Indirect Evergreening Using Related Parties: Evidence From India. *

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Abstract

We identify a novel way of evergreening loans where a low-quality bank lends to a related party of an insolvent borrower, and the loan recipient transfers the funds to the insolvent borrower using internal capital markets. Internal capital market transactions, incremental investments, interest rates charged, and loan delinquency rates collectively indicate evergreening. These loans are unlikely to represent arm's length transactions or rescue of troubled related firms by stronger firms to prevent group-wide spillover effects. Indirect evergreening is less likely to be detected by regulatory audits. It has significant real consequences at the firm and industry levels.

Key Words: Evergreening; Zombie lending; Regulatory Forbearance; Banking; Related Party Transactions.
JEL Classification: E58, G21, G23, G28.

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Conflict of Interest Statement

We have nothing to disclose.

I Introduction

The literature recognizes that evergreening of loans, which refers to a phenomenon where undercapitalized banks treat economically nonperforming loans as performing through additional lending or restructuring, is a distortionary practice, which has contributed significantly to the eruption and prolonging of major global banking crises.[1] Therefore, identifying and understanding various forms of evergreening of loans becomes important to explain and mitigate banking-induced macro-economic crises.

The extant literature focuses primarily on what we call "direct evergreening", which involves the renewal or restructuring of loans of insolvent borrowers by thinly capitalized banks (Peek and Rosengren (2005)). The motivation usually is to postpone recognition of loss with the hope that either the (i) borrower will turn around; or (ii) the authorities will rescue the bank; or (iii) the buck can be passed on to the succeeding management.

The possibility of undercapitalized banks using a healthy related entity of an insolvent borrower to evergreen loans has not received much attention. We call the above phenomenon "indirect evergreening" (IE). Consider a troubled borrower A and its undercapitalized lender B. The "direct" evergreening (DE) involves B lending a fresh loan to A to help it repay the old loan or restructuring the old loan. Under IE, B lends to A1, a related party of A, and A1 passes on the loan amount to A through internal capital markets, and finally, A repays B. Using the Indian banking setting, we seek to (i) identify indirect evergreening, (ii) understand its motivations, and (iii) examine its consequences.

Although the implications of DE are well understood, there is a need to study not-so-well-known forms of evergreening such as the IE for the following reasons. First, it is harder for both econometricians and the regulators to identify IE because it involves a web of transactions between a troubled bank, an insolvent borrower, and its related parties. Since IE involves lending to a healthy related party of an unhealthy borrower, even an examination of borrower quality cannot detect it. Also, as we discuss later, several alternative explanations are possible. Second, the motivation of banks and borrowers behind DE and IE could be different. Finally, given the complexity and the related execution-related uncertainty, the economic impact of IE could vary from that of DE.

Using the disclosures made by the ministry of corporate affairs (MCA), we create a loan-level dataset of all registered secured corporate loans. The dataset contains information about the identity of the borrower and the lender, the loan amount, the loan date, loan restructuring, if any, and others. We obtain the data relating to loan performance from the largest credit bureau in India, TransUnion CIBIL Limited. Information about other financial variables is sourced from the Center For Monitoring Indian Economy (CMIE). Our data spans 15 years between the years 2006 and 2020.

[1] See for example; Peek and Rosengren (2005); Caballero, Hoshi, and Kashyap (2008); Acharya, Borchert, Jager, and Steffen (2020); Giannetti and Simonov (2013); Bonfim, Cerqueiro, Degryse, and Ongena (2020); Hoshi and Kashyap (2010)

We start with a panel organized at the borrower-bank-year level with all bank-firm relationships existing at the beginning of our sample period. We find that when a firm is under distress, one of its "low-quality" bankers is more likely to extend a loan to a related party of the firm. The result is economically meaningful as it represents 14.2% of the probability of a related firm of an existing borrower borrowing from a bank. The related party receiving the loan usually has a healthier balance sheet.

Firm X year and bank X year level fixed effects absorb firm and bank level time-invariant and time-varying observable and unobservable factors. These include demand for credit, lending technology, and screening ability of the bank, agency frictions within banks and firms, and others. Thus, the above result is not due to either bad firms dealing only with bad banks or bad banks lending exclusively to bad firms. The results manifest in bank-firm-years where there is a combination of a bad firm and a bad bank.

In our baseline measure, we identify distress as a situation when a firm's income is insufficient to meet interest obligations. Banks having above the median proportion of borrowers under distress are considered low-quality banks. We show that because of regulatory forbearance on the loan loss recognition, the state of affairs of borrowers rather than the reported capital adequacy is likely to represent the true capital of banks. We vary the definitions for robustness. The term related party is defined by law and includes board-level connections, common ownership, parent-subsidiary relationships, and others.

We recognize that the mere existence of the types of loans described above is insufficient to prove evergreening. There should exist evidence that show (i) the transfer of funds from the related party that borrows the loan ("subsequent borrower") to the beneficiary ("initial borrower"); (ii) reduced investment by both the parties; (iii) lower (higher) delinquency of the initial loan (subsequent loan); (iv) subsidized interest rates; and (iv) macroeconomic consequences associated with evergreening.

We call cases where a related party of an insolvent borrower receives a loan from a bad bank of the insolvent borrower as suspected indirect evergreening (SIE). Organizing data at the initial borrower-related party-year level, we examine whether a related party that receives SIE loans is more likely to transfer funds to the initial borrower compared to other related parties. Indeed, when the initial borrower-related party pair is associated with SIE, the flow of funds from the recipients of SIE loans to the initial borrower, in the form of loans, investments, and others, is higher by 57%. The amount of related party inflows is close to the loan amount of the subsequent loan. We include initial borrower X year fixed effects, and hence, effectively compare within a borrower-year between related parties based on whether or not they are involved in SIE. We also include related party X year fixed effects and account for shocks at the related party level.

Next, we compare the delinquency rates of SIE loans against all other loans. If these loans are used for evergreening, they are likely to have a higher delinquency rate. We find that subsequent loans are 54% more likely to default when compared to other new loans.

Lender fixed controls for heterogeneity across banks. Thus, the higher delinquency rate of SIE loans cannot be explained by spillover effects from insolvent borrowers to their related parties.

We also show that the rate of interest charged on borrowers of SIE loans is an economically meaningful 2.76 percentage points points lower than the rate of interest charged to other similar borrowers. Thus, a combination of a higher probability of delinquency and subsidized interest rates support the hypothesis that SIE loans are indeed used for evergreening (Caballero, Hoshi, and Kashyap (2008)).

Further, since funds are recycled back to the bank through a circuitous route, we expect the SIE loans to lead to lower investments. Comparing all initial borrowers, we find that despite receiving higher inflows from related parties, the initial borrowers involved in SIE reduce investments by about 26.5%. Similarly, even the subsequent borrowers of SIE loans invest 13.5% less when compared to other borrowers who borrow non SIE loans.

Finally, given that the whole idea of indirect evergreening is preventing defaults by initial borrowers in trouble, we expect initial borrowers who are a part of SIE to default (i) less than other initial borrowers in trouble; and (ii) as much as other normal initial borrowers not in trouble. We find the above result. All the above results support the hypothesis that the SIE transactions indeed represent evergreening.

In second part of the paper, we proceed to address alternative explanations. One may argue that what we call IE actually represents bailout of troubled firms by stronger firms within a group-a phenomenon detected by Gopalan, Nanda, and Seru (2007) ("the internal capital markets" channel). The motivation is to prevent within-group adverse spillover effects. Thus, the transaction is driven solely by the borrowers' incentives and not the lenders' incentive to postpone default on the initial loan. We argue that the SIE is different from the internal capital markets channel based on the following findings.

First, within initial borrowers' lenders, a low-quality banker lends more than high quality bankers to the subsequent related borrower when the initial borrower is in trouble. Further, even those low-quality lenders of initial borrowers who have no prior relationship with the subsequent borrower show a higher tendency to fund SIE loans when the initial borrower is in trouble. Second, we find that the bankers of subsequent borrowers not associated with the initial borrowers do not show a higher inclination to fund the rescue. If SIE is driven by the internal capital markets channel independent of the initial borrower's troubled banks' incentives, it is reasonable to expect the subsequent borrower to borrow more from its bankers and not unconnected troubled bank of the initial borrower.

Finally, consistent with Gopalan, Nanda, and Seru (2007), when a firm transfers funds to a related party in trouble without borrowing from a troubled banker of the insolvent related party, there is no significant increase in the delinquency rate of the subsequent loans. In contrast, when SIE conditions are satisfied, i.e., when a firm first borrows from a bad bank of its insolvent related party and then transfers funds through internal capital markets, the delinquency rate is significantly higher compared to non SIE loans.

A second argument could be that the SIE loans are arm's length transactions consummated due to the inherent strength and collateral of the borrower. The fact that the subsequent borrower in an SIE is relatively healthier, further bolsters the above argument. We address the concern in two ways. First, based on their delinquency rate and interest yield, the SIE loans do not appear to be advantageous from a risk-reward point of view. Second, arm's length loans are unlikely to depend on the financial situation of the bank and its prior lending relationship with an insolvent related party of the borrower.

A third explanation could be that the SIE loans are beneficial to the bank because they help resurrect a failing initial borrower and provide fresh collateral. The benefit is higher for bad banks due to higher exposure to bad borrowers. Therefore, bad banks are more likely to engage in SIE. The above explanation is unlikely to explain SIE for two reasons. First, as noted before, by including initial borrower X year fixed effects, we ensure that the comparison is within an insolvent borrower between troubled and other banks. Within a borrower, the NPV of rescuing an insolvent borrower should not depend on the banker's health. However, a troubled banker has a higher incentive to postpone recognition of loss. Second, as stated before, SIE loans do not appear to be profitable.

In the third part of the paper, we ask what motivates banks and borrowers to engage in IE instead of DE? First, given the complicated nature of transactions, it may be harder for regulators to detect IE. Motivated by their incentives, regulators are known to look the other way despite evidence of evergreening (Hoshi and Kashyap (2010)). Therefore, we recognize that, normally, nonrecognition of evergreening by regulators does not mean an inability to detect. Fortunately, we have a setting where the regulator conducted a thorough audit known as the asset quality review (AQR) to unearth hidden nonperforming assets. Despite a thorough audit, the regulator was neither able to detect nor prevent IE. Expectedly, the audit was able to detect at least a part of DE.

Second, we find that an insolvent borrower who is already directly evergreened has a higher chance of being indirectly evergreened when compared to other insolvent borrowers. Thus, it appears that the banks use the complicated IE after exhausting DE opportunities. Repeated DE could increase the probability of detection. Third, IE, unlike DE, provides the bank access to additional collateral and a borrower with a cleaner balance sheet. Therefore, bank management could find it easier to satisfy the de-jure checks and balances and internal lending rules. Finally, suggestive evidence indicates that IE also helps bank CEO to push recognition of delinquency beyond his/her tenure.

A skeptic may wonder why the regulators cannot use the econometric techniques we have used to detect IE. Note that it is tough to link the subsequent loan, the related party transactions, and loan default in a de-facto sense. A bank may argue that the decision to lend the subsequent loan is based on the subsequent borrower's fundamentals and collateral; it has nothing to do with the initial loan. The bank may also argue that it cannot prevent the working of internal capital markets between related entities. Further, excessive restrictions on related party transactions may not be socially desirable in an emerging economy with underdeveloped external capital markets.

In the final part of the paper, we study the macro economic consequences of IE. We find that industries with higher exposure to IE obtain a higher share of bank credit but invest less when compared to other industries. Within highly exposed industries, the proportion of credit flowing to high growth firms declines significantly. The results are consistent with crowding-out effect of DE (Caballero, Hoshi, and Kashyap (2008)). Finally, we also find the chances of an eventual stock price crash are significantly higher for banks having a higher proportion of their loans indirectly evergreened. Baron, Verner, and Xiong (2021) show that such crashes lead to a significant contraction of bank credit.

Our paper directly talks to the literature that identifies evergreening and its consequences. Peek and Rosengren (2005) identify evergreening as lending to borrowers with poor operating and financial fundamentals by capital-constrained banks. Caballero, Hoshi, and Kashyap (2008) use granting of subsidized credit as a metric whereas Acharya, Eisert, Eufinger, and Hirsch (2019) consider interest coverage ratio, credit rating, and interest rate subsidy to identify evergreening. Tantri (2020) consider quick renewal of a loan close to the due date by the same loan officer who lent the initial loan as evergreening. Several other studies (Bonfim, Cerqueiro, Degryse, and Ongena (2020); Chari, Jain, and Kulkarni (2019); Bruche and Llobet (2014); Jaskowski (2015); Hoshi and Kashyap (2004)) identify different aspects of evergreening. All the extant studies identify DE and highlight its consequences. We identify IE where a loan is given to a related party of the borrower in trouble plausibly with the expectation that the recipient will then transfer the funds to the intended beneficiary. We also identify the real effects of IE.

We also contribute to the literature that explores the role of regulatory forbearance in facilitating evergreening. Acharya, Borchert, Jager, and Steffen (2020) show that fiscally constrained governments postpone recognition of bad loans and recapitalization. Hoshi and Kashyap (2010) describe the relationship between regulatory forbearance and the prolonged Japanese banking crisis. Steffen (2014) show that it is not always incentive compatible for regulators to identify and preempt evergreening. Agarwal, Lucca, Seru, and Trebbi (2014) find that regulators implement identical rules differently based on their incentives. Chopra, Subramanian, and Tantri (2020) find that a regulator driven bank cleanup that does not involve bank recapitalization further exacerbates the zombie lending problem. In most extant settings, it is hard to disentangle the unwillingness of the regulators to detect evergreening and their inability to do so. Using the AQR, where the regulator set out to identify evergreening and clean bank balance sheets, we are able to attribute the non-detection of evergreening to their inability.

Finally, we also contribute to the literature that examines related party transactions and internal capital markets (Jian and Wong (2010); Bertrand, Mehta, and Mullainathan

(2002); Bae, Kang, and Kim (2002); Almeida, Kim, and Kim (2015)). Gopalan, Nanda, and Seru (2007) show that one purpose of related party loans is to save a firm within the business group so that the group level spillover effects are mitigated. Jiang, Lee, and Yue (2010) show that related party transactions could also be used for tunneling of resources from the firm. We show that related parties can be used as conduits to pass on loans that are a part of an evergreening transaction.

II Institutional Background

Government-owned banks dominated the Indian banking landscape until the nineties. Large private sector banks were nationalized in two waves in the years 1969 and 1980 (Cole (2009)). The liberalization program undertaken during the early nineties led to the sector's opening up to private banks. Within a decade or so, large and modern private sector banks came up. Several foreign banks also now operate in India. Commercial banks are regulated by the Reserve Bank of India (RBI).

Slow enforcement of contracts is a major impediment faced by banks in India in their loan recovery efforts. Although India has recently improved significantly in terms of the world bank ease of doing business ranking, it is still ranked at a low 163 in terms of enforcement of contracts.[2] The country did not have a modern bankruptcy law until the year 2016. Although some creditor rights laws were enacted, with time and due to political and judicial interventions, they lost steam, and the nonperforming assets of banks soared (Bhue, Prabhala, and Tantri (2015)).

Although India was not directly impacted by the global financial crisis (GFC) and did not suffer a recession, the central bank announced a forbearance policy that allowed banks to restructure loans without downgrading and providing for such loans. The policy was continued for seven years despite the economy recovering fully in the interim. It was withdrawn in 2015 and the AQR was initiated. Lax enforcement of contracts, absence of a bankruptcy law, and forbearance provide conditions under which banks are likely to resort to widespread evergreening of loans (Hoshi and Kashyap (2010)).

III Data, Sample and Descriptive Statistics

Our primary source of data is the secured loan register of the ministry of corporate affairs (MCA). It contains information about all secured loans on which a "charge" has been created. A charge is a right that is created by a borrower on its assets in favor of a lender. In the absence of a charge and its registration, the lender loses the privileges of a secured lender. Therefore, it is reasonable to expect almost all large secured corporate

[2]Source: https://www.doingbusiness.org/en/data/exploreeconomies/india

loans to be registered. Chopra, Subramanian, and Tantri (2020), find that the MCA dataset containing loans to listed firms covers more than 50% of all private commercial credit in the country. Our dataset contains loans to listed and unlisted firms. Moreover, nearly 75% of all loans lent in India are secured loans (Bhue, Prabhala, and Tantri (2015)).

Each observation in the MCA dataset represents a loan and contains information such as the identities of the borrower and the lender, the loan amount, the date of loan origination and restructuring, and the date of closure of the loan. The dataset does not have information about loan terms such as the tenure of the loan, interest rates, and the frequency of repayment. We obtain information about loan performance in terms of defaults from the data maintained by TransUnion CIBIL (CIBIL), the largest credit bureau in the country. The dataset contains a list of loan defaulters undergoing recovery proceedings, lenders of such loans, and the date of default. For tests that involve loan default, we create a dataset combining MCA and CIBIL data by matching firm names.

We obtain information about financial variables of firms from the Prowess database maintained by the Center For Monitoring Indian Economy (CMIE). The Prowess database also has information about the transactions of a firm with its related parties. The term related party has been defined by Section 2(76) of the Companies Act of 2013. It includes associations such as holding company-subsidiary, common directorships, common controlling ownership, and others.[3] We merge the datasets created using MCA, CIBIL and Prowess databases using a unique corporate identity number.

III.A The Sample

We present the key variables definitions in Table 1 and sample construction details in Table 2. Our main loan-level sample spans a period of 15 years starting from the financial year 2006 (2005-2006) and ending in the financial year 2020 (2019-2020).[4] As noted in Section II, the banking sector was opened for private participation in the nineties. The first wave of entry of private sector banks ended with the entry of Yes bank in the year 2004. Therefore, we start our analysis from the financial year 2005-2006.

We start our analysis by creating two datasets. The primary loan-level MCA dataset contains information about secured loans. We consider all flow of funds from a bank to a firm in a financial year as a loan. Since evergreening can be done by granting a loan just before or after the due date of an existing loan, clubbing all transfers within a year facilitates better identification.[5] The second dataset is the list of all available related party pairs. We obtain this information from the Prowess database. We create related

[3]See the detailed definition here:https://www.mondaq.com/india/contracts-and-commercial-law/614332/a-brief-overview-of-related-party-transactions. We provide a list of associations that fall under the ambit of the term related party in Section A of the online appendix.

[4]A financial year in India is 12 months between April and March.

[5]Tantri (2020) shows that in some cases borrowers arrange bridge finance to repay a loan and the bank subsequently lends the evergreening loan.

party pairs based on list of subsidiaries/holding companies disclosed in the annual reports and related party transactions consummated during our sample period.

We start with all bank-firm pairs having an outstanding loan as at the beginning of the year 2006. We track all loans and repayments made from the year 1991-1992- a year in which India conducted major structural reforms. We then build a panel at the bank-firm-year level. We record a new loan amount in the year in which a bank lends to an existing borrower. Otherwise, the new loan amount is considered as zero for existing bank-firm pairs. We exclude a bank-firm pair from the year following the year of full repayment of the outstanding loan amount.

New lending relationships are counted from the year in which a bank and a firm not having an outstanding loan between them start a fresh loan. As shown in Table 2, we identify 789,196 bank-firm-year pairs having 161,755 loans during our sample period. 21,314 unique borrowers of 327,910 bank-firm-years are covered by the Prowess database. We call the dataset with 327,910 firm-bank-year observations as the matched sample. There are 320 unique lenders out of which 55 are commercial banks.[6] 56,244 new loans are made to 9,543 borrowers within the matched dataset of 327,910 firm-bank-years.

III.B Variable Definitions

As described in Table 1, borrowers having an existing lending relationship with a bank are called "initial borrowers". A related party of an initial borrower that obtains a new loan from the same bank is considered a "subsequent borrower". A loan given to a subsequent borrower is called a "connected loan". In the matched dataset, 27,604 firm-bank-year observations have a connected loan. Sometimes a subsequent borrower is related to multiple initial borrowers. Therefore, the number of unique new connected loans is 23,046. 5,782 unique subsequent borrowers are associated with connected loans.

A borrower having an interest coverage ratio of less than one is considered a "borrower in trouble" or an "insolvent borrower". A bank that is above the median among all banks in terms of average exposure to borrowers in trouble in the previous three years is considered a "low-quality bank" or a "bad bank". Exposure is the proportion of loans outstanding of a category of borrowers within the entire loan book.

The regulatory forbearance regime allowed banks to restructure loans without providing for them, and hence, overstate capital. To test the above hypothesis, we examine the change in all banks' reported capital adequacy ratio before and after the GFC. We report the results in Table A1 of the online appendix. Despite a slow down in economic activity, we find an increase in the reported capital adequacy ratio after GFC compared to before. We then test the change in the proportion of loans where the borrower has an interest coverage ratio of less than one. We find a significant increase in the post-GFC

[6] 76.2% of all loans are lent by commercial banks.

period. Thus, banks reported increased capital adequacy despite worsening borrower quality. Therefore, we do not use reported capital adequacy ratios because banks that evergreen more mechanically report better numbers. The quality of the underlying borrowers is a better measure of true capital levels. The incentives of equity holders depend on true capital (Admati and Hellwig (2014)).

A connected loan is considered an SIE if the initial borrower is in trouble and the bank is of low-quality. We have 3,470 such loans. We consider a loan directly evergreened if the initial borrower in trouble gets it restructured or obtains a new loan from the lender. There are 6,874 such loans. 1,931 of the 56,244 loans eventually default. Out of the 21,314 initial borrowers, we have information about RPTs for 15,177. At a related party pair-year level, we have 390,305 observations. For tests relating to investments, we organize the data at a borrower-year level. Out of the 32,130 (143,019) subsequent (initial) borrower-year level observations, we have information about investments for 24,548 (97,997) observations. In Section B of the online appendix, we reconcile the number of observations for every Table containing regression analysis.

III.C Descriptive Statistics

Table 3 presents descriptive statistics. The average (median) loan amount of loans lent in the matched dataset is INR. (Rupee) 1,384 (350) million. 3.4% of the loans eventually default. Nearly 41% (7%) of all new loans are connected (SIE) loans.

We use two definitions of investments. The average (median) value for the first measure, based on additional investment in fixed assets, is INR. 1,257 (79). The average (median) value for the second measure, based on the cash outflow on investment activities, is INR. 1,015 (104). We classify RPTs into four categories; total inflow of funds from related parties, inflow from loans, inflow on account of investments, and the sum of all related party inflows. The definitions are from the initial borrowers' point of view. The average (median) values of the three categories are INR. 290 (0), 487 (0), 880 (0), and 2036 (0), respectively.

IV The Building Blocks

The hypothesized steps in SIE as depicted in figure 1, are described below.

Step 1: A loan exists between a bank and an initial borrower.

Step 2: The initial borrower then faces a shock. In the absence of SIE, the borrower is likely to default. The bank also gets into trouble if a large proportion of its borrowers are on the verge of default. The incentive to avoid borrower default is higher for thinly capitalized banks.

Step 3: The low-quality bank, which has incentives to hide defaults, then lends

to a subsequent borrower who is related to the initial borrower. Most extant studies consider lending directly to the initial borrower facing a shock or restructuring of their loans as evergreening (Peek and Rosengren (2005)). Notice that such direct evergreening is easily detectable by regulators and analysts. It is relatively easier to hide the loan to a related party as an independent loan driven by business considerations.

Step 4: The subsequent borrower transfers the funds to the initial borrower through related party transactions.

Step 5: The initial borrower uses these funds to repay the bank. Thus, recognition of default is avoided and a new loan recorded – a typical consequence of evergreening.

Step 6a: In the unlikely event of the initial borrower recovering, it repays the subsequent borrower.

Step 6b: The most likely outcome in evergreening cases is a default by the initial borrower on the related party loan.

Step 7a: The subsequent borrower then repays the bank.

Step 7b: A consequent default or restructuring of the loan between the subsequent borrower and the bank follows. Even though the subsequent borrower pledges additional collateral, the chances of full recovery are low given the institutional frictions.

IV.A Connected Lending By Bad Banks (Steps 1–3)

The core of our measure is a connected loan- a loan given to a related entity of an existing borrower. As discussed in detail in the extant literature (Hoshi and Kashyap (2010)), truly undercapitalized banks have a higher incentive to evergreen loans. We, therefore, test whether low-quality banks are more likely to lend connected loans where the initial borrower is in trouble (steps 1-3).

In Panel A of Figure 2, we depict the proportion, in terms of the loan value, of loans to related parties of borrowers in trouble within connected loans. Consider the first two bars of panel A. The blue (orange) bar represents high (low) quality banks. We use the median of the proportion of loans lent to borrowers in trouble to classify banks into low and high quality. As shown in the figure, the proportion of loans lent to related parties of borrowers in trouble among all connected loans is about 18 percentage points higher for the low-quality banks. In the subsequent two bars, we compare banks in the highest tercile in terms of the proportion of lending to troubled borrowers with those in the lowest tercile. The gap between the low and high-quality banks increases to 30 percentage points. Similarly, in panel B, we use the value of all the loans lent during the sample period as the denominator and obtain similar results.

To account for borrower heterogeneity between banks and bank heterogeneity, we estimate the following regression equation:

$$Y_{\mathrm{ijt}} = \alpha + \beta_1 * Bad\_Borrower_{it} * Bad\_Bank_{jt} + \beta_2 * Bad\_Borrower_{it} + \beta_3 * Bad\_Bank_{jt} + \beta_4 * X_{ijt} + \beta_5 * \theta_{it} + \beta_5 * \gamma_{jt} + \epsilon_{ijt} \quad (1)$$

The data are organized at the initial borrower-bank-year level. We start with all bank-borrower pairs that have an outstanding lending relationship at the beginning of our sample period and create an annual panel. When a bank lends to a borrower for the first time, we create a new bank-borrower pair. When a borrower repays the full outstanding amount, we close the bank-borrower pair. A new loan to an existing borrower is recorded by updating the loan amount.

The outcome variable Y_{ijt} is an indicator variable that takes the value of one if a loan is lent to a subsequent borrower related to an initial borrower i by a bank j–an existing banker to to the initial borrower i–during the year t and zero otherwise. $Bad\_Borrower_{it}$ is an indicator variable that takes the value of one if the initial borrower i is a borrower in trouble during a year t and zero otherwise. Bad_Bank_{jt} is an indicator variable that takes the value of one if the bank j is a low-quality bank during a year t and zero otherwise. θ_{it} (γ_{jt}) stands for initial borrower X year (bank X year) fixed effects.

X_{ijt} represents the number of years of association between the initial borrower and the bank, and the proportion of bank credit that is allocated to the initial borrower. These variables represent the intensive and extensive margins of the relationship between the borrowers and the bank. They account for the possibility of the bank lending to related parties of the relationship borrowers in the normal course. The standard errors are clustered at an industry level and adjusted for heteroskedasticity.

We present the results in Table 4. In columns 1 and 2, the interaction between initial borrower in trouble and low quality bank indicators shows that the low quality banks are close of 1.2 percentage points more likely to lend a connected loan when the initial borrower is in trouble when compared to the high quality banks in a difference-in-difference sense. As shown in Table 2, connected loans are lent in 8.4% of initial borrower-bank-year observations (27,604 out of 327,910). Therefore, a difference in 1.2 percentage points represents an economically meaningful 14.3% increase in the probability of a connected loan.[7]

Notice that we include initial borrower X year fixed effects. Therefore, our comparison is within a borrower year and between banks. The results cannot be explained by borrower demand for credit and other time varying borrower side factors. Further, we include bank X year fixed effects. Therefore, it is not the case that our results are due to low quality

[7] In Table A2 of the online appendix, we use the actual interest coverage ratio in place of dummy variables. In line with the above result, we find a negative relationship between the interest coverage ratio of the initial borrower and the probability of a connected loan from a low-quality bank to a related party.

banks having more borrowers in trouble in years when they are designated as such.[8] Crucially, we focus on lending to related parties of borrowers in trouble. Finally, any general increase in lending or general increase in connected lending in some years are absorbed by the bank X year fixed effects.

Related Party Health: An indirect evergreening operation would involve lending to a healthy related party of unhealthy borrowers. Lending to unhealthy related parties of unhealthy borrowers does not achieve the purpose of window dressing bank books. Also, as in the case of DE, an inspection of the borrower quality could easily lead to suspicion of evergreening. As we discuss later in Section VI.C, even de-jure bank rules may come in the way of executing such transactions. Therefore, we test whether SIE is executed using healthy related parties of unhealthy borrowers.

We estimate the regression equation 1 by slightly modifying the definition of a connected loan. In the results presented in columns 3 and 4 of Table 4, we consider a loan connected only if a banker of the initial borrower lends to a low quality related party of the initial borrower. Firms having an interest coverage ratio of less than one are considered low quality. Low quality banks of the initial borrower do not show a significantly higher tendency to lend such connected loans.

In columns 5 and 6, we consider a loan as connected only if a banker of the initial borrower lends to a high quality related party of the initial borrower. Firms having an interest coverage ratio of one and above are considered high quality. We find that low quality banks of an insolvent initial borrower are more likely to lend to a high quality related party of the initial borrower when such initial borrower gets into trouble. While the above result is consistent with evergreening, it raises questions about these loans being arm's length transactions. We address alternative explanations in Section V.

IV.B Related Party Transfer(Step 4)

Suppose the connected loan is indeed an evergreening transaction done to prevent the initial borrower from defaulting. In that case, as described in Step 4 above, the subsequent borrower is likely to pass on the funds to the initial borrower for repayment of the original loan. To test the above possibility, we examine the related party transactions. We ask whether initial borrowers of an SIE transaction are more likely to receive funds through related party transactions from their related parties (subsequent borrowers) that receive a loan from the low-quality bankers of the initial borrower.

We estimate the following regression equation.

[8] Figure A1 of the online appendix shows that banks frequently change status from high quality to low quality based on shocks to their borrowers. We have 143 status changes in our sample period. Thus, low quality is not a fixed characteristic of a bank.

$$Y_{\mathrm{ikt}} = \alpha + \beta_1 * Evergreen_{ikt} + \beta_2 * \theta_{it} + \beta_3 * \gamma_{kt} + \beta_4 * X_{ikt} + \epsilon_{ikt} \quad (2)$$

An observation represents a initial borrower (i)-related party (k) -year (t) pair. Y_{ikt} is the natural logarithm of the value of a type of related party transaction (RPT) consummated between the initial borrower i and a related party k during the year t. $Evergreen_{ikt}$ is a dummy variable that takes the value of one if the initial borrower i and a related party k are a part of an SIE transaction during the year t and zero otherwise. θ_{it} (γ_{kt}) represent initial borrower X year (related party X year) fixed effects. X_{ikt} denotes the type and depth, in terms of time, of the relationship between the related parties in a year. The standard errors are clustered at an industry level and adjusted for heteroskedasticity.

We present the results in Table 5. In columns 1 and 2, we consider the natural logarithm of RPT loans received by the initial borrower. We find a 39% increase in loans from the related parties in SIE cases. In columns 3 and 4, we consider inflows from related parties in the form of investments. We find a 18% increase in such inflows as well. In columns 5 and 6, we use the natural logarithm of the total RPT inflows as the dependent variable. We find a 57% increase in total RPT inflows to initial borrowers from the related parties involved in SIE.

Finally, in columns 7 and 8, we consider all RPT transactions. We add both inflows and outflows. We recognize that in some cases, such as purchasing equipment at a below-market price, the initial borrowers could use RPT outflows to extract funds from related parties. Here, we find an increase of 67%. The results are in line with the hypothesis made in step 4. It appears that the subsequent borrowers of evergreened loans that receive funding from the bank transfer resources to the initial borrowers to facilitate the repayment of the initial loans.

It is crucial to note that, as before, we include initial borrower X year fixed effects. Effectively, the comparison is within an initial borrower year and between related parties associated with SIE and other related parties. Therefore, our results are over and above the normal working of the internal capital markets. We also include related firm X year fixed effects that absorb any time-varying shocks to the related parties of the initial borrower. Therefore, even within a related party-year, the flows are higher to the initial borrower when the SIE conditions are satisfied. We also account for the type of relationship between the initial borrower and the related party and add the proportion of total related party transactions of the initial borrowers in a year from the related party under consideration as a control variable.

IV.B.1 Value of Loans And RPTs

Suppose, indeed, the chain of transactions that we focus on represents a form of evergreening. In that case, it is reasonable to expect the subsequent borrower to transfer the amount received as a loan to the initial borrower. Accordingly, we test whether, within SIE transactions, the new loan received and related party flows are similar. We consider all related party inflows to the initial borrower and not just the flows from the subsequent borrower to account for the fact that the subsequent borrowers could transfer funds through a chain of related parties.

We report the results in Panel A and B of Table A3 of the internet appendix. In panel A, we consider only related party loans, whereas panel B considers all related party transactions of the initial borrower. We compare the amount of such transactions with the loan amount received by the subsequent borrower. We find that the two variables are not statistically distinguishable. We also compare the loan amount and related party loans within other connected but not SIE loans in the same table. Here, we find a significant difference between the two variables. The result supports our hypothesis that the subsequent borrower transfers the loan received to the initial borrower in trouble.

IV.B.2 Investment By The Subsequent and Initial Borrowers

A corollary of step 4 is that the subsequent borrower of an SIE transaction is likely to invest less when compared to other loan recipients. This is because a large part of the loan received is passed on to a related entity in trouble. We test the above hypothesis by organizing the data at a new loan borrower-year level and regressing measures of investments on the SIE measure. We include firm and year fixed effects.

We report the results in Table A4 of the online appendix. We find a significant decline ranging between 13.5% to 16.6% in investments by subsequent borrowers. The results are in line with the hypothesis that the borrowers of subsequent loans of an SIE transaction pass on the loans rather than invest themselves.

For completion, we examine the investments made by the initial borrowers and report the results in Table A5. We find a decline of close to 26.5% in investments by initial borrowers of SIE transactions. Despite inflows from related parties, the initial borrowers who are a part of SIE transactions invest less. It appears that the related party inflows are used to repay the existing loan in the case of SIE transactions.

IV.C Loan Performance (Steps 5 to 7)

Performance of New Loans:

Indirect evergreening is akin to the refinancing of a risky project on the verge of collapse. If the subsequent loans represent evergreening, it is highly likely that they eventually default. On the other hand, if a subsequent loan represents an arm's length loan lent based on the strength of the subsequent borrower and additional collateral, then increased default is unlikely.

We estimate the propensity to default on the SIE (subsequent) loan using a Cox hazard model. We regress the loan default of subsequent borrowers on the Indirect evergreening indicator using the following specification.

$$\begin{aligned} HR = \pi(t)/\pi_0(t) \quad = \quad & \exp(\beta_1 * \text{IndirectEvergreeningIndicator} \\ & + \beta_2 * \text{GoodbankConnectedLoanIndicator} + \beta_3 \Sigma X_i + \gamma_i) \end{aligned} \tag{3}$$

Here H denotes the hazard ratio, i.e. the ratio of default rate of loans of interest ($\pi(t)$) to the baseline default rate of loans ($\pi_0(t)$). The results are reported in Table 6. We use creditor fixed effects to control for time-invariant lender characteristics. We cannot use borrower fixed effects as we have only one observation (loan) per borrower in a large number of cases.

In columns 1 and 2, we regress loan default by the subsequent borrower on the SIE indicator to estimate the hazard ratio for SIE loans, i.e. the ratio of the rate of default of the treatment group (SIE loans) and the control group (other loans). In column 1, the coefficient of the Indirect evergreening indicator, which provides the HR estimate for suspected SIE loans, is 1.54 and is highly significant. It indicates that the subsequent borrower has a 54 percent higher default rate than non-SIE loans when it receives an SIE loan. In column (2), we include additional control variables used in equation 1.

To compare the performance of SIE loans to other connected loans from good bankers, we include an additional independent variable: "good bank connected loan indicator", in columns 3 and 4. The variable is set to one when the subsequent borrower borrows a connected loan from a good quality bank of the initial borrower in trouble, and zero otherwise.

The coefficient of indirect evergreen indicator in column 4, where we use the full-fledged specification, shows that the rate of default of the SIE loans is nearly 60% higher than the other loans. On the other hand, the hazard rate coefficient of 'Good bank connected loan indicator' is statistically indistinguishable from one. The result indicates that the default rate is higher only when the subsequent borrower borrows from a low-quality banker and not when it borrows from a high-quality banker of the initial borrower. Thus, a combination of the initial borrower in trouble and a bad bank lending to a related party of the initial borrower results in higher loan delinquency.

Loan Performance of Initial Borrowers: We next examine the impact on loans of initial borrowers that are the likely beneficiaries of SIE. Here, we expect the loans of initial borrowers involved in indirect evergreening not to default more than other regular loans. This is because these borrowers receive support from the bank indirectly through related entities. The purpose of evergreening is to prevent default on those loans.

We estimate the following regression equation:

$$
\begin{aligned}
Y_{\text{ijt}} \;=\; & \alpha + \beta_1 * SIE_{it} + \beta_2 * Bad\_Borrower\_NoSIEit + \\
& \beta_3 * X_{ijt} + \beta_4 * \theta_{it} + \beta_5 * \gamma_{jt} + \epsilon_{ijt} \qquad (4)
\end{aligned}
$$

We organize the data at a initial borrower i-bank j-year t level as in Section IV.A. The outcome variable takes the value of one if the initial borrower i defaults on a loan from bank j during the years t or $t+1$. SIE_{it} is an indicator variable that takes the value of one if the initial borrower i-bank j pair is associated with an SIE during the year t and zero otherwise. $Bad\_Borrower\_NoSIE$ is an indicator variable that takes the value of one for observations where the initial borrower i has an interest coverage ratio of less than one but does not satisfy other SIE or DE conditions. θ_{it} (γ_{jt}) represent initial borrower X year (bank X year) fixed effects. X_{ijt} represents a vector of control variables as in equation 1. The standard errors are clustered at an industry level and adjusted for heteroskedasticity. Notice that we use a linear probability model rather than a hazard model here as the purpose is to measure the chances of default immediately after evergreening and not any time during the life of the loan.

We report the results in Table 7. In column 1, we find that the distressed borrowers (those with less than one interest coverage ratio) who are neither directly nor indirectly evergreened default 30 basis points more than other borrowers. In column 2, we introduce the SIE indicator variable. We find that the SIE loans' default rate is no different from other loans after accounting for distressed borrowers not evergreened. However, the default rate of distressed borrowers not evergreened is 40 basis points higher. In columns 3 and 4, we introduce control variables used in Table 4. We include initial borrower X year and lender X year fixed effects in all columns.

Note that the proportion of firm-bank-year pairs with a loan default is 0.74%. Therefore, 40 basis points represent an economically meaningful 54%. In the absence of evergreening, the default rate of even the SIE borrowers would likely have been higher by close to 40 basis points. In other words, initial borrowers have a 54% lower default rate than other comparable borrowers immediately after the SIE. Also, the inclusion of initial borrower X year and bank X year fixed effects ensures we measure loans' performance within a borrower year and bank year.

IV.D Interest Rates

In Caballero, Hoshi, and Kashyap (2008), interest rate subsidy is a key feature of evergreening. In this context, we ask whether the pricing of subsequent loans reflect the additional risk of default. It is reasonable to expect higher interest rates for arm's length loans when the risk of default is higher. Thus, banks charging lower than expected interest rates on SIE loans further bolsters the evergreening argument.

Unfortunately, we do not have information about the interest rate charged on loans. The prowess database provides information about weighted average interest rates at a firm-year level. Using the outstanding loan amount at the end of the previous year and the amount of new loans borrowed during a year, we calculate the likely cost of funds during the year. Unfortunately, we cannot distinguish between multiple loans borrowed in the same year. We assume that all loan repayments are done at the end of the year. Based on the above assumptions, we calculate the interest cost on loans lent during a year. Given the data limitations, we can only ask whether the interest cost in the year when the SIE loan is made is higher or lower than other years.

We estimate the following regression equation.

$$Y_{\text{it}} = \alpha + \beta_1 * Evergreen_{it} + \beta_2 * \theta_i + \beta_3 * \gamma_t + \beta_4 * X_{it} + \epsilon_{ikt} \tag{5}$$

The data are organized at a loan level. The dependent variable Y_{it} represents the interest cost of a firm i in the year t. $Evergreen_{it}$ is a dummy variable that takes the value of one if the borrower i borrows an SIE loan during the year t and zero otherwise. θ_i (γ_t) stands for firm (year) fixed effects. X_{it} represents time-varying firm-level characteristics that could influence interest rates charged. The characteristics include the size in terms of assets, leverage, return on assets, and the borrower's credit rating.

We present the results in Table 8. The data are organized at a loan level. Out of the 68,673 firm-years when a new loan is made, we have interest related information for 26,329 firm-years. Due to the presence of large outliers, we winsorize the interest rate variable at 95% level. In columns 1 and 2, where we consider the entire sample for which the interest rate data are available, we find that the interest rate is 2.76 percentage points lower in firm-years having SIE loans when compared to other firm years. Given the average interest rate of 13.5%, we find that the coefficient is economically meaningful.

In columns 3 and 4, we restrict the sample to firm years where the borrowing firms are rated. Additionally, in column 4, we include a dummy variable that takes the value of one for firms rated below the investment grade and zero otherwise. We find that the borrowers of SIE loans are likely to pay nearly 4 percentage points lower in the firm-years associated with the SIE loans.

Therefore, despite a significantly higher default rate, SIE loans are associated with substantially lower interest rates. The results further support the indirect evergreening argument and significantly ameliorate the concern that the SIE loans are arm's length loans extended by banks to earn high profits.

Thus a combination of lending to related parties of a borrower in trouble by low-quality banks, transfer of funds through RPTs, reduced investments, loan performance, and subsidized interest rates indicate that the transactions that we identify are likely to be evergreening transactions.

IV.E Robustness

We conduct several robustness tests. First, in Table A6 of the online appendix, we use the value of the connected loan instead of the connected loan indicator variable as a dependent variable. The results are similar to the results presented in Table 4. Second, we variously redefine bad firms as firms (i) with above median leverage and less than one interest coverage; (ii) with negative net worth; (iii) with below median sales growth and less than one interest cover. Accordingly, a bank with above median exposure to such borrowers is considered a low quality bank. In results presented in Table A7 and A8, we find that the tendency of increased connected loans between low quality banks and borrowers in trouble, the transfer of funds from the subsequent borrower to the initial borrower in trouble, and lower investments by the subsequent borrowers continue to hold. Finally, in Table A9 of the online appendix, we compare the subsequent borrowers of SIE and other connected loans in terms of their prior financial performance. We do not find a significant difference.[9]

V Alternative Explanations

In this section, we attempt address several alternative explanations for the SIE phenomenon that we document.

V.A Rescue Through Internal Capital Markets?

Gopalan, Nanda, and Seru (2007) study the working of related party loans within-group firms in India and show that (i) the purpose of related party loans is to prevent the bankruptcy of a weak firm in the group; and (ii) the rescue of a weak group firm prevents the negative spillover effects on the entire group. The question of how the rescuing related party raises resources to fund the bailout, and the incentives of the funders of the bailout, including banks, are not central to their hypothesis. In the case of SIE, bankers' incentives to postpone default play a central role.

[9]The initial borrowers expectedly have poor fundamentals as shown in the same Table.

We argue that SIE is distinct from the rescue using the internal capital markets argument based on the following findings. First, as shown in Section IV.A, the tendency to lend to a related party of an insolvent borrower is higher among low-quality bankers when compared to high-quality bankers of the insolvent borrower. It is unlikely that a firm trying to bail out its related party in trouble will prefer to fund the rescue using loans from a low-quality banker of the insolvent related party over other banks.

Second, a firm trying to rescue its related party in trouble is likely to borrow from its own bankers rather than the low-quality bankers of the insolvent related party. We test the above hypothesis by estimating a regression equation similar to equation 1. We organize data at an initial borrower-bank level. We consider bankers of both the initial borrowers and their related parties. For instance, consider a hypothetical initial borrower A having two related parties A1 and A2. Suppose A1 banks with banks B1 and B2, and A2 banks with B3 and B4. Further, firm A itself banks with banks B1, B3, and B5. In this case, we consider five observations–AB1, AB2, AB3, AB4, and AB5.

We define an indicator variable- $RelatedParty'sBanker$- that takes the value of one for observations involving banks having a relationship with only related parties of the initial borrower but not with the initial borrower and zero otherwise. In the above example, the indicator variable takes the value of one for pairs AB2 and AB4 as banks B2 and B4 do not have a direct lending relationship with the initial borrower A. We ask whether bankers that deal only with related parties of the initial borrower are likely to lend more to such related parties when the initial borrower is in trouble compared to bankers that have an existing banking relationship with the initial borrower. Specifically, our focus is on the interaction term between $RelatedParty'sBanker$ and $IntialBorrowerInTrouble$. As before, the dependent variable is the $connectedloan$ indicator.

We report the results in column 1 of Table 9. As in Table 4, we include initial borrower X year and bank X year fixed effects and initial borrower-bank level control variables. We find that the interaction term has a negative coefficient of 3.1%, representing 36.9% of any bank lending a connected loan. In other words, when the initial borrower is in trouble, an existing banker of a related party with no connection to the initial borrower is 36.9% less likely to lend than a bank with an existing lending relationship with the initial borrower. The result strongly supports our thesis that bankers' incentives have a role to play in SIE transactions.

Third, by restricting the data to the initial borrower-related party banker-year level (or by leaving out the initial borrower's bankers from the previous specification), we ask whether the bad banks of the related party also show a higher tendency to lend connected loans when the initial borrower is in trouble. In terms of the above example, we only consider firm-bank pairs AB2 and AB4 as banks B2 and B4 have an existing relationship only with the related parties of the initial borrower A and not with A itself. The results reported in column 2 of Table 9 show that within the above sub-sample, low-quality banks are not more likely to fund a rescue of the initial borrowers. Thus, the SIE seems to result from an initial borrower's troubled bank trying to postpone default rather than a related party trying to save a firm using funding from its bad bank.

Fourth, there could be a concern that what appears to be a funding of SIE loans by insolvent initial borrowers' troubled bankers is, in fact, funding by related party's bankers. This can happen when there are common bankers for initial and subsequent borrowers. To address this concern, we restrict the sample used in Table 4 to banks that have an existing relationship only with the initial borrowers and not with any related party of the initial borrower and estimate the regression equation 1. We present the result in column 3 of Table 9. As before, the tendency of lending SIE loans is higher among low-quality banks, even in this sub-sample. Thus, SIE is driven by initial borrowers' troubled bankers. The result further strengthens the ever-greening argument.

For completion, in column 4, we restrict the sample to common bankers of the initial borrower and at least one of its related parties and estimate the regression equation. We find that the low-quality bankers of the initial borrower in trouble continue to show a higher tendency to lend to a related party of the troubled initial borrower even in this sub-sample.

Finally, we examine whether SIE and internal capital markets hypothesis of Gopalan, Nanda, and Seru (2007) are separate phenomena. We separately identify instances where (i) a related party (subsequent borrower) of an insolvent borrower borrows from a low quality bank of the insolvent borrower and passes on funds through related party transaction; and (ii) such a related party passes on funds to the insolvent initial borrower without borrowing from a low quality bank of the insolvent borrower. Notice that the first set of transactions represent SIE and the second set represent internal capital market transactions without SIE.

Using the hazard model set up used in Section IV.C, we test whether the chances of loan delinquency are different for the two types of transactions. We expect only the SIE loans to default more and not loans associated with internal capital market transactions. We report the results in Table 10. In columns 1 and 2 (3 and 4), we consider RPT outflows (total RPTs). We find that the SIE loans continue to have higher default rates whereas loans associated with only internal capital markets do not default more. Thus, SIE and internal capital markets appear to be separate phenomena.

V.B Arm's Length Loans

Given that the SIE loans are given to a healthy related party of an insolvent borrower based on new collateral, a reader may wonder whether these are normal arm's length loans that are made based on risk-reward calculations. We address the above concerns in two ways.

First, the results presented in Section IV.C show that the SIE loans have a higher delinquency rate than other loans. From a risk-reward point of view, a higher delinquency rate can be justified only when accompanied by a proportionately higher interest rate. The results presented in Section IV.D show that the interest cost of firms is lower in borrower-years having an SIE. Thus, SIE loans do not seem to offer high returns.

Second, arguments made in Section V.A regarding the type of bankers associated with the SIE help rule out the arm's length explanation as well. There is no reason to expect low-quality bankers of an insolvent borrower to show a higher tendency to lend arm's length loans.

V.C SIE Loans Are Profitable For Low Quality Banks

A possible reason for the low-quality bankers to engage in SIE is that such loans are more profitable for low-quality banks. Since low-quality banks have higher exposure to insolvent firms, to the extent SIE loans help improve loan repayment of insolvent firms and earn further returns from new loans, SIE loans may be more profitable for low-quality banks when compared to high-quality banks. We address the above concern in three ways.

First, notice that the results presented in Table 4 are robust to the inclusion of both initial borrower X year and lender X year fixed effects. Thus, given the same initial borrower-year, a low-quality bank is more likely to lend an SIE loan when compared to a high-quality bank. Thus, having a higher exposure to low-quality borrowers alone cannot explain SIE. Suppose SIE loans are profitable due to existing exposure to bad borrowers. In that case, even good banks should consider loans with common exposure with low-quality banks profitable and engage in SIE to the same extent.

Second, extending a new loan with the hope of recovering the old loan and the new one is a feature of evergreening and is not inconsistent with it. The historical experience suggests that trying to save a struggling old loan with a new loan eventually ends with higher default on both loans (Hoshi and Kashyap (2010)). Writing off the old loan or providing for it seems to be a more sensible strategy. Finally, as shown in Section IV.C, even the new loan does not seem profitable.

VI Motives Behind Indirect Evergreening

In the third part of the paper, we discuss the possible motivations behind indirect evergreening.

VI.A Window Dressing To Reduce The Chances of Detection

DE lets banks report better performance and reduces the need for additional capital to meet regulatory requirements. However, a regulator can still unearth this kind of evergreening by closely looking at borrowers' quality and their loan repayment track record with other banks. IE is different. Because the subsequent loan is made to a new (connected) borrower, even an inspection of borrower quality is unlikely to reveal much as long as the subsequent borrower appears healthy on books. Thus, IE achieves the purpose of evergreening at a reduced risk of detection. Therefore, a successful IE requires that the subsequent borrower appears healthier than the original borrower in trouble. Accordingly, the results presented in Table 4 show that SIE involves lending to healthy related parties of an insolvent borrower.

We test the ability of IE to window dress borrower quality by regressing the difference between the accounting variables of the subsequent and the initial borrowers on the SIE variable. We limit the sample to connected loans so that both the borrowers have a loan from the same bank. Note that the subsequent borrower appears as a borrower on the bank books for the new loan. Therefore, to the extent subsequent borrowers have better accounting fundamentals than initial borrowers, the bank will be able to show better health of its borrowers.

We report the results in Table 11. In columns 1 and 2, we consider the difference in interest coverage ratio and find that the difference between subsequent and initial borrowers is nearly 8 times. In columns 3 and 4, we find that the leverage ratio of subsequent borrowers is 4.8 percentage points lower than that of initial borrowers. In columns 5 and 6, we find that the return on assets is higher by 3.3 percentage points for the subsequent borrowers of the SIE loans. We include fixed effects at initial borrower, subsequent borrower, bank, and year levels.[10] The results suggest that the banks are able to not only show better strength of their balance sheets but also better borrower quality by resorting to SIE.

VI.A.1 Is Indirect Evergreening Difficult To Detect ?

We ask whether the window dressing of borrower quality shown above indeed reduces the regulators' chances of detection. Most studies on evergreening (Peek and Rosengren (2005); Caballero, Hoshi, and Kashyap (2008)) argue that the deliberate choice of the regulators to look the other way leads to its persistence. The regulators can detect evergreening and cleanup banks when they purposefully try to do so, usually, after a crisis has hit (Hoshi and Kashyap (2010)). Thus, it is hard to know whether the lack of detection of evergreening is deliberate or due to the regulator's inability to do so.

The central bank's AQR, mentioned in Section II, allows us to disentangle the regulator's ability and willingness to detect evergreening. The Indian bank regulator ordered a detailed AQR of all banks to know their "true" state of affairs. The auditors attempted

[10]We do not include related borrower X year fixed effects as in equation 1 due to lack of variation within an initial borrower year. Note that unlike in Table 4, the data are restricted to connected loans, so the sample size is significantly reduced.

to identify specific instances of evergreening of loans. Eventually, the central bank came out with its own assessment of the true level of banks' bad assets. It required the banks to disclose the divergence between the actual provisions created and the central banks' assessment. The AQR was first conducted in the year 2016 and continued after that. The exercise resulted in a more than 300% increase in declared nonperforming assets within three years. It is reasonable to assume that, at least during the period of AQR, the regulator was not looking the other way. Therefore, we can test whether the regulator can potentially detect and prevent indirect evergreening.

We start with a piece of anecdotal evidence. Two large private banks in India, Yes Bank and Lakshmi Vilas Bank, failed in 2019 and 2020, respectively. In Panels A (B) of figure 3, we plot the returns of a portfolio that is long on Yes Bank (Lakshmi Vilas Bank) and short on the National Stock Exchange bank index. The vertical line represents the beginning of the AQR. For about two years after the initiation of the AQR, the two bank stocks kept outperforming. It is only in the year 2018 when the economy started slowing, the two stocks started under-performing and eventually crashed to below 90% of their peaks. It appears that the banks kept accumulating undisclosed bad assets that remained undetected by the AQR.

We conduct a formal test of AQR's ability to detect direct and indirect evergreening. Organizing data at a bank-year level, we ask whether the difference in the provisions suggested by the AQR and numbers reported by the bank are related to our measures of direct and indirect evergreening. A significant positive association implies that the AQR exercise was able to detect evergreening, at least to some extent.

We restrict the data to the AQR years of 2016 to 2019. Unfortunately, we obtain only 85 bank-year observations where the divergence is disclosed. The banks are required to disclose the divergence only when the divergence in gross nonperforming assets or provisions is more than 15%. We do not know whether the divergence data is missing for these banks or the divergence is less than 15%. We present separate results assuming (i) missing data; (ii) 7.5% divergence; (iii) 15% divergence. The foreign banks were excluded from AQR, and hence, we limit the sample to domestic banks.[11] Given the low number of observations and persistence of divergence within banks, we do not include bank fixed effects. Within the above constraints, we estimate the following regression equation:

$$Y_{\mathrm{jt}} = \alpha + \beta_1 * Direct\_Ever_{jt} + \beta_2 * Indirect\_Ever_{jt} + \beta_3 * \theta_t + \epsilon_{jt} \quad (6)$$

The dependent variable is the divergence in provisions normalized by bank assets. $Direct\_Ever_{jt}$ ($Indirect\_Ever_{jt}$) is the proportion of a bank's assets directly (indirectly)

[11] Source:https://www.business-standard.com/article/beyond-business/the-war-against-npas-the-rbi-style-120103001484_1.html

evergreened. θ_t denotes year fixed effects. The adjusted standard errors are clustered at the bank level.

We present the results in Table 12. In column 1, we ignore observations with missing divergence data. The divergence detected by the central bank is positively associated with the proportion of direct evergreening. A one standard deviation increase in direct evergreening proportion is associated with an economically meaningful 10% of the ratio between provisions and total assets of the bank. The result shows that the central bank detected direct evergreening to some extent.

However, the coefficient relating to indirect evergreening is statistically indistinguishable from zero. The regulator seems unable to detect instances of indirect evergreening even after an AQR. In columns 2 and 3, we attribute 7.5% and 15% divergence, respectively, for missing values. The results continue to hold. In fact, we find a weak negative association between indirect evergreening and divergence. The result suggestively indicates that indirect evergreening is a more effective way of masking bad assets when compared to direct evergreening.

We then focus on prevention. We test and find that the SIE continued even after the AQR. We add a triple interaction term– Post AQR X Borrowers in Trouble X Poor Quality Bank– to regression equation 1. Post AQR is an indicator variable that takes the value of one for the AQR years. We present the results in Table A10 of the online appendix. The interaction between the indicator variables representing borrowers in trouble and poor quality banks continues to be positive and significant, and the triple interaction term is statistically indistinguishable from zero. The results indicate that the SIE continued even after the AQR.

The question of why can't the regulator adopt the same econometric approach that we have used to detect IE arises. It is hard to prove in a legal sense that the loan lent by the low-quality banker of the insolvent borrower to a related party of that borrower and the related party transfers between the insolvent borrower and its related party are a part of the same transaction chain. Banks may argue that their decision to lend the subsequent loan has nothing to do with the initial loan. The loan is given to the subsequent borrower based on the banks' assessment of the subsequent borrower. Also, banks cannot be held responsible for related party transactions between two borrowers. Commercial judgment on interest rates cannot be normally questioned. Therefore, it is hard for the regulators to adjudge SIE as indirect evergreening and ask banks to provide for them.

Further in Tables A11 and A12 of the online appendix, using an event study approach, we show that bank stocks do not react negatively when they lend SIE loans. However, given that banks make several loans along with SIE loans, it is hard to attribute stock price reaction only to SIE loans. In Table A13 of the online appendix, we show that a proportion of SIE loans is not associated with significant deposit outflows. The results suggestively indicate that the financial markets do not punish banks for engaging in SIE.

VI.B Post Retirement Career

Studies have shown that CEOs engage in earnings management to show good performance during their tenure to secure their post-retirement career (Brickley, Linck, and Coles (1999)). The fact that in government-owned banks the end of a CEO's tenure is determined solely by age in almost all cases provides us a good setting to test whether IE is driven by CEO career concerns (Sarkar, Subramanian, and Tantri (2019)). Due to the age-based retirement policy, the end of tenure is perfectly predictable.

We examine whether the SIE increases towards the end of the CEO tenure. We organize the data at a bank-year level and regress the proportion of loans evergreened by a bank on an indicator variable that takes the value of one for the second half of a bank CEO tenure. We limit the sample to government-owned banks. We present the results in Table A14 of the online appendix.

In columns 1 and 2, where we include bank and CEO fixed effects, we find a positive association between CEO tenure and SIE. The tendency to indirectly evergreen is higher by 2 percentage points in the second half of a bank CEO's tenure. In columns 3 and 4, we include bank and year fixed effects and find directionally similar results. However, the magnitude of the difference declines significantly. When we look at the data carefully, we find that more than 50% of the retirements are concentrated in 3 out of 10 years in our sample. Therefore, it is possible that the year fixed effects absorb a portion of the main effect due to the above concentration.

VI.C Circumventing De-Jure Restrictions

IE potentially allows banks to circumvent internal and external restrictions that make DE hard. For instance, the bank's internal policies may not allow lending to borrowers with poor fundamentals or may impose stringent procedural requirements, including approvals from multiple departments, for making such loans. In some cases, regulations may require banks to treat restructured loans as not standard and provide for them. Since IE involves lending to a new and healthy borrower based on fresh collateral, the above restrictions do not apply.

It should be noted that executing an IE has its own challenges. An insolvent initial borrower and a low-quality bank should be able to find a related party with a healthy balance sheet that is willing to act as a conduit for the SIE loan. Finding such a related party is difficult. Not surprisingly, we find far fewer cases of IE than DE in our data.

In fact, we find that IE is resorted to after the DE option is exercised in most cases. In results presented in Table A15 of the online appendix, we show that a related party of an already directly evergreened initial borrower in trouble has a higher chance of receiving a loan from a low-quality banker of the initial borrower in trouble. The coefficient of the triple interaction between $InitialBorrowerinTrouble$, $BadBank$, and

$DiectlyEvergrened$ is positive, with the connected loan being the dependent variable.

VII Macro Impact

VII.A Industry Level Macro Impact

A well-recognized impact of direct evergreening is the crowding out of credit and investments of the non evergreened sectors and firms (Caballero, Hoshi, and Kashyap (2008)) due to the persistence of zombie firms. Such persistence is fueled by the bank credit extended to zombies. We test whether the SIE also has a similar impact. We use the CMIE Prowess dataset to identify firms within an industry. We then ask whether the flow of credit and investment to productive firms get negatively impacted by estimating the following regression equation:

$$Y_{\text{it}} = \alpha + \beta_1 * Industry\_Exposure_{it} + \beta_2 * X_{it} + \beta_3 * \theta_i + \beta_4 * \gamma_t + \epsilon_{it} \tag{7}$$

Y_{it} represents outcomes such as total credit and investments at an industry year level. $Industry\_Exposure_{it}$ is the proportion of SIE loans out of total loans at the industry-year level. We consider the industry affiliation of the firms that receive credit in an indirect evergreening transaction to identify the industry impacted. X_{it} represent the weighted average return on assets and debt to equity ratio at the industry year level. θ_i stands for industry fixed effects and γ_t stands for year fixed effects.

We report the results in Table 13. In columns 1 and 2, the natural logarithm of total credit is the dependent variable. We find that industries with higher exposure to SIE receive a significantly higher credit. A one standard deviation increase in exposure to SIE leads to 11.9 percentage points increase in the flow of credit. In columns 3 and 4, we consider incremental investments in fixed assets. We find that industries more exposed to SIE invest significantly less. A one standard deviation increase in exposure to SIE leads to 3.2 percentage points decrease in the flow of credit. Thus, despite receiving a higher share of credit, firms in industries more exposed to indirect evergreening invest significantly less. The overall reduction in industry level investments also suggests that productive firms do not increase investments to make good the reduction in investments by the evergreened firms.

Finally, in columns 5 and 6, we consider the proportion of credit flowing to firms having high sales growth. We identify firms that are in the third tercile in terms of sales growth within an industry year prior to the year under consideration as high growth firms. We find that such firms in industries highly exposed to SIE see a significant decline in the flow of fresh credit. The result is in line with evergreening crowding out credit to more productive firms.

VII.B Bank Stock Crash

As shown in Table 6, a large number of subsequent loans of an indirect evergreening operation end up either in default or get restructured. We test whether, eventually, the equity markets recognize the problem of indirect evergreening as cases build up. We ask whether stocks of banks that build up significant evergreening assets eventually crash. As shown by Baron, Verner, and Xiong (2021), a crash of banking stocks has significant real consequences in terms of lending growth and investment growth of borrowers. Therefore, we look at bank stock price crashes.

We test whether indirect evergreening culminates into a subsequent stock price crash using the methodology introduced by Kim, Li, and Zhang (2011). It involves two steps. In the first step we estimate the bank-specific weekly returns for each bank week every year. The estimation involves running the following expanded market model regression:

$$r_{j,\tau} = \alpha_j + \beta_{1j} r_{m,\tau-2} + \beta_{2j} r_{m,\tau-1} + \beta_{3j} r_{m,\tau} + \beta_{4j} r_{m,\tau+1} + \beta_{5j} r_{m,\tau+2} + \epsilon_{j,\tau} \quad (8)$$

Where $r_{j,\tau}$ is the return on bank stock j in week τ and $r_{m,\tau}$ is the return on market-index in week τ. The lead and lag market return terms are included to allow for nonsynchronous trading. Then, the bank-specific weekly return, $W_{j,\tau}$ is estimated as $ln(1+\epsilon_{j,\tau})$. Next, we define crash weeks as the weeks in which bank-specific weekly returns are 3.2 standard deviations below the mean bank-specific weekly returns. The choice of 3.2 standard deviations ensures that this event is only 0.1% likely, assuming a normal distribution. The weekly crash measure is then aggregated to bank-year level by defining crash years as years in which there is at least one crash week.

In the second step we estimate the following regression to measure the association between direct and indirect evergreening exposures and one year ahead crash probability of bank stocks:

$$\text{Crash}_{j,t+1} = \alpha + \beta_1 \text{ Directevergreen}_{j,t} + \beta_2 \text{ Indirectevergreen}_{j,t} + \beta_3\theta_j + \beta_4\gamma_t + \epsilon_{j,t} \quad (9)$$

Where $Crash_{j,t+1}$ is an indicator which takes a value of 1 if bank stock j suffers a crash in at least 1 week of year t+1, 0 otherwise. Directevergreen (Indirectevergreen) is the total directly (indirectly) evergreened loans as a proportion of bank assets. θ_j (γ_t) stands for creditor (year) fixed effect.

We present the results in Table 14. The data are organized at the bank-year level. In columns 1 and 2, we use Bombay stock exchange (BSE) bank index as the measure market return, while in columns 3 and 4, we use National Stock Exchange bank index as the measure of the market return.[12] In columns 2 and 4 we run a horse race between direct evergreening and indirect evergreening. We also include creditor and year fixed effects in all the columns.

Indirect evergreening is economically and statistically significant across all specifications. A one standard deviation increase in indirect evergreening results in an economically significant 7.8% increase in the probability of a crash. This is about 50% of the unconditional crash probability of 14.8%. In contrast, direct evergreening exposure is statistically insignificant. The result suggests that a higher incidence of SIE is associated with an increased probability of bank stock crash in the subsequent year, which may have macro-economic consequences through a contraction in credit supply (Baron, Verner, and Xiong (2021)).

VIII Conclusion

In this paper, we study a set of transactions where a borrower in trouble is bailed out by one of its low-quality bankers through additional lending to one of its related parties. The related parties that receive the loan seem to pass on the loan to the intended original target through a web of related party transactions and the borrower in trouble uses the same to repay the initial loan, leading to the lower default rate of the initial loan.

However, as expected of an evergreening transaction, the subsequent loan is more likely to fail. Even the pattern of investments suggests that the set of transactions under study represent evergreening. Thus, we contribute to the literature by identifying what we call indirect evergreening. We proceed to show that indirect evergreening is distinct from the known ways of direct evergreening in that even a systematic audit by the regulator seem to be able to detect it. We also highlight firm-level and industry-level real consequences of indirect evergreening. We rule out several alternative explanations.

One significant limitation of our study is that we cannot explain why the borrowers, especially healthy subsequent borrowers, participate in the IE exercise. Our focus is on the incentives of banks. Several reasons could explain the participation of borrowers in the IE exercises. First, both the initial and subsequent borrowers may have a single controlling entity, and that controlling entity gains more by temporarily avoiding the default of the initial borrower even at the expense of the long-term health of the subsequent borrower. This is akin to the tunneling argument put forth by the business group literature. Second, as it happens in evergreening transactions, borrowers may falsely hope that initial borrower will recover during the next period, and hence, both the loans can be repaid. Third, borrowers could act under pressure from banks, governments, or reg-

[12]Bombay stock exchange and National Stock Exchange are two largest stock exchanges in India.

ulators who enjoy considerable power over them. There could be other reasons as well. Unfortunately, we cannot test any of the above borrower-side channels.

Our findings have significant policy implications. Most countries of the world follow the Basel norms in mandating minimum capital requirements for banks. Basel norms are based on low regulatory capital and additional contingent capital buffer to be used during bad times. Given the low level of capital required, the efficacy of the regulators in detecting and preventing risk-shifting behavior by the bankers becomes extremely crucial. Admati and Hellwig (2014) suggest that absent sufficient skin in the game in the form of enhanced capital, banks will find a way of deceiving the regulators due to the implicit taxpayer put on banks. Our findings echo their view. In fact, the regulators fail to detect indirect evergreening even after an ex-post audit. Expectedly, the practice seems rampant among low-quality banks, which are in spirit undercapitalized.

Significant restrictions on related party transactions either through regulations or through loan covenants could potentially curb IE. However, such a move could be socially counter-productive in emerging markets with weak external capital markets. The extant research has shown that internal capital markets play a significant role in ensuring the flow of capital to firms that are credit-constrained. Restrictions on working of the internal capital markets could therefore lead to a significant reduction in investments and employment. Thus the costs may outweigh the benefits of curbing IE.

Another way of addressing this issue is to enhance the regulatory toolkit to include more advanced warning signals and take timely action. However, there is always a possibility of banks finding newer and even harder to detect ways of evergreening of loans. If regulators are unable to step up their game, enhancing the true economic capital of banks significantly above the Basel norms might be required to prevent several creative ways of evergreening including the indirect evergreening pointed out in this paper.

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Figure 1: The Process of Indirect Evergreening

This figure depicts the process of indirect evergreening that we study in this paper.

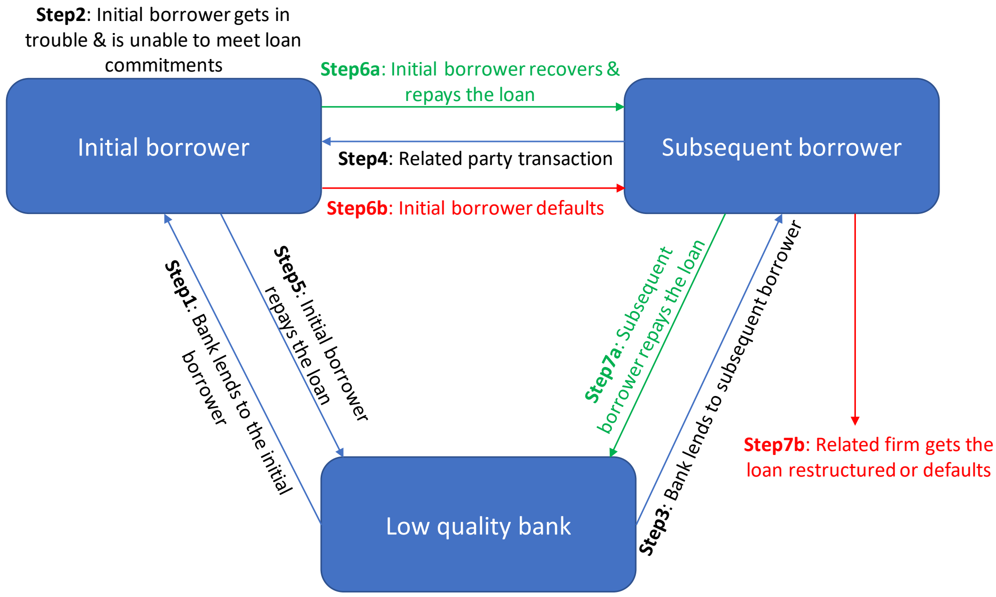
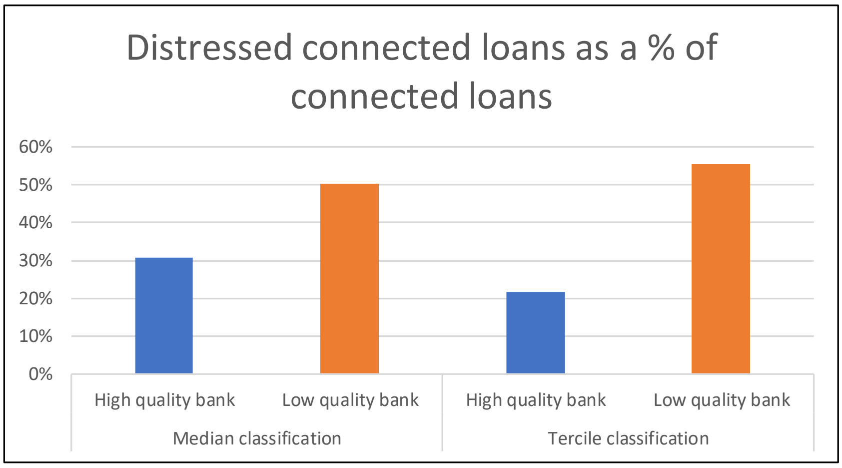


Figure 2: Lending by Good And Banks

This figure depicts the proportion, in terms of loan value, of lending to related parties of borrowers in trouble by the high and low-quality banks. The figure is based on 56,244 fresh loans for which full data are available. Orange (blue) bars represent low (high) quality banks. In panel A (B), we depict the proportion of loans to related parties of borrower's in trouble out of connected (all) loans. In the first two bars, banks above (below) the median in terms of the proportion of loans outstanding where the borrower's interest coverage is less than one are considered low (high) quality banks. In the next two bars, banks in the top (bottom) tercile in terms the proportion of loans outstanding where the borrower's interest coverage is less than one are considered low (high) quality banks.

Panel A



Panel B

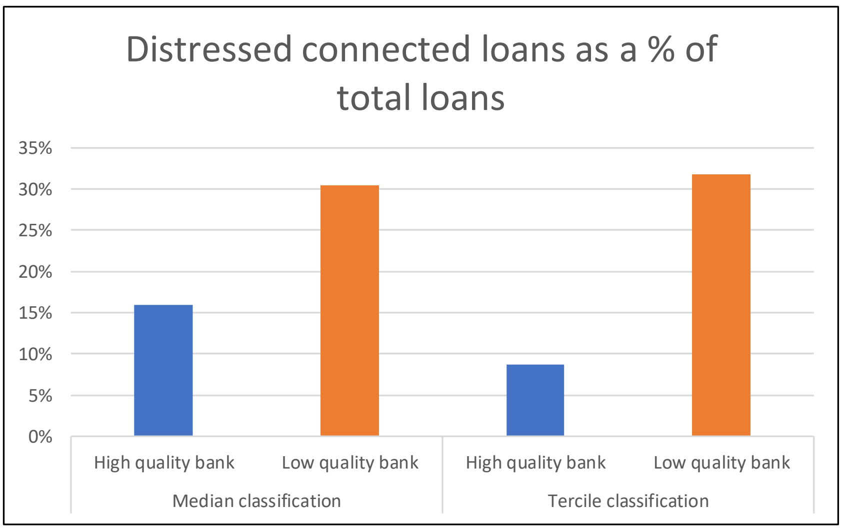
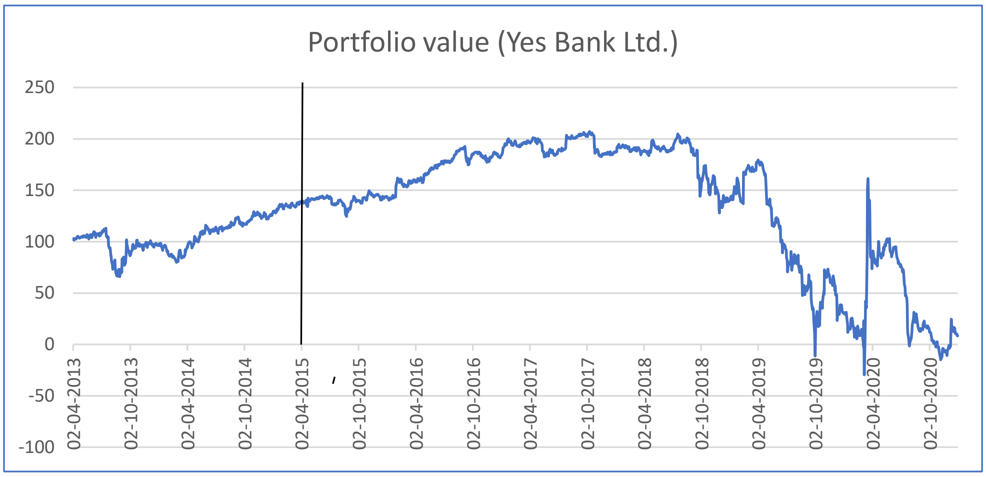


Figure 3: Two Failed Banks

The figures plot the movement of a portfolio long on one of the failed banks and short on the National Stock Exchange's bank index. We start with a notional INR.100. The horizontal axis depicts the dates and the vertical axis plots the value of the portfolio. The vertical line inside the figure represents the time of initiation of AQR.



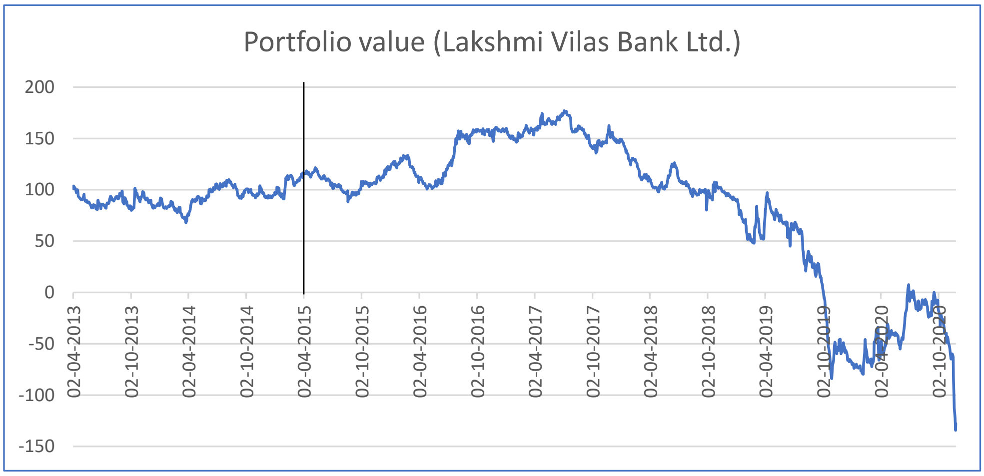


Table 1: Variable Definition

In this table, we define the key variables.

Key variables	**Definition**
Initial borrower	A firm having an existing relationship with a bank
Subsequent borrower	A related party of an initial borrower which receives a new loan from the initial borrower's bank during the sample period
Connected loan	It is a loan given by a bank to a firm (subsequent borrower) whose related party (initial borrower) has an existing loan from the same bank
Borrower in trouble	An indicator variable that takes a value of 1 if the interest coverage ratio (ICR) of a borrower is below one, and 0 otherwise
Exposure	It is the proportion of loans outstanding of a category of borrowers within the entire loan book.
Low-quality Bank	This indicator is 1 for banks with above median average exposure to firms with interest coverage less than one in the previous three years, 0 otherwise
Indirect evergreen indicator	This indicator is set to 1 if the following three conditions are met; (i) a (initial) borrower has an existing loan from a low-quality bank; (ii) the borrower is in trouble; and (iii) a related firm (subsequent borrower) of the borrower receives a new loan from the low-quality bank
Direct evergreen indicator	This indicator is set to 1 when a bank having an existing lending relationship grants a new loan to an initial borrower having interest cover ratio of less than one or when it restructures such a firm's loans

Table 2: Sample Construction

In this table, we report details about the sample used. The terms have been defined in Table 1

Firm (initial borrower) - Bank - Year level observations	
Sample period	2006-2020
Number of firm-bank-year level observations in MCA data	789,196
Number of new loans lent during the sample period	161,755
Number of firm-bank-year level observations in MCA data with available financial information of borrowers and banks in the Prowess database (Matched Data)	327,910
Number of unique initial borrowers in the matched dataset	21,314
Number of loans lent during the sample period covered by MCA and Prowess	56,244
Number of unique borrowers of new loans in the matched dataset	9,543
Number of unique lenders in the matched dataset	320
Number of unique banks in the matched dataset	55
Number of firm-bank-year observations where related firms (subsequent borrowers) receive connected loans	27,604
Number of connected loans in the matched dataset	23,046
Number unique subsequent borrowers in the matched dataset	5,782
Number of indirectly evergreened loans in the matched dataset	3,470
Number of directly evergreened loans in the matched dataset	6,874
Number of loans which ever defaulted in the matched dataset	1,931

Firm pair - year level observations	
Number of unique firms (initial borrowers) from MCA dataset (out of 21,314 borrowers) for which related party transaction (RPT) information is available	15,177
Number of firm pair - year observations available in RPT database corresponding to the matched dataset	390,305

"Firm - Year" level observations	
Number subsequent borrower-year level aggregated observations where there is a new loan	32,130
Number of subsequent borrower-year level aggregated observations for which investment data are available	24,548
Number of initial borrower-year level aggregated observations	143,019
Number of initial borrower-year level aggregated observations for which investment data is available	97,997

Table 3: Descriptive Statistics

In this table, we report the descriptive statistics relating to key variables.

Variables	**N**	**Median**	**Mean**	**Std dev**	**1 percentile**	**99 percentile**
Loan summary: Subsequent borrower - bank - year						
Loan Amount	56,244	350	1,384	7,305	1	16,295
Loan default	56,244	0	0.034	0.182	0	1
Connected loan indicator	56,244	0	0.409	0.492	0	1
Indirect evergreen indicator	47,390	0	0.073	0.260	0	1
Investment summary: Subsequent borrower - year						
Investment 1	24,548	79	1,257	22,592	0	18,857
Investment 2	24,174	104	1,015	6,353	0	16,411
RPT summary: Initial borrower - subsequent borrower - year						
RPT loans	390,304	0	290	90,814	0	524
RPT investments	390,304	0	487	205,979	0	250
RPT inflow	390,304	0	880	330,290	0	2,001
RPT total	390,304	0	2,036	407,705	0	5,166

Table 4: Connected Lending By Low Quality Banks

The table presents the results for the difference in lending of connected and non-connected loans by low- and high-quality banks. The data are organized at the initial borrower-bank-year level for the sample period 2006-2020. In columns 1 and 2 dependent variable is an indicator that takes a value of one for connected loans, 0 otherwise. In columns 3 and 4 (5 and 6) dependent variable is an indicator variable that takes the value one for connected loans to a subsequent borrower in trouble (connected loan to a healthy subsequent borrower) and zero otherwise. All terms have been defined in Table 1. We include fixed effects at initial borrower X year and the lender X year levels in all columns. Control variables included in columns 2, 4 and 6 are the age of banking relationships for the initial borrower-bank pair and the percentage of loan exposure of the bank towards the initial borrower. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	Connected Loan		Connected loan to subsequent borrower in trouble		Connected loan to healthy subsequent borrower	
Initial borrower in trouble*Low quality bank	0.012***	0.012***	0.003	0.003	0.008***	0.008***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Age of banking relationship of initial borrower		0.002***		0.001***		0.001***
		(0.000)		(0.000)		(0.000)
% of loan exposure of bank to the initial borrower		0.414***		0.102*		0.233**
		(0.155)		(0.057)		(0.091)
Observations	249,615	249,615	249,615	249,615	249,615	249,615
R-squared	0.372	0.373	0.346	0.346	0.349	0.349
Borrower X Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Lender X Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes

Table 5: Transfer of Funds Using Related Party Transaction

The table presents the association of related party transaction (RPT) transactions between pair of related firms and indirect evergreening. The data are arranged at the initial borrower – related party – year level for the sample period 2006-2020. The dependent variable in columns 1 and 2 (3 and 4) (5 and 6) is the natural logarithm of loans (investments) (total inflows) received by the initial borrower from a related party during the year. In columns 7 and 8, the total value of related party transactions between the two parties is the dependent variable. The indicator variable Indirect evergreen indicator is set to one when the two related parties are a part of an SIE transaction and zero otherwise. The specifications include initial borrower X year and related party X year fixed effects in all columns. We also include fixed effects for type of related parties in the even-numbered columns. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Dependent variables	(1) Log(RPT loans)	(2)	(3) Log(RPT investments)	(4)	(5) Log(RPT inflow)	(6)	(7) Log(RPT total)	(8)
Indirect evergreen indicator	0.330***	0.250***	0.172***	0.117**	0.454***	0.268***	0.515***	0.281***
	(0.062)	(0.058)	(0.057)	(0.052)	(0.104)	(0.087)	(0.111)	(0.087)
% RPT inflows from related borrower		1.371***		0.870***		3.551***		4.632***
		(0.091)		(0.051)		(0.087)		(0.076)
Observations	292,157	292,157	292,170	292,170	292,099	292,099	292,091	292,091
R-squared	0.529	0.587	0.494	0.531	0.634	0.748	0.685	0.821
Initial borrower X Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Related Party X Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Related party Type F.E.	No	Yes	No	Yes	No	Yes	No	Yes

Table 6: Loan Performance- New Loans

The table presents the results relating to the performance of loans borrowed by subsequent borrowers during the sample period 2006-2020. The data are organized at a borrower-bank level. For each loan, time to survival is recorded, which is measured as time to default for loans that default, and time till the loan is repaid or end of sample period for loans that do not default. Cox Hazard regression model is used to model the survival time analysis of the loans. The dependent variable is the hazard ratio, i.e. ratio of hazard rate of loans of interest to hazard rate of other loans. The independent variable 'Indirect evergreening indicator', as defined in Table 1. The independent variable, 'Connected loan from good bank', is set to one for connected loans from a good bank of the initial borrower in trouble. Column 2 controls for first time relationship indicator which is 1 if the firm is borrowing from the bank for the first time; and percentage loan exposure of the bank to the borrower. All columns include creditor fixed effects. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent variable	**Hazard ratio of loan default**			
Indirect evergreening indicator	1.543***	1.613***	1.531***	1.601***
	(0.228)	(0.239)	(0.226)	(0.237)
Connected loans from good bank			0.744*	0.765
			(0.133)	(0.137)
First time relationship indicator		0.919		0.918
		(0.191)		(0.190)
% Loan exposure to the borrower		0.000***		0.000***
		(0.000)		(0.000)
Observations	33,697	33,540	33,697	33,540
Lender F.E.	Yes	Yes	Yes	Yes

Table 7: Loan Performance- Initial Borrowers

The table presents the results relating to loan default by initial borrowers. The data are organized at an initial borrower-bank-year level. The dependent variable—Loan default—takes the value of one if the initial borrower defaults to a bank during the year or the subsequent year, and zero otherwise. Low ICR not evergreened, is an indicator variable set to one if the initial borrower has an ICR of less than one, but is neither directly evergreened, nor indirectly evergreened: otherwise, the variable takes the value of zero. The indirect evergreen indicator is as defined in Table 1. Control variables included in columns 3 and 4 are the age of banking relationships for the initial borrower-bank pair and the percentage of loan exposure of the bank towards the initial borrower. We include fixed effects at initial borrower X year and the lender X year levels in all columns. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent variable	Loan default			
Low ICR not evergreened	0.003**	0.004**	0.003*	0.004**
	(0.002)	(0.002)	(0.002)	(0.002)
Indirect evergreen indicator		0.002		0.002
		(0.003)		(0.003)
Age of banking relationship			-0.000	-0.000
			(0.000)	(0.000)
% Loan exposure of bank to the borrower			-0.007	-0.007
			(0.020)	(0.020)
Observations	249,615	249,615	249,615	249,615
R-squared	0.345	0.345	0.345	0.345
Initial borrower X Year F.E.	Yes	Yes	Yes	Yes
Lender X Year F.E.	Yes	Yes	Yes	Yes

Table 8: Interest Rates

The table presents the results for the difference in interest rates charged to the borrowers who are a part of an indirect evergreening transaction and others among the borrowers of new loans during our sample period. The data are organized at a borrower-year level for the sample period 2006 - 2020. The dependent variable is the estimated interest rates paid by a borrower during a year. The explanatory variable is an indicator that takes a value of 1 for indirect evergreened loans, 0 otherwise. Column 2 controls for size, leverage and ROA. Columns 3 and 4 shows the result for a subset of rated firms, and column 4 also includes a control which is an indicator variable that is 1 for below investment grade firms, 0 otherwise. We include fixed effects at the borrower and year level in all columns. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent Variable	Interest rate			
Indirect evergreen indicator	-2.756**	-2.464*	-4.128***	-4.014**
	(1.306)	(1.345)	(1.554)	(1.683)
Log Size		-2.597***		-2.490*
		(0.792)		(1.331)
Leverage		-12.577***		-14.209**
		(3.442)		(6.222)
ROA		1.245		2.304
		(0.874)		(4.200)
Low rating indicator				7.577***
				(1.883)
Observations	21,087	20,006	11,002	10,441
R-squared	0.376	0.381	0.397	0.400
Borrower F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes

Table 9: Connected Lending By Low Quality Banks- Both Initial and Subsequent Borrower' Bankers

The table presents the results for the variation in lending by low and high quality banks under different scenarios. The data are organized at a initial borrower-bank -year level in all columns. In column 1, we consider banks having a banking relationship with either the initial borrower or related parties of the initial borrower. In column 2, we consider only those banks that have a banking relationship with a related party of the initial borrower. In column 3, we consider only those banks that have banking relationship with only the initial borrower but not with any related party of the initial borrower. Finally, in column 4, we consider banks having a banking relationship with both the initial borrower and a related party of the initial borrower. The sample period is 2006-2020. The dependent variable- loan indicator- takes the value of one if the bank lends a loan to a related party of the initial borrower and zero otherwise. Related party banker is an indicator variable that takes the value of one if the bank under consideration has a existing banking relationship with any related party of the initial borrower and zero otherwise. All other terms have the same meaning as assigned to them in Table 4. Control variables include age of banking relationships for the initial borrower-bank pair, age of banking relationships for the related paty-bank pair, the percentage of loan exposure of the bank towards the initial borrower, and the percentage of loan exposure of the bank towards a related party. In situations where a bank deals with multiple related parties, we take the averages for the control variables. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent variable	Loan indicator			
Initial borrower in trouble*Related party Banker	-0.031***			
	(0.005)			
Related party Banker	0.376***			
	(0.004)			
Initial borrower in trouble*Low quality bank		0.004	0.028***	0.002*
		(0.003)	(0.008)	(0.001)
Age of banking relationship of initial borrower	0.002***		-0.001	0.000***
	(0.000)		(0.001)	(0.000)
% of loan exposure of bank to the initial borrower	0.699***		0.152***	0.067***
	(0.211)		(0.011)	(0.023)
Average age of banking relationship of a related borrower	-0.019***	-0.019***	-0.017***	0.001***
	(0.000)	(0.000)	(0.001)	(0.000)
Average % of loan exposure of bank to the related party	1.462***	1.519***	3.169***	0.572***
	(0.146)	(0.150)	(0.507)	(0.191)
Observations	854,400	562,304	73,176	249,615
R-squared	0.349	0.329	0.444	0.274
Borrower X Year F.E.	Yes	Yes	Yes	Yes
Creditor X Year F.E.	Yes	Yes	Yes	Yes

Table 10: Loan Performance SIE and Internal capital Markets

The table presents the performance of loans issued to subsequent borrowers when it is accompanied with RPT transfer to initial borrower. The data are organized at a borrower-bank level. For each loan, time to survival is recorded, which is measured as time to default for loans that default, and time till the loan is repaid or end of sample period for loans that do not default. Cox Hazard regression model is used to model the survival time analysis of the loans. The dependent variable is the hazard ratio, i.e. ratio of hazard rate of loans of interest to hazard rate of other loans. Independent variables in columns 1 and 2: (i) 'Indirect evergreening with RPT' – an indicator variable set to one when the borrower borrows under SIE and also records RPT outflow towards the troubled initial borrower, otherwise zero; and (ii) 'Loans from other banks with RPT' – an indicator variable set to one when subsequent borrower gets a loan from any bank excluding the evergreening (low quality bank of the initial borrower) bank, and there is an RPT outflow towards the related party. Independent variables in columns 3 and 4 are similar to ones used in columns 1 and 2, but they use total RPT instead of 'RPT outflow' together with the loan. Columns 2 and 4 use control variables similar to column 2 in Table 6. All columns use creditor fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	RPT outflow		RPT total	
Dependent variable	Hazard ratio of loan default			
Indirect evergreening with RPT	1.558*	1.603*	1.476*	1.520*
	(0.380)	(0.391)	(0.349)	(0.360)
Loans from other banks with RPT	0.999	1.007	1.071	1.078
	(0.100)	(0.101)	(0.109)	(0.109)
First time relationship indicator		1.151		1.163
		(0.392)		(0.396)
% Loan exposure to the borrower		0.000**		0.000**
		(0.000)		(0.000)
Observations	16,562	16,562	16,562	16,562
Lender F.E.	Yes	Yes	Yes	Yes

Table 11: Window Dressing of Bank Books

The table presents the differences between the characteristics of subsequent borrowers and initial borrowers for evergreened and non-evergreened connected loans. Here, the data are organized at the initial borrower-bank-year level for the sample of connected loans for the period 2006-2020. In columns (1) and (2) the dependent variable is the interest coverage ratio (ICR) for subsequent borrower minus ICR for the initial borrower. Similarly, the difference in leverage and return on assets (ROA) are used as the dependent variables in columns (3-4) and (5-6), respectively. The indirect evergreen indicator, as defined in Table 1, is used as the independent variable. The even-numbered columns include controls for the age of banking relationships for the initial borrower and the subsequent borrower; and the percentage of loan exposure of the bank towards the initial borrower. In case of multiple banks within an observations, we use the averages of the above variables. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variables	Difference in ICR		Difference in leverage		Difference in ROA	
Indirect evergreen indicator	7.935***	8.157***	-0.048***	-0.046***	0.033***	0.031***
	(0.776)	(0.960)	(0.008)	(0.009)	(0.002)	(0.003)
Age of banking relationship for initial borrower		-0.145*		0.001		-0.000***
		(0.078)		(0.000)		(0.000)
Age of banking relationship for subsequent borrower		0.134		-0.000		0.000
		(0.085)		(0.000)		(0.000)
% Loan exposure of the bank to the initial borrower		-19.283		-0.117***		-0.072**
		(16.377)		(0.041)		(0.028)
Observations	32,892	26,601	33,563	27,267	34,484	27,924
R-squared	0.648	0.667	0.803	0.808	0.710	0.715
Subsequent borrower F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Initial borrower F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Creditor F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes

Table 12: Detection of Ever-greening

The table presents the results of the association between the divergence between the central bank's estimate of actual provisions required and the provisions made by the banks and measures of evergreening. Each observation represents a bank-year. The data spans the post AQR years of 2016-19. The dependent variable is the divergence for the year expressed as a percentage of bank assets. The explanatory variables are direct evergreening as a proportion of bank assets, indirect evergreening as a proportion of bank assets; and an indicator variable that takes the value of one for government-owned banks and zero otherwise. We include year fixed effects in all columns. In column 1, we consider only those bank-year observations where we have information about divergence. In column 2 (3), we assume the missing divergence to be 7.5% (15%). The standard errors reported in parentheses are robust and adjusted for clustering at the bank level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Dependent variable	Provisioning Divergence		
Direct evergreening	0.033*	0.040**	0.037**
	(0.017)	(0.016)	(0.015)
Indirect evergreening	-0.006	-0.010**	-0.009*
	(0.007)	(0.005)	(0.005)
Government owned bank	-0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
Observations	85	152	152
R-squared	0.226	0.248	0.222
Year F.E.	Yes	Yes	Yes

Table 13: THE MACRO IMPACT

The table shows the association of various outcomes at industry-year level with the industry indirect evergreening exposure. The data is at industry-year level for the sample period 2006-2020. The dependent variables include – 1) log of total credit inflow in columns 1 and 2; 3) log of gross fixed asset investment in columns 3 and 4; and 3) proportion of credit flow within the industry that goes to high sales growth firms measured as firms in the top tercile in terms of sales growth in the year in columns 5 and 6. The explanatory variables include indirect evergreening exposure of the industry measured as cumulative evergreen loans to the industry in the year as a proportion cumulated total loans to all firms in the industry. The controls in the even numbered columns include average leverage of the industry and average profitability (ROA) of the industry. These measures weighted using the value of assets. We include industry and year fixed effects in all columns. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variables	Log(credit)		Log(gross fixed asset investment)		Proportion credit flow to high sales growth firms	
Indirect evergreening exposure	0.908***	0.903***	-0.248***	-0.246***	-0.040*	-0.039*
	(0.280)	(0.280)	(0.1)	(0.099)	(0.023)	(0.023)
Industry average leverage		0.025		-0.014*		0.002
		(0.025)		(0.017)		(0.004)
Industry average ROA		0.220		0.209		0.195***
		(0.205)		(0.213)		(0.060)
Observations	8,244	8,004	9,352	9,254	8,243	8,003
R-squared	0.752	0.753	0.824	0.823	0.179	0.18
Industry F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes

Table 14: The Stock Price Crash

The table presents the results of association between indirect evergreening and probability of bank stock crash in the next year. The data are organized at a bank-year level for the sample period of 2006-2020. The dependent variable, crash is an indicator variable that takes the value of one if the bank-specific return in any week of the corresponding year is 3.2 standard deviation below the mean bank-specific return in that week, zero otherwise. The explanatory variables are direct evergreening as a proportion of bank assets, indirect evergreening as a proportion of bank assets. We include lender and year fixed effects in all columns. Columns 1 and 2 (3 and 4) use BSE bank (NIFTY bank) index return for the market model used to estimate bank-specific return. The standard errors reported in parentheses are robust and adjusted for clustering at the creditor level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Bench Mark	BSE Bank Index		NSE Bank Index	
Dependent variable	Crash indicator			
Direct evegreening		-0.177		-0.039
		-0.723		(0.867)
Indirect evegreening	0.523***	0.573**	0.600***	0.611***
	(0.123)	(0.26)	(0.165)	(0.203)
Constant	0.101***	0.107***	0.120***	0.122***
	(0.007)	(0.022)	(0.009)	(0.033)
Observations	553	553	553	553
R-squared	0.135	0.135	0.148	0.148
Creditor F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes

Internet Appendix

Figure A1: Change in Status of Banks

The figure shows the frequency distribution of number of status changes of the banks from good to bad quality, or vice versa during 2006-20. The y-axis in the figure represents the count of banks, while x-axis represents count of bank quality changes.

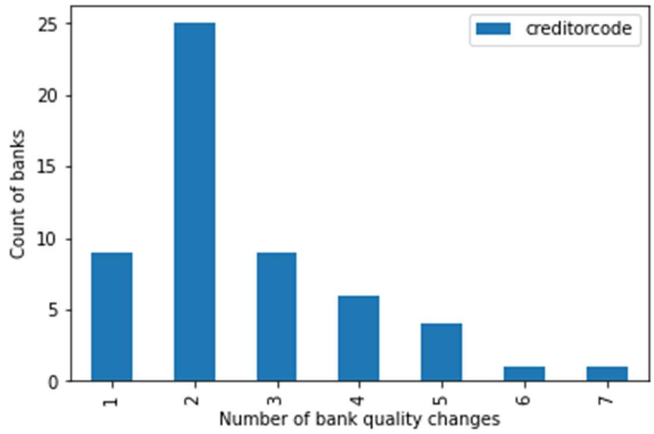


Table A1: Capital Adequacy And Borrower Quality

The table presents the results for the difference in capital adequacy and exposure to troubled borrowers of the banks in the post global financial crisis (GFC) versus pre GFC period. The data are organized at bank - year level for the sample period 2006 - 2011. The dependent variable in column 1 is a bank's exposure to troubled borrowers in that year. The capital adequacy ratio is the dependent variable in column 2. The explanatory variable post is an indicator that takes a value of 1 after 2008, 0 otherwise . We include fixed effects at the creditor level in all columns. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***,**, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Dependent Variable	Proportion of ICR below 1	Capital adequacy
Post GFC	0.031***	1.656***
	(0.011)	(0.393)
Constant	0.086***	13.122***
	(0.005)	(0.198)
Observations	324	303
R-squared	0.658	0.704
Creditor F.E.	Yes	Yes

Table A2: Connected Lending-Robustness Using The Continuous Measure

The table presents the results for the difference in lending of connected and non-connected loans by low- and high-quality banks. Here, the data are organized at the initial borrower-bank-year level for the sample period 2006-2020. In columns 3 and 4, the data are restricted to troubled initial borrower. The dependent variable is an indicator that takes a value of 1 for connected loans, 0 otherwise. The explanatory variable in columns 1 and 2 (3 and 4) is an interaction between low quality bank and ICR of the initial borrower (low quality bank indicator). All terms have been defined in Table 1. We include fixed effects at initial borrower X year and lender X year levels in columns 1 and 2, while at initial borrower X year level in columns 3 and 4. Control variables included in columns 2 and 4 are the age of banking relationships for the initial borrower-bank pair and the percentage of loan exposure of the bank towards the initial borrower. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent Varible	Connected loan indicator			
Low quality bank*ICR of initial borrower	-0.0003**	-0.0003**		
	(0.0002)	(0.0002)		
Low quality bank			0.0061**	0.0059**
			(0.0027)	(0.0027)
Age of banking relationship of initial borrower		0.0022***		0.0018***
		(0.0002)		(0.0004)
% of loan exposure of bank to the initial borrower		0.4017**		-0.0844
		(0.1617)		(0.0818)
Observations	249,609	249,609	51,952	51,952
R-squared	0.3728	0.3740	0.3765	0.3772
Initial borrower X Year F.E.	Yes	Yes	Yes	Yes
Lender X Year F.E.	Yes	Yes	No	No

Table A3: Comparison of Loan Size

The table presents the comparison between the connected loans received by the subsequent borrower and the RPT loans received by initial borrower (total RPTs of initial borrowers) in Panel A (Panel B), for all the connected loans. We tabulate the mean of the RPT variables and the connected loan to subsequent borrowers separately for evergreened loans and non-evergreened loans in both the panels.

Panel A

	Obs	Bank Loans	RPT loans	Differences in mean	t stat
Evergreened Loans	2,624	9,754.5	5,767.7	2,336.5	0.4
Connected but not evergreened Loans	13,266	5,476.8	740.0	4,736.7	25.0

Panel B

	Obs	bank Loans	Total RPTs	Differences in mean	t stat
Evergreened Loans	2,624	9,754.5	18,213.1	8,638.5	0.9
Connected but not evergreened Loans	13,266	5,476.8	10,324.6	4,847.8	1.6

Table A4: Investments By Borrowers of New Loans

The table presents the results for the difference in investments by the borrowers of new loans who are a part of an indirect evergreening transaction and others among the borrowers of new loans during our sample period. Panel A(B) includes a sample of all new loan borrowers (new loan borrowers having data on interest coverage ratio in Prowess) during our sample period. The data are organized at a borrower-year level for the sample period 2006 - 2020. The dependent variable is the natural logarithm of additional investment in fixed assets as recorded by the Prowess database (cash outflow due to investment activity) in columns 1 and 2 (3 and 4). We control for the subsequent borrower's size, leverage, and profitability in columns 2 and 4. We include fixed effects at the related borrower and year level in all columns. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Panel A				
	(1)	(2)	(3)	(4)
Dependent variables	Log (Fixed asset investment)		Log(Investment cash flow)	
Indirect evergreen indicator	-0.145***	-0.158***	-0.172***	-0.182***
	(0.048)	(0.048)	(0.043)	(0.044)
Log(size)		0.567***		0.429***
		(0.031)		(0.041)
Leverage		-0.467***		-0.851***
		(0.138)		(0.230)
ROA		0.386**		0.393
		(0.185)		(0.304)
Observations	31,645	28,881	28,504	26,214
R-squared	0.747	0.765	0.770	0.785
Related borrower F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
Panel B				
Indirect evergreen indicator	-0.144***	-0.165***	-0.173***	-0.189***
	(0.046)	(0.047)	(0.045)	(0.045)
Log(size)		0.639***		0.511***
		(0.042)		(0.047)
Leverage		-0.431**		-0.790***
		(0.184)		(0.286)
ROA		0.341**		0.348
		(0.165)		(0.292)
Observations	17,603	17,323	17,856	17,567
R-squared	0.748	0.760	0.769	0.779
Related borrower F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes

Table A5: Investments By Initial Borrowers

The table presents the results for the difference in investments by the initial borrowers between evergreened and other loans. The data are organized at an initial borrower - year level for the sample period 2006 - 2020. The dependent variable is the natural logarithm of additional investment in fixed assets as recorded by the Prowess database (cash outflow due to investment activity) in columns 1 and 2 (3 and 4). We control for the initial borrower's size, leverage, and profitability in columns 2 and 4. We include fixed effects at the initial borrower and year level in all columns. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent variables	Log (Fixed asset investment)		Log(Investment cash flow)	
Indirect evergreen indicator	-0.308***	-0.297***	-0.489***	-0.474***
	(0.057)	(0.056)	(0.061)	(0.062)
Log(size)		0.763***		0.888**
		(0.286)		(0.425)
Leverage		-0.087		-0.147**
		(0.054)		(0.067)
ROA		0.521***		0.421***
		(0.020)		(0.023)
Observations	95,244	91,989	81,296	84,402
R-squared	0.750	0.758	0.784	0.777
Initial borrower F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes

Table A6: Connected Lending By Low Quality Banks-Volume

The table presents the results for the difference in lending of connected and non-connected loans by low- and high-quality banks. Here, the data are organized at the initial borrower-bank-year level for the sample period 2006-2020. The dependent variable is the natural logarithm of the loan amount for connected loans and zero otherwise. The explanatory variable in columns 1 and 2 (3 and 4) is an interaction between low quality bank and initial borrower in trouble indicators (low quality bank indicator). All terms have been defined in Table 1. We include fixed effects at initial borrower X year and lender X year levels in columns 1 and 2, and at initial borrower X year level in columns 3 and 4. Control variables included in columns (2) and (4) are age of banking relationships for the initial borrower-bank pair and the percentage of loan exposure of the bank towards the initial borrower. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent Variable	Log(Connected loan)			
Initial borrower in trouble * Low quality bank	0.104***	0.101***		
	(0.021)	(0.021)		
Low quality bank			0.068***	0.066***
			(0.019)	(0.019)
Age of banking relationship of initial borrower		0.015***		0.014***
		(0.002)		(0.003)
% of loan exposure of bank to the initial borrower		3.028***		-0.569
		(1.142)		(0.690)
Observations	249,615	249,615	51,952	51,952
R-squared	0.381	0.382	0.385	0.386
Initial borrower X Year F.E.	Yes	Yes	Yes	Yes
Lender X Year F.E.	Yes	Yes	No	No

Table A7: Connected Lending- Alternative Definitions

The table presents the results for the difference in lending of connected and non-connected loans by low- and high-quality banks for various definitions of bad firms. Columns 1 and 2 define bad firms as firms with above-median leverage and less than one interest coverage ratio, columns 3 and 4 define bad firms as firms with negative net worth, and columns 5 and 6 define bad firms as firms with below-median sales growth and less than one interest coverage ratio. Here, the data are organized at the initial borrower bank-year level for the sample period 2006-2020. The dependent variable is an indicator variable that takes the value one for connected loans and zero otherwise. The explanatory variables include bad firm indicator and bad bank indicator defined as above median exposure to bad firms. We include fixed effects at initial borrower X year and the lender X year levels in all columns. Control variables included in even numbered columns are: age of banking relationships for the initial borrower-bank pair and the percentage of loan exposure of the bank towards the initial borrower. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	High leverage-low ICR		Negative net worth		Low sales growth-low ICR	
Dependent variable	Connected loan indicator					
Initial borrower in trouble*Low quality bank	0.008***	0.008***	0.011***	0.010***	0.011**	0.011**
	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
Age of banking relationship of initial borrower		0.002***		0.002***		0.002***
		(0.000)		(0.000)		(0.000)
% of loan exposure of bank to the initial borrower		0.406**		0.417***		0.423**
		(0.166)		(0.158)		(0.173)
Observations	243,704	243,704	249,580	249,580	220,703	220,703
R-squared	0.372	0.373	0.372	0.373	0.375	0.376
Initial borrower X Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Lender X Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes

Table A8: RPTs and Investments- Alternative Definitions

The table presents the association of related party transaction (RPT) transactions between pair of related firms. The data are arranged at the initial borrower related party year level (related borrower-year level) for the sample period 2006-2020 for columns 1, 3, and 5 (2, 4, and 6). Columns 1 and 2 (3 and 4) (5 and 6) define bad firms as above median leverage and below 1 ICR (negative net worth) (below median sales and below 1 ICR). The dependent variable in columns 1, 3, and 5 (2, 4, and 6) is the natural logarithm of total RPT (natural logarithm of gross fixed asset investments). The controls included in columns 1,3, and 5 (2, 4, and 6) are the strength of relatedness measured as the percentage of related party inflows from the related borrower (log of assets, leverage, and profitability measured as ROA). The indicator variable Indirect evergreen indicator is set to one when the two related parties are a part of an indirect evergreening transaction and zero otherwise. The specifications included in columns 1, 3, and 5 (2, 4, and 6) are initial borrower X year, related party X year, and related party type fixed effects (related borrower and year fixed effects) in all columns. We also include fixed effects for type of related parties in even-numbered columns. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	High leverage - low ICR		Negative networth		Low sales growth-low ICR	
Dependent variables	Log(total RPT)	Log(gross fixed asset investment)	Log(total RPT)	Log(gross fixed asset investment)	Log(total RPT)	Log(gross fixed asset investment)
Indirect evergreen indicator	0.408***	-0.241***	0.268*	-0.135*	0.572***	-0.191***
	(0.134)	(0.061)	(0.160)	(0.075)	(0.142)	(0.060)
% RPT inflows from related borrower	4.632***		4.632***		4.632***	
	(0.076)		(0.076)		(0.076)	
Log size		0.570***		0.551***		0.554***
		(0.032)		(0.030)		(0.033)
Leverage		-0.469***		-0.515***		-0.502***
		(0.129)		(0.140)		(0.138)
ROA		0.383**		0.418**		0.384**
		(0.183)		(0.202)		(0.191)
Observations	292,091	28,566	292,091	33,044	292,091	27,460
R-squared	0.821	0.765	0.821	0.758	0.821	0.766
Related Borrower F.E.	No	Yes	No	Yes	No	Yes
Year F.E.	No	Yes	No	Yes	No	Yes
Related party type F.E.	Yes	No	Yes	No	Yes	No
Initial Borrower X Year F.E.	Yes	No	Yes	No	Yes	No
Related party X Year F.E.	Yes	No	Yes	No	Yes	No

Table A9: Comparison Between Different Type of Borrowers

The table presents the comparison between borrowers who are a part of indirect evergreening and others. In columns 1,2,3, we organize data at a subsequent borrower-loan level and in columns 4, 5, and 6, at the initial borrower-loan level. We use lagged interest coverage ratio, lagged return on assets, and lagged natural logarithm of sales as the dependent variables in columns 1 and 4, 3 and 5, and 4 and 6, respectively. All other terms are as defined in Table 1. We include borrower and year fixed effects in all columns. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Related borrowers of evergreened loans versus Related borrowers of non-evergreened loans			Initial borrowers of evergreened loans versus Related borrowers of non-evergreened loans		
Dependent variables	Lagged RoA	Lagged leverage	Lagged log sales	Lagged RoA	Lagged leverage	Lagged log sales
Indirect evergreen indicator	-0.158	0.000	-0.001	-2.177***	-0.015***	-0.157***
	(0.329)	(0.004)	(0.018)	(0.319)	(0.006)	(0.038)
Observations	67,303	72,317	62,040	67,687	72,657	62,384
R-squared	0.598	0.304	0.926	0.600	0.307	0.919
Borrower FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table A10: Prevention Post AQR

The table presents the results for divergence in lending of connected and non-connected loans by low- and high-quality banks. Here, the data are organized at the initial borrower-bank-year level for the sample period 2006-2020. The dependent variable is an indicator variable that takes the value one for connected loans and zero otherwise. Post is a dummy variable that takes the value one for years after 2015 and zero otherwise. All other terms have been defined in Table 1. We include fixed effects at initial borrower x year and the lender x year levels in all columns. Control variables included in columns (2) and (4) are: age of banking relationships for the initial borrower-bank pair and the percentage of loan exposure of the bank towards the initial borrower. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent variable	Connected loan indicator			
Initial borrower in trouble*Low quality bank	0.012***	0.012***	0.014***	0.013***
	(0.003)	(0.003)	(0.004)	(0.004)
Post*Initial borrower in trouble*Low quality bank			-0.006	-0.005
			(0.007)	(0.007)
Age of banking relationship of initial borrower		0.002***		0.002***
		(0.000)		(0.000)
% of loan exposure of bank to the initial borrower		0.414***		0.414***
		(0.155)		(0.155)
Constant	0.090***	0.073***	0.090***	0.073***
	(0.000)	(0.002)	(0.000)	(0.002)
Observations	249,615	249,615	249,615	249,615
R-squared	0.372	0.373	0.372	0.373
Initial borrower X Year F.E.	Yes	Yes	Yes	Yes
Lender X Year F.E.	Yes	Yes	Yes	Yes

Table A11: Market Reaction

The table presents the results relating to market reaction to evergreening. In columns 1 and 2, the data includes all new loans and loans issued as a part of loan restructuring. In columns 3 and 4, we include only new loans. The excess return of the bank stock over the benchmark index (Nifty bank index) over three days around the date of a loan is the dependent variable. The terms direct and indirect evergreen indicators have the same meaning as defined in Table 1. In column 2 (4) we include the interaction between post AQR indicator (1 for years after 2015, 0 otherwise) and the direct (indirect) evergreen indicator. We include lender and year fixed effects in all columns. The standard errors reported in parentheses are robust and adjusted for clustering at the bank level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent variable	Cumulative three day excess return			
Direct evergreen indicator	0.012	0.008		
	(0.044)	(0.047)		
Indirect evergreen indicator			0.06	0.062
			(0.053)	(0.081)
Post*Direct evergreen indicator		0.012		
		(0.079)		
Post*Indirect evergreen indicator				-0.006
				(0.086)
Observations	71,358	71,358	56,919	56,919
R-squared	0.003	0.003	0.003	0.003
Lender F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes

Table A12: Market Reaction Large Loans

The table presents the results relating to market reaction to evergreening of bigger ticket sized loans. In panel A (B) we only include loan amounts or restructuring amounts that are at least 0.1% (0.2%) of the one-year lagged asset size of the bank. In columns 1 and 2, the data includes all new loans and loans issued as a part of loan restructuring. In columns 3 and 4, we include only new loans. The excess return of the bank stock over the benchmark index (Nifty bank index) over three days around the date of a loan is the dependent variable. The terms direct and indirect evergreen indicators have the same meaning as defined in Table 1. In column 2 (4) we include the interaction between the post indicator (1 for years after 2015, 0 otherwise) and the direct (indirect) evergreen indicator. We include lender and year fixed effects in all columns. The standard errors reported in parentheses are robust and adjusted for clustering at the bank level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Panel A				
Loan to Bank's previous year's asset ratio > 0.1%				
	(1)	(2)	(3)	(4)
Dependent variable	Cumulative three day excess return			
Direct evergreen indicator	-0.031	-0.035		
	(0.052)	(0.061)		
Indirect evergreen indicator			-0.069	-0.044
			(0.116)	(0.132)
Post*Direct evergreen indicator		0.018		-0.092
		(0.113)		(0.121)
Post*Indirect evergreen indicator				
Observations	18,773	18,773	15,008	15,008
R-squared	0.006	0.006	0.006	0.006
Lender F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
Panel B				
Loan to Bank's previous year's asset ratio > 0.2%				
	(1)	(2)	(3)	(4)
Dependent variable	Cumulative three day excess return			
Direct evergreen indicator	0.076	0.072		
	(0.063)	(0.081)		
Indirect evergreen indicator			0.016	0.025
			(0.143)	(0.140)
Post*Direct evergreen indicator		0.019		-0.034
		(0.169)		(0.250)
Post*Indirect evergreen indicator				
Observations	10,984	10,984	8,828	8,828
R-squared	0.012	0.012	0.009	0.008
Lender F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes

Table A13: Deposits and Evergreening

The table presents the association between deposits and evergreening. The data are at a bank year level. The dependent variable is the natural logarithm of deposits of the bank in a year. The explanatory variables are direct evergreening as a proportion of bank assets and indirect evergreening as a proportion of bank assets. Controls include an indicator for high gross nonperforming assets (GNPA) of the bank which is set to one if the bank has higher than median value for average GNPA in the previous three years; and indicator for high capital adequacy of bank which is set to one if the bank has higher than median value for average capital adequacy in the previous three years. We include bank and year fixed effects. The standard errors reported in parentheses are robust and adjusted for clustering at the bank level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Dependent variable	Log(Deposit)	
Direct evergreening	-2.076*	-1.475
	(1.078)	(1.139)
Indirect evergreening	0.835	0.737
	(0.613)	(0.552)
Indicator for high GNPA of bank		-0.209***
		(0.065)
Indicator for high capital adequacy of bank		0.034
		(0.048)
Observations	746	745
R-squared	0.966	0.969
Creditor F.E.	Yes	Yes
Year F.E.	Yes	Yes

Table A14: CEO Tenure and Evergreening

The table presents the association between indirect evergreening of loans and the CEOs years of service. Here the data are organized at a bank-year level for the period 2006 to 2020. The data are restricted to government owned banks. The dependent variable evergreen exposure is the ratio of cumulative loan amount (starting from 2006) that has been indirectly evergreened to the assets of the bank, and the independent variable is an indicator which takes a value of 1 if the CEO is in second half of the tenure. Columns (1) and (2) include the bank and CEO fixed effects, whereas columns (3) and (4) include bank and year fixed effects. The even numbered columns include controls variables. The indicator for high GNPA is set to one if the bank has higher than median value of average GNPA (Gross NPA ratio) in the past three years; and the indicator for high capital adequacy, which is set to one if the bank has higher than median value of average capital adequacy in the last three years. The standard errors reported in parentheses are robust and adjusted for clustering at the creditor level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent variables	Cumulative evergreened loans as a proportion of assets			
Tenure second half indicator	0.020***	0.021***	0.003**	0.004**
	(0.004)	(0.004)	(0.002)	(0.002)
High gnpa indicator		-0.003		-0.012
		(0.006)		(0.009)
High capital adequacy indicator		-0.002		0.003
		(0.016)		(0.014)
Observations	227	227	261	261
R-squared	0.964	0.964	0.856	0.858
Creditor F.E.	Yes	Yes	Yes	Yes
Year F.E.	No	No	Yes	Yes
CEO F.E.	Yes	Yes	No	No

Table A15: DE and IE- Complements Or Substitutes?

The table presents the results for the difference in lending of connected and non-connected loans by low- and high-quality banks. Here, the data are organized at the initial borrower-bank-year level for the sample period 2006-2020. The dependent variable is an indicator that takes a value of 1 for connected loans, 0 otherwise. The explanatory variable of interest is a triple interaction between initial borrower in trouble indicator, low quality bank indicator and direct evergreening which is an indicator variables. All other terms have been defined in Table 1. We include fixed effects at initial borrower X year and the lender X year levels in all columns. Control variables included in column 2 are the age of banking relationships for the initial borrower-bank pair and the percentage of loan exposure of the bank towards the initial borrower. The standard errors reported in parentheses are robust and adjusted for clustering at the industry level. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Dependent Variable	Connected loan	
Initial borrower in trouble*Low quality bank	0.009***	0.007**
	(0.003)	(0.003)
Direct evergreening	0.059***	0.044***
	(0.006)	(0.006)
Initial borrower in trouble*Direct evergreening	-0.034***	-0.027***
	(0.011)	(0.011)
Low quality bank*Direct evergreening	-0.008	-0.009
	(0.008)	(0.008)
Initial borrower in trouble*Low quality bank*Direct evergreening	0.021**	0.022**
	(0.010)	(0.010)
Age of banking relationship of initial borrower		0.002***
		(0.000)
% of loan exposure of bank to the initial borrower		0.083***
		(0.004)
Observations	249,615	249,615
R-squared	0.373	0.378
Initial borrower X Year F.E.	Yes	Yes
Lender X Year F.E.	Yes	Yes

A Related Party Definition

Table A16: Related Party Definition

The term related party under section 2(76) of the Companies Act includes the following relationships.

Categories of 'related parties' as defined in section 2(76) of Companies Act of 2013.
A director or his relative, key management personnel or his relative, or any individual having significant influence over the company.
A firm, in which a director, manager or his relative is a partner.
A private company, in which a director or manager or his relative is a member or director.
A public company in which a director or manager is a director and holds along with his relatives, more than two per cent of its paid-up share capital.
A company whose Board of Directors, managing director, or manager is accustomed to act in accordance with the advice, directions or instructions of a director or manager.
A company which is a holding, subsidiary or an associate company of such company.
A company which is a subsidiary of a holding company to which it is also a subsidiary.
A company which is an investing company or the venturer of the company.

B Reconciliation

Table A17: Reconciliation Part One

Sample Period: 2006 to 2020	
Table 4 & 7: Connected lending by low quality banks and loan performance by initial borrowers	
Number of firm-bank-year level observation in MCA data with available financial information of borrowers and banks in the Prowess database (Matched Data)	327,910
Number of Bank-firm-year observations from matched data after "firm X year" and "bank X year" Fixed effects	249,615
Table 5: RPT regressions	
Number of firm pair - year observations available in RPT database in CMIE	636,808
Number of firm pair - year observations available in RPT database, where the RPT receiving firm is available in MCA dataset	390,305
Number of firm pair - year observations after "borrower X year" and "RPT firm X year" fixed effects	292,170
Table 6: Loan performance of subsequent borrowers	
Number of loans (related borrower-lender-years) given in the sample period	161,755
Number of related borrower-lender-years with indirect evergreening information in the sample period	105,971
Number of firm pair - year observations after "related borrower X year" and "lender X year" fixed effects	53,954
Table A4: Subsequent borrower investment	
Number of loans (related borrower-lender-years) given in the sample period	161,755
Number of related related borrower-years with indirect evergreening information	68,637
Number of related related borrower-years with indirect evergreening and investment information	37,211
Number of related borrower - year observations after "related borrower" and "year" fixed effects	31,654

Table A18: Reconciliation Part Two

Sample Period: 2006 to 2020	
Table A11: Event study regression	
Number of new loans and loan restructurings by listed banks with either ICR information or restructuring	71,358
Number of new loans by listed banks with evergreening information	56,919
Table 11: Window dressing: "Subsequent borrower - initial borrower - year"	
Number of connected loans	23,046
Number of firm pair-bank-year observations corresponding to the connected loans	43,113
Number of observations where ICR information is available for both firms	35,676
Number of subsequent borrower - initial borrower - year observations after fixed effects	32,892
Table 13: Macro Impact	
Number of industries	767
Number of industry-years with credit information	8,244
Number of industry-years with investment information	9,352
Number of industry-years with credit exposure to high sales firm information	8,243

Sample Period: 2016 to 2019	
Table 12: Detection of evergreening	
Number of banks	55
Number of public and private sector (excl. foreign) banks	46
Number of banks which reported divergence at least once	37
Number of bank-years with reported divergence by banks	85
Number of bank-years (with provisioning data available) after imputing 7.5% or 15% for missing divergence	152