Online appendix for "Damaged Collateral and Firm-Level Finance"

Journal of Comparative Economics

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Table A1: Alternative Definition of Share of New Loans

	(1) OLS	(2) IV	(3) OLS	(4) IV	(5) OLS	(6) IV
Change in collateral-loan ratio	0.063***	0.153***	0.063***	0.171***	0.064***	0.175***
	(0.015)	(0.031)	(0.015)	(0.037)	(0.015)	(0.038)
Collateral in affected raion			0.003	0.017	0.021	0.036
			(0.019)	(0.020)	(0.023)	(0.024)
Borrower in affected raion					-0.033	-0.033
					(0.026)	(0.025)
Bank FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Macro-region FE	✓	✓	✓	✓	✓	✓
Observations	5,499	5,499	5,499	5,499	5,499	5,499
First-stage F-stat		16.49		13.34		13.11
Mean dep. variable	0.081	0.081	0.081	0.081	0.081	0.081

Notes: Dependent variable is new loans obtained between February and November 2022 as a share of all outstanding loans as of November, 2022. The unit of observation is bank-borrower-loan-collateral asset. In parentheses, heteroskedasticity-robust standard errors that correct for correlation of error terms at borrower level. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A2: Change in Collateral Loan Ratio and Collateral Condition

	(1)	(2)	(3)	(4)	(5)	(6)
Damaged	-0.054	0.011	-0.003	-0.007	0.005	0.002
	(0.075)	(0.071)	(0.055)	(0.054)	(0.056)	(0.055)
Destroyed	-0.127**	-0.015	0.034	0.031	0.034	0.032
	(0.051)	(0.057)	(0.071)	(0.073)	(0.073)	(0.071)
No information	0.133	0.175*	0.175*	0.171*	0.181*	0.180*
	(0.111)	(0.105)	(0.097)	(0.096)	(0.094)	(0.094)
Loss of control	-0.390***	-0.440***	-0.499***	-0.499***	-0.472***	-0.472***
	(0.076)	(0.090)	(0.098)	(0.097)	(0.100)	(0.100)
Collateral in affected raion					-0.048*	-0.040
					(0.026)	(0.029)
Borrower in affected raion						-0.014
						(0.043)
Bank FE		✓	✓	✓	✓	✓
Industry FE			✓	✓	✓	✓
Macro-region FE				✓	✓	✓
Observations	5,667	5,667	5,499	5,499	5,499	5,499
R-squared	0.065	0.127	0.169	0.172	0.174	0.174

Notes: Table shows the results of OLS regression with the change in collateral-loan ratio between February and November as the dependent variable. The unit of observation is bank-borrower-loan-collateral asset. In parentheses, heteroskedasticity-robust standard errors that correct for correlation of error terms at borrower level. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A3: Defaults

	(1) OLS	(2) IV	(3) OLS	(4) IV	(5) OLS	(6) IV
Change in collateral-loan ratio	-0.138**	-0.773***	-0.130**	-0.788***	-0.130**	-0.798***
	(0.062)	(0.216)	(0.058)	(0.233)	(0.058)	(0.230)
Collateral in affected raion			0.060*	-0.021	0.027	-0.058
			(0.032)	(0.032)	(0.034)	(0.042)
Borrower in affected raion					0.061	0.066
					(0.047)	(0.048)
Bank FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Macro-region FE	✓	✓	✓	✓	✓	✓
Observations	5,499	5,499	5,499	5,499	5,499	5,499
First-stage F-stat		16.49		13.34		13.11
Mean dep. variable	0.122	0.122	0.122	0.122	0.122	0.122

Notes: Dependent variable is default as of November 2022. The unit of observation is bank-borrower-loan-collateral asset. In parentheses, heteroskedasticity-robust standard errors that correct for correlation of error terms at borrower level. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A4: Probability of Default

	(1) OLS	(2) IV	(3) OLS	(4) IV	(5) OLS	(6) IV
Change in collateral-loan ratio	-0.041	-0.446**	-0.031	-0.407**	-0.031	-0.425**
	(0.046)	(0.179)	(0.044)	(0.199)	(0.043)	(0.191)
Collateral in affected raion			0.075**	0.029	0.004	-0.046
			(0.036)	(0.042)	(0.031)	(0.037)
Borrower in affected raion					0.130**	0.134**
					(0.054)	(0.060)
Bank FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Macro-region FE	✓	✓	✓	✓	✓	✓
Observations	5,499	5,499	5,499	5,499	5,499	5,499
First-stage F-stat		16.49		13.34		13.11
Mean dep. variable	0.122	0.122	0.122	0.122	0.122	0.122

Notes: Dependent variable is change of probability of default between February and November, 2022. The unit of observation is bank-borrower-loan-collateral asset. In parentheses, heteroskedasticity-robust standard errors that correct for correlation of error terms at borrower level. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A5: New Loans

	(1) OLS	(2) IV	(3) OLS	(4) IV	(5) OLS	(6) IV
Change in collateral-loan ratio	0.218***	0.677***	0.219***	0.756***	0.219***	0.769***
	(0.048)	(0.141)	(0.048)	(0.167)	(0.047)	(0.166)
Collateral in affected raion			0.008	0.076	0.058	0.129**
			(0.062)	(0.066)	(0.048)	(0.054)
Borrower in affected raion					-0.093	-0.094
					(0.082)	(0.080)
Bank FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Macro-region FE	✓	✓	✓	✓	✓	✓
Observations	5,499	5,499	5,499	5,499	5,499	5,499
First-stage F-stat		16.49		13.34		13.11
Mean dep. variable	0.284	0.284	0.284	0.284	0.284	0.284

Notes: Dependent variable is new loans which takes on the value of 1 if the borrower has obtained a new loan between February and November 2022. The unit of observation is bank-borrower-loan-collateral asset. In parentheses, heteroskedasticity-robust standard errors that correct for correlation of error terms at borrower level. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A6: Share of New Loans

	(1) OLS	(2) IV	(3) OLS	(4) IV	(5) OLS	(6) IV
Change in collateral-loan ratio	0.005	0.240***	0.001	0.237***	0.001	0.244***
	(0.045)	(0.065)	(0.049)	(0.061)	(0.049)	(0.061)
Collateral in affected raion			-0.031	-0.000	-0.003	0.028
			(0.043)	(0.039)	(0.046)	(0.043)
Borrower in affected raion					-0.052	-0.051
					(0.038)	(0.038)
Bank FE	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Macro-region FE	✓	✓	✓	✓	✓	✓
Observations	5,499	5,499	5,499	5,499	5,499	5,499
First-stage F-stat		16.49		13.34		13.11
Mean dep. variable	0.121	0.121	0.121	0.121	0.121	0.121

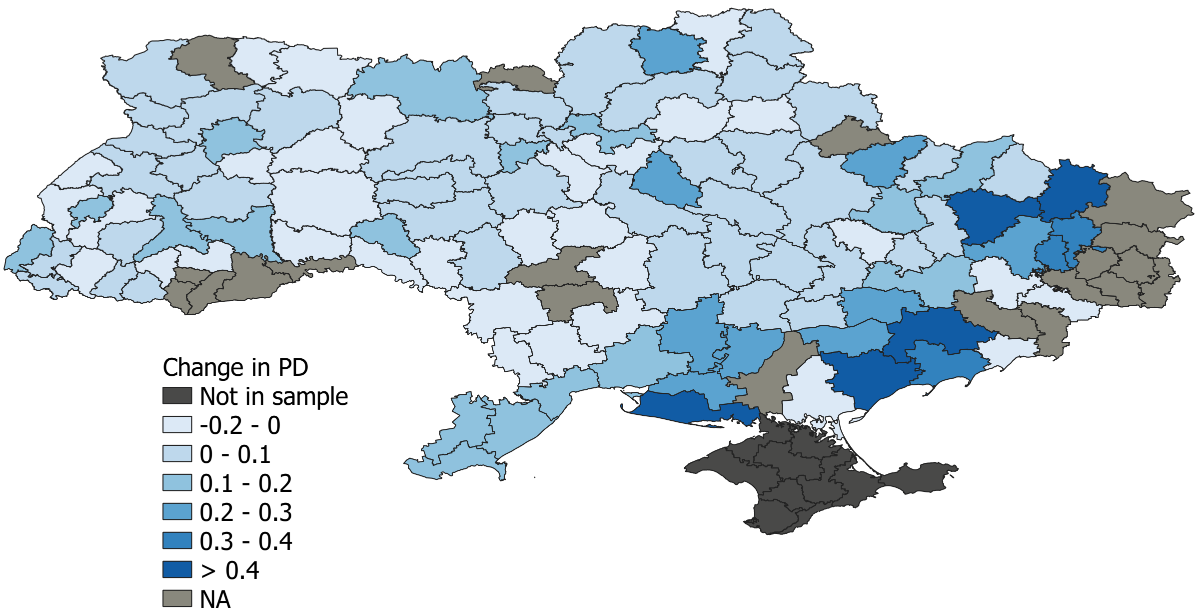
Notes: Dependent variable is new loans obtained between February and November 2022 as a share of all outstanding loans as of February, 2022. The unit of observation is bank-borrower-loan-collateral asset. In parentheses, heteroskedasticity-robust standard errors that correct for correlation of error terms at borrower level. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A7: Main Results Controlling for Oblast Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Default		Change in default probability		New loans		Share new loans	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
Change in collateral-loan ratio	-0.077***	-0.354*	-0.002	-0.162	0.159***	0.546***	-0.017	0.204**
	-0.024	-0.195	-0.027	-0.186	(0.037)	(0.184)	(0.045)	(0.101)
Collateral in affected raion	-0.016	-0.050	-0.030	-0.050	0.057	0.106**	0.016	0.045
	(0.034)	(0.040)	(0.032)	(0.035)	(0.047)	(0.053)	(0.043)	(0.043)
Borrower in affected raion	0.057	0.076	0.196***	0.206***	0.032	0.001	-0.073	-0.095
	(0.049)	(0.051)	(0.069)	(0.071)	(0.173)	(0.168)	(0.087)	(0.092)
Bank FE	✓	✓	✓	✓	✓	✓	✓	✓
Industry FE	✓	✓	✓	✓	✓	✓	✓	✓
Oblast FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	5,499	5,499	5,499	5,499	5,499	5,499	5,499	5,499
Mean dep. variable	0.122	0.122	0.121	0.121	0.284	0.284	0.121	0.121

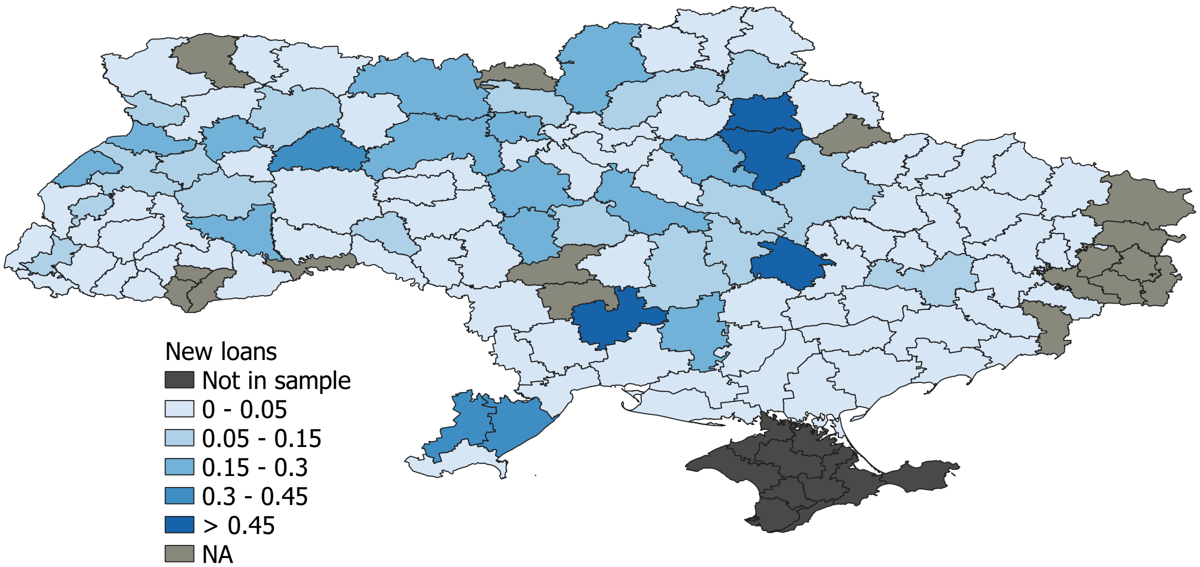
Notes: In Columns 1 and 2, dependent variable is default as of November 2022. In Columns 3 and 4, dependent variable is change of probability of default between February and November, 2022. In Columns 5 and 6, the dependent variable is new loans which takes on the value of 1 if the borrower has obtained a new loan between February and November 2022. In Columns 7 and 8, dependent variable is new loans obtained between February and November 2022 as a share of all outstanding loans as of February, 2022. The unit of observation is bank-borrower-loan-collateral asset. Each model controls for oblast level fixed effects. In parentheses, heteroskedasticity-robust standard errors that correct for correlation of error terms at borrower level. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure A1: Change in Probability of Default, 2022 (Survey Sample)



Notes: The map reports mean change in the probability of default in the survey sample between February and November 2022 by raion level. Dark blue raions experienced the largest average increase in the probability of default between February and November 2022. Light gray area indicates the raions that are not in the sample as there are no borrowers in the sample who are registered in these raions. Dark gray area refers to Crimea, which is not in the sample as Russia annexed it in 2014.

Figure A2: Share of New Loans, 2022 (Survey Sample)



Notes: The map reports mean share of new loans in the survey sample as of November 2022 by raion level. Dark blue raions experienced the largest average increase in the share of new loans between February and November 2022. Light gray area indicates the raions that are not in the sample as there are no borrowers in the sample who are registered or no new loans were issued to borrowers in these raions. Dark gray area refers to Crimea, which is not in the sample as Russia annexed it in 2014.