Banking Crises and Exports: Lessons from the Past

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Motivation

Unprecedented drops in trade volumes following

- the unfolding of the financial crisis
- large drops in demand particularly in developed economies

Questions:

1. How much of the observed reduction in trade is attributable to supply side effects (i.e. finance)?
2. Can we disentangle the supply side effect of the crisis from the demand side effect?

Agenda

Previous literature

1. Impact of financial distress on the real economy
   - Dell'Ariccia et al. 2008, Berman 2008, Borensztein and Panizza 2009, Braun and Larrain 2005
2. Financial development and growth
   - **finance and production** (Rajan and Zingales 1998, Fisman and Love 2003, Braun 2003)
   - **finance and exports** (Beck 2002, Beck 2003, Manova 2008)
3. Firm level literature on financial constraints of exporters
   - **theory** (Kletzer and Bardhan 1987, Baldwin 1989, Krugman 1989)
   - **empirics** (Roberts and Tybout 1997, Iacovone and Javorcik 2008, Muuls 2008)

Methodology - estimation equation

Methodology

- difference in difference a la Rajan and Zingales (1998)
- reduces the issues of endogeneity and ommitted variables

Estimation equation

$$\Delta X_{ijt} = \alpha_{ij} + \beta_{it} + \gamma_{jt} + \phi Share_{ijt-3} + \delta ExtFinDep_j * Crisis_{it} + \lambda DemShock_{ijt} + \epsilon_{ijt}$$

- ΔX_{ijt} is the (ln) growth rate of exports
- α_{ij} is the country-industry fixed effect (long-term growth control)
- β_{it} is the country-year fixed effect (country specific shocks)
- γ_{jt} is the industry-year fixed effect (global industry specific shocks)
- $Share_{ijt-3}$ is the share of industry in total exports (convergence effects)

Data

Trade data

- Gross exports from UN Comtrade for period 1980-2006
- ISIC revision 2, disaggregated to 4 digit level

Banking crises

- based on Dell'Ariccia et al 2008 who identify systemic crises when
  - Emergency measures taken to assist the banking system
  - Large scale nationalization took place
  - NPLs reached at least 10% in total assets
  - Cost of rescue operation more than 2% of GDP
- 23 episodes in 21 developed and developing countries after excluding twin crises

Data - Financial measures

All measures based on US firm level data from Compustat 1980-1990

- **Dependence from bank finance** (Rajan and Zingales 1998)
  - Industry level median of ratio of capital expenditures minus cash flow over capital expenditures
- **Dependence on inter-firm finance** (Fisman and Love 2003)
  - Industry level median of ratio of accounts payable over total assets
- **Tangibility** (Kroszner et al. 2007)
  - Industry level median of ratio of tangible assets in total assets

Main results: Benchmark regressions

	(1)	(2)	(3)	(4)
Trade share	-0.680***	-0.679***	-0.674***	-0.676***
	(0.115)	(0.115)	(0.115)	(0.115)
RZ*Crisis	-0.0536***			-0.0354*
	(0.0171)			(0.0181)
FL*Crisis		0.203		-0.240
		(0.351)		(0.366)
TANG*Crisis			0.199***	0.175***
			(0.0543)	(0.0583)
Constant	-0.153	-0.163	-0.160	-0.235
	(0.143)	(0.131)	(0.135)	(0.154)
Observations	30753	30753	30753	30753
R-squared	0.275	0.275	0.275	0.275

Robust standard errors in parentheses

***, **, * significant at 1%, 5%, 10%

Main results: Demand shocks

	(1)	(2)	(3)	(4)	(5)
Trade share	-0.673***	-0.668***	-0.675***	-0.669***	-0.670***
	(0.111)	(0.114)	(0.114)	(0.114)	(0.114)
Demand shock	0.0118***	0.00790***	0.0227***	0.0185***	0.00551**
	(0.00198)	(0.00231)	(0.00833)	(0.00475)	(0.00241)
RZ*Crisis		-0.0480***			-0.0418**
		(0.0170)			(0.0172)
RZ*Demand shock		0.0144***			0.0110***
		(0.00397)			(0.00406)
FL*Crisis			0.129		
			(0.352)		
FL*Demand shock			-0.120		
			(0.0871)		
TANG*Crisis				0.192***	
				(0.0544)	
TANG*Demand shock				-0.0214	
				(0.0136)	
Durables*Crisis					-0.0162
					(0.0121)
Durables*Demand shock					0.00848***
					(0.00307)
Constant	0.0239	-0.0471	0.144*	-0.305*	-0.254
	(0.0707)	(0.150)	(0.0783)	(0.157)	(0.161)
Observations	31980	30753	30753	30753	30753
R-squared	0.274	0.277	0.276	0.277	0.277

More results..

1. **Deepness of the crisis**
   - using GDP loss as a proxy for deepness of a crisis we show that the adverse effect on highly dependent sectors is stronger in deeper crises
2. **Effect of financial development and GDP**
   - more developed countries tend to do better
   - probably because of better access to other forms of finance and to foreign banks
3. **Effect of policies**
   - general policy interventions targeted at easing the situation of the banks (blanket guarantee, liquidity support, debt relief etc.) do not have a significant effect on exports performance

Robustness tests

- is banking crisis like any economic distress?
- are our measures of financial dependence/tangibility suitable?
- are we measuring something else? what about omitted variables?
- are results driven by a certain country or certain group of countries?
- are our results driven by the choice of methodology?
- what about endogeneity?

Conclusions

Main results

- exporters get hurt through the financial channel in banking crisis
  - industries highly dependent on external finance grow less
  - highly tangible industries grow faster in a crisis
- demand shocks work on top of the supply shocks
- better economic and financial development helps mitigate the effect on exporters

Implications

- effects of finance on exporters should not be underestimated
- governments could potentially implement schemes to ease access to finance

Thanks

Thank you