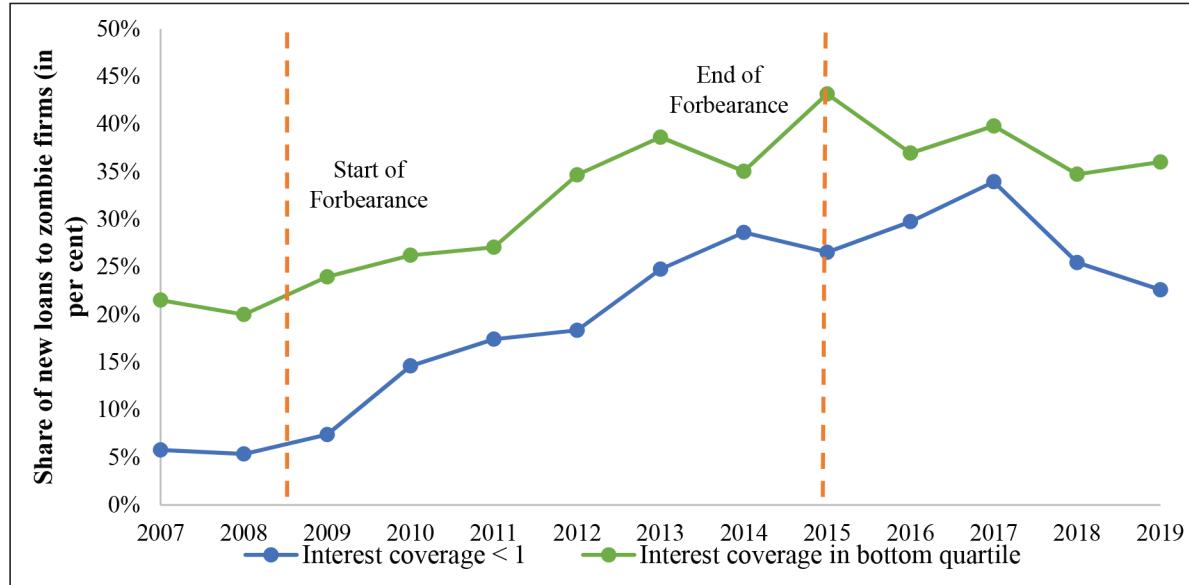
Lending to Zombie Firms

7.15 As noted above, reduction in the capital is akin to reduced “skin in the game.” It distorts the incentives of the bank owners and incumbent management. With less of their own money at stake, banks become increasingly risk-seeking (Diamond and Rajan, 2011). As explained in Box 1, undercapitalized banks find risky lending and shady lending practices, such as those based on high upfront fees, attractive.

7.16 Chari, Jain, and Kulkarni (2019) document that regulatory forbearance led to an increase in lending to low-solvency and low-liquidity firms. Precisely, the forbearance period witnessed an increase in lending to unproductive firms, popularly referred to as “zombies”. Zombies are typically identified using the interest coverage ratio, the ratio of a firm’s profit after tax to its total

interest expense. Firms with an interest coverage ratio lower than one are unable to meet their interest obligations from their income and are categorized as zombies. As shown in figure 13, the share of new loans to such firms increased from 5% in 2007-08 to a whopping 27% in 2014-15.

Figure 13: Increased Zombie Lending



Source: MCA Index of charges and CMIE Prowess

7.17 This increased lending to zombies could merely be a reflection of the poor financial performance of firms during the forbearance regime. To assess whether it is indeed the case of risky lending, a revised definition of zombie firms is considered. Under this alternative definition, zombie firms are those whose interest coverage ratio lies in the bottom quartile. This definition ensures that the proportion of zombies remains the same across all years. Even with the revised definition, the share of new loans sanctioned to zombie firms is found to increase from 20% in 2007-08 to 43% in 2014-15, as shown in figure 13. This clearly indicates an increase in risky lending by banks.

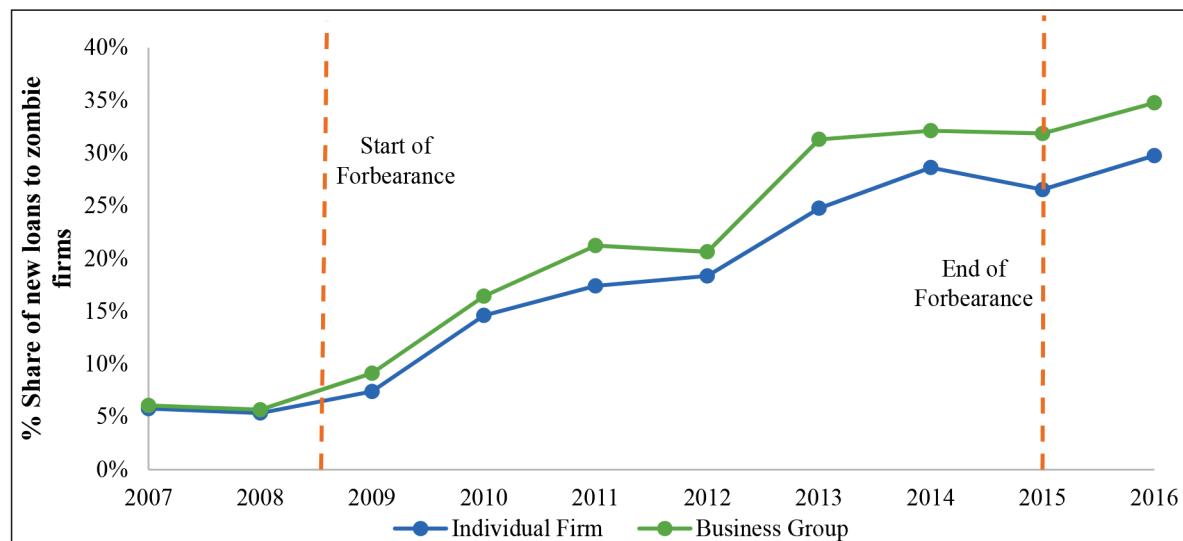
Ever-greening of Loans

7.18 There is another motive for undercapitalized banks to engage in lending to poor quality firms: to protect their already depleted capital. One way of ever-greening loans is lending a new loan to a borrower on the verge of default, near the repayment date of an existing loan, to facilitate its repayment (Tantri, 2020). Such transactions go undetected as banks are not required to disclose them, unlike restructurings that warrant disclosures.

7.19 To further disguise their lending to distressed borrowers, banks may direct credit to other healthy firms in the business group to which those borrowers belong. Therefore, it is important to consider a business group as a whole, instead of individual firms, for a more robust estimate of zombie lending. A business group is classified as a zombie if the interest coverage ratio of the entire group is less than one. In figure 14, the green line represents the share of lending to zombie business groups and the blue line does so for individual zombie firms. The gap between the two lines reflects the lending to a healthy firm belonging to a zombie business group. This

difference reached a peak of over 6% in FY2013. Therefore, banks possibly used the above indirect mechanism of lending to firms related to zombie firms with the hope of their existing loans getting repaid. Evidence for the same is provided in Box 4.

Figure 14: Share of New Loans to Zombie Firms



Source: MCA Index of charges

Individual Firm: Percentage share of new loans to zombie firms (interest coverage less than one)
Business Group: Percentage share of new loans to firms belonging to zombie business groups (business groups whose combined interest coverage is less than one)

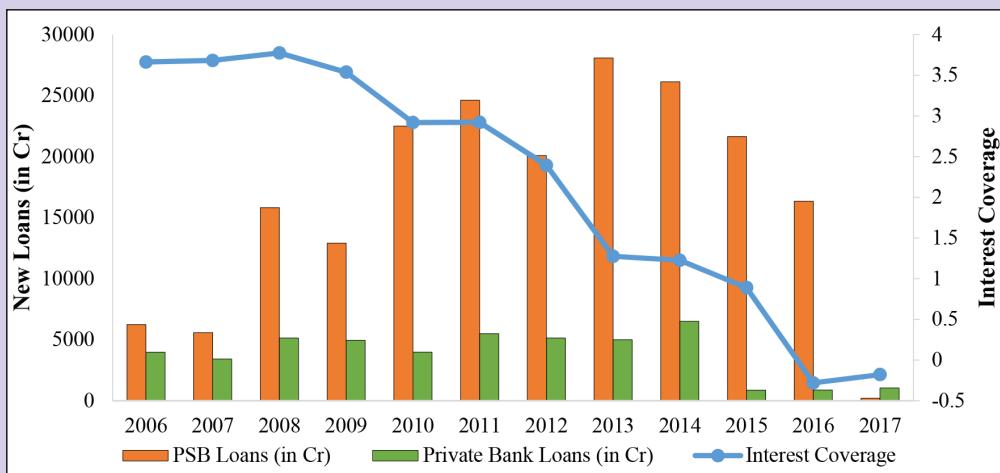
Box 4:- Zombie lending – The case of a prominent wilful defaulter

The illustration below demonstrates how a financially troubled firm in a business group continued receiving loans through other group firms during the forbearance regime. The business group had many firms, of which 4 major firms received the bulk of loans during the period 2008-09 to 2014-15, as shown below. Firm A was the most troubled firm within the group, to whom banks ceased lending from FY2013 onwards. Yet, the same banks increased lending to firm C which could have diverted the extra credit to firm A. The group as a whole had a combined interest coverage of -0.04 between FY2013 to FY2015. Firm C, which had an interest coverage of 4.41 received loans worth INR 2,244 Cr during FY2013 to FY2015. Although the loans appeared healthy in banks' loan books, they were given to a business group under distress. This demonstrates that banks engage in proxy zombie lending by lending to healthy borrowers of a distressed group, who could ultimately divert the loans to other distressed firms within the group.

Firm Name	Loan Amount (in Cr)				Interest coverage	
	2009-2012		2013-2015		2009-2012	2013-2015
	PSBs	Private	PSBs	Private		
Firm A	3430	267	0	0	-1.34	-1.37
Firm B	637	835	52	12	8.51	-0.32
Firm C	0	66	1652	592	3.85	4.41
Firm D (sold in 2013)	2381	819	150	2506	3.43	-0.57

Dirty Dozen are the 12 large firms identified by the RBI that contributed to 25% of overall NPAs in 2016-17, i.e. INR 3.45 lakh crores. These firms are Bhushan Steel, Bhushan Power, Electrosteel Steels, JP Infra, Era Infra, Amtek Auto, ABG Shipyard, Jyoti Structures, Monnet Ispat, Lanco Infratech, Alok Industries, and Essar Steel. These firms continued to receive credit during the forbearance window even when their financial condition had worsened. As observed in the figure below, new lending to Dirty Dozen firms showed an increasing trend from 2007 to 2014, despite a fall in their average interest coverage from 3.66 in FY2007 to 0.89 in FY2015.

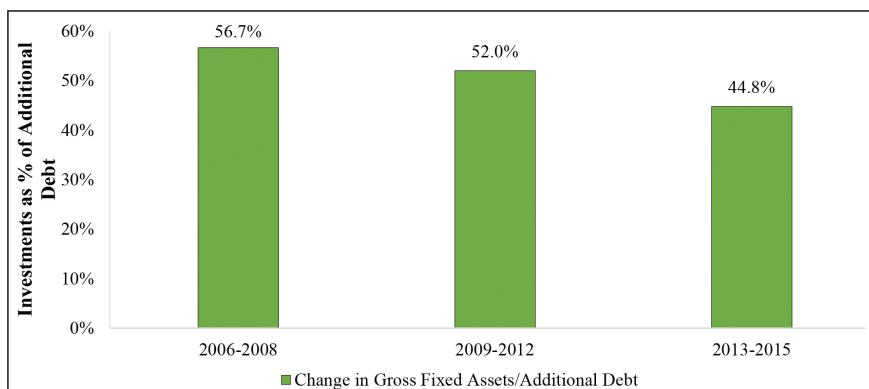
Figure B1: New Loans Lent to Dirty Dozen Firms vs their Interest Coverage



Source: Ministry of Corporate Affairs

7.20 Thus, forbearance resulted in increased lending to firms with poor fundamentals and higher lending to inefficient projects. Consequently, the industrial sector's increased credit growth from 2008-09 to 2014-15 failed to translate into a higher investment rate. India's Gross Fixed Capital Formation as a share of GDP reduced from 34.7% in 2008 to 28.7% in 2015. Within non-financial firms, the ratio of gross fixed capital addition to additional debt decreased from 56.7% in the 2005-2008 period to 44.8% in the 2012-2015 period, as shown in figure 15. In other words, a lesser proportion of new loans were used for capital asset creation such as buildings, plants, machinery, etc. A larger part of the credit seems to have been used to keep dead loans alive by ever-greening.

Figure 15: Decrease in Firm Investments



Source: CMIE Prowess

Weakening of Corporate Governance in Borrowers benefitting from forbearance

7.21 As highlighted in the previous section, the forbearance regime witnessed a significant increase in credit supply to corporates with poor operating metrics and a simultaneous decrease in their investment-to-debt ratio. This suggests that the increased credit supply was not used productively by firms. Chopra, Nishesh, and Tantri (2020) show that this credit was instead diverted for the private benefit of the incumbent management. They argue that the incumbent managers' ability to get loans restructured under the forbearance policy strengthened their influence within the firm. Getting a loan restructured involved negotiations with the bankers who had discretion in selecting cases for restructuring. In an era of relaxed provisioning norms, firm managers formally or informally connected with bankers could persuade them to restructure loans, plausibly even unviable ones. This ability made the incumbent management's influence stronger. It became difficult for the firm's board to overthrow such managers even if they were otherwise inefficient. The increased influence of the incumbent management resulted in the weakening of the firms' governance which, in turn, had detrimental consequences in the longer run.

Deterioration in the Quality of the Board

7.22 The institution of independent directors on the board is a robust mechanism to maintain checks and balances at the board level. Given that promoters are the controlling shareholders in most Indian firms, the non-promoter directors are specifically required to uphold the interests of minority shareholders. They are supposed to act as watchdogs against the likelihood of firms' management indulging in unhealthy practices such as expropriation of resources or investments in value-destroying projects that may personally benefit the promoters. Therefore, a decline in the proportion of non-promoter directors implies a weakening of governance among firms.

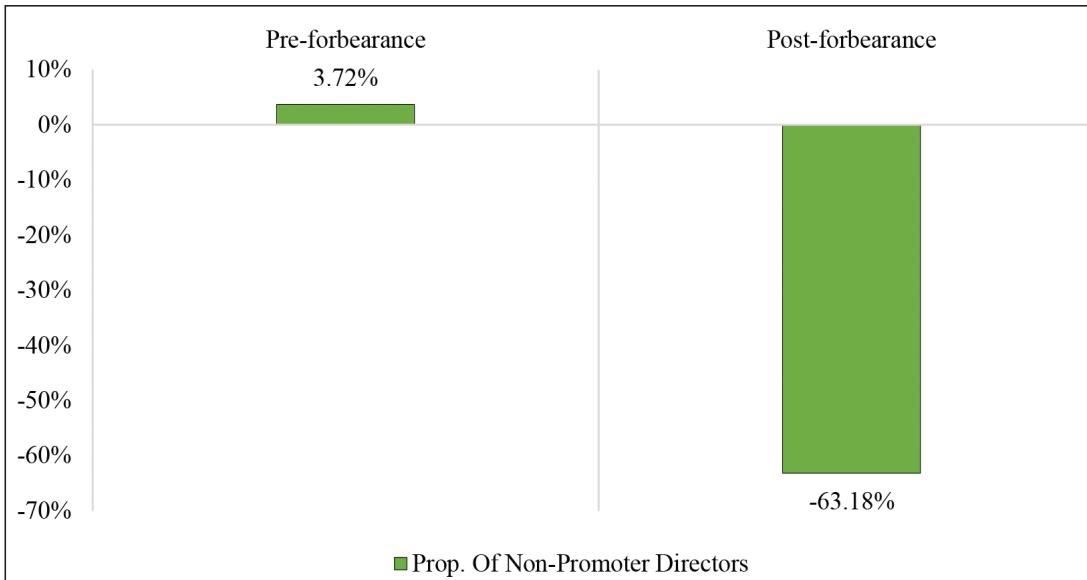
7.23 Figure 16 shows the percentage change in the average proportion of non-promoter directors two years after and two years before firms' loans were restructured. To highlight the impact of regulatory forbearance, the figure compares restructured firms during the forbearance regime (2009-2015) with those that were restructured before forbearance (2002 – 2006).² As evident, the percentage of non-promoters on the board decreased significantly after restructuring during the forbearance regime, while it slightly increased upon restructuring before forbearance. Hence, boards became increasingly dominated by firms' promoters during forbearance. This is further strengthened by the findings in Box 6 which show that forbearance led to an increase in incumbent management's influence as: (i) the presence of independent directors on boards declined, (ii) the propensity of a CEO becoming the chairman increased, (iii) having a connected director on board became more likely, and (iv) the bank monitoring declined as a lower number of bank-nominated directors occupied board seats.

Inefficient allocation of capital by borrowers that benefited from forbearance

7.24 Aided by poor governance, beneficiary firms under the forbearance regime also seem to have misallocated capital in unviable projects. As shown in figure 17, the total capex projects increased only modestly for firms restructured both during the forbearance regime and before. However, there was a much higher rise in the number, proportion, and rupee value of stalled projects for

² The pre-period is restricted until 2006 so that two years post-restructuring does not coincide with the Global Financial Crisis and the subsequent introduction of the forbearance

Figure 16: Weakening of Corporate Governance - Decrease in Non-Promoter Directors on Board



Source: MCA (for restructured loans) and CMIE Prowess for the composition of boards

Pre-forbearance: Average percentage change two years after and before for firms restructured during 2002-06

Post-forbearance: Average percentage change two years after and before for firms restructured during 2009-15

restructured firms in the forbearance window. Total stalled projects (as a proportion of all capex projects) increased by 40% (30%) during forbearance, while the same witnessed a decline of 12% (18%) pre-forbearance. In other words, in the pre-forbearance period, firms likely re-initiated stalled projects when injected credit through restructuring, whereas firms in the forbearance window witnessed additional stalling, indicating a possible misuse of increased credit supply.

Box 6: Increase in the Power of Management for Firms Benefitting from Forbearance

Using the difference-in-difference technique discussed in Box 3, this box demonstrates a causal link between forbearance and increasing power of incumbent management using panel regressions that control for all confounding factors. Here, firms are classified into two groups that are similar on dimensions such as size, age, profitability, leverage, and solvency but differ on their ability to obtain restructuring. This difference arises from their possible relationships with the banks. Any difference in firm outcomes for the two groups could thus be attributed to the difference in their likelihood of restructuring. Four outcomes are studied: (i) proportion of independent directors on board, (ii) CEO duality or the likelihood of firm's CEO to also be the chairman of its board, (iii) connectedness in board measured through the similarity in the biographies (age, education, other directorships, etc.) and (iv) proportion of board directors nominated by banks. For certain variables, data availability is restricted to the post-forbearance era. In that case, the outcomes are compared only during forbearance in a single difference between treated and control firms. After organizing data at a firm-year level, the following regression equation is estimated:

$$Y_{it} = \alpha + \beta_1 \times Treatment_i \times Post_t + \beta_2 \times Treatment_i + \beta_3 \times X_{it} + \delta_i + v_t + \epsilon_{it}$$

The equation includes fixed effects for firms as well as years. These fixed effects absorb any unobserved variations in firms or across years that could influence the estimates.

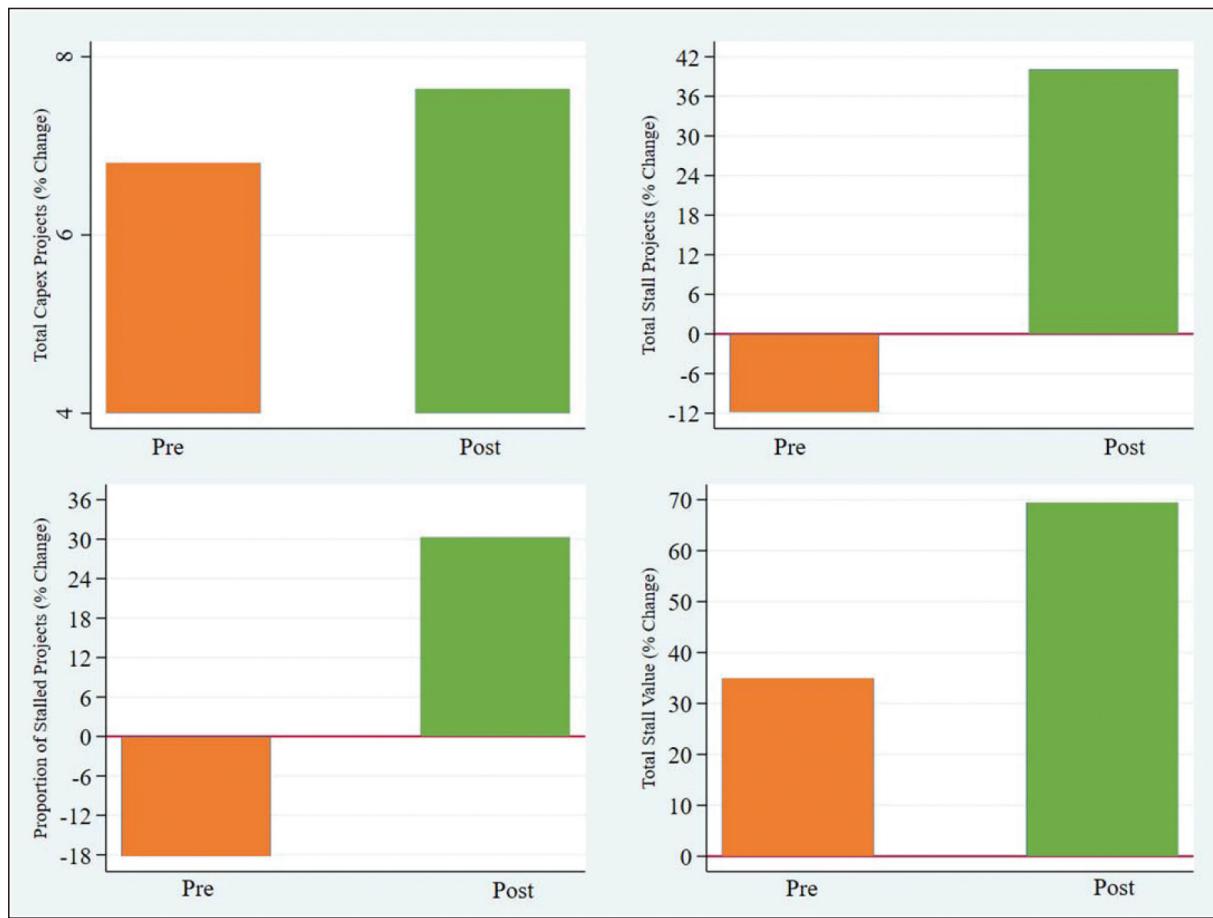
The results are as below:

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Independent Directors		CEO Duality		Similarity In Board		Banks' Nominee Directors	
Treatment Post	X	-0.008** (-2.587)	-0.007** (-2.196)		0.012** (2.175)	0.012* (2.192)		
Treatment			0.02* (1.715)	0.02* (1.70)			-0.005** (-3.835)	-0.004** (-3.053)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	83,844	82,862	7,826	7,796	10,323	10,285	7,827	7,797
R-squared	0.835	0.835	0.253	0.256	0.707	0.704	0.045	0.055
Fixed Effects	Firm and Year		Year		Firm and Year		Year	

Table 4: Table shows a difference-in-difference or single-difference specification to estimate the change in the composition of boards within firms. Data are organized at a firm-year level with years ranging from 2002 to 2015. Independent director represents the proportion of independent directors. CEO duality is an indicator variable that takes the value of 1 if the CEO is also the chairman of the board and 0 otherwise. Similarity in board captures the within-board connectedness based on the cosine similarity of texts in biographies of all members in the board. Banks' nominee director represents the proportion of directors that are nominated by lending institutions. Treatment is an indicator variable that takes the value of 1 for firms that have above-median likelihood to benefit from forbearance in the form of higher restructurings. Post is another indicator variable that takes the value of 1 for years 2009 – 2015 and 0 otherwise. included in even-numbered columns, refers to firm-level time-varying control variables: number of banking relationships, average loan duration, and completed loans in the last 5 years. stands for firm fixed effects whilerepresents year fixed effects. Standard errors, presented in parenthesis, are clustered at the firm level. * $p<0.1$; ** $p<.05$; *** $p<0.01$. Source: Chopra, Nishesh, and Tantri (2020).

Coefficients for all the variables turn out to be statistically significant at standard levels. The coefficients are negative for independent directors and banks' nominee directors and positive for CEO duality and similarity in board. This suggests that board quality in firms more likely to benefit from forbearance weakens as their share of independent directors decreases. Even monitoring by lending institutions declines with a falling representation of bank-nominated directors. At the same time, incumbent managers in such firms become more powerful. Boards of such firms are likely to recruit members connected to their management and the likelihood of a firm's CEO also being the board's chairman increases. Collectively, this suggests that forbearance leads to an increase in incumbent management's influence over the board.

Figure 17: Misallocation of Credit during Forbearance – Evidence from Capital Expenditure of Firms Benefitting from Restructuring



Source: MCA (for restructured loans) and CMIE Prowess for the composition of boards

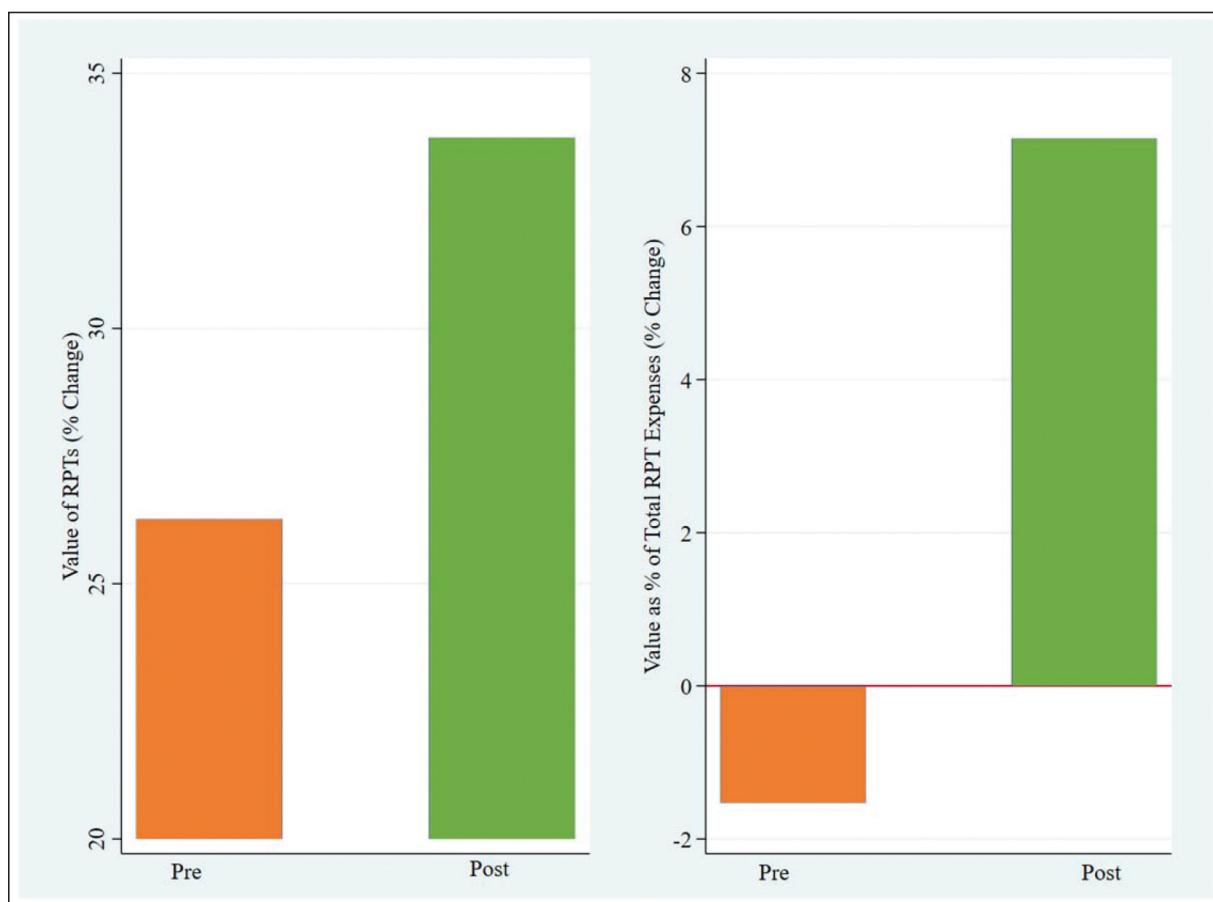
Pre: Average percentage change two years after and before for firms restructured during 2002-2006

Post: Average percentage change two years after and before for firms restructured during 2009-2015

Mis-appropriation of resources in borrowers that benefited from forbearance

7.25 Another likely consequence of strong management influence and declining governance is the increase in private benefits being redirected to the firms' management. In the Indian context, related party transactions (RPTs) are often utilized to camouflage the expropriation of firm resources. Incumbent management can force the firm to engage in related party transactions with entities connected to key managerial personnel. This is shown in figure 18. Related party transactions to key personnel increased by around 34% among firms whose loans were restructured during the forbearance regime. When taken as a proportion of total expenses, related party transactions to key personnel increased by over 7%. In comparison, among firms restructured before forbearance, the related party transactions to key personnel increased by 26% in absolute terms but decreased by 1.5% as a proportion of total expenses. Box 7 shows the results of careful panel regressions that demonstrate a jump in overall management compensation and directors' sitting fees during the forbearance regime. Hence, the increased, lax restructuring seems to have resulted in the misappropriation of firm resources at the cost of minority shareholders.

Figure 18: Misappropriation of Firm's Resources – Evidence from Related Party Transactions to Key Personnel



Source: MCA (for restructured loans) and CMIE Prowess for the composition of boards

Pre: Average percentage change of two years after and before for firms restructured during 2002-2006

Post: Average percentage change two years after and before for firms restructured during 2009-2015

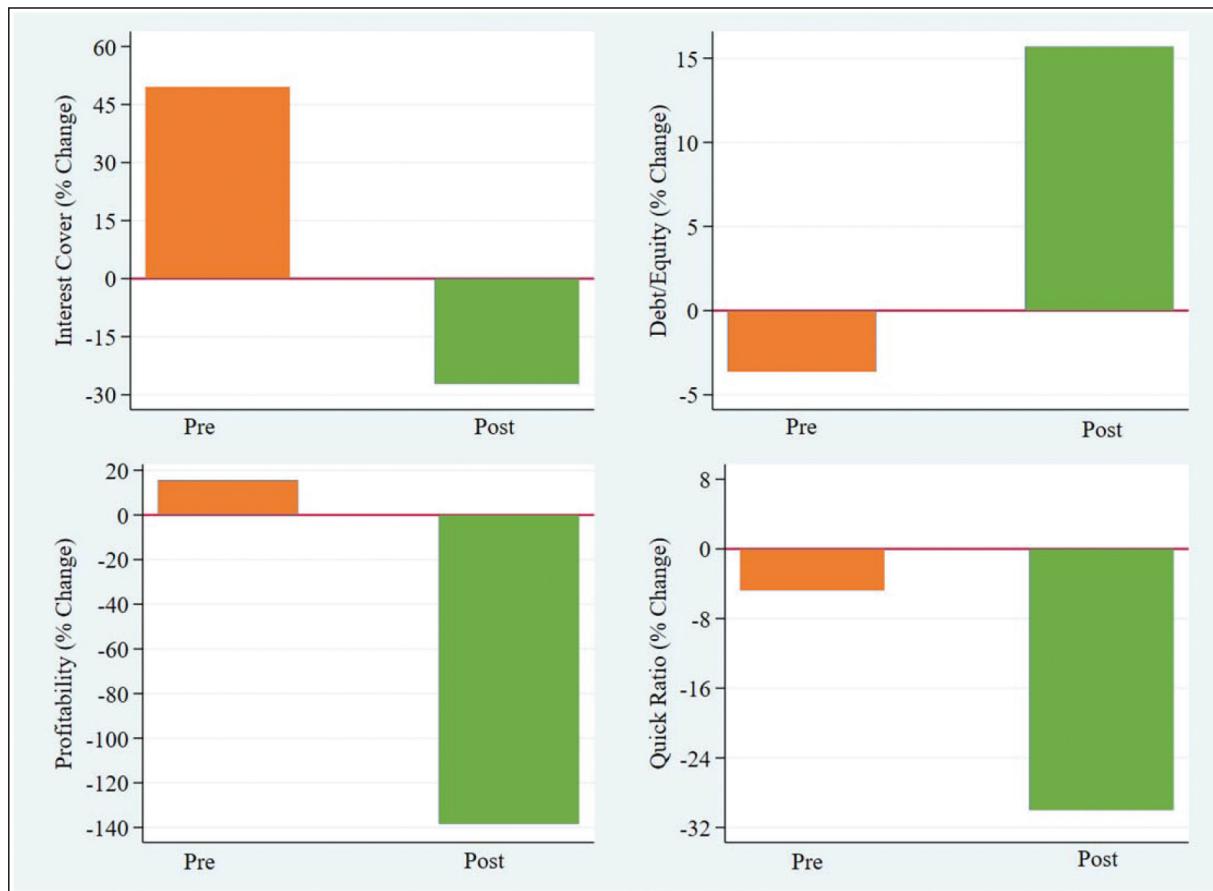
Deterioration in performance of borrowers benefiting from forbearance

7.26 As a consequence of the weakened governance, the impacted firms' performance deteriorated. Figure 19 reports industry-adjusted changes in key firm fundamental ratios two years before and after restructuring, both for the pre and post-forbearance regimes. There was a significant increase in leverage (15.7%), measured as the ratio of debt to equity, accompanied by a 27.2% decline in the interest coverage for firms restructured during the forbearance regime. As noted before, interest coverage measures the ability of a firm to cover debt servicing costs from current profits. Interestingly, firms restructured before forbearance reported a 3.4% decrease in leverage, and a significant 49.6% increase in interest cover after their loan was restructured. There also seems to be a detrimental impact on firms' liquidity, as evidenced by a 30% decrease in their quick ratio compared to a marginal 4% decrease in the pre-period.³ Finally, the firms' profitability, measured as profits as a proportion of firms' assets, suffered a sharp decline of over 138% in the forbearance era. In other words, firms benefitting from restructuring during the forbearance regime, on average, turned loss-making, whereas profitability improved by around 15% for restructured firms in the pre-forbearance

³ For a firm, quick ratio is defined as the ratio of its current assets to its current liabilities

period. Overall, while firm fundamentals usually improved upon restructuring in the pre-forbearance era, they significantly declined under forbearance. Note that, these values are adjusted for industry and year and thus are not influenced by macroeconomic shocks during the forbearance regime.

Figure 19: Deterioration in Operating Metrics and Performance of Firms Benefitting from Forbearance



Source: MCA (for restructured loans) and CMIE Prowess for the composition of boards

Pre: Average percentage change two years after and before for firms restructured during 2002-2006

Post: Average percentage change two years after and before for firms restructured during 2009-2015

Box 7: Misappropriation of Resources by Firms Benefiting from Forbearance

Using the difference-in-difference technique discussed in Box 6, this box shows the impact of forbearance on increased remuneration to boards of firms that benefited from the forbearance. There are two outcomes studied: (i) Management Compensation and RPT — the total compensation of the key management in the firm including any related party transactions with them and (ii) Directors Salary - the total remuneration of all directors on the board. With the identifications and regression framework remaining the same, the following results are obtained:

VARIABLES	(1)	(2)	(3)	(4)
Treatment X Post	0.231** (2.492)	0.242*** (2.619)	0.071* (1.788)	0.075* (1.916)
Controls	No	Yes	No	Yes
Observations	91,566	90,576	38,931	38,579
R-squared	0.688	0.689	0.817	0.818
FE	Firm and Year			
Clustering	Firm			
Observation Level	Firm-Year			

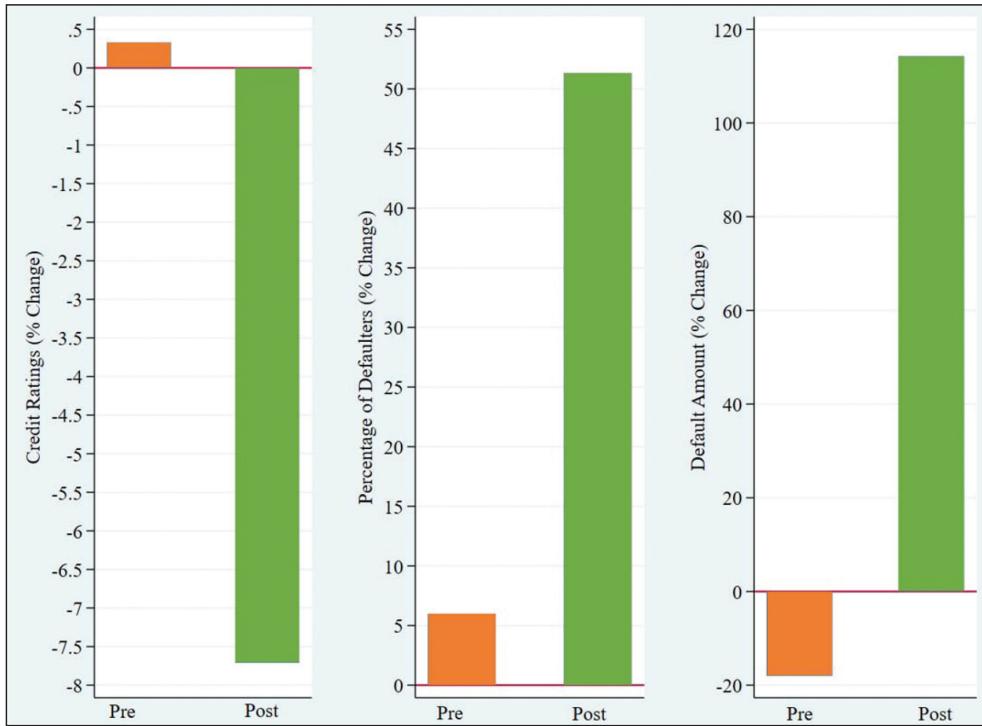
Table 5: Table shows a difference-in-difference specification to estimate the change in compensation to management within firms. The outcome variables are explained above. All the variables and notations remain the same as in Table 4. Source: Chopra, Nishesh, and Tantri (2020).

Coefficients for both the variables are positive and have standard statistical significance. The firms likely to benefit from forbearance, therefore, increase remuneration to their key management personnel. This suggests that forbearance results in an increase in benefits being redirected to firms' management.

Increased defaults by borrowers benefitting from forbearance

7.27 Subsequent to the deterioration in their fundamentals, restructured firms in the forbearance window also witnessed a decrease in their credit ratings. Figure 20 shows that the average credit rating for a firm deteriorated by 7.7% upon restructuring during the forbearance regime while the same marginally improved (0.33%) before forbearance. The forbearance regime also accompanied an increase in defaults by restructured firms when compared to a decrease in the same in the pre-forbearance era. The proportion of restructured firms that became defaulters increased by 51% in the forbearance period, while the pre-period increase was comparatively marginal (by 6%). In terms of the amount under default, the figure more than doubled (an increase of 114%) in the post-forbearance period compared to an 18% decrease in the value before forbearance. Once again, restructuring in the pre-forbearance era seems to have helped distressed and defaulting borrowers repay their debt and undo their defaulter tag. However, firms benefitting from restructuring during the forbearance window, on average, started defaulting more.

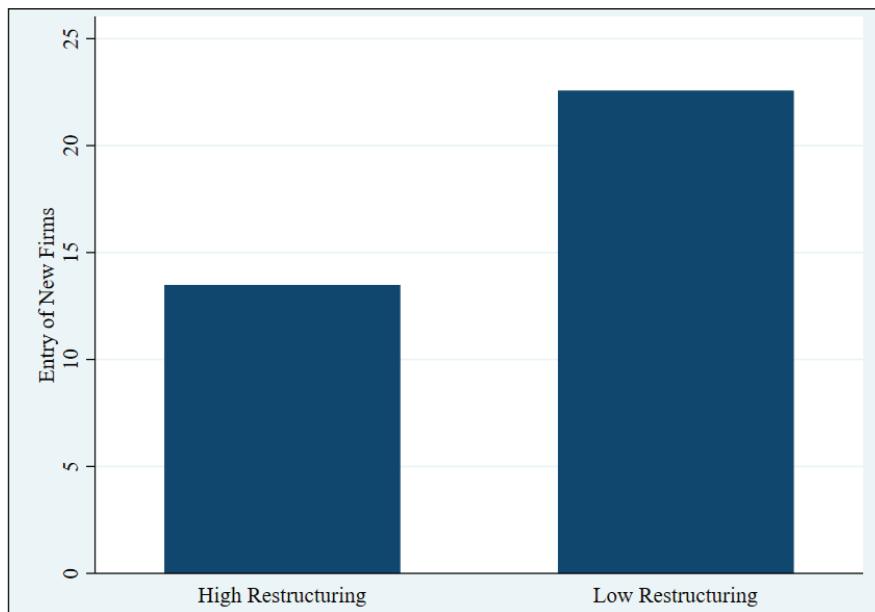
7.28 In conclusion, the prolonged forbearance policy meant to address grievances of crisis-hit borrowers led to unintended negative consequences for the firms in the long run. The internal governance of the firms weakened, misappropriation of resources increased, and their fundamentals deteriorated. On a macroeconomic front, as shown in figure 21, under the forbearance window, a higher share of restructured firms within an industry was also associated with a decrease in the entry of new firms in the industry.

Figure 20: Accelerated Firm Defaults due to Forbearance

Source: MCA (for restructured loans), CMIE Prowess for credit ratings, and CIBIL's website for suit-filed database of defaulters

Pre: Average percentage change two years after and before for firms restructured during 2002-2006

Post: Average percentage change two years after and before for firms restructured during 2009-2015

Figure 21: Macroeconomic Impact - Decline in Industry Competition due to Forbearance

Source: MCA (for restructured loans), CMIE Prowess for firm incorporations

High (Low) Restructuring: Industries that had above (below) median share of restructured firms

BANK CLEAN-UP WITHOUT ADEQUATE CAPITALIZATION

7.29 Finally, after continuing forbearance for seven years, the RBI decided to bite the bullet and withdrew regulatory forbearance starting from April 2015. The RBI also decided to conduct a

detailed Asset Quality Review (AQR) to know the true status of banks' NPAs. However, as Chopra, Subramanian, and Tantri (2020) document, the AQR exacerbated the problem as it neither mandated capital raising by banks nor provided a capital backstop even though it was certain that banks' capital would be adversely impacted following the AQR.

7.30 Economic theory highlights that two contrasting outcomes were possible with such an AQR. In the optimistic view, the AQR was expected to lead to a reduction in information asymmetry. The critical assumption – as hypothesized in Diamond and Rajan, 2011 – was that the resultant cleaner bank balance sheets would help banks to raise more private capital on their own, thereby improving the quality of financial intermediation. Along these lines, the RBI's view was that the program was a “deep surgery” that would lead to healthy bank balance sheets (Rajan, 2016).

7.31 However, a more sobering outcome could have been expected from an application of the impact of asymmetric information problems on the likelihood of capital raising. Myers and Majluf (1984) predict that firms in distress would have no incentive to raise equity voluntarily as managers – who know more about the firm's fundamentals than investors – fear dilution of the value of equity. Therefore, absent a policy for either mandatory capital raising or capital backstop, incumbent shareholders and managers of banks – who would invariably know more about the bank's fundamentals than the regulator or investors – have no incentive to raise equity capital. Implicit government guarantees further dis-incentivize capital raising (Admati and Hellwig, 2014). As a result, under-capitalized banks may again resort to risk-shifting and zombie lending, thereby severely exacerbating the problem. The adverse impact could then spill over to the real economy through good borrowers and projects being denied credit. The resultant drop in the investment rate of the economy could then lead to the slowdown of economic growth. Chopra, Subramanian, and Tantri (2020) provide careful evidence that this is precisely what transpired following the AQR.

The crucial difference vis-à-vis bank clean-ups in the rest of the world

7.32 In this context, it is crucial to understand that India's AQR differed from the typical bank clean-ups carried out in other major economies such as Japan, the European Union, and the U.S. in two key aspects. First, the clean-up was undertaken when the country was not undergoing an economic crisis. Given the economic stability, RBI assumed that markets would supply the required capital to banks once their books are cleaner, as explained in Section 8.30. Second, there was neither a forced recapitalization of the banks nor was an explicit capital backstop provided for. RBI initiated the AQR under the presumption that the extent of additional loan provisioning required due to the clean-up would not generate needs for a severe recapitalization of the banks.⁴

⁴ For instance, Rajan (2016) states: “The Government has been fully involved and supportive. We have mapped out a variety of scenarios on possible outcomes. The Finance Minister has indicated he will support the public sector banks with capital infusions as needed. Our estimate is that the government support that has been indicated will suffice... Our projections are that any breach of minimum core capital requirements by a small minority of public sector banks, in the absence of any recapitalization, will be small... What the Government has already explicitly committed is, in our view, enough to take care of all reasonable scenarios, and the Government has committed to stand behind its banks to whatever extent needed.” The RBI envisaged the program as temporary and the banking sector “to have a clean and fully provisioned balance sheet by March 2017... In sum, while the profitability of some banks may be impaired in the short run, the system, once cleaned, will be able to support economic growth in a sustainable and profitable way.” For private sector banks, RBI expected that “Our various scenarios also show private sector banks will not want for regulatory capital as a result of this exercise.”

The inadequate clean-up of bank balance sheets

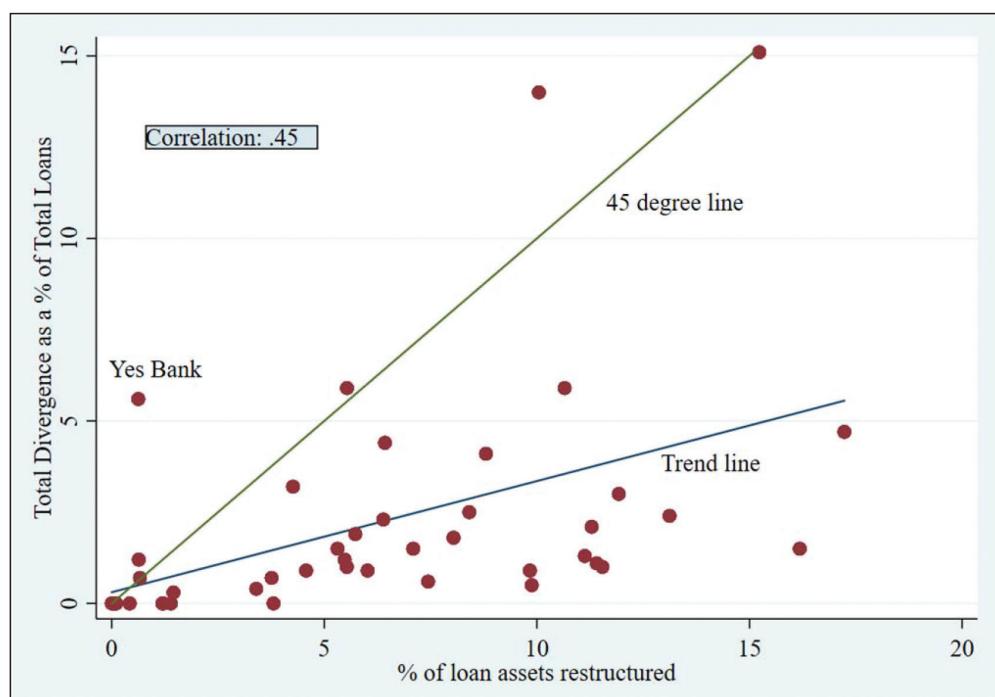
7.33 In reality, the AQR exercise significantly under-estimated the full extent of NPAs as well as the resultant capital infusion that was required to ensure that the bank balance sheets indeed become healthy. In terms of additional (gross) NPAs, public sector banks added about INR 5.65 lakh crores from FY2016 to the end of FY2019.⁵ To put this amount in perspective, the additional NPAs translated to about 7.9% of the total tax revenue over this period.

7.34 To be sure, the AQR did lead to some clean-up of the toxicity in the bank balance sheets. Figure 22 plots the accumulated proportion of restructured loans reported by the banks (FY2009 to FY2015) against their NPA divergence during the AQR regime (FY2016 to FY2019). NPA divergence is the difference in banks' reported NPA numbers and the NPA assessed by the RBI, taken as a proportion of total loans. A positive correlation indicates that the AQR did identify some bad loans lent through restructuring activities. However, the effectiveness of the AQR exercise cannot be assessed from such a simple positive association, especially given the statistically low correlation (0.45). Also, notice that most banks are found to lie below the 45° line. This means that, in most cases, the identified NPAs were smaller in comparison to the loans restructured by the bank.

7.35 Kashyap, Mahapatro, and Tantri (2020) argue that the AQR was mostly restricted to targeting bad lending through restructuring, rather than identifying subtle ever-greening activities. Notice that loan restructuring warrants a disclosure whereas fresh lending does not. Therefore, rather than restructuring, banks could have easily lent a new loan to an existing borrower on the verge of default. To further camouflage their incentives, they could have disguised the payment in the form of fresh lending to a network of related parties of the actual firm in distress. Figures 23 and 24 plot the accumulated proportion of lending (FY2009 to FY2015) in the form of these two *subtle* ever-greening possibilities against the gross NPA divergence disclosed by banks. Figure 23 plots the proportion of direct lending to borrowers with interest coverage less than one while figure 24 plots lending activity for such borrowers through the channel of related parties. The extremely low correlations (which is, in fact, marginally negative in one case) between divergence and ever-greening measures signify that the AQR exercise failed to recognize *subtle* ever-greening and thus may have been unable to curb distortionary lending. Almost all banks in the two figures lie below the 45° line which further indicates the nominal extent of ever-greening unearthed during the exercise. Interestingly, Yes Bank, which was recently rescued by the RBI, stands as an outlier in both these graphs. While the bank's divergence was just around 5%, its ever-greening indicators were as high as 38%-52%. The sharp rise in the bank's reported NPAs (0.75% in FY2016 to 16.8% in FY2020) seems unsurprising from this analysis.

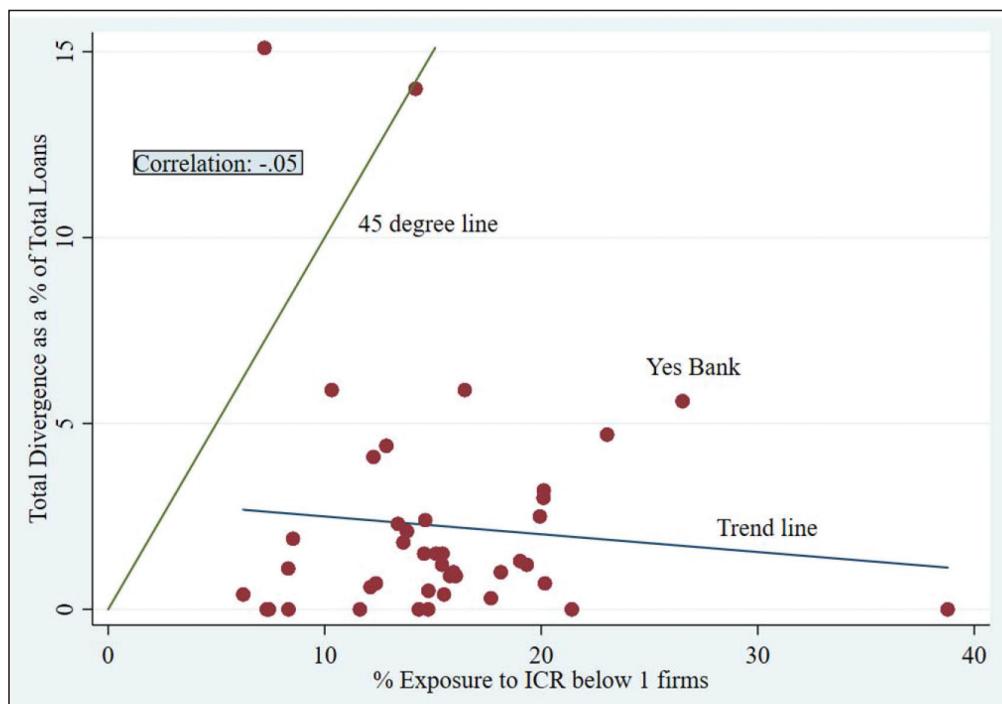
⁵ The only mention of AQR is in the Financial Stability Report of June 2016, which mentions "The gross non-performing advances (GNPAs) ratio increased sharply to 7.6 per cent from 5.1 per cent between September 2015 and March 2016, largely reflecting reclassification of restructured standard advances as non-performing due to asset quality review (AQR)." Clearly, the report gives no details about the assumptions involved or the procedure followed in the exercise.

Figure 22: Clean-up by the AQR – Positive Correlation with Restructuring Activities



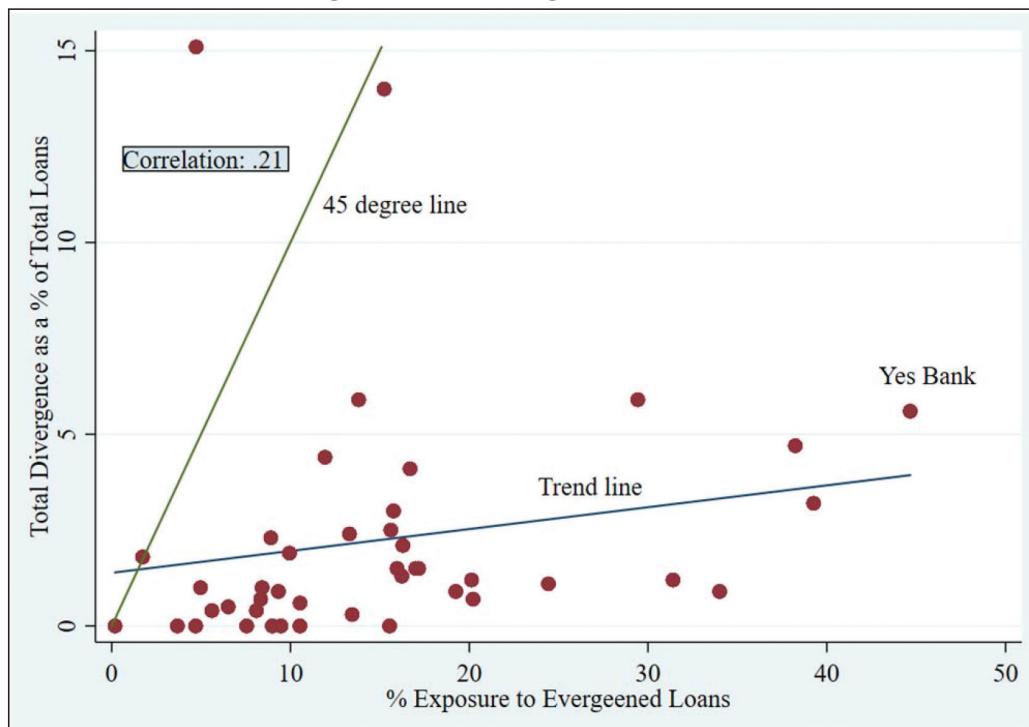
Source: Ministry of Corporate Affairs and CMIE Prowess

Figure 23: The AQR did not identify ever-greening: No Correlation of Divergence with Lending to Zombie Firms



Source: Ministry of Corporate Affairs and CMIE Prowess

Figure 24: The AQR did not identify ever-greening: Weak Correlation of Divergence with lending to Related Parties



Source: Ministry of Corporate Affairs and CMIE Prowess

7.36 The recent events at Yes Bank and Lakshmi Vilas Bank corroborate that the AQR did not capture ever-greening carried out in ways other than formal restructuring. Table 6 reports the Gross NPA ratio of Yes Bank Ltd. and Lakshmi Vilas Bank. Had the AQR exercise detected ever-greening, the increase in their reported NPAs should have been in the initial years of the AQR. Our analysis clearly shows that most of the non-performing loans were lent and restructured during the forbearance phase. Hence, the RBI audit missed some severe cases of ever-greening by these banks. The fact that both these banks had to be rescued by the regulator also goes against RBI's assumption that the private banks should have been able to raise the required capital after the clean-up.

Table 6: Gross NPA of Yes Bank and Lakshmi Vilas Bank

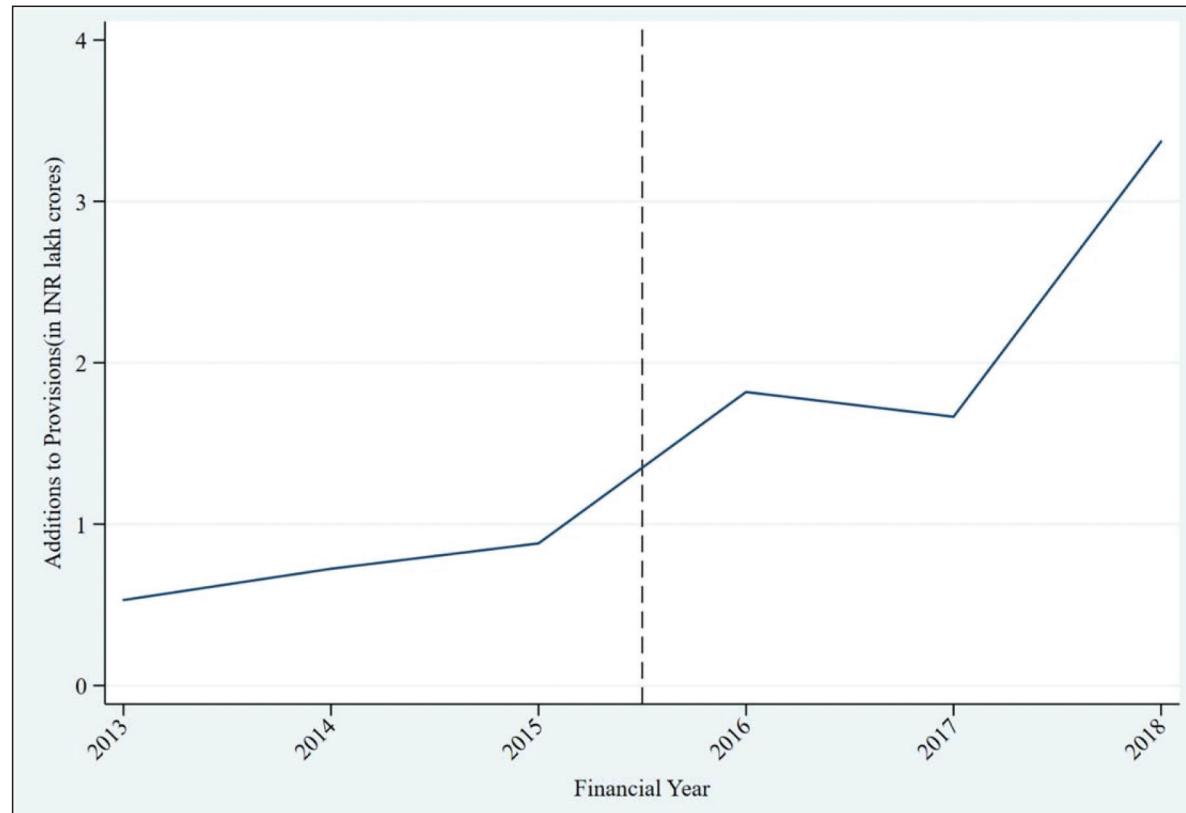
	Yes Bank Ltd.	Lakshmi Vilas Bank Ltd.
FY2016	0.76	1.97
FY2017	1.52	2.67
FY2018	1.28	9.98
FY2019	3.22	15.30
FY2020	16.80	25.39
Q2FY2021 (Unaudited)	16.90	24.45

Source: Annual Reports

7.37 If the AQR had correctly identified all the hidden bad quality assets on banks' books, all the increase in NPAs and the necessary provisioning would have concluded by the stated

deadline of FY2017. However, the gross NPAs in the Indian banking sector only increased to 11.2% by FY2018. A massive surge in loan loss provisioning also occurred in FY2018 – a year *after* AQR was supposed to make bank balance sheets healthy. As shown in figure 25, the additional provisions doubled in FY2018. For instance, in FY2016 and FY2017, the Punjab National Bank reported additional provisions at INR 18,145 crores and INR 15,881 crores, respectively. In FY2018, the additional provisions increased to INR 31,459 crores. The rise in provisioning depleted banks' capital.

**Figure 25: Inadequate identification of hidden bad assets under the AQR:
Sharp rise in provisioning a year after completion of the AQR**



Source: Chopra, Subramanian, and Tantri (2020)

Under-estimation of required bank capital

7.38 The actual capital required by public sector banks significantly exceeded the amount that the RBI seems to have estimated before the AQR. In the first year of the AQR, the total capital infused into public sector banks was INR 25,000 crores with an intended plan of infusing INR 45,000 crore in the next three years under *Mission Indradhanush*. However, by the end of FY2019, i.e. four years after the inception of the AQR, the government had infused INR 2.5 lakh crores in the public sector banks. The addition of capital amounted to 44.24% of the added (gross) NPAs. Box 8 presents the regression results from Chopra, Subramanian, and Tantri (2020) to show that banks, both private and public, did not recapitalize themselves adequately after the clean-up. Consequently, the banks were left significantly undercapitalized. Recall that RBI's assessment in this context was that "the government support that has been indicated will suffice... enough to take care of all reasonable scenarios."

Box 8: Inadequate Capital Raising by Banks

Using the below specification, Chopra, Subramanian, and Tantri (2020) document that banks, both private and public, became undercapitalized after the AQR.

$$Y_{it} = \alpha + \beta_1 \times \text{Exposure}_{it} + \beta_2 \times \text{Exposure}_{it} \times \text{Public Sector Bank}_i + v_i + \delta_t + \epsilon_{it}$$

Data are organized at a bank-year level with years ranging from 2013 to 2019. There are two dependent variables (i) total additions in the paid-up capital as a percentage of the bank's total assets, and (ii) total additions in paid-up capital minus the divergence in provisions under the AQR as a percentage of the bank's total assets. The independent variables are the bank's *Exposure to AQR* and an indicator variable for *Public Sector Banks*. *Bank's Exposure to AQR* equals the bank's divergence in provisions due to the AQR (as a % of total assets), and refer to bank and year fixed effects respectively. Bank fixed effects ensure that any bank-specific time-invariant effect does not influence the results. Column (1) indicates that higher the reported additional provisions due to the AQR, higher was the capital infusion. Column (2) indicates that this is true only because of the capital infusion into public sector banks. About the sufficiency of the capital infusion, the negative and much larger coefficient in column (3) points out that the capital additions were vastly insufficient to offset the additional provisions due to the AQR. In other words, when adjusted for additional provisions, banks' capital actually declined.

VARIABLES	(1)	(2)	(3)
	Additions in Paid-Up Capital (in %)	Addition to Paid-Up Capital after Adjusting for Divergence (in %)	
Bank's Exposure to AQR	0.1859** (2.2620)	-0.1247 (-1.2679)	-0.8141*** (-9.9030)
Bank's Exposure to AQR X Public Sector Banks		0.3902** (2.6037)	
Observations	297	297	297
R-squared	0.3023	0.3133	0.4251
FE		Bank & Year	
Clustering		Bank	

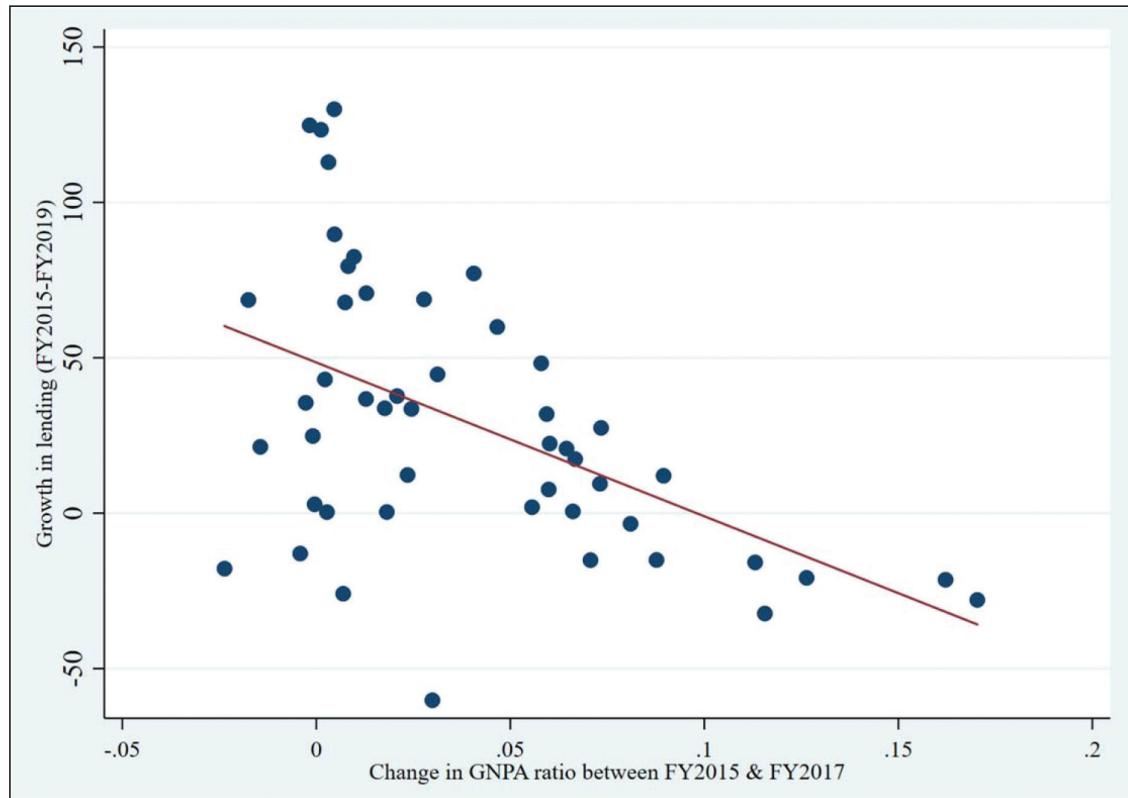
Table 7: This table reports the OLS estimates of the impact of divergence in provisions on the capital infusion using the equation above. Standard errors are clustered at the bank level and t-statistics are reported in parentheses. *p<0.1; **p<.05; ***p<0.01. Source: Chopra, Subramanian, and Tantri (2020).

Adverse impact on lending

7.39 As the banks were unable to raise adequate fresh capital after the clean-up, their lending reduced. Figure 26 plots the percentage change in lending by each bank against the difference in its gross NPAs in 2017 (two years after the commencement of the AQR) and 2015 (just before the AQR). There was a sharp decline in lending post the increased NPAs that resulted from the

AQR. Figure 27, which plots the share of lending to zombie firms against the difference in bank's NPA, suggests that the affected banks, however, increased their exposure to risky borrowers. The economic rationale behind the relationship between reduction in capital and increased risky lending has already been explained in Box 1. Thus, in an already stressed banking sector, the second wave of under-capitalization caused by the AQR created perverse incentives to lend even more to the unproductive zombie borrowers. Box 9 shows this evidence using panel regressions that control for various confounding factors.

Figure 26: AQR's Impact on Bank Lending



Source: CMIE Prowess and Ministry of Corporate Affairs

Box 9: Impact of the AQR on overall lending and zombie lending through undercapitalization

The decline in overall lending:

Chopra, Subramanian, and Tantri (2020) use the below panel regression to document the impact of the AQR on overall lending by the banking sector:

$$\text{Log}(\text{Loan Amount}_{ijt}) = \alpha + \beta_1 \times \text{Exposure to AQR}_{it} + \beta_2 \times X_{ijt} + v_{jt} + \delta_i + \epsilon_{ijt}$$

The key dependent variable is the natural logarithm of the total amount lent by a bank i to a firm j in the financial year t . The observations are at the firm-lender-year level. *Exposure* is defined as the lender's divergence in provisions due to the AQR (as a % of total assets). X_{ijt} controls for any time-varying firm-level trend, i.e. any variation in firm-level demand for credit. v_{jt} captures time-invariant lender level effects. δ_i are variables controlling for time-varying firm-lender-year level trends. The results are provided below:

VARIABLES	(1)	(2)	(3)	(4)
Exposure to AQR (%)	-0.3484*** (-3.6049)	-0.2826* (-1.7049)	-0.2156** (-2.3061)	-0.2899* (-1.7165)
Observations	167,674	167,674	167,674	167,674
R-squared	0.3044	0.3393	0.3118	0.3453
Controls	No	No	Yes	Yes
FE	Firm X Year	Lender	Firm X Year	Firm X Year & Lender
Clustering	Firm	Lender	Firm	Lender

Table 8: This table reports the OLS estimates of the equation above. Standard errors are clustered at the firm level in odd-numbered columns and the lender level in even-numbered ones. t-statistics are reported in parentheses. *p<0.1; **p<.05; ***p<0.01. Source: Chopra, Subramanian, and Tantri (2020).

The coefficients come out to be negative and statistically significant. This suggests that higher the exposure of a bank, more is the contraction in its credit supply following the AQR. In terms of the economic magnitude, a one standard deviation increase in the exposure due to the AQR reduces a bank's lending by as much as 4%.

Impact of lower capital on overall lending and zombie lending:

The below regression specification from Chopra, Subramanian, and Tantri (2020), looks at the impact of undercapitalization on lending

$$\text{Log}(\text{Loan Amount}_{ijt}) = \alpha + \beta_1 \times \text{Exposure to AQR}_{it} + \beta_2 \times \text{Zombie}_{(j,t-1)} + \beta_3 \times \text{Capital Adequacy Ratio}_{it} + \beta_4 \times \text{Exposure to AQR}_{it} \times \text{Zombie}_{(j,t-1)} + \beta_5 \times \text{Exposure to AQR}_{it} \times \text{CAR}_{it} + \beta_6 \times \text{Zombie}_{(j,t-1)} \times \text{CAR}_{it} + \beta_7 \times \text{Exposure to AQR}_{it} \times \text{Zombie}_{(j,t-1)} \times \text{Capital Adequacy Ratio}_{it} + \beta_8 \times X_{ijt} + v_{jt} + \delta_i + \text{epsilon}_{ijt}$$

The observations are at a firm-lender-year level. The dependent variable is the natural logarithm of the total amount lent by a lender i to a firm j in a year t . The key independent variables are: (i) Exposure defined as the lender's divergence in provisions due to the AQR (as a % of total assets), (ii) CAR defined as the bank's capital adequacy ratio, and (iii) Zombie defined as an indicator variable that equals one if interest coverage ratio (adjusted for any income from related party transactions) is less than one and zero otherwise in the year $t-1$. and control for any time-varying firm-level trend and time-invariant lender level effects respectively. are variables controlling for time-varying firm-lender-year level trends.

VARIABLES	(1)	(2)	(3)	(4)
	Log(Loan Amount)			
Exposure to AQR (%)	-0.6264*** (-2.6718)	-0.6476*** (-2.7588)	-4.8615*** (-4.3438)	-4.8462*** (-4.5303)
Capital Adequacy Ratio			0.0076 (1.5617)	0.0070 (1.5173)
Exposure to AQR (%) x Capital Adequacy Ratio			0.3763*** (3.8534)	0.3724*** (3.9497)
Exposure to AQR (%) X Zombie	0.7216*** (3.3870)	0.7509*** (3.6242)	3.9556*** (3.3956)	3.9325*** (3.5502)

Capital Adequacy Ratio X			
Zombie	-0.0039	-0.0036	
	(-0.7303)	(-0.6736)	
Exposure to AQR (%) X			
Capital Adequacy Ratio X			
Zombie	-0.2752***	-0.2682***	
	(-3.0560)	(-3.0201)	
Observations	117,827	117,827	83,977
R-squared	0.3202	0.3265	0.3506
Controls	No	Yes	No
FE		Firm X Year & Lender	
Clustering		Lender	

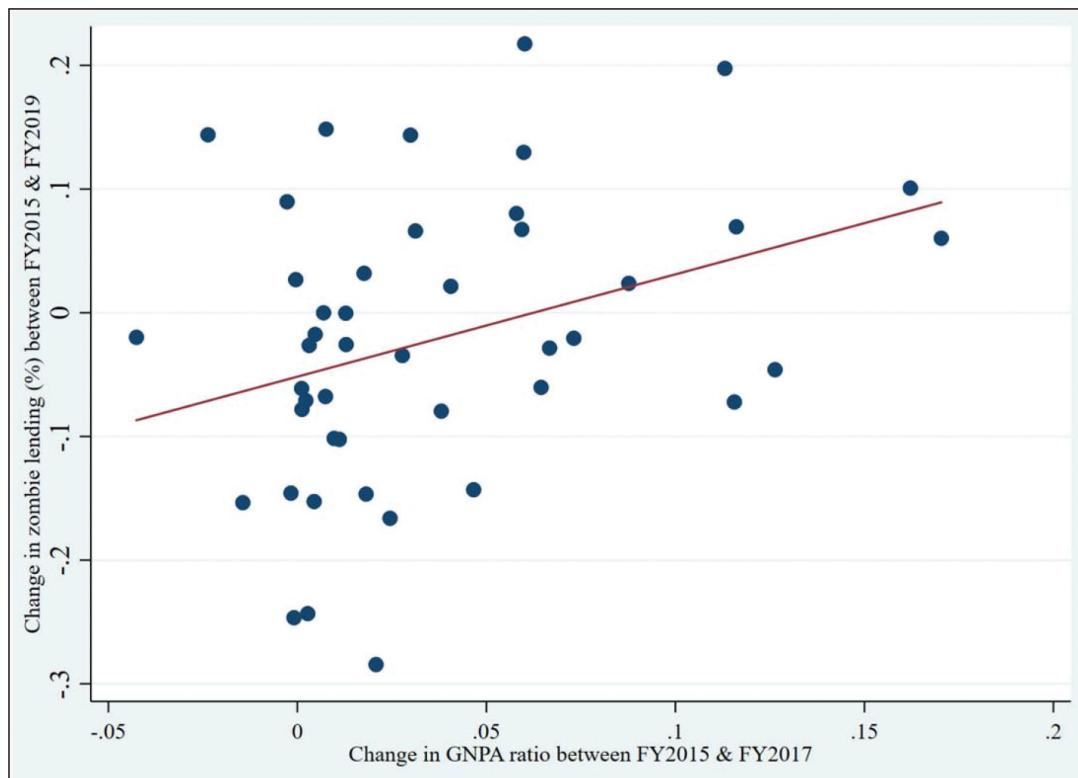
Table 9: This table reports the OLS estimates of the impact of AQR on lending. Standard errors are clustered at the lender level and t-statistics are reported in parentheses. * $p<0.1$; ** $p<.05$; *** $p<0.01$. Source: Chopra, Subramanian, and Tantri (2020).

In all the columns of Table 9, we see that the AQR led to a decline in lending as seen in the consistently negative coefficient of the variable Exposure to AQR. In the first two columns, the positive coefficient for the interaction term suggests that while overall lending declined, lending to the zombie firms increased after the AQR; thus, the zombie firms were less impacted by the credit contraction following the AQR.

In columns (3) and (4), the positive coefficient estimate for the interaction between Exposure and Capital Adequacy Ratio suggests that lower capital exacerbated the impact of Exposure to AQR on lending. To see this, note that the marginal impact of Exposure to AQR, which is given by the partial derivative $\partial(\text{lending})/\partial(\text{Exposure to AQR})$, equals $-4.8 + 3.9^* \text{Zombie} + 0.38^* \text{Capital Adequacy Ratio} - 0.27^* (\text{Zombie}^*\text{Capital Adequacy Ratio})$. As the sign of the coefficient for capital adequacy ratio is positive, this implies that the marginal impact of the AQR on lending was disproportionately greater for banks with a lower capital adequacy ratio. Also, the sign of the interaction term $\text{Zombie}^*\text{Capital Adequacy Ratio}$ in this marginal impact is negative, which implies that the lending declined less for the zombie firms that engaged with undercapitalized banks.

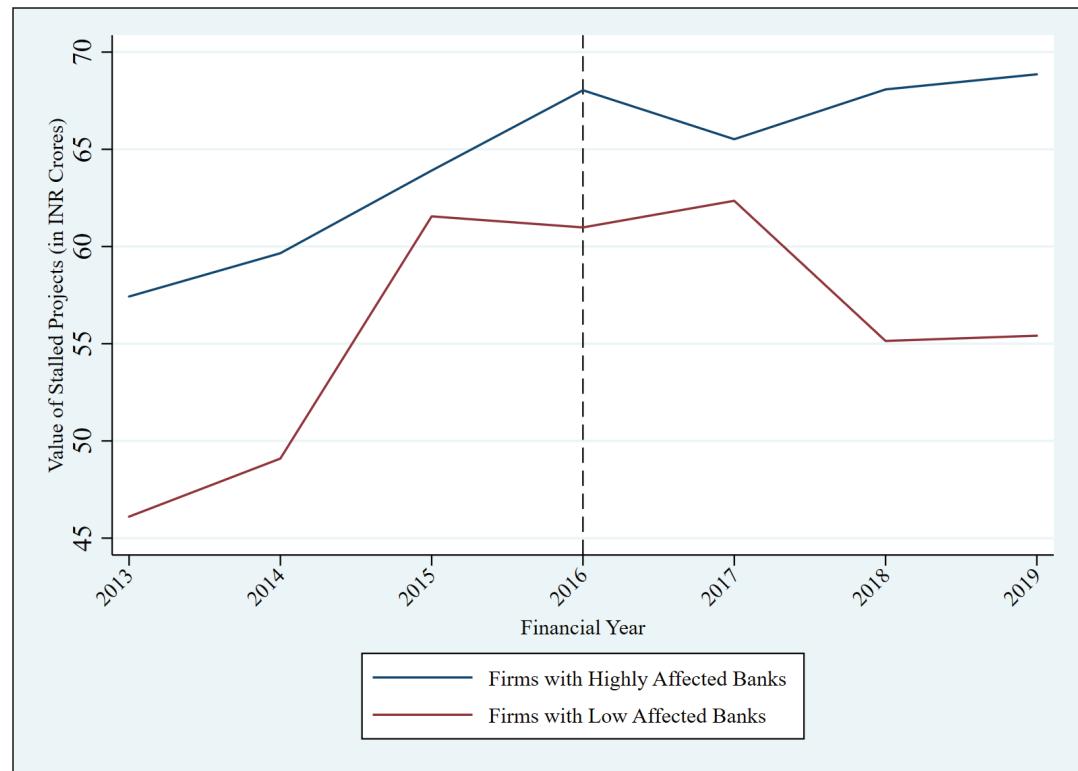
Decline in Firm's Capital Investment

7.40 Banks' tightening of credit supply negatively impacts healthy borrowers as it forces firms to cut down on their investments and capital expenditures. Thus, the likelihood of stalling of ongoing projects increases. Figure 28 plots the value of stalled projects for firms. There is a significant increase in the value of stalled projects following the AQR for firms exposed to banks affected by the AQR when compared to firms that engaged with unaffected banks. Chopra, Subramanian, and Tantri (2020) find that the firms more exposed to the AQR- affected banks could not entirely replace their credit supply from other financial institutions. Thus, these firms became financially constrained and reduced their capital expenditures, leading to ongoing projects being stalled.

Figure 27: AQR's Impact on Zombie Lending

Source: CMIE Prowess

Note: Zombie lending measures the proportion of lending to firms with interest coverage of less than one

Figure 28: Capital Investment of Firms – Value of Stalled Projects

Source: CMIE Prowess

7.41 In sum, the clean-up of bank balance sheets undertaken under the AQR exacerbated the problems created by the prolonged period of forbearance. In terms of lending, being under-capitalized, banks reduced lending to good borrowers while increasing lending to zombie borrowers. For firms, the reduction in the supply of bank credit reduced their ability to invest. Chopra, Subramanian, and Tantri (2020) compare the AQR with other clean-up programs and point towards the necessity of having an explicit recapitalization program, forced or otherwise, before entering such clean-ups.

IMPLICATIONS FOR THE CURRENT FORBEARANCE REGIME

7.42 The extensive, careful analysis of the regulatory forbearance and the resulting banking crisis offers key learnings for the current regime of regulatory forbearance following the Covid crisis. Finally:

- (a) Remember that forbearance represents emergency medicine that should be discontinued at the first opportunity when the economy exhibits recovery, not a staple diet that gets continued for years. Therefore, policymakers should lay out thresholds of economic recovery at which such measures will be withdrawn. These thresholds should be communicated to the banks in advance so that they can prepare for the same. Prolonged forbearance is likely to sow the seeds of a much deeper crisis. As well, forbearance should be accompanied by restrictions on zombie lending to ensure a healthy borrowing culture.
- (b) A clean-up of bank balance sheets is necessary when the forbearance is discontinued. Note that while the 2016 AQR exacerbated the problems in the banking sector, the lesson from the same is not that an AQR should not be conducted. Given the problem of asymmetric information between the regulator and the banks, which gets accentuated during the forbearance regime, an AQR exercise must be conducted immediately after the forbearance is withdrawn.
- (c) The asset quality review must account for *all* the creative ways in which banks can ever-green their loans. In this context, it must be emphasized that advance warning signals that do not serve their purpose of flagging concerns may create a false sense of security. The banking regulator needs to be more equipped in the early detection of fault lines and must expand the toolkit of ex-ante remedial measures.
- (d) A clean-up unaccompanied by mandatory capital infusion exacerbates bad lending practices. Expecting banks to get recapitalized on their own on account of economic recovery may not be prudent. Therefore, a clean-up exercise should be accompanied by mandatory recapitalization based on a thorough evaluation of the capital requirements post an asset quality review.
- (e) Apart from re-capitalizing banks, it is important to enhance the quality of their governance. Ever-greening of loans by banks as well as zombie lending is symptomatic of poor governance, suggesting that bank boards are “asleep at the wheel” and auditors are not performing their required role as the first line of defence. Therefore, to avoid ever-greening and zombie lending following the current round of forbearance banks should have fully empowered, capable boards. Sound governance is a key metric to ensure that banks do not engage in distortionary lending post capital infusion. The regulator may consider penalties on bank auditors if ever-greening is discovered as part of the toolkit of ex-ante measures. This would thereby create incentives for the auditor to conduct the financial oversight more diligently.

- (f) While the learnings from the previous episode must be employed to avoid a recurrence, ex-post analysis of complex phenomena must be disciplined by the insights highlighted in Chapter 7 of the Survey. Specifically, to enable policymaking that involves exercise of judgement amidst uncertainty, ex-post inquests must recognise the role of hindsight bias and not make the mistake of equating unfavourable outcomes to either bad judgement, or worse, malafide intent.
- (g) Finally, the legal infrastructure for the recovery of loans needs to be strengthened *de facto*. The Insolvency and Bankruptcy Code (IBC) has provided the *de jure* powers to creditors to impose penalties on defaulters. However, the judicial infrastructure for the implementation of IBC – comprised of Debt recovery tribunals, National Company Law Tribunals, and the appellate tribunals must be strengthened substantially.

CHAPTER AT A GLANCE

<ul style="list-style-type: none"> ➤ During the Global Financial Crisis, forbearance helped borrowers' tide over temporary hardship caused due to the crisis and helped prevent a large contagion.
<ul style="list-style-type: none"> ➤ However, the forbearance continued long after the economic recovery, resulting in unintended and detrimental consequences for banks, firms, and the economy.
<ul style="list-style-type: none"> ➤ Given relaxed provisioning requirements, banks exploited the forbearance window to restructure loans even for unviable entities, thereby windowdressing their books.
<ul style="list-style-type: none"> ➤ As a result of the distorted incentives, banks misallocated credit, thereby damaging the quality of investment in the economy.
<ul style="list-style-type: none"> ➤ Forbearance represents emergency medicine that should be discontinued at the first opportunity when the economy exhibits recovery, not a staple diet that gets continued for years
<ul style="list-style-type: none"> ➤ To enable policymaking that involves an exercise of judgement amidst uncertainty, ex-post inquests must recognise the role of hindsight bias and not make the mistake of equating unfavorable outcomes to either bad judgement, or worse, malafide intent.
<ul style="list-style-type: none"> ➤ Given the problem of asymmetric information between the regulator and the banks, which gets accentuated during the forbearance regime, an Asset Quality Review exercise must be conducted immediately after the forbearance is withdrawn.
<ul style="list-style-type: none"> ➤ The legal infrastructure for the recovery of loans needs to be strengthened <i>de facto</i>.

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