Bank Credit and Exports

Veronica Rappoport
London School of Economics, CEPR

JIE Summer School

Greece 2023

What is the role of bank credit in international trade and the pattern of comparative advantage?

1. Financial development as a source of comparative advantages
   - Back to Schumpeter (1911): Services provided by financial intermediaries are essential for technological innovation and development
   - Can we think of credit as an endowment?
2. How can we estimate the elasticity of exports to credit supply?
3. Is exporting a credit-intensive activity?
   - What do we know about the use of credit in exporting?
   - What are the export-specific mechanisms?
4. Do banks shape the pattern of comparative advantage beyond funding?
   - Banks seem to specialize and develop expertise in certain firms' activities
   - Why does bank specialization matter?

Financial Development

and

Patterns of Comparative Advantages

Financial Development as Endowment

- Countries with developed financial markets have comparative advantage in capital-intensive sectors

  Rajan & Zingales (1998), Beck (2003), Manova (2008)

$$Y_{pc(t)} = \alpha_{p(t)} + \alpha_{c(t)} + \beta \; FinConditions_{c(t)} \times ExtDependence_{p} + \epsilon_{pc(t)}$$

- External Capital Dependence (Rajan & Zingales (1998))
  - Industry share of K-expenditures not funded by cash flow (and variations)
  - US public firms: credit unconstrained firms as benchmark

- Assumptions:
  - Same demand for exports of the same product across destination: $\alpha_{p(t)}$
  - Difference within-product across-sectors are supply driven: $FinConditions_{c(t)}$
  - External funding dependence is a technological elasticity: $\times ExtDep_{p}$

Financial Development as Endowment

$$Y_{pc(t)} = \alpha_{p(t)} + \alpha_{c(t)} + \beta \; FinConditions_{c(t)} \times ExtDependence_{p} + \epsilon_{pc(t)}$$

Dep. variable ($Y_{pc(t)}$):	$Growth_{pc}$ Rajan-Zingales '98	$XShare_{pc}$ Beck '03	$\Delta \ln X_{pct}$ Manova '08
$ExtDep_p \times FinConditions_c$	0.067***	1.259***	
	(0.023)	(0.001)	
$ExtDep_p \times FinConditions_{c,t-\Delta}$			0.946***
			(0.121)
Obs	1,217	1,945	39,568
Fin Conditions	Private Credit/GDP		Fin. Liberalization

Interaction terms, controls, and FEs included

- Countries with developed financial markets have comparative advantage in capital-intensive sectors
- Exports in capital-intensive sectors grew more after financial liberalization

Empirical Challenge

- Intuitive idea but empirically challenging to identify and measure

  How to distinguish the effect of lending supply on exports from changes in credit in response to factors also affecting exports?

- Identification assumption
  - Financial development is correlated with other country characteristics

    e.g.: human capital, wealth, ...
  - Also in the time series

    e.g.: exchange rate, local demand, inputs, ...
  - Industries differ in multiple dimensions

    and presumably react differently to cyclical fluctuations, interest rate & exchange rate

- Usual causation caveats: financial development may be endogenous to industrial needs

  Do & Levchenko (2007)

  e.g. K-inflows and market development in Chile once copper is discovered

1. Financial Development and Comparative Advantages: Remarks

- Strong link between performance of K(or Credit)-intensive sectors and financial development
- But difficult to overcome empirical challenges w.r.t. identification and quantification
- Availability of granular trade and credit data allows us to overcome some of these empirical caveats ...

  ... at the cost of missing general equilibrium effects

Export Elasticity

to

Credit Supply

Empirical Challenge

How to distinguish the effect of lending supply on exports from changes in credit in response to factors also affecting exports?

- Exports are an equilibrium outcome

$$X_{idpt} = \mathcal{X}\left(H_{idpt}, L_{it}\right)$$

- Total lending is an equilibrium outcome

$$L_{it} \quad = \quad \mathcal{L}\left(L_{it}^{D}, L_{bt}^{S}\right) \quad = \quad \mathcal{L}(H_{idpt}, ..., L_{it}^{S})$$

  - Depends on supply of lending to the firm L_{it}^{S}
  - Depends on firm's demand, L_{it}^{D}, which may depend on H_{idpt}

- Linear unobservable model (unfeasible):

$$\ln X_{idpt} = H_{idpt} + \beta_{idpt} \ln L_{it}^{s}$$

Directly Estimate Elasticity of Output to Credit Supply

- Linear unobservable model (unfeasible):

$$\ln X_{idpt} = H_{idpt} + \beta_{idpt} \ln L^{s}_{it}$$

- So far... assume technological heterogeneous elasticity to funding

$$\ln X_{pct} = \alpha_{pt} + \alpha_{ct} + \underbrace{\beta \times ExtDep_{p}}_{\beta_p} \times FinCond_{ct} + \epsilon_{pct}$$

- Goal: estimate directly the average elasticity to credit

$$\ln X_{idpt} = \alpha_{ipd} + \alpha_{dpt} + \beta \ \ln L^{S}_{it} + \epsilon_{idpt}$$

  - α_{dpt} controls for (un)observable changes at product-destination-time level

Identification of Credit Supply Shocks

- Within-firm estimator (Khwaja & Mian (2008))

$$\ln L_{ibt} = \gamma_{it} + \gamma_{ib} + IV_{bt} + \epsilon_{ibt}$$

  - Identification based on firms with multiple banking relationships
  - Assumption: IV_{bt} uncorrelated with changes in demand across banks (conditional on γ_{it} and γ_{ib})

$\rightarrow$ Is the supply shifter related to the motive for credit demand across banks?

  - Why do firms borrow from multiple banks?
  - Do banks specialize in certain credit lines or activities?
  - Are those activities of specialization co-moving with the supply shifter?

Credit Supply Shifter: Peru during Subprime

- How international financial crisis affected domestic banks' balance sheet?
  Paravisini, Rappoport, Schnabl & Wolfenzon (2015) (Also see Amiti & Weinstein (2011))
  - Instrument for $\ln L^S_{bt}$: $Exposure_b \times Post_t$

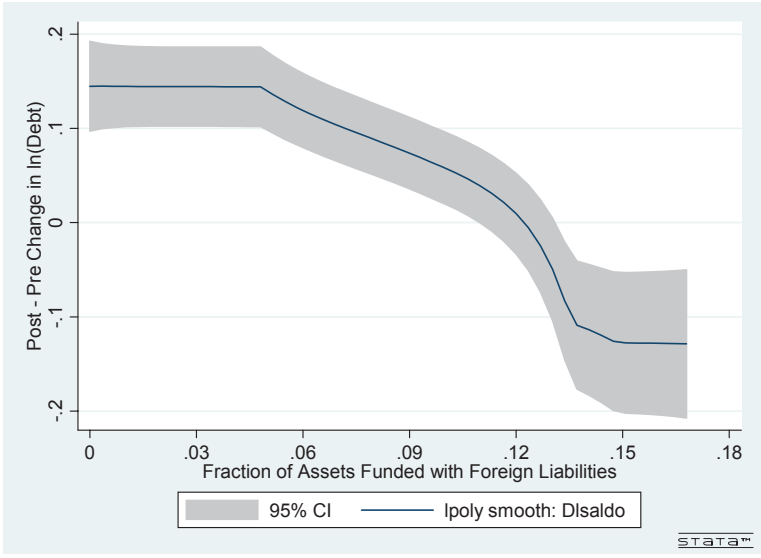
(a) Timing t: Portfolio Inflows

Bank (top 10)	For.Liabilities/Assets 2007-S2
HSBC	0.177
Mibanco	0.168
Continental	0.122
Citibank	0.103
Interamericano	0.075
Financiero	0.073
Credito	0.062
Wiese	0.060
Interbank	0.055
Santander	0.022

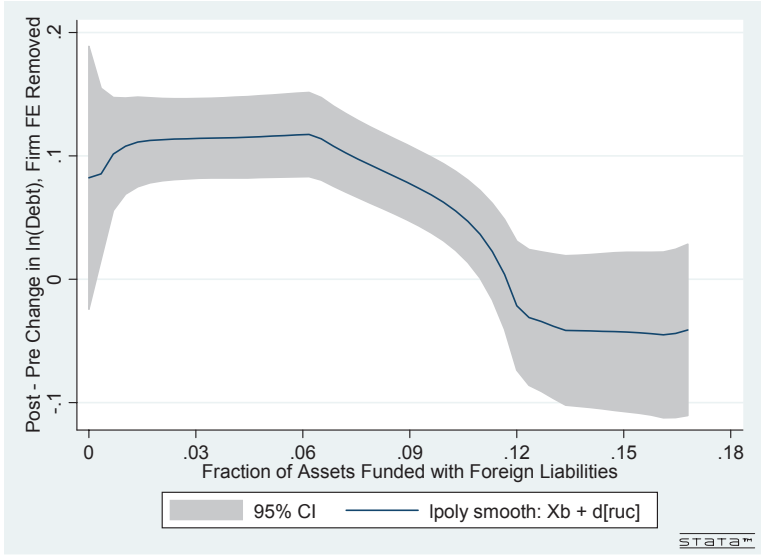
(b) Exposure b: Share Foreign Liabilities

Identification of Credit Supply Shock

- Estimation in first differences:



(c) Pool : $\Delta \ln L_{ibt}$



(d) Within-Firm: $\Delta \ln L_{ibt} \big| \gamma_{it}$

  - Non-linear effect: most variation for share foreign liabilities $>$ 10%-12%

    LASSO: least absolute shrinkage and selection operator

$\rightarrow$ Similar pattern with and without firm-time FE, γ_{it}. Can you think why?

From Bank shock to firm-specific credit supply shock

$$\ln X_{idpt} = \alpha_{idp} + \alpha_{dpt} + \beta \underbrace{\ln L_{it}^{S}}_{\downarrow} + \epsilon_{ipdt}$$

$$IV: \quad \sum_{b} \omega_{ib} \; Exposed_b \times Post_t$$

- Compare Xs by firms that borrow from exposed vs. non-exposed banks
  - Absorb confounding changes in demand, prices, or inputs: α_{pdt}
  - Joint test: credit matters and banks cannot be easily substituted

IV results	$\ln X_{idpt}$ Intensive	$(X_{idpt} = 0 \mid X_{idpt-1} > 0)$ Exit	$(X_{idpt} > 0 \mid X_{idpt-1} = 0)$ Entry
$\ln L_{it}^{S}$	0.195***	-0.040*	-0.006
	(0.046)	(0.011)	(0.02)
d-p-t FE	✓	✓	✓
i-d-p FE	✓	✓	✓

t: 1 year before vs. after shock

$Exposed_b$: share foreign liabilities above 10%

What can we infer about usage of credit for exports?

- Different usages of credit:
  - $\xi_{X,L}$: Short-term response to a short-term fluctuation
  - Probably working capital (important for intensive margin)
  - Different from the bigger question about Development/Growth

- What is the mechanism?
  - Framework to organize ideas: CES demand and monopolistic competition

$$X_{ipdt} = \left(\frac{p_{ipdt}}{P_{pdt}}\right)^{-\eta} E_{pdt} \qquad \& \qquad p_{ipdt} = \frac{\eta}{\eta - 1}\ \tau_{ipdt}\ c_{ipt}$$

  then:

$$\ln X_{ipdt} = \alpha_{pdt} - \eta \cdot (\ln \tau_{ipdt} + \ln c_{ipt})$$

  - Is $\xi_{X,L}$ about exports or general production?

$$\xi_{X,L} = \eta \left(\xi^{\tau}_{p,d} + \xi^{C}_{p}\right)$$

2. Elasticity of Exports to Credit: Remarks

- Exports are sensitive to fluctuations in firm-specific credit supply
  - Short-term elasticity: fast response to short-term credit fluctuations
  - Possibly different from longer-term response to more permanent financial conditions
- Suggestive of working-capital mechanism
  - Significant intensive margin elasticity, relevant for short-term fluctuations
  - Together with fixed cost of exporting can explain Exit margin reaction
  - No support for credit channel associated with entry sunk cost

Is Exporting a

Credit-Intensive Activity?

Heterogeneous Elasticity to Credit

- Linear unobservable model (empirically unfeasible):

$$\ln X_{idpt} = H_{idpt} + \beta_{idpt} \ln L_{it}^{S}$$

- Is $\xi_{X,L}$ about exports or general production?

$$\xi_{X,L} = \eta \left(\xi_{p,d}^{\tau} + \xi_{p}^{C} \right)$$

- What can we learn from the *heterogeneous* elasticity of exports to credit

$$\ln X_{idpt} = \alpha_{idp} + \alpha_{dpt} + \beta_{p(d)} \ln L_{it}^{S}$$

  - Heterogeneous effects may be consistent with a theoretical mechanism
  - Example: Is $ExtDep_p$ a proxy for technical elasticity ξ_p^C?
  - Caveat: *consistent with*...is not a smoking gun!

The Mechanism: Heterogeneous Effects

$$\xi_{X,L} = \eta \left(\xi^{\tau}_{p,d} + \xi^{C}_{p} \right)$$

- Is elasticity of exports to credit higher for....
  - ... Products with larger External Finance Dependence? ξ^{C}_{p}
  - ... Destinations more distant from home? ξ^{τ}_{d}

IV results	$\ln X_{idpt}$		
$\ln L^{S}_{it}$	0.195***	0.164***	0.177**
	(0.046)	(0.049)	(0.053)
$\ln L^{S}_{it} \times ExtDep_{p}$		-0.132	
		(0.084)	
$\ln L^{S}_{it} \times Distance_{d}$			-0.062
			(0.055)
d-p-t FE	✓	✓	✓
i-d-p FE	✓	✓	✓

- Note: Elasticity to credit supply within product-destination!

The Mechanism: Terms of export contracts

- Contracts do not only refer to Price & Quantities

  Antràs & Foley (2015)

  - Cash in advance
  - Open Account: maturity and rate
  - Letters of Credit

- Firms compete in all dimensions:
  - Again: Credit conditions as a source of comparative advantage
  - Export promotion policies often involve subsidized credit for better contract terms
  - Do firms adjust their contracts to changing financial conditions?

The Mechanism: Terms of export contracts

- How do firms adapt their export contracts?
  - Peru credit supply shock: reduce cash contracts when credit available
  - Turkey (Basel II): risk-weight of letters of credit according to counterpart

    Demir, Michalski & Ors (2017)

	Turkey risk re-weight ΔLC Share		Peru Credit Shock ΔCash Share
Risk-weight decrease$_{dt}$	0.005**		
	(t: 2.04)		
Risk-weight increase$_{dt}$		-0.006**	
		(t: -3.80)	
ln L_{it}^{S}			-0.024**
			(0.011)
Destination-product FE		✓	✓
Firm-time FE	✓	✓	
Destination-product-time FE			✓

The Mechanism: Access to FX financial instruments

- Peru credit supply shock: only USD credit supply
  - Bank exposure to international 2008 K-reversal
- France credit supply shock: only towards firms that use USD credit

  Berthou, Horny & Msonnier (2022)
  - Banks exposure to USD funding shock in Summer 2011

Dependent Variable:	ln L_{ibt}				
	Peru 2008			France 2011	
	Total	Dollar	Soles	US Xers	EU Xers
$Exposure_b \times Post_t$	-0.168***	-0.223***	0.163	-0.45***	-0.14
Firm-bank FE	✓	✓	✓	✓	✓
Firm-time FE	✓	✓	✓	✓	✓

- Effect on exports
  - Peru: all exports invoiced in USD
  - France: USD credit supply affects exports to US

3. Sensitivity of Trade to Credit Supply Shock: Remarks

- Export-specific mechanisms
  - Sensitivity to credit does seem not vary across with usual industry or destination heterogeneity
  - ! Heterogeneous effects provide evidence *consist* with a mechanism
  - ! Important to have a framework in mind
  - ! Careful with over-interpreting a smoking gun
- Terms of export contracts react to credit conditions
  - Better financial conditions give firms an edge against competition
  - Potential financial linkages between exporters & importers
  - Importance of FX instrument access

    Alfaro, Calani & Varela (2021)

Banks' Expertise and

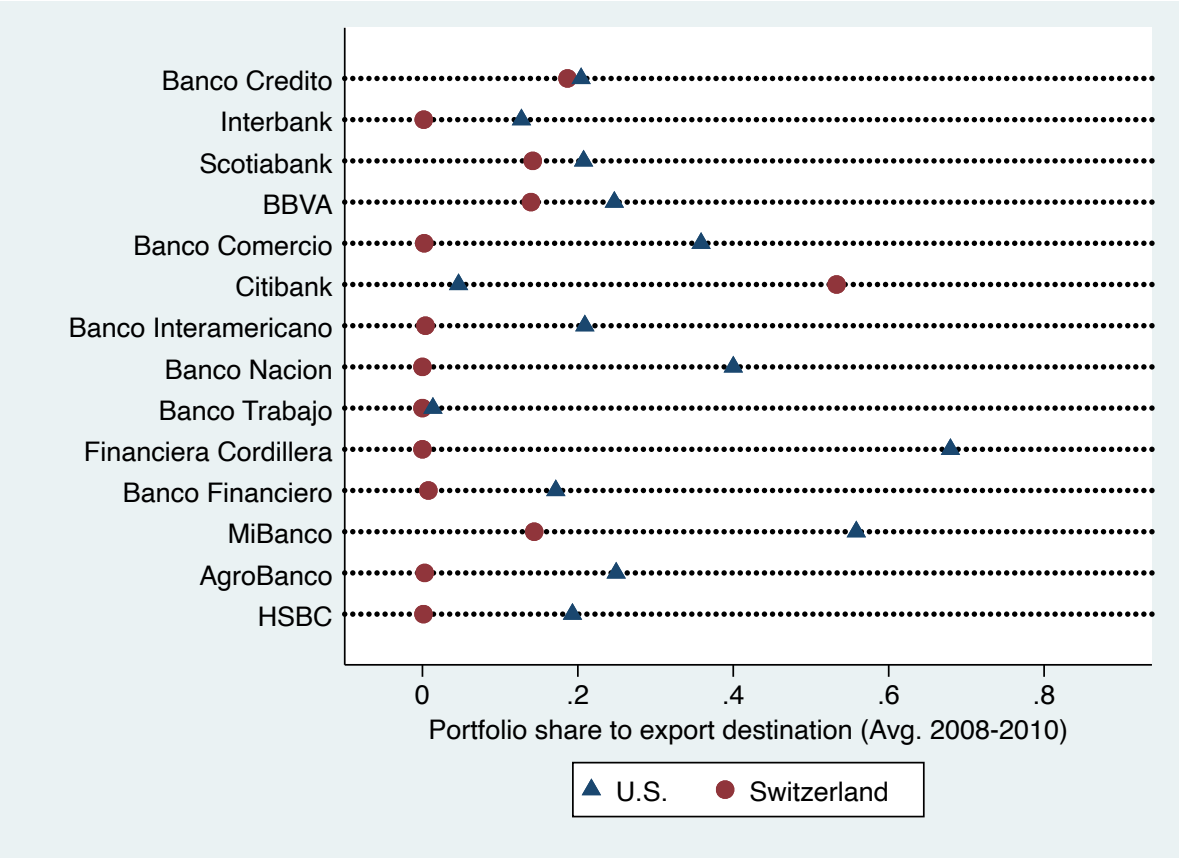
Specialization in Export Markets

Peru: Bank Loan Portfolio Shares (1998-2010)

- Example: share of loans towards firms that export to US and Switzerland

  Paravisini, Rappoport & Schnabl (2023)

  - Largest 14 banks, shares weighted by borrower exports to the destination
  - Swiss (U.S.) exports to total Peruvian exports are 9% (20%)



Specialization According to Portfolio Shares

- Banks' portfolios deviate from market shares

		S_b^c				Export
Country	Code	Mean	S.D.	Median	Skewness	Share
Canada	CA	0.033	0.046	0.023	5.1	6.3
Switzerland	CH	0.027	0.088	0.0014	5.2	11.1
Chile	CL	0.083	0.160	0.039	4.2	5.5
China	CN	0.150	0.130	0.120	1.1	11.6
Colombia	CO	0.035	0.069	0.025	9.7	2.3
Germany	DE	0.055	0.059	0.047	3.0	3.3
Spain	ES	0.031	0.066	0.019	11.0	3.2
Japan	JP	0.061	0.065	0.059	5.7	5.8
South Korea	KR	0.017	0.025	0.0094	3.9	1.8
USA	US	0.210	0.180	0.170	1.7	19.0
Overall		0.042	0.087	0.015	5.3	100

Are Portfolio Shares Signaling Lending Advantage?

1. Is covariance b/w export-c and credit larger for bank specialized in c?

$$\ln L_{bit} = \alpha^c_{bi} + \alpha'_{it} + \alpha''_{bt} + \beta_1 X^c_{it} + \sum_{j=2}^{4} \beta_j \ \ln X^c_{it} \times (\mathcal{S}^c_{ib} \in Q_j) + \epsilon^c_{ibt}$$

2. Are firms more likely to start borrowing from bank specialized in c after starting exporting to c?

$$EntryBank_{bit} = \alpha^c_{bi} + \alpha'_{it} + \alpha''_{bt} + \beta_1 EntryX^c_{it-1} + \sum_{j=2}^{4} \beta_j \ EntryX^c_{it-1} \times (\mathcal{S}^c_{ib} \in Q_j) + \epsilon^c_{ibt}$$

Dep. Variable:	$\ln L_{ibt}$	Dep.Variable:	$EntryBank_{ibt}$
$\ln(X^c_{it})$	-0.013*	$EntryX^c_{it-1}$	-1.07***
$\ln(X^c_{it}) \times (S^c_{ib} \in Q_2)$	0.010	$EntryX^c_{it-1} \times (S^c_{ib} \in Q_2)$	1.15***
$\ln(X^c_{it}) \times (S^c_{ib} \in Q_3)$	0.016	$EntryX^c_{it-1} \times (S^c_{ib} \in Q_3)$	1.25***
$\ln(X^c_{it}) \times (S^c_{ib} \in Q_4)$	0.126**	$EntryX^c_{it-1} \times (S^c_{ib} \in Q_4)$	1.89***
FEs	b-i , i-t, b-t		b-i , i-t, b-t

$\rightarrow$ Is this correlation driven by demand or supply of credit?

Revisit: Do firm-time-FE absorb credit demand?

- Recall: within-firm specification to identify credit supply shocks

$$\ln L_{ibt} = \gamma_{it} + \gamma_{ib} + IV_{bt} + \epsilon_{ibt}$$

- Instrument c-specific $X_{it}^{c,D}$ demand with c-shocks: GDP_t^c and RER_t^c

$$\ln L_{bit} = \gamma_{ib}^c + \gamma_{it}' + \gamma_{bt}'' + \beta \ \ln X_{it}^{c,D} + \epsilon_{ibt}^c$$

Dep. Variable	$\ln(X_{it}^{c,D})$ FS	$\ln(L_{ibt})$ IV
$\Delta GDPGrowth_t^c$	0.0104***	
	(0.003)	
$\Delta \ln(RER_t^c)$	0.504***	
	(0.028)	
$\mathcal{S}_{ib}^c \times \ln(X_{it}^{c,D})$		0.120**
		(0.059)
$\ln(X_{it}^{c,D})$		0.339**
		(0.173)

!!! Careful if bank-supply IV correlates with motive for bank-specific demand

Revisit: Elasticity of Exports to Credit Supply Shock

- Using again bank exposure to 2008 K-reversal in Peru

$$X_{idpt} = \alpha_{idp} + \alpha_{dpt} + \beta \underbrace{L_{it}^{S}}_{IV: \sum_b \omega_{ib} Exposed_b}$$

IV results	$\ln X_{ipt}^{c}$	
$\ln L_{it}^{S}$	0.195***	0.035
	(0.046)	(0.070)
$\ln L_{it}^{S} \times (S_{ib}^{c} \in Q_2)$		-0.596
		(0.542)
$\ln L_{it}^{S} \times (S_{ib}^{c} \in Q_3)$		-0.063
		(0.231)
$\ln L_{it}^{S} \times (S_{ib}^{c} \in Q_4)$		0.446**
		(0.173)
Destination-product-time FE	✓	✓

t: 1 year before vs. after shock

4. Banks' Specialization in Export Markets: Remarks

- Role of banks as source of comparative advantage
  - Banks seem to develop expertise towards activities of related firms
  - Banks are not perfectly substitutable sources of funding
  - Some shocks may induce bank-specific credit demand
  - Credit supply may induce within firm activity-specific responses

  $\rightarrow$ Challenge to common identification assumptions

- Implications
  1. Implications for market power and substitutability across banks
  2. Implications for propagation and transmission of shocks

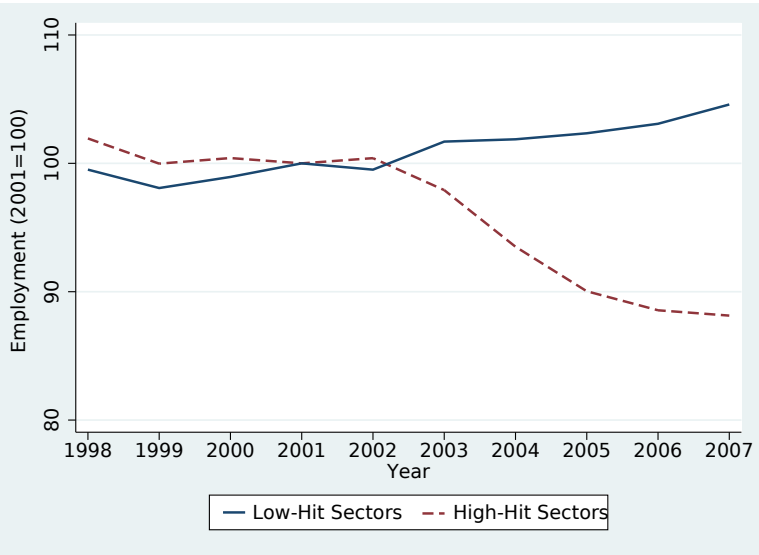
Implications

of Bank Specialization

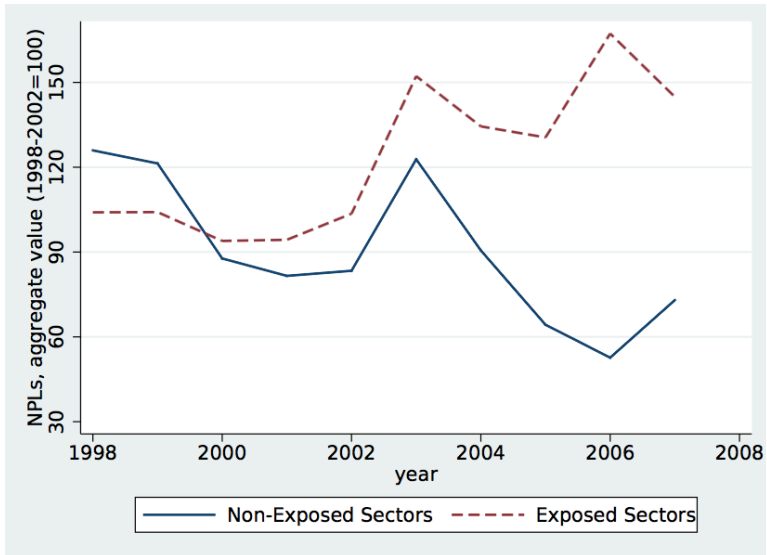
Amplification and Transmission of Real Shocks to Firms

- Real shock: Italian firms exposed to import competition from China
  Federico, Hassan & Rappoport (2023)

Figure: Heterogeneous Impact of Shock across Industries



(a) Employment

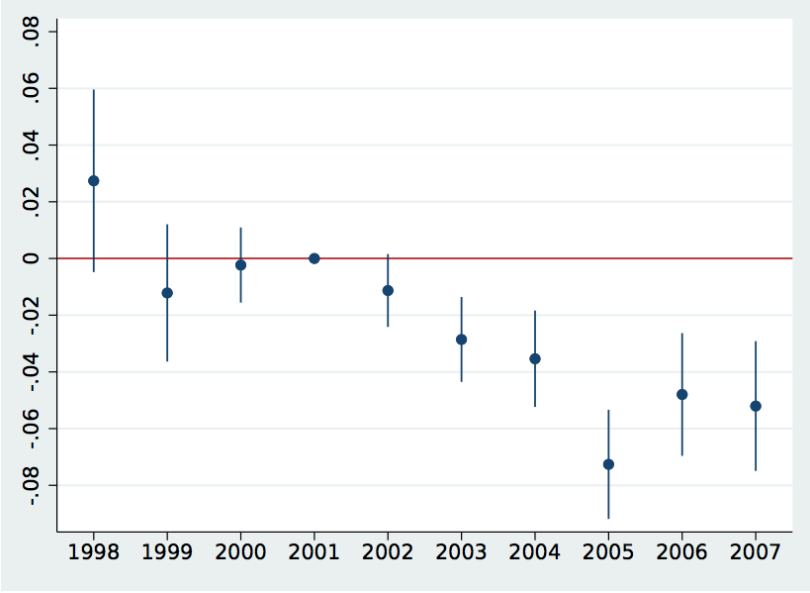


(b) NPL

- Exposed Sectors Instrumented as in Autor, Dorn & Hanson (2013)

$$China_p^{IT} = \frac{\Delta M_s^{IT-CH}}{Empl_{s,90}^{IT}} \quad \rightarrow \quad IV: China_s^{OT} = \frac{\Delta M_s^{OT-CH}}{Empl_{s,90}^{IT}}$$

From Firms Trade Shock to Bank Supply Shock



(c) Dynamic Diff-Diff

Dep. Vari	ln C_{ibt}
$Exposure\_{i,b} \times Post_t \times \ldots$	
$\ldots \times ManufLowHit_i$	-0.078***
	(0.010)
$\ldots \times ManufHighHit_i$	-0.068***
	(0.013)
$\ldots \times Services_i$	-0.073***
	(0.008)
firm-year FE	✓
firm-bank FE	✓

(d) Heterogeneous Effects

- $Exposure\_{i,b}$: share of credit in sectors affected by China shock

$$Exposure\_{i,b} = \frac{\sum_{j \neq i} C_{jb} China_j^{IT}}{\sum_{j \neq i} C_{jb}}$$

$China_j^{IT} = China_s^{IT} \times \mathbf{I}(j \in s)$: IV with $China_s^{OT}$ as in Autor et al. (2013)

From Bank Supply Shock back to Firms

$$\ln Y_{it} = \gamma_i + \gamma_{st} + \beta \; ExpFirm_i \times Post_t + \epsilon_{it}$$

Dep Var:	ln C_{it}		ln $Empl_{it}$		ln Inv_{it}	
	coeff.	s.d.	coeff.	s.d.	coeff.	s.d.
Full Sample	-0.047	(0.009)	-0.049	(0.009)	-0.059	(0.016)
Manuf HighHit	-0.053	(0.012)	-0.053	(0.011)	-0.041	(0.019)
Manuf LowHit	-0.076	(0.012)	-0.090	(0.015)	-0.134	(0.022)
Services	-0.033	(0.011)	-0.032	(0.010)	-0.039	(0.019)
Firm FE	✓		✓		✓	
Sector-time FE	✓		✓		✓	

- $ExpFirm_i$: Ave exposure of the firm's bank, weighted by share of firm credit

$$ExpFirm_i = \frac{\sum_b C_{ib} Exposure_{-i,b}}{\sum_b C_{ib}}$$

Amplification and Transmission of Real Shocks to Firms

- Partial-equilibrium aggregation (Chodorow-Reich (2014))

$$\Delta Y_s = \underbrace{g_s}_{\substack{\textit{unconstrained} \\ \textit{growth}}} + \underbrace{\beta_s}_{\substack{\textit{elasticity} \\ \textit{to credit}}} \underbrace{\sum_i [\underbrace{(ExpFirm_i - E_0)}_{\substack{\textit{firm exposure} \\ \textit{to credit shock}}} \cdot \underbrace{\omega_i}_{\substack{\textit{firm weight} \\ \textit{on } Y}}]}_{\textit{Credit shock}_s}$$

- Transmission
  - Effect on outcomes larger in sectors not hit by China shock (β_s)

  $\rightarrow$ Timing of shock coincides with relative expansion in non-hit sectors

- Amplification
  - Specialized banks lend mostly to sectors of specialization ($\textit{Credit Shock}_s$)

  $\rightarrow$ Force towards segmentation within already hit-sectors

Conclusion

- Financial development as a source of comparative advantage in trade
  - Not only because it provides external funding to capital-intensive sectors
  - But also because banks' expertise is valuable input
  - $\rightarrow$ Challenges: Identification + GE effects
- How do exporters use bank credit?
  - High-frequency fluctuations associated with working capital
  - Contracts are not only about prices: credit allows for terms flexibility
  - FX financial instruments
  - $\rightarrow$ Challenges: Multiple dimensions of export contracts. Prices + Terms + FX
- Current topics:
  - Credit links along the value chain
  - Trade credit: complement or substitute for bank credit?
  - Amplification/transmission of credit risk?

References I

Alfaro, L., Calani, M. & Varela, L. (2021), Granular Corporate Hedging Under Dominant Currency, Working Paper 28910, National Bureau of Economic Research.

Amiti, M. & Weinstein, D. E. (2011), 'Exports and Financial Shocks', *The Quarterly Journal of Economics* **126**(4), 1841–1877.

Antràs, P. & Foley, C. F. (2015), 'Poultry in Motion: A Study of International Trade Finance Practices', *Journal of Political Economy* **123**(4), 809–852.

Autor, D. H., Dorn, D. & Hanson, G. H. (2013), 'The China syndrome: local labor market effects of import competition in the United States', *American Economic Review* **103**(6), 2121–68.

Beck, T. (2003), 'Financial Dependence and International Trade', *Review of International Economics* **11**(2), 296–316.

Berthou, A., Horny, G. & Msonnier, J.-S. (2022), 'The real effects of invoicing exports in dollars', *Journal of International Economics* **135**(C).

Chodorow-Reich, G. (2014), 'The Employment Effects of Credit Market Eisruptions: Firm-Level Evidence from the 2008-9 Financial Crisis', *The Quarterly Journal of Economics* **129**(1), 159.

Demir, B., Michalski, T. & Ors, E. (2017), 'Risk-based capital requirements for banks and international trade', *Review of Financial Studies* **30**(11), 3970–4002.

References II

Do, Q.-T. & Levchenko, A. (2007), 'Comparative Advantage, Demand for External Finance, and Financial Development', *Journal of Financial Economics* **86**, 796–834.

Duquerroy, A., Mazet-Sonilhac, C., Mesonnier, J.-S. & Paravisini, D. (2022), Bank Local Specialization, Working Paper 865, Banque de France.

Federico, S., Hassan, F. & Rappoport, V. (2023), Trade Shocks and Credit Reallocation, Working Paper 31111, National Bureau of Economic Research.

Khwaja, A. & Mian, A. (2008), 'Tracing the impact of bank liquidity shocks: Evidence from an emerging market', *The American Economic Review* **98**(4), 1413–1442.

Manova, K. (2008), 'Credit constraints, equity market liberalizations and international trade', *Journal of International Economics* **76**(1), 33 – 47.

Paravisini, D., Rappoport, V. & Schnabl, P. (2023), 'Specialization in bank lending: Evidence from exporting firms', *The Journal of Finance* **forthcoming**.

Paravisini, D., Rappoport, V., Schnabl, P. & Wolfenzon, D. (2015), 'Dissecting the effect of credit supply on trade: Evidence from matched credit-export data', *Review of Economic Studies* **82**(1), 333–359.

Rajan, R. & Zingales, L. (1998), 'Financial Dependence and Growth', *The American Economic Review* **88**(3), 559–586.