Internet Appendix

Indirect Evergreening Using Related Parties: Evidence From India

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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 ICR_BELOW_1 which is bank's exposure to troubled borrowers in that year. The CAPITAL_ADEQUACY ratio is the dependent variable in column 2. The explanatory variable POST_GFC is an indicator that takes a value of 1 after 2008, 0 otherwise . We include fixed effects at the bank 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	ICR_BELOW_1	CAPITAL_ADEQUACY
POST_GFC	0.031***	1.656***
	(0.011)	(0.393)
Observations	324	303
R-squared	0.658	0.704
Bank F.E.	Yes	Yes

Table A2: Reconciliation

Sample Period: 2006 to 2020	
Table 4 (Panel A): Connected lending by low quality banks and loan performance by initial borrowers	
Number of firm-bank-year level observation in matched Data	327,910
Number of Bank-firm-year observations from matched data after fixed effects and controls	312,343
Table 4 (Panel B): RPT regressions	
Number of firm pair - year observations available in RPT database	387,015
Number of firm pair - year observations after firm fixed effects and controls	177,231
Table 5 (Panel A): Hazard rate of subsequent borrower loans	
Number of loans (related borrower-lender-years) given in the sample period	161,760
Number of subsequent borrower loan observations with evergreening and default information available	33,697
Table 5 (Panel B): Default rate of Initial borrowers	
Number of Intial borrower-lender-years in the matched data	327,910
Number of Intial borrower-lender-years in the matched data where ICR is less than 1	69,056
Table A3: Subsequent borrower Investments	
Number of loans (related borrower-lender-years) given in the sample period	161,760
Number of subsequent borrower-years with indirect evergreening and investment information	37,173
Number of subsequent borrower - year observations after fixed effects	31,606
Table A4: Initial borrower Investments	
Number of initial borrower - year observations in the matched sample	143,019
Number of initial borrower - year observations with investment data available	97,898
Number of initial borrower - year observations with investment data available	95,142
Table 9: Window dressing	
Number of connected loans	22,597
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	35,672
Number of subsequent borrower - initial borrower - year observations after fixed effects	32,888
Table 11: Macro Impact	
Number of industries	195
Number of industry-year observations with investment information available	2,590
Number of industry-year observations after using fixed effects and controls	2,542
Sample Period: 2016 to 2019	
Table 10: Detection of evergreening	
Number of banks	55
Number of public and private sector (excl. foreign) banks	42
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	173

Table A3: Comparison of Loan Size and RPT

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
SIE Loans	2,624	9,754.5	5,767.7	2,336.5	0.4
Connected but non-SIE Loans	13,266	5,476.8	740.0	4,736.7	25.0

Panel B

	Obs	Bank Loans	Total RPT	Differences in mean	t stat
SIE Loans	2,624	9,754.5	18,213.1	8,638.5	0.9
Connected but non-SIE Loans	13,266	5,476.8	10,324.6	4,847.8	1.6

Table A4: Connected loan and RPT - alternate measures of bank health and private banks

The table presents the results associated with building blocks of SIE for alternate definitions of troubled firms. The first three columns test the propensity of lending connected loans by low quality lenders of borrowers in trouble. In columns 1,2 and, 3 the data are organized at the initial borrower-bank-year level for the sample period 2006-2020. Columns 1,2 and 3 define troubled firms as firms with ICR below 0.8, ICR below 0.9 and networth below median, respectively. The dependent variable is an indicator that takes a value of 1 for connected loans, 0 otherwise. The explanatory variable is an interaction between BAD_BORROWER which takes a value of 1 if initial borrower is in trouble, 0 otherwise and BAD_BANK which takes a value of 1 for low-quality banks, 0 otherwise. All terms have been defined in Table 1. We include borrower, bank and year-fixed effects in the first 3 columns. We also include initial borrower and creditor-year controls in columns 1,2 and 3. The last 3 columns show the association of related party transactions (RPT) between pair of related firms and the indicator representing connected loan by a low quality bank of initial borrower in trouble. The data are organized at the initial borrower – related party – year level for the sample period 2006-2020. Columns 4,5, and 6 define troubled firms as firms with ICR below 0.8, ICR below 0.9 and networth below median, respectively. The dependent variables is natural logarithm of RPT_TOTAL received by the initial borrower. The explanatory variable-'*CONNECTED_SIE*'- is 1 when there is a connected loan by a low quality bank of initial borrower to the related party of the initial borrower, 0 otherwise. We include initial borrower, subsequent borrower, year, and related party type-fixed effects. We also include initial borrower, subsequent borrower and bank-year level controls. In all columns, borrower-year level controls include natural logarithm of total assets, leverage and current ratio, while creditor-year level controls include ROA and gross non-performing asset (GNPA). 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
Bad firm definition	ICR below .8	ICR below .9	Low Networth	ICR below .8	ICR below .9	Low Networth
Dependent variable	CONNECTED_LOAN			Ln RPT_TOTAL		
BAD_BORROWER X BAD_BANK	0.006**	0.007***	0.011***			
	(0.003)	(0.003)	(0.003)			
BAD_BORROWER	-0.013***	-0.012***	-0.020***			
	(0.003)	(0.003)	(0.004)			
BAD_BANK	-0.009***	-0.009***	-0.014***			
	(0.001)	(0.001)	(0.002)			
CONNECTED_SIE				1.084***	1.125***	1.151***
				(0.114)	(0.109)	(0.169)
Initial borrower - Year controls	Yes	Yes	Yes	Yes	Yes	Yes
Subsequent borrower - Year controls	No	No	Yes	Yes	Yes	Yes
Bank - Year controls	Yes	Yes	No	No	No	No
Initial Borrower F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Subsequent borrower F.E.	No	No	No	Yes	Yes	Yes
Bank F.E.	Yes	Yes	No	No	No	No
Related party type F.E.	No	No	No	Yes	Yes	Yes
Year F.E	Yes	Yes	Yes	Yes	Yes	Yes
Observations	312,312	312,312	310,729	177,166	177,166	177,166
R-squared	0.218	0.218	0.219	0.561	0.562	0.561

Table A5: Investment, Default and Interest rate: Alternative measures

The table presents the results for the difference in investment, default and interest rates between SIE and non-SIE loans. A troubled borrower is defined as the ones with ICR below 0.8 (ICR below 0.9) (networth below median) in columns 1 and 2 (3 and 4) (5 and 6) in both panels A and B. Panel A of the table presents the association between SIE, and subsequent borrower investment and default. The sample period is 2006-2020. The dependent variable is natural logarithm of subsequent borrower's INVESTMENT in odd numbered columns. In even numbered columns we present the results for Cox hazard model of subsequent borrower's default. The explanatory variable is SIE indicator that takes a value of 1 for SIE loans, 0 otherwise. We include subsequent borrower-year controls in odd numbered columns. We include borrower-bank level controls including NEW_BANKING_RELATIONSHIP indicator and LOAN_EXPOSURE_TO_FIRM which is share of bank's loan exposure to the firm in the even numbered columns. We include borrower and year (bank)-fixed effects in odd (even) numbered columns. Panel B of the table presents the association between SIE, and interest rate on new loan and default of initial borrower. The dependent variable is INTEREST_RATE on new loans (IB_DEFAULT, initial borrower's default indicator) in odd (even) numbered columns. We include borrower-year level controls in all columns. We also include borrower and year-fixed effects in all columns of panel B. 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	5	6
Bad firm definition	ICR below .8		ICR below .9		Low Networth	
Dependent variable	INVESTMENT	Hazard ratio	INVESTMENT	Hazard ratio	INVESTMENT	Hazard ratio
SIE	-0.277***	2.341***	-0.245***	2.263***	-0.166**	1.741
	(0.080)	(0.401)	(0.082)	(0.405)	(0.078)	(0.623)
Borrower-Bank controls	No	Yes	No	Yes	No	Yes
Borrower-Year controls	Yes	No	Yes	No	Yes	No
Borrower F.E.	Yes	No	Yes	No	Yes	No
Bank F.E.	No	Yes	No	Yes	No	Yes
Year F.E	Yes	No	Yes	No	Yes	No
Observations	28,808	33,540	28,808	33,540	30,752	33,540
R-squared	0.765		0.765		0.761	

Panel B

Dependent variable	INTEREST_RATE	IB_DEFAULT	INTEREST_RATE	IB_DEFAULT	INTEREST_RATE	IB default
SIE	-1.503***	-0.006**	-1.317**	-0.004**	-1.442**	-0.008*
	(0.516)	(0.002)	(0.519)	(0.002)	(0.701)	(0.005)
DIRECT_EVERGREEN		-0.012***		-0.011***		-0.010***
		(0.002)		(0.002)		(0.002)
Borrower-Year controls	Yes	Yes	Yes	Yes	Yes	Yes
Borrower F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,899	60,778	10,899	76,897	12,019	58,165
R-squared	0.336	0.303	0.336	0.393	0.330	0.303

Table A6: Comparison Between Different Type of Borrowers

The table presents the comparison between borrowers who are a part of SIE and others, and the association between SIE and the indicator variable representing extent of correlation between the industries of the initial and subsequent borrowers. In columns 1,2 and 3 we organize data at a subsequent borrower-loan level while in columns 4, 5, and 6 the data is organized at the initial borrower-loan level. We use leverage (return on assets) (natural logarithm of sales) as the dependent variable in columns 1 and 4 (3 and 5) (4 and 6), respectively. The explanatory variable in the first 6 columns is the SIE indicator which takes a value of 1 for SIE loans, 0 otherwise. All the terms are as defined in Table 1. In column 7 the data is at initial borrower-subsequent borrower-year level. The dependent variable in column 7 is SIE indicator and the explanatory variable is UNCONNECTED_INDUSTRY which is an indicator that takes a value of 1 for if the initial and subsequent borrower pairs belong to industries in the bottom 50 percentile of correlation based on total sales from 1995-2005 (before our sample starts). We include borrower and year-fixed effects in all columns. We also include borrower-year and creditor-year controls 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.

	Comparison between different types of borrowers						**Unconneted industry**
	1	2	3	4	5	6	7
	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 variable	LEVERAGE	ROA	SALES	LEVERAGE	ROA	SALES	SIE
SIE	0.025	-0.008	-0.030	0.104***	-0.035***	-0.291***	
	(0.019)	(0.006)	(0.033)	(0.023)	(0.004)	(0.047)	
UNCONNECTED_INDUSTRY							0.004**
							(0.002)
Initial borrower-Year controls	No	No	No	No	No	No	Yes
Related party-Year controls	No	No	No	No	No	No	Yes
Borrower F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	71,582	71,896	62,571	74,313	74,683	65,101	110,903
R-squared	0.389	0.199	0.929	0.390	0.206	0.922	0.207

Table A7: SIE Loan Performance and Internal Capital Markets

The table compares the loan performance of SIE loans with non-SIE loans accompanied by RPT. 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 are: (i) 'SIE loans' - loans which are part of SIE; 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 transaction towards the related party. Columns 1 and 2 (3 and 4) uses 'RPT_OUTFLOW' ('RPT_TOTAL) to determine SIE loans. Bank-fixed effects are used throughout. Column 2 additionally controls for NEW_BANKING_RELATIONSHIP which is an indicator variable representing whether the bank has a first time lending relationship with the borrower, and LOAN_EXPOSURE_TO_FIRM which represents the percentage of exposure of the bank to the firm. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

	RPT_OUTFLOW		RPT_TOTAL	
	1	2	3	4
Dependent variable	Hazard ratio of rate of LOAN_DEFAULT			
SIE	1.966***	1.905***	1.643***	1.584**
	(0.372)	(0.370)	(0.313)	(0.310)
Non-SIE loans with RPT	0.865	0.865	0.836**	0.831**
	(0.077)	(0.078)	(0.076)	(0.076)
NEW_BANKING_RELATIONSHIP		0.997		1.000
		(0.214)		(0.176)
LOAN_EXPOSURE_TO_FIRM		0.000*		0.000*
		(0.000)		(0.000)
Bank F.E.	Yes	Yes	Yes	Yes
Observations	18,493	18,416	18,622	18,545

Table A8: Market and Depositors' Reaction

Columns 1,2,3 and 4 (5 and 6) of the table presents the results relating to market (depositors') reaction to evergreening. The data are organized at loan level in columns 1,2,3 and 4 and the sample period is 2006-2020. In columns 1 and 2 (3 and 4) we include all loan amounts or restructuring amounts (only the loan amounts or restructuring amounts that are at least 0.1% of the one-year lagged asset size of the bank). In columns 1 and 3 the data includes new loans and loans issued as a part of loan restructuring. In column 2 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 in columns 1,2,3 and 4. The explanatory variables are '*DIRECT_EVERGREEN*' which is an indicator that takes a value of 1 for directly evergreened loans, 0 other wise and '*SIE*' which takes a value of 1 for SIE loans, 0 otherwise. The terms direct evergreen and SIE have the same meaning as defined in Table 1. In columns 5 and 6 the data are organized at creditor-year level. The dependent variable in columns 5 and 6 is natural logarithm of total deposit. The explanatory variables are '*DIRECT_EVERGREENING_INCIDENCE*' which is cumulative directly evergreened loans as a proportion of bank assets, and '*INDIRECT_EVERGREENING_INCIDENCE*' which is cumulative SIE loans as a proportion of bank assets. We include bank and year-fixed effects in all columns. We also include creditor-year level controls in column 6. 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.

VARIABLES	1	2	3	4	5	6
	CUMULATIVE_3DAY_EXCESS_RETURN				*Ln DEPOSIT*	
DIRECT_EVERGREEN	0.012		-0.031		-1.645*	
	(0.044)		(0.052)		(0.905)	
SIE		0.091		-0.168	1.634	
		(0.097)		(0.217)	(1.063)	
DIRECT_EVERGREENING_INCIDENCE						0.816
						(1.147)
INDIRECT_EVERGREENING_INCIDENCE						0.415
						(0.682)
Bank-Year controls	No	No	No	No	No	Yes
Bank F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Observations	71,358	56,919	18,773	15,008	746	728
R-squared	0.003	0.003	0.006	0.006	0.966	0.976

Table A9: 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 INDIRECT_EVERGREENING_INCIDENCE which is the ratio of cumulative loan amount (starting from 2006) that has been indirectly evergreened to the assets of the bank. In columns 1 and 2, the explanatory variable is TENURE_SECOND_HALF which is an indicator which takes a value of 1 if the CEO is in second half of the tenure. In columns 3 and 4, the explanatory variable is TENURE_LAST_YEAR which is an indicator which takes a value of 1 if the CEO is in last year of the tenure. All columns include the bank and CEO-fixed effects. The even numbered columns include bank year level control variables - ROA and GNPA. 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 variable	INDIRECT_EVERGREENING_INCIDENCE			
TENURE_SECOND_HALF	0.005**	0.003*		
	(0.002)	(0.002)		
TENURE_LAST_YEAR			0.004**	0.002*
			(0.001)	(0.001)
Bank-Year controls	No	Yes	No	Yes
Bank F.E.	Yes	Yes	Yes	Yes
CEO F.E.	Yes	Yes	Yes	Yes
Observations	229	219	229	219
R-squared	0.937	0.944	0.932	0.941

Table A10: Direct and indirect evergreening

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 BAD_BORROWER which takes a value of 1 if initial borrower is in trouble, 0 otherwise, BAD_BANK which takes a value of 1 for low-quality banks, 0 otherwise, and DIRECT_EVERGREEN which is an indicator variable that takes a value of 1 for directly evergreened loans. All other terms have been defined in Table 1. We include fixed effects at initial borrower, bank and year levels in all columns. Control variables included in column 2 are at initial borrower and bank-year levels. Borrower level controls include natural logarithm of TOTAL_ASSETS, LEVERAGE and CURRENT_RATIO, while creditor level controls include ROA and gross non-performing asset (GNPA). 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	
BAD_BORROWER X BAD_BANK X DIRECT_EVERGREEN	0.026***	0.025***
	(0.007)	(0.008)
BAD_BORROWER	-0.012***	-0.011***
	(0.003)	(0.003)
BAD_BANK	-0.017***	-0.012***
	(0.001)	(0.001)
BAD_BORROWER X BAD_BANK	0.001	0.002
	(0.003)	(0.003)
DIRECT_EVERGREEN	0.038***	0.038***
	(0.005)	(0.005)
BAD_BORROWER X DIRECT_EVERGREEN	-0.034***	-0.035***
	(0.008)	(0.008)
BAD_BANK X DIRECT_EVERGREEN	-0.008	-0.009*
	(0.005)	(0.005)
Initial Borrower-Year controls	No	Yes
Bank-Year controls	No	Yes
Initial borrower F.E.	Yes	Yes
Bank F.E.	Yes	Yes
Observations	326,591	312,343
R-squared	0.217	0.221