

# The changing geography of banking in CESEE

## Branch closures outpace openings

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Views presented are not necessarily those of the OeNB or the Eurosystem.

# Motivation

## Established economic perspective:

- Banks are central for economic growth and financial inclusion.
- Spatial distribution affects access to credit inclusion.
- Uneven access is a concern for policy makers, particularly in developing countries.

## Sharp decline in bank branches in advanced economies

- U.S. branch network shrank by 10% between 2009 and 2020 (Keil and Ongena, 2024)
- Euro area: Over 40% decline in bank branches since 2008 (ECB).
- Key drivers: digitization, declining cash use, consolidation, and local market dynamics (Galardo et al., 2021; Keil and Ongena, 2024; Amberg and Becker, 2024)

# Contribution

## CESEE as a distinct case

- Banking markets developed after transition in the 1990s, widespread foreign ownership
- Bank-dominated financial sector; capital markets underdeveloped
- Continued high reliance on cash; strong household credit demand

## Qi et al. (2024)

- Study of 1995–2012 branching dynamics shows initial expansion followed by clustering, driven by improved information sharing

## This paper

- New data links 2021 branches across 12 CESEE countries to 2013
- 2013–2021: ~30% decline in branches.
- Drivers of branch decline at regional, regional–bank, & branch level

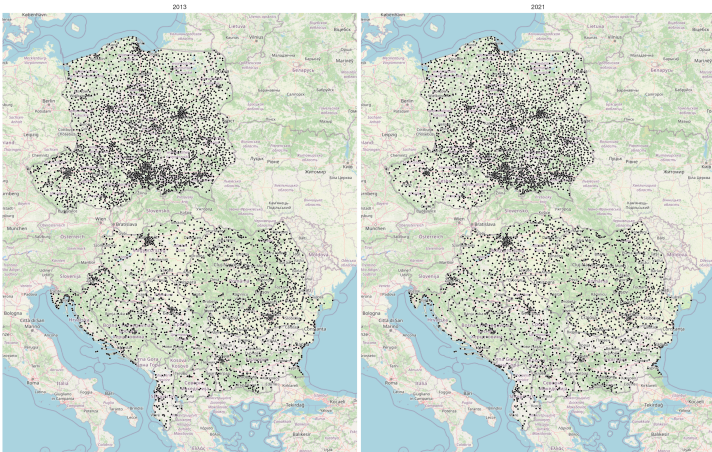
## Data overview

- 2021: Newly compiled data for bank branches in 12 CESEE countries, HU & PL (2025)
- Complemented by data for 10 CESEE countries from 2013 (Beckmann et al., 2018)
- Sources: predominantly manual web scraping, some central bank lists
- Combined with:
  - Bank-level data: ownership, assets, profitability
  - Regional characteristics (NUTS3): GDP, night light, population density, internet access



# Bank branch data

- 2013: 28,540 branches, 214 banks, 10 countries.
- 2021: 19,868 branches, 188 banks, 12 countries.



## Bank dynamics

- Several banks closed, entered via greenfield, or merged.
- M&A harmonized: 2013 bank names recoded to 2021 identities.
- Ensures consistent identification of branch openings/closures.

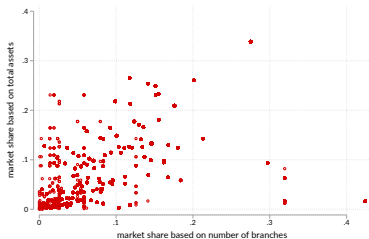
Country	Greenfield banks	Bankrupt banks	M&A banks
Albania	1	1	6
Bosnia and Herzegovina	0	1	3
North Macedonia	0	1	2
Bulgaria	2	1	5
Croatia	0	5	7
Poland	0	0	0
Romania	0	0	6
Serbia	0	2	3
Czechia	0	0	3
Hungary	1	0	1

# Classifying branch entry and exit

Data combination 2013-2021:

- Matching procedure: 250m radius + exact distance refinement.
- Constrained by bank identity, post-merger.
- Data validation with IMF FAS, central bank reports, GooglePlaces.
- Geocoding accuracy varies across countries.

Market share by total assets vs. number of branches



## Branch networks in CESEE: 2013 vs. 2021

- Branches declined by more than 30%
- Decline in all countries, heterogeneous in magnitude
- Stronger than in the US, weaker than in the euro area

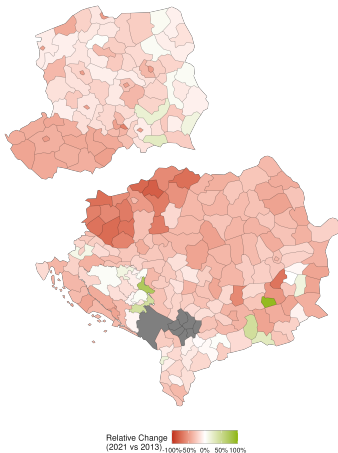
Country	Banks 2013	Banks 2021	%Δ Banks	Branches 2013	Branches 2021	%Δ Branches
Albania	14	12	-14.3	471	410	-13.0
Bosnia and Herzegovina	21	18	-14.3	803	743	-7.5
North Macedonia	14	12	-14.3	408	386	-5.4
Bulgaria	26	18	-30.8	2668	1687	-36.8
Croatia	28	20	-28.6	1158	841	-27.4
Poland	25	26	4.0	10432	7861	-24.6
Romania	26	20	-23.1	5260	3401	-35.3
Serbia	31	19	-38.7	1996	1472	-26.3
Czechia	17	20	17.6	2732	1549	-43.3
Hungary	12	12	0	2738	1149	-58.0
Montenegro	–	11	–	–	174	–
Kosovo	–	10	–	–	195	–

# Regional disparities

## Adults per branch per 1000 km<sup>2</sup>:

- Increased across countries.
- Smallest change:  
in MK with 5,055 adults per  
branch in 2013 & 5,360  
adults per branch in 2021.
- AL in 2013 & 2021:  
highest adults per branch at  
NUTS2 level.
- HU in 2021:  
greatest disparity between  
the NUTS2 regions.

Geographic distribution of branch network changes on NUTS-3 level  
10 CESEE countries: 2021 vs 2013



# Empirical strategy

Analyze bank branch closure dynamics on three levels:

- NUTS3 regions: branch dynamics and regional change.
- NUTS3–bank: branch dynamics by bank–region pair.
- Branch: closure at the individual branch level.

Exploratory regressions linking branch outcomes to:

- Regional economic indicators.
- Bank-level characteristics (size, profitability, M&A).
- Local competition between branches.

## Empirical strategy: NUTS3 level

- Dependent variables:
  - Growth rate of branch numbers (2013–2021)
- Explanatory variables:
  - Population density, night lights
  - Change in population density and night lights
  - Digitization: download speed, internet access, online banking
- OLS with country fixed effects; SEs clustered at country level

$$\% \Delta \text{Branches}_{r,2013-2021} = \alpha + \delta_1 \Delta(\text{Pop. density}_r) + \delta_2 \Delta(\text{Night light}_r) + \mu_c + \varepsilon_r$$

# Bank branch dynamics: correlates at NUTS3

Dependent variable	change in branch # at NUTS3			
change in population density	-0.095*** (0.017)	-0.089** (0.030)	-0.090*** (0.015)	-0.238 (0.142)
change in night light	0.069 (0.037)	0.064* (0.029)	0.063 (0.040)	0.059 (0.035)
log(average download speed in Mbps)		-0.041 (0.121)		
% households internet access			-0.040 (0.059)	
% consumers using online banking				-0.009 (0.101)
Constant	-0.256*** (0.044)	-0.123 (0.370)	-0.232*** (0.056)	-0.175*** (0.041)
Country Fixed Effects	✓	✓	✓	✓
Mean DepVar	-0.32	-0.32	-0.34	-0.33
R-squared	0.39	0.39	0.51	0.40
N	160	160	139	138

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .



## Empirical strategy: NUTS3–bank level

- Dependent variable:
  - Growth rate of number of branches per bank–region (2013–2021)
- Explanatory variables:
  - Bank characteristics:

$$\text{BankChar}_{b,\text{NUTS3}} = \frac{\text{Branches}_{b,\text{NUTS3}}}{\sum_{b'} \text{Branches}_{b',\text{NUTS3}}} \cdot \text{BankChar}_b$$

- Regional controls: change in population density, night lights
- OLS with NUTS3 fixed effects; SEs clustered at country level

# Bank branch dynamics at the bank–NUTS3 level

Dependent variable	change in branch # (NUTS3 × bank)			
change in night light	0.078*** (0.015)	0.077*** (0.016)	0.082*** (0.012)	
change population density	-0.012 (0.026)	-0.013 (0.027)	-0.010 (0.026)	
M&A	-1.250* (0.540)	-1.137* (0.489)	-1.147* (0.565)	-1.387* (0.698)
ROAA	-0.549* (0.234)	-1.900** (0.734)	-0.522* (0.256)	-1.693** (0.655)
log(download speed Mbps)	-0.038 (0.080)	-0.040 (0.068)	-0.040 (0.108)	
small bank		-0.058 (0.087)	-0.193 (0.368)	-0.013 (0.084)
large bank		-0.136 (0.154)	0.183 (0.437)	-0.029 (0.185)
small bank × ROAA		1.701* (0.871)		1.780** (0.708)
large bank × ROAA		1.495 (0.918)		1.030 (1.000)
small bank × log(download speed Mbps)			0.047 (0.074)	
large bank × log(download speed Mbps)			-0.057 (0.120)	
NUTS3 Fixed Effects				✓
Mean DepVar	-0.14	-0.14	-0.14	-0.09
R-squared	0.09	0.11	0.10	0.21
N	1653	1653	1653	2581

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

## Empirical strategy: Branch level

- Dependent variable:
  - Branch closure dummy (1 = closed between 2013 and 2021, 0 = otherwise)
- Explanatory variables:
  - Distance to nearest proprietary branch
  - Distance to nearest competitor branch
  - Number of competitor branches within 5km
  - Bank-level characteristics: M&A, size, foreign ownership.
- Linear probability model with country & bank fixed effects; SEs clustered at bank level.

$$\text{Closed}_{j,b} = \alpha + \beta_1 \cdot \text{CompProx}_{j,b} + \beta_2 \cdot \text{OwnProx}_{j,b} + \mathbf{X}'_b \boldsymbol{\gamma} + \mu_b + \lambda_c + \varepsilon_{j,b}$$

# Branch closures & the local banking landscape

	Branch closed										
	Pooled	AL	BA	MK	BG	HR	PL	RO	RS	CZ	HU
distance to next proprietary branch	-0.002*** (0.001)	0.001 (0.001)	-0.002 (0.002)	0.002 (0.002)	-0.001 (0.001)	-0.001 (0.001)	-0.003 (0.002)	0.000 (0.001)	0.001 (0.001)	-0.007** (0.003)	-0.016** (0.006)
distance to next competitor branch	0.003 (0.007)	0.009** (0.003)	-0.004 (0.007)	-0.033*** (0.008)	0.014*** (0.003)	0.012*** (0.004)	-0.003 (0.003)	0.024*** (0.002)	0.011*** (0.002)	0.054*** (0.002)	-0.020*** (0.003)
M&A	0.414*** (0.051)	-0.273*** (0.006)	0.140*** (0.007)	0.147*** (0.006)	0.278*** (0.045)	0.342*** (0.081)	0.581*** (0.049)	0.383*** (0.020)	0.193*** (0.058)	0.431** (0.185)	0.662*** (0.088)
GUO foreign	0.020 (0.050)	0.010 (0.015)	0.131*** (0.009)	0.237*** (0.017)	0.402*** (0.005)	0.519*** (0.080)	-0.153*** (0.050)	-0.001 (0.012)	-0.120*** (0.035)	0.927*** (0.011)	0.551*** (0.032)
Country Fixed Effects	✓										
Bank Fixed Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mean DepVar	0.69	0.27	0.68	0.74	0.74	0.53	0.71	0.66	0.79	0.56	0.84
R-squared	0.24	0.46	0.11	0.08	0.12	0.14	0.37	0.10	0.11	0.25	0.34
N	28497	470	802	408	2652	1140	10388	5196	1990	2719	2732

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

## Summary of main findings

- Bank branch networks in CESEE declined by  $\sim 30\%$  (2013–2021).
- Decline more pronounced in urban areas; substantial cross-country variation.
- No robust association between closures and digitization indicators.
- Branch reductions are closely associated with M&A.
- Profitability correlates differently by bank size:
  - Larger profitable banks: more likely to reduce branches.
  - Smaller profitable banks: more likely to expand.
- Relationship with local competition appears non-linear: lowest closure likelihood in areas with 6–8 competitors.

# Limitations & next steps

## Limitations

- Observations: Only two points in time (2013 & 2021), dynamics in between remain unobserved.
- Analytical scope: exploratory correlations, no causal identification.

## Next steps

- Analyze closures and openings simultaneously.
- Leverage additional satellite data in greater detail.
- Explore cross-country and regional heterogeneity using interaction regressions with individual-level data.

## Conclusion

Geocoded, branch-level dataset for 12 CESEE countries, exploratory analysis of debranching dynamics between 2013 and 2021.

- CESEE countries exhibit a “debranching” pattern, though less pronounced than in the euro area.
- Consolidation and profitability appear more relevant than digitization.
- Regional disparities persist → important for financial inclusion.

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- Jan Keil and Steven Ongena. The demise of branch banking – Technology, consolidation, bank fragility. *Journal of Banking & Finance*, 158(C), 2024.
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# Appendix

# Openings, closures and branch stocks (2013–2021) €NB

Country	Branch closures	Branch openings	Branches (2013 & 2021)
Albania	129	68	342
Bosnia and Herzegovina	543	483	260
Bulgaria	1,986	1,005	682
Croatia	618	301	540
Czechia	1,526	343	1,206
Hungary	2,307	718	431
North Macedonia	301	279	107
Poland	7,466	4,895	2,966
Romania	3,447	1,588	1,813
Serbia	1,573	1,049	423

# Bank branches per 1,000 km<sup>2</sup> (NUTS 3) by country

**Panel A: 2013**

Country	Country Average	NUTS3 min.	NUTS3 max.	NUTS3 max.–min.
Albania	16	5	113	108
Bosnia and Herzegovina	16	2	100	99
North Macedonia	16	8	94	86
Bulgaria	23	5	499	495
Croatia	14	3	158	156
Poland	33	11	1,308	1,296
Romania	22	6	3,589	3,583
Serbia	26	8	195	187
Czechia	33	1	984	983
Hungary	29	10	754	744

**Panel B: 2021**

Country	Country Average	NUTS3 min.	NUTS3 max.	NUTS3 max.–min.
Albania	14	4	104	100
Bosnia and Herzegovina	20	1	99	97
North Macedonia	15	8	92	85
Bulgaria	14	4	293	288
Croatia	12	2	23	22
Poland	25	10	669	659
Romania	14	4	2,320	2,315
Serbia	19	6	142	136
Czechia	19	1	491	490
Hungary	12	5	503	498
Montenegro	13	13	13	0
Kosovo	18	-	-	-

# Average number of adults per bank branch

Panel A: 2013				
Country	Country Avg.	NUTS2 min.	NUTS2 max.	Max-min
Albania	6,152	4,647	10,470	5,823
North Macedonia	5,055	5,067	5,067	0
Bulgaria	2,700	2,359	3,121	762
Croatia	3,668	2,825	9,420	6,595
Poland	3,649	2,961	5,332	2,371
Romania	3,806	2,444	5,038	2,594
Serbia	3,527	2,680	4,718	2,038
Czechia	3,849	2,539	4,875	2,336
Hungary	3,614	2,634	4,951	2,316
Panel B: 2021				
Albania	6,902	5,261	11,735	6,474
North Macedonia	5,360	5,502	5,502	0
Bulgaria	3,872	3,559	4,702	1,143
Croatia	4,629	4,321	5,405	1,084
Poland	4,659	3,636	5,850	2,213
Romania	5,646	3,834	7,173	3,340
Serbia	4,668	3,688	5,903	2,215
Czechia	6,775	5,140	8,525	3,385
Hungary	8,342	6,387	10,031	3,644
Montenegro	3,567	-	-	-
Kosovo	8,148	-	-	-

# Branch closure and the local banking landscape

	Branch closed										
	Pooled	AL	BA	MK	BG	HR	PL	RO	RS	CZ	HU
distance to next proprietary branch	-0.001 (0.001)	-0.003* (0.002)	-0.003 (0.002)	0.005** (0.002)	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.002)	-0.001 (0.001)	0.001 (0.002)	-0.006 (0.005)	-0.009** (0.003)
distance to next competitor branch	0.020*** (0.003)	0.004* (0.002)	-0.004 (0.004)	-0.031*** (0.008)	0.011*** (0.003)	0.006*** (0.003)	0.014 (0.009)	0.018*** (0.004)	0.013*** (0.003)	0.058*** (0.005)	-0.043* (0.018)
M&A	0.270*** (0.042)	-0.134 (0.099)	0.195*** (0.039)	0.200*** (0.058)	0.248*** (0.050)	0.085 (0.052)	0.398** (0.143)	0.254* (0.126)	0.218*** (0.031)	0.478*** (0.106)	0.316 (0.183)
GUO foreign	0.027 (0.053)	0.133 (0.182)	0.038 (0.055)	0.049 (0.044)	-0.022 (0.054)	-0.089* (0.047)	-0.060 (0.137)	0.141 (0.089)	0.028 (0.063)	0.372*** (0.082)	-0.427** (0.137)
ROAA	-0.005 (0.004)	-0.249* (0.120)	0.005 (0.111)	0.010 (0.023)	0.061** (0.021)	-0.011 (0.010)	-0.164*** (0.039)	-0.002** (0.001)	-0.010*** (0.002)	-0.171** (0.073)	-0.072 (0.056)
Constant	0.100 (0.095)	0.448** (0.165)	-0.107 (0.065)	-0.299** (0.117)	0.595*** (0.140)	1.088*** (0.051)	0.799*** (0.117)	0.786*** (0.071)	0.438*** (0.101)	-0.181 (0.173)	1.129*** (0.064)
Country Fixed Effects	✓										
Bank Fixed Effects											
NUTS3 Fixed Effects		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mean DepVar	0.71	0.24	0.67	0.74	0.75	0.52	0.80	0.67	0.77	0.56	0.88
R-squared	0.14	0.24	0.14	0.07	0.09	0.60	0.32	0.07	0.07	0.18	0.46
N	21456	395	792	408	2534	1029	7293	4264	1524	2688	529

	Branch closed										
	Pooled	AL	BA	MK	BG	HR	PL	RO	RS	CZ	HU
distance to next proprietary branch	-0.001 (0.001)	-0.003** (0.001)	-0.002 (0.002)	0.005*** (0.002)	-0.000 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.001 (0.001)	-0.004 (0.005)	-0.009** (0.003)
distance to next competitor branch	0.022*** (0.003)	0.005*** (0.001)	-0.007 (0.005)	-0.030*** (0.008)	0.013*** (0.003)	0.006* (0.003)	0.010 (0.008)	0.023*** (0.002)	0.013*** (0.003)	0.055*** (0.002)	-0.043* (0.018)
M&A	0.267*** (0.046)	-0.947*** (0.123)	0.219** (0.098)	0.194*** (0.059)	0.249*** (0.050)	0.075 (0.069)	0.403** (0.145)	0.079 (0.140)	0.226*** (0.060)	0.456*** (0.177)	0.316 (0.183)
GUO foreign	0.037 (0.044)	0.570*** (0.097)	-0.008 (0.095)	0.060 (0.047)	-0.024 (0.041)	-0.097** (0.045)	0.011 (0.159)	-0.148 (0.144)	0.116 (0.137)	0.613*** (0.123)	-0.427** (0.137)
ROAA	-0.048* (0.026)	1.592*** (0.207)	-0.011 (0.016)	-0.043** (0.018)	0.070** (0.026)	0.044 (0.042)	-0.249*** (0.064)	-0.011 (0.013)	-0.071 (0.085)	-0.379 (0.256)	-0.072 (0.056)
small bank	-0.048 (0.051)	0.915*** (0.082)	0.145 (0.154)	-0.020 (0.043)	-0.033 (0.074)	0.039 (0.047)	-0.219 (0.126)	-0.006 (0.034)	-0.092 (0.156)	-0.305 (0.353)	0.000 (.)
large bank	-0.132*** (0.035)	0.026 (0.039)	0.106** (0.046)	-0.072 (0.050)	0.079 (0.062)	0.026 (0.059)	-0.393** (0.145)	-0.154*** (0.054)	0.004 (0.056)	0.004 (0.056)	0.000 (0.056)
small bank × ROAA	0.044* (0.026)	-1.895*** (0.147)	-0.221 (0.144)	0.081** (0.032)	0.221*** (0.070)	-0.056 (0.042)	0.168* (0.081)	0.010 (0.013)	0.061 (0.085)	0.060 (0.240)	0.000 (.)
large bank × ROAA	0.094** (0.038)	-1.721*** (0.206)	0.097*** (0.025)	0.026 (0.030)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Constant	0.140 (0.101)	-0.153 (0.126)	-0.233 (0.195)	0.745*** (0.073)	-0.067 (0.087)	0.076 (0.055)	0.945*** (0.103)	0.774*** (0.139)	0.584*** (0.141)	0.050 (0.299)	1.062*** (0.042)
Country Fixed Effects	✓										
Bank Fixed Effects											
NUTS3 Fixed Effects		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mean DepVar	0.71	0.24	0.67	0.74	0.75	0.52	0.80	0.67	0.77	0.56	0.88
R-squared	0.15	0.34	0.18	0.08	0.12	0.60	0.33	0.09	0.08	0.19	0.46
N	21456	395	792	408	2534	1029	7293	4264	1524	2688	529

# Branch closed no new open $\leq 1\text{km}$

	Branch closed no new open $\leq 1\text{km}$										
	Pooled	AL	BA	MK	BG	HR	PL	RO	RS	CZ	HU
distance to next proprietary branch	-0.001 (0.001)	0.000 (0.001)	-0.001 (0.001)	0.003 (0.003)	0.001 (0.001)	-0.002 (0.001)	-0.000 (0.002)	0.001 (0.001)	0.002** (0.001)	-0.007** (0.002)	-0.016** (0.006)
distance to next competitor branch	0.003 (0.005)	0.006** (0.003)	0.008 (0.011)	0.007 (0.012)	0.028*** (0.004)	0.024*** (0.004)	0.000 (0.002)	0.010** (0.004)	0.017** (0.008)	0.061*** (0.002)	-0.019*** (0.003)
M&A	0.227*** (0.049)	-0.244*** (0.006)	0.404*** (0.004)	-0.018* (0.009)	0.128*** (0.028)	0.245*** (0.102)	0.306*** (0.091)	0.209*** (0.019)	0.067* (0.035)	0.441** (0.175)	0.657*** (0.087)
GUO foreign	0.013 (0.049)	-0.000 (0.015)	0.416*** (0.011)	0.678*** (0.027)	0.532*** (0.008)	0.510*** (0.102)	-0.063 (0.092)	0.128*** (0.013)	-0.033 (0.022)	0.863*** (0.009)	0.553*** (0.032)
Constant	0.240*** (0.049)	0.241*** (0.030)	-0.259*** (0.033)	0.242*** (0.040)	0.318*** (0.025)	-0.117 (0.110)	0.391*** (0.018)	0.233*** (0.009)	0.972*** (0.008)	0.170*** (0.030)	0.282*** (0.088)
Country Fixed Effects	✓										
Bank Fixed Effects		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mean DepVar	0.48	0.25	0.31	0.25	0.35	0.37	0.50	0.39	0.46	0.48	0.84
R-squared	0.29	0.50	0.17	0.22	0.22	0.20	0.33	0.11	0.31	0.24	0.33
N	28497	470	802	408	2652	1140	10388	5196	1990	2719	2732

	Branch closed no new $\leq 1\text{km}$										
3-5 competitor branches	-0.084** (0.039)	-0.143 (0.109)	0.039 (0.083)	-0.014 (0.134)	-0.044 (0.114)	-0.078 (0.063)	0.010 (0.017)	-0.140 (0.090)	-0.055 (0.039)	-0.365*** (0.071)	-0.013 (0.070)
6-8 competitor branches	-0.202*** (0.054)	-0.197 (0.127)	0.093 (0.126)	-0.100 (0.117)	-0.290** (0.126)	-0.133* (0.068)	0.003 (0.051)	-0.214* (0.121)	-0.259** (0.092)	-0.500*** (0.106)	0.258** (0.089)
9+ competitor branches	-0.083* (0.046)	-0.144 (0.133)	0.061 (0.156)	-0.168 (0.116)	-0.011 (0.090)	-0.153** (0.064)	-0.052 (0.061)	-0.163 (0.110)	-0.228*** (0.047)	-0.362*** (0.063)	
share proprietary branches	0.084 (0.118)	-0.213 (0.845)	-0.436 (0.311)	0.350 (1.314)	0.144 (0.301)	0.216 (0.157)	0.082 (0.051)	0.069 (0.110)	-0.988*** (0.164)	-0.141 (0.270)	0.644*** (0.044)
3-5 competitor branches × share proprietary branches	0.179*** (0.069)	0.965 (0.918)	1.121* (0.540)	-2.023 (1.531)	-0.321 (0.420)	-0.469** (0.175)	-0.039 (0.073)	-0.465*** (0.159)	1.046*** (0.194)	0.424 (0.375)	0.105 (0.156)
6-8 competitor branches × share proprietary branches	0.271*** (0.088)	0.700 (0.926)	0.052 (0.488)	0.299 (1.334)	0.085 (0.431)	0.086 (0.179)	-0.221*** (0.053)	-0.014 (0.221)	1.481*** (0.344)	0.515 (0.322)	-0.264 (0.158)
9+ competitor branches × share proprietary branches	-0.117 (0.121)	0.165 (0.846)	0.376 (0.367)	-0.361 (1.340)	-0.381 (0.329)	-0.058 (0.188)	-0.076 (0.071)	-0.166 (0.111)	0.888*** (0.145)	0.294 (0.251)	
M&A	0.232*** (0.046)	-0.176*** (0.037)	0.403*** (0.031)	-0.004 (0.021)	0.148*** (0.028)	0.286*** (0.095)	0.298*** (0.088)	0.217*** (0.020)	0.069* (0.038)	0.448* (0.207)	0.899*** (0.007)
GUO foreign	0.040 (0.046)	-0.004 (0.003)	0.478*** (0.007)	0.777*** (0.025)	0.515*** (0.005)	0.574*** (0.089)	-0.038 (0.089)	0.150*** (0.009)	-0.093*** (0.030)	0.814*** (0.006)	0.661*** (0.014)
Constant	0.275*** (0.058)	0.347*** (0.102)	-0.378*** (0.115)	0.383*** (0.101)	0.528*** (0.025)	-0.143 (0.096)	0.413*** (0.047)	0.451*** (0.092)	1.269*** (0.042)	0.382*** (0.077)	-0.492*** (0.062)
Country Fixed Effects	✓			✓	✓	✓	✓	✓	✓	✓	✓
Bank Fixed Effects		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mean DepVar	0.47	0.25	0.31	0.25	0.34	0.36	0.48	0.40	0.46	0.46	0.87
R-squared	0.30	0.55	0.20	0.24	0.22	0.20	0.30	0.12	0.35	0.25	0.38
N	26618	448	777	403	2587	1077	9311	4813	1959	2602	2641

# Impact of local competition on branch closure

	Branch closed
3-5 competitor branches	-0.077** (0.037)
6-8 competitor branches	-0.174*** (0.048)
9+ competitor branches	-0.059 (0.042)
share proprietary branches	0.096 (0.116)
3-5 competitor branches × share proprietary branches	0.180*** (0.068)
6-8 competitor branches × share proprietary branches	0.265*** (0.083)
9+ competitor branches × share proprietary branches	-0.054 (0.118)
M&A	0.419*** (0.048)
GUO foreign	0.035 (0.049)
Constant	0.266*** (0.060)
Country Fixed Effects	✓
Bank Fixed Effects	✓
Mean DepVar	0.69
R-squared	0.26
N	26618

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Marginal effects of proprietary branch share on branch closures for different levels of competitor branch presence

