



Shared Destinies? Small Banks and Small Business Consolidation

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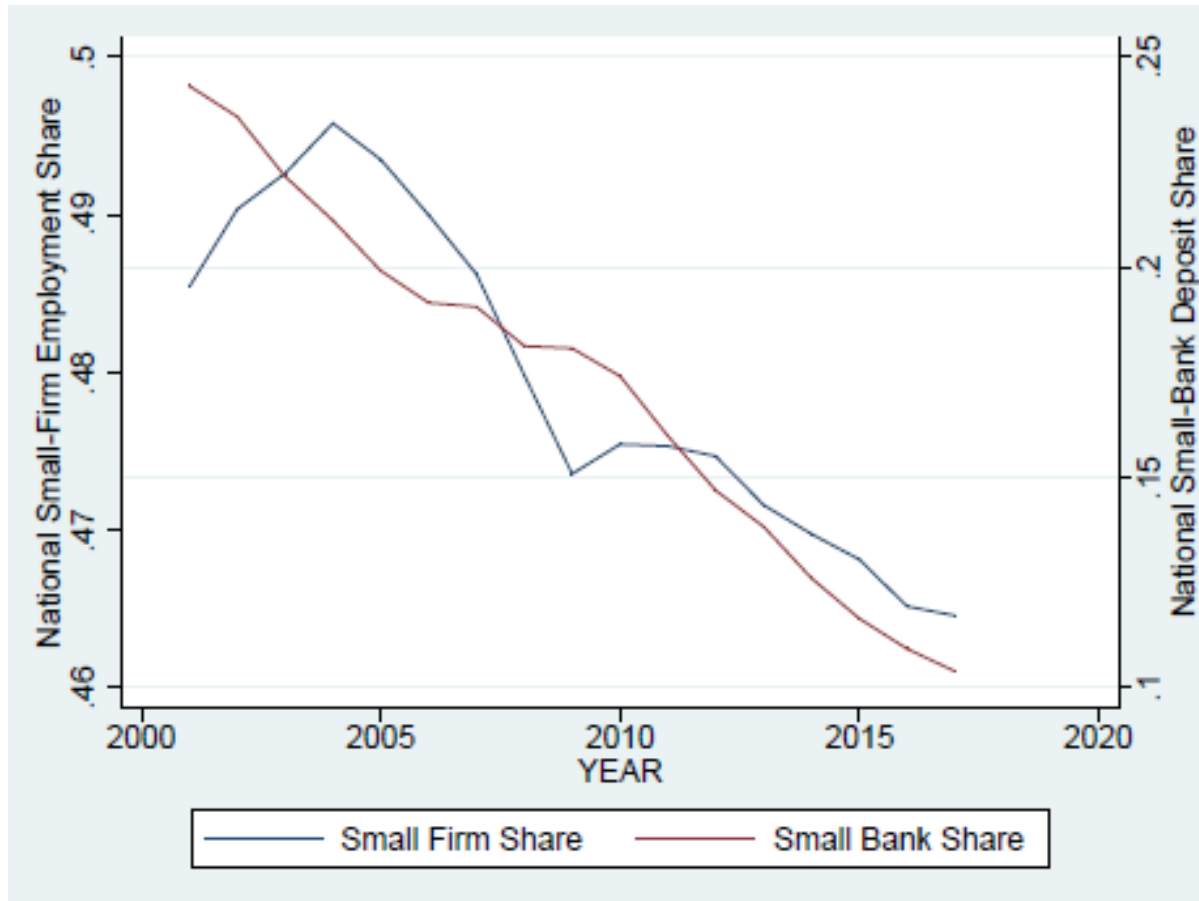
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Decline in Small Banks and Small Firms



Source: Quarterly Workforce Indicators (Firm Shares).
Summary of Deposits (Deposit Shares).

Small Firms <250 employees

Small Banks < \$1 bn assets





Banking Consolidation

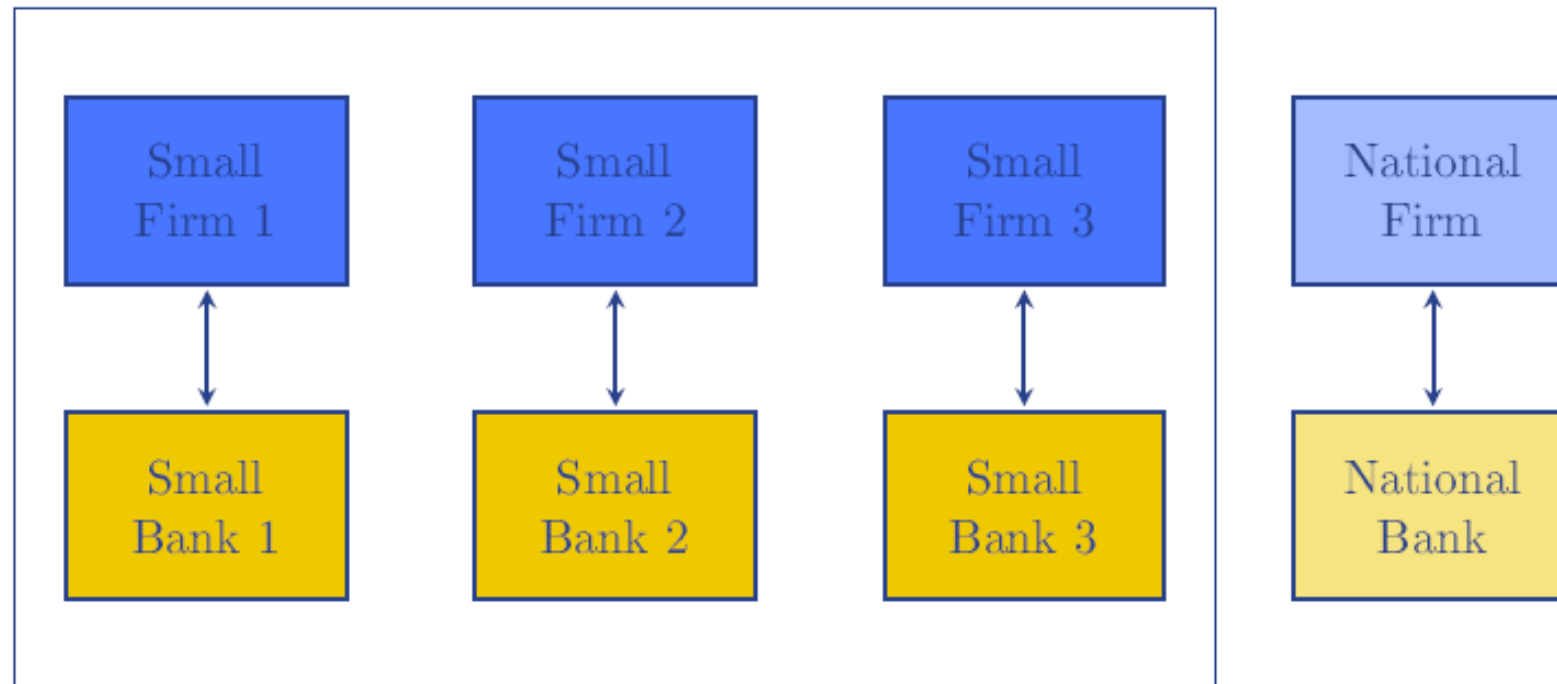
- Consolidation of banking system, driven by:
 - Regulatory changes (Riegle Neal 1994, Gramm Leach Bliley 1999, Dodd Frank 2010)
 - Technological changes (ATMs, credit scoring)
- Small banks have comparative advantage in lending to small businesses
 - Boot (1999), Petersen & Rajan (2002), Chakraborty & Hu (2006)
- Common narrative: Banking consolidation → loss of small businesses
 - Cetorelli & Strahan (2006), Sapienza (2002)





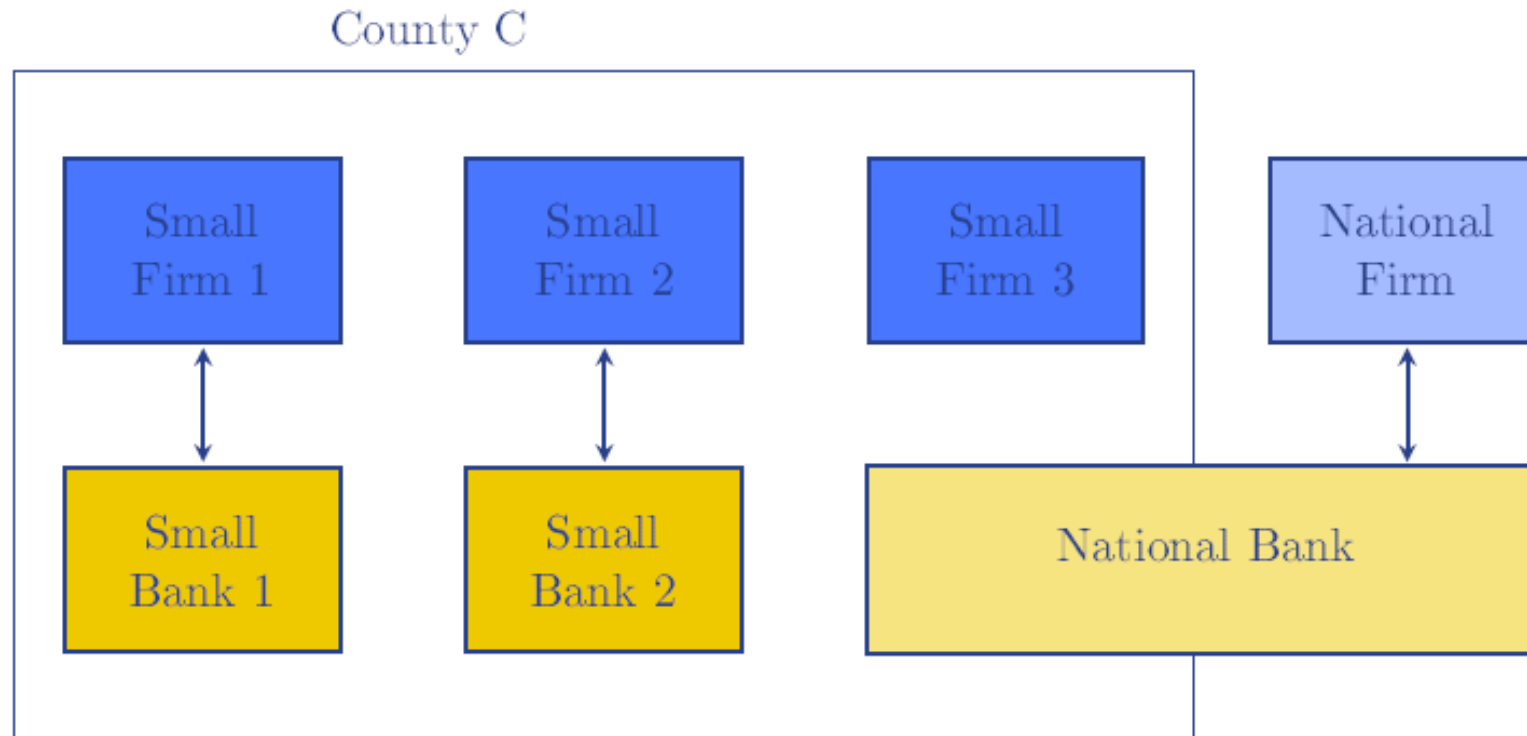
Literature in a Picture

County C





Literature in a Picture





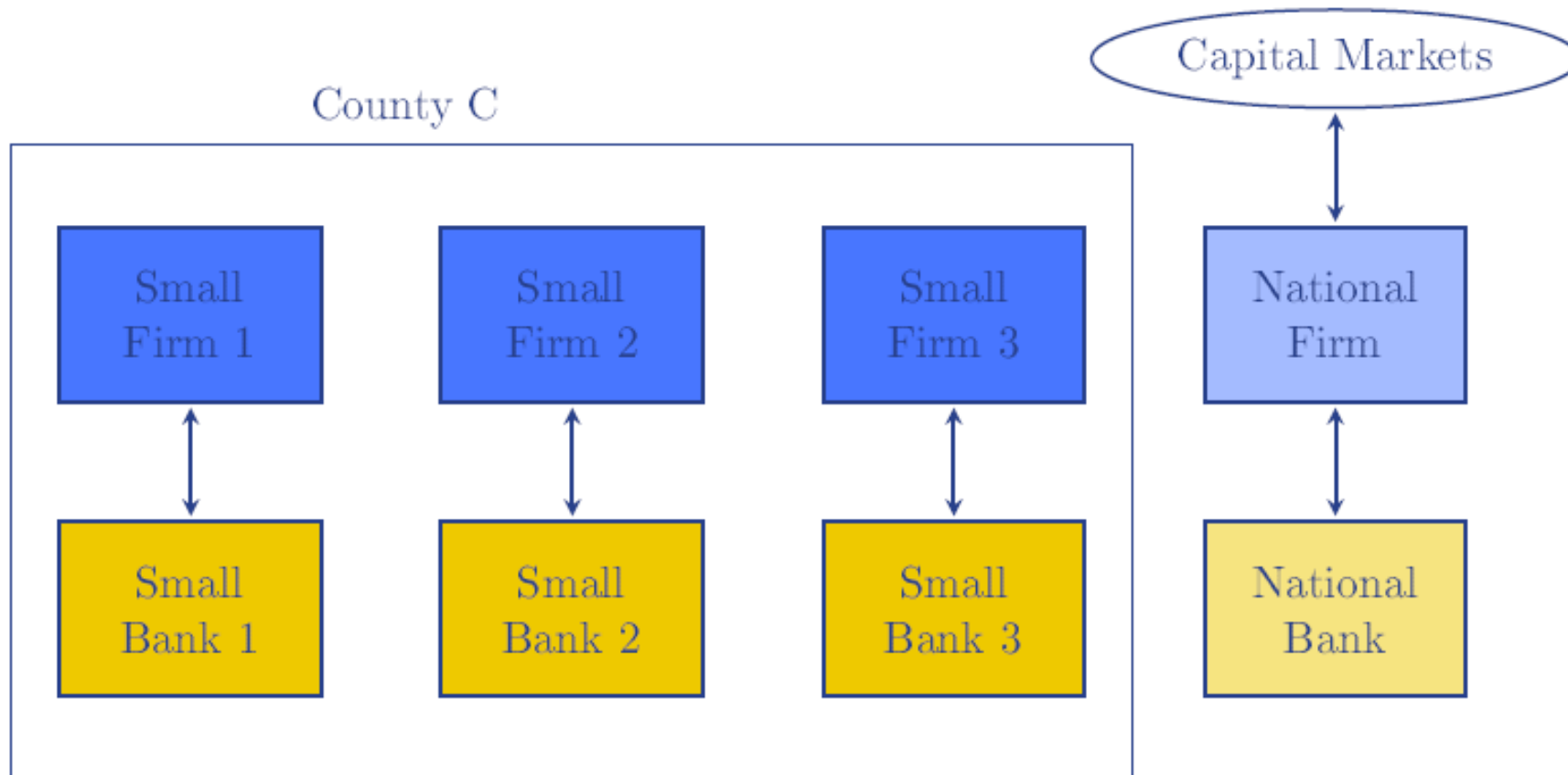
Real-Side Consolidation

- Consolidation of real industry (Grullon et al 2019, CEA 2016, Jia 2008)
 - Technological changes (e.g. supply chain management (Holmes 2008), e-commerce (Goldmanis et al 2010))
 - Regulatory (e.g. antitrust (Gutierrez & Philippon 2017))
- Small banks have comparative advantage in lending to small business
- **Our narrative: Loss of small business → changes to viability of small banks**
- Not mutually exclusive, but helps us weigh efficacy of policies
- COVID recession and govt response → SmBus → Small Banks



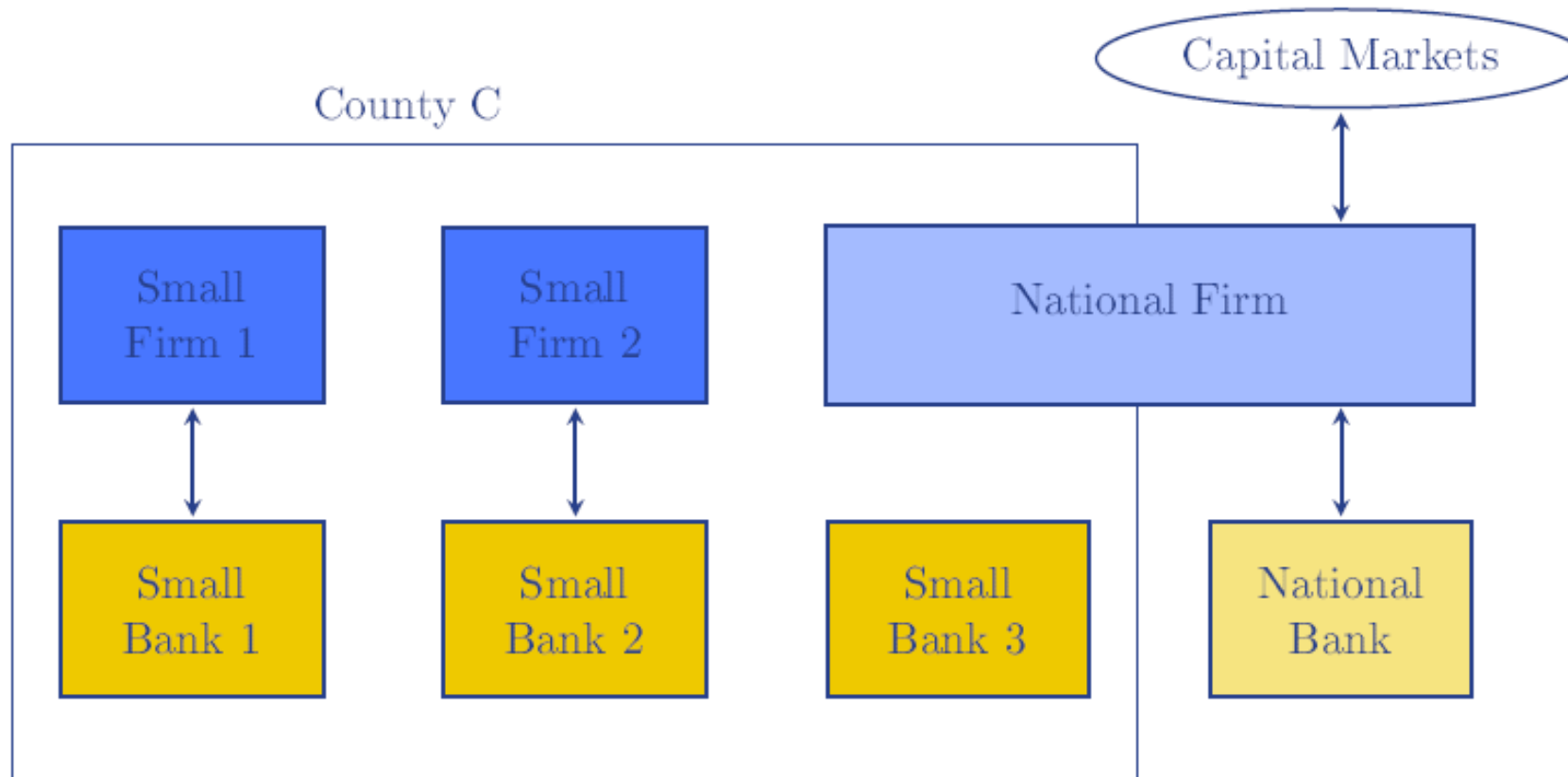


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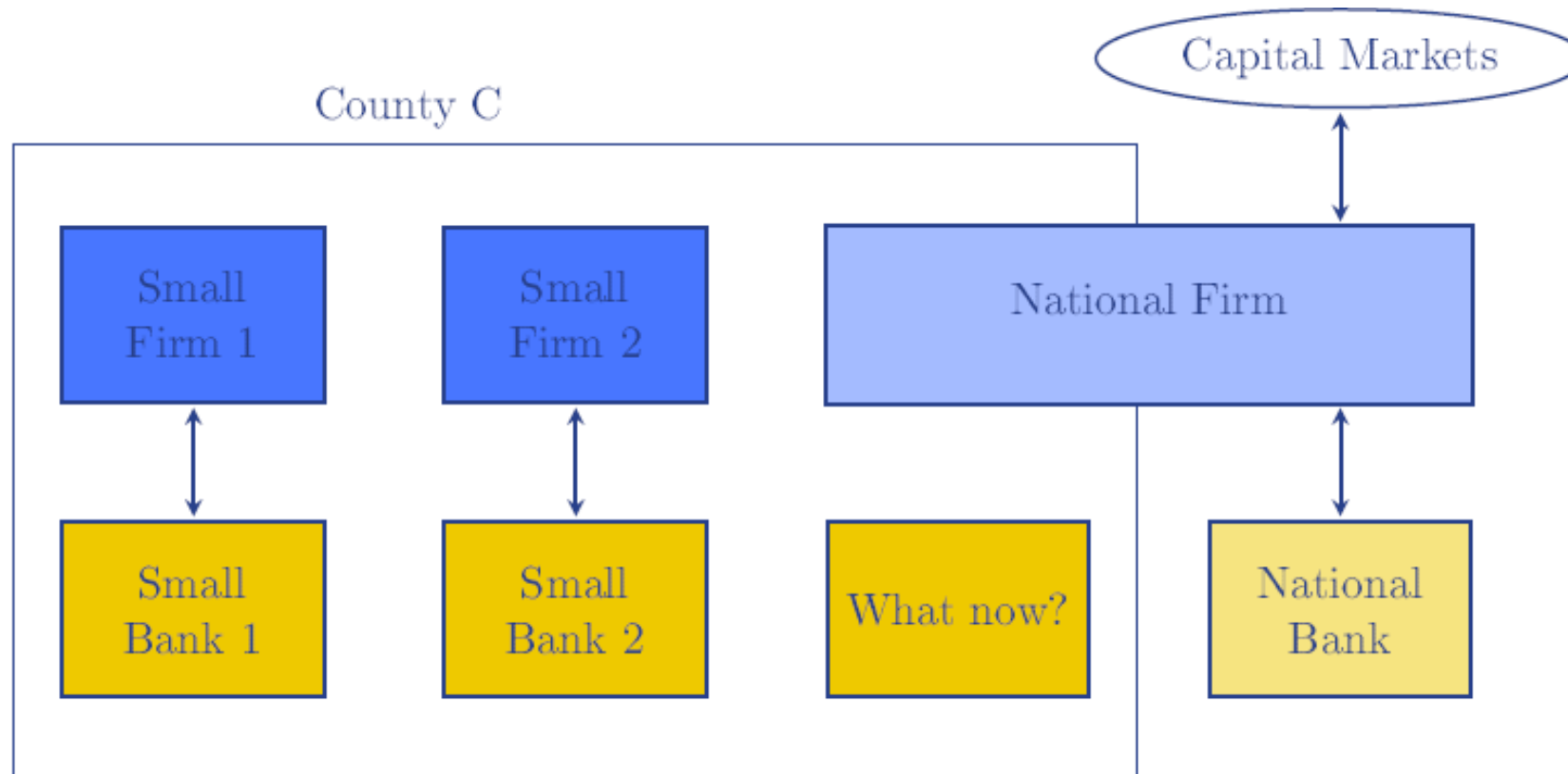


Paper in a Picture





Paper in a Picture





What We Do

- Estimate effect of small business performance on small bank performance using:
 - Census QWI data on county employment by firm size
 - FDIC Summary of Deposits (SOD) data on bank deposits by bank size
- Use a Bartik instrument to estimate effect of real industry growth patterns by industry and firm size on bank financials by bank size 2002-2017
 - Rely upon 2000 county-industry shares as differential exposures to national trends by industry and firm size
 - Use Goldsmith-Pinkham, Sorkin, Swift (2019) to unpack instrument assumptions





Data: 2002-2017

- QWI – small < 250 employees, large > 500 employees
 - (Endogenous) County-level employment growth by firm size (not establishment size)
 - County-level employment by industry
 - National-level employment by firm size-industry
- SOD – small < \$1 billion asset, large > \$50 billion
 - Location of bank branches and deposits
 - Create deposit-weighted small-bank county proxy financials (Call Reports)
 - Bank variables such as deposit growth, income, small business lending growth





Bartik Instrument

Healthcare: 35
Transportation: 25
Retail: 15
Manufacturing: 25

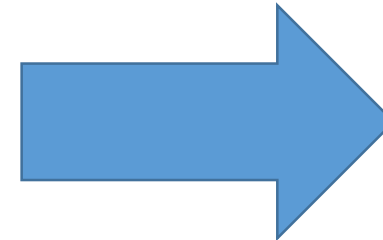
Jon's Home County, 2000

Healthcare: 25
Transportation: 15
Retail: 30
Manufacturing: 30

Stefan's Home County, 2000

National Small Business Employee
Trends:
2002-2017

Healthcare: +31%
Transportation: +8%
Retail: -16%
Manufacturing: -20%



Expected Demand in
Small Business Financial
Service





Main Findings

- 1% increase in small-firm employment growth → 0.9% increase in small-bank deposit growth
 - Increase small-bank income
 - Increase small-bank small-CI lending, less robust/smaller increase in RE lending
 - Decrease provisions
 - No increase in large-bank deposit growth
- Large-firm employment growth → no increase in small-bank deposit growth





What drives our findings?

- Small firm employment growth associated with small bank deposit growth
- Possible explanations: Small firm employment growth makes small bank business model more profitable
 - Less likely to be acquired?
 - Less likely to look to acquire?
 - Less likely to fail?
- Examine small-bank county deposits and HQs associated with acq, failure





What drives our findings?

- Small firm employment growth associated with small bank deposit growth
- Possible explanations: Small firm employment growth makes small bank business model more profitable
 - **Less likely to be acquired? – Share of Deposits Acquired. HQ Acquisitions.**
 - ~~Less likely to look to acquire?~~
 - ~~Less likely to fail?~~
- Examine small-bank county deposits and HQs associated with acq, failure





Additional Findings

- Effects of small business employment growth on small bank deposit growth higher for more urban areas
 - Extant evidence that small banks are declining faster in urban areas
- Effects of small business employment growth on small bank deposit growth higher for more concentrated banking markets





Conclusions

- The composition of the banking industry depends, at least in part, on the composition of the real economy
- Combined with existing literature, there is a feedback loop between small-banks and small-business consolidation
- Evolution of the organizational structure of banking will depend, in part, on the evolution of the American small business
- Policies affecting small-banks interdependent with policies and trends affecting small-business





Extras - Tables





Two Stage Least Squares Regressions

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Small Dep Gr	Small Dep Gr	Small Dep Gr	Small Dep Gr	Small Dep Gr	Small Dep Gr
SmFirm Gr	0.906*** (0.178)	0.812*** (0.183)			1.137*** (0.401)	0.997*** (0.363)
LgFirm Gr			0.447*** (0.0901)	0.447*** (0.0901)	-0.220 (0.272)	-0.177 (0.253)
Pop Gr		0.00512 (0.0401)				0.00358 (0.0419)
Income Gr		-0.182*** (0.0598)				-0.187*** (0.0587)
Observations	36,526	36,069	36,526	36,526	36,526	36,069
Number of geograph	2,468	2,437	2,468	2,468	2,468	2,437
REG	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
YEAR FE	YES	YES	YES	YES	YES	YES
COUNTY FE	YES	YES	NO	YES	YES	YES
YRS	2003-2017	2003-2017	2003-2017	2003-2017	2003-2017	2003-2017





Small Bank Income Variables

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	ROA	ROA	ROE	ROE	Provisions	Provisions
SmFirm Gr	0.0243*** (0.00785)	0.00647*** (0.00193)	0.296*** (0.0909)	0.0794*** (0.0243)	-0.0131*** (0.00482)	-0.00521*** (0.00117)
LgFirm Gr		0.000536** (0.000259)		0.00548* (0.00277)		-0.000610*** (0.000216)
Constant	0.0152*** (0.000226)	0.0151*** (0.000644)	0.153*** (0.00211)	0.152*** (0.00764)	0.00347*** (9.26e-05)	0.00349*** (0.000328)
Observations	35,216	35,216	35,216	35,216	35,216	35,216
R-squared		0.560		0.460		0.412
REG	2SLS	OLS	2SLS	OLS	2SLS	OLS
YEAR FE	YES	YES	YES	YES	YES	YES
COUNTY FE	YES	YES	YES	YES	YES	YES
YRS	2003-2017	2003-2017	2003-2017	2003-2017	2003-2017	2003-2017





Small Bank Balance Sheet Variables

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	SmBus Loan Gr	SmBus Loan Gr	CI Loan Gr	CI Loan Gr	RE Loan Gr	RE Loan Gr
SmFirm Gr	0.830*** (0.300)	0.0721** (0.0267)	0.834*** (0.281)	0.136*** (0.0264)	0.689*** (0.208)	0.0426 (0.0303)
LgFirm Gr		0.00104 (0.0123)		-0.00534 (0.00948)		-0.000826 (0.00591)
Constant	0.00607 (0.00614)	0.00395 (0.0121)	0.0331*** (0.00653)	0.0310** (0.0140)	0.0153*** (0.00579)	0.0135 (0.00853)
Observations	35,204	35,204	35,204	35,204	35,204	35,204
R-squared		0.065		0.065		0.067
REG	2SLS	OLS	2SLS	OLS	2SLS	OLS
YEAR FE	YES	YES	YES	YES	YES	YES
COUNTY FE	YES	YES	YES	YES	YES	YES
YRS	2003-2017	2003-2017	2003-2017	2003-2017	2003-2017	2003-2017

