Financial Sanctions Interact(ed) with Trade Sanctions

Christian Bayer

University of Bonn and CEPR

Alexandros Gilch

University of Bonn

Farzad Saidi

University of Bonn and CEPR

October 17, 2024

How to combine financial and trade sanctions?

Timing of financial and trade sanctions

- **Multidimensional economic sanctions, often bundled**
  - But they are not always enacted simultaneously!
- U.S. sanctions against Cuba since 1960 or Iran since 1987

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Does the order of financial and trade sanctions matter for their impact when they are eventually combined?

What we do

- Systematically exploit staggered implementation
    - Empirically: country-year panel and event studies
    - In a two-country DSGE model
- **Bottomline:** financial sanctions amplify trade sanctions
    - But not vice versa

Economic impact of financial and trade sanctions

Data & empirical strategy

Analysis at the (target) country-year level *ct*:

$$\begin{aligned}\ln(GDP)_{c,t} \quad &= \quad \underbrace{\beta_1 \textit{Financial sanctions}_{c,t-1} + \beta_2 \textit{Trade sanctions}_{c,t-1}}_{\text{both weighted by GDP of sanctioning countries}} \\ &+ \quad \underbrace{\theta_{o(c)t}}_{\text{continent-year FE}} \quad + \mu_c + \epsilon_{ct}\end{aligned}$$

- Data from the Global Sanctions Database
  (Felbermayr et al., 2020; Kirilakha et al., 2021)
- Augmented with additional sanctions (+ country-level variables from FRED) $\Rightarrow$ final sample from 1949 to 2020

Baseline effects of financial and trade sanctions on GDP

Countries with a functioning financial sector

	$\ln(GDP_{c,t})$	
Sample	All countries	Financially developed
Financial sanctions	-0.295**	-0.269*
	(0.137)	(0.163)
Trade sanctions	-0.255	-0.328
	(0.201)	(0.213)
Financial sanctions $\times$ Trade sanctions		
Country FE	Y	Y
Year FE	Y	Y
Continent-Year FE	N	N
N	2,757	2,530

Baseline effects of financial and trade sanctions on GDP

$1\sigma \Uparrow$ financial sanctions (GDP weighted) $\Rightarrow$ 7.1% $\Downarrow$ GDP

	$\ln(GDP_{c,t})$		
Sample	All countries	Financially developed	
Financial sanctions	-0.295**	-0.269*	-0.292*
	(0.137)	(0.163)	(0.155)
Trade sanctions	-0.255	-0.328	-0.395**
	(0.201)	(0.213)	(0.189)
Financial sanctions × Trade sanctions			
Country FE	Y	Y	Y
Year FE	Y	Y	N
Continent-Year FE	N	N	Y
N	2,757	2,530	2,455

Baseline effects of financial and trade sanctions on GDP

Noisily estimated effect of trade sanctions and their interaction with financial sanctions

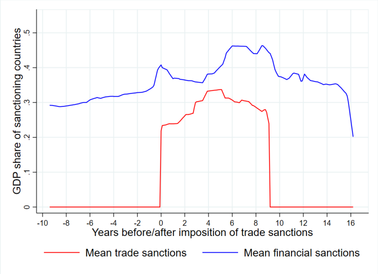
	$\ln(GDP_{c,t})$			
Sample	All countries	Financially developed		
Financial sanctions	-0.295**	-0.269*	-0.292*	-0.238**
	(0.137)	(0.163)	(0.155)	(0.114)
Trade sanctions	-0.255	-0.328	-0.395**	-0.310
	(0.201)	(0.213)	(0.189)	(0.205)
Financial sanctions $\times$ Trade sanctions				-0.180
				(0.376)
Country FE	Y	Y	Y	Y
Year FE	Y	Y	N	N
Continent-Year FE	N	N	Y	Y
N	2,757	2,530	2,455	2,455

Asymmetric effects of combined sanctions by their order

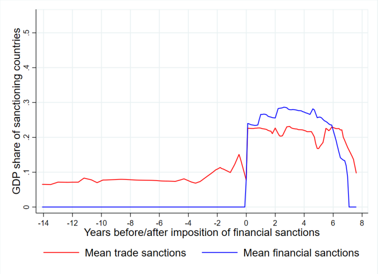
	$\ln(GDP_{c,t})$		
'before' cutoff	1 year	1 year	2 years
Financial sanctions × Trade sanctions × Financial *before* trade sanctions	-0.888*	-0.947**	-1.025**
	(0.461)	(0.455)	(0.458)
Financial sanctions × Trade sanctions × Trade *before* financial sanctions	-0.002	-0.037	-0.154
	(0.195)	(0.193)	(0.167)
Financial sanctions × Trade sanctions	0.305	0.392*	0.485*
	(0.210)	(0.232)	(0.271)
Financial sanctions	-0.265*	-0.208	-0.216
	(0.134)	(0.169)	(0.192)
Trade sanctions	-0.282	-0.232	-0.245
	(0.190)	(0.154)	(0.169)
Additional lags	N	1	2
Country FE	Y	Y	Y
Continent-Year FE	Y	Y	Y
N	2,455	2,249	2,068

$\Rightarrow$ Financial ahead of trade sanctions significantly more effective

Zooming in on combined sanction episodes



(a) Financial before trade sanctions



(b) Trade before financial sanctions

- **Financial and trade sanctions unfold differently depending on their order of implementation**

  Trade sanctions active for longer before financial sanctions kick in

- **Greater overlap in countries imposing financial before trade sanctions**

Moving to the sanction episode by country level

- Start with first sanction until 1 year (2 years) after second sanction kicks in
- Allows to account for pre-period differences before both financial and trade sanctions coincide
- Control group consists of all countries with no sanctions during the same period

Financial before trade *vs.* trade before financial sanctions

Analysis at the episode by country level *ec*,
with $t(e)$ the first year both types of sanctions are in place:

	$\Delta\ln(GDP)_{ec}^{t(e)+1,-1}$			
Sample				Financially developed
Financial sanctions × Trade sanctions × Financial before trade sanctions	-4.925**	-6.063***	-6.108***	-9.638**
	(2.225)	(1.955)	(1.970)	(3.599)
Financial sanctions × Trade sanctions	3.878	4.807**	4.861**	8.289**
	(2.273)	(1.996)	(2.019)	(3.861)
No. of years before second sanction	-0.032**	-0.041***	-0.041***	-0.066***
	(0.012)	(0.009)	(0.009)	(0.022)
GDP share second & first sanction		0.276*	0.749**	2.058***
		(0.153)	(0.363)	(0.514)
GDP share first sanction before & after			-0.490	-2.044***
			(0.472)	(0.604)
Episode FE	Y	Y	Y	Y
Country FE	Y	Y	Y	Y
Continent-Time FE	Y	Y	Y	Y
N	2,263	2,263	2,263	1,535

A two-country model with frictional banking can rationalize our findings

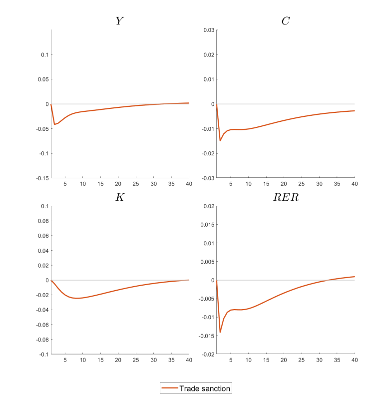
Model building blocks

- Two-country open economy
  - With a banking sector that transforms deposits into capital (Gertler and Karadi, 2011)
- Large sender economy with unconstrained banking sector
- Small target economy with banking sector closer to being constrained

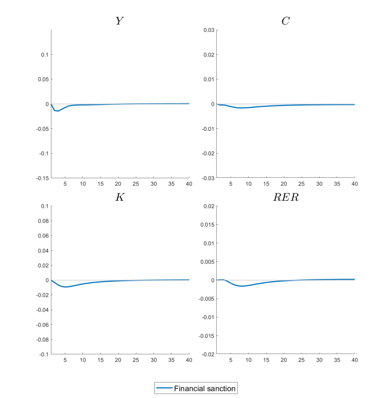
Calibration

- **Trade sanction**
  - Temporary increase in iceberg trade costs between sender and target
  - Captures sanction evasion and goods substitution
- **Financial sanction**
  - One-time negative shock to banking sector's net worth
  - Disruption of financial intermediation

Separate trade and financial sanction effects

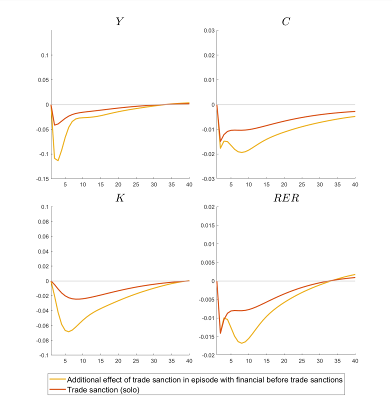


(a) Trade sanctions

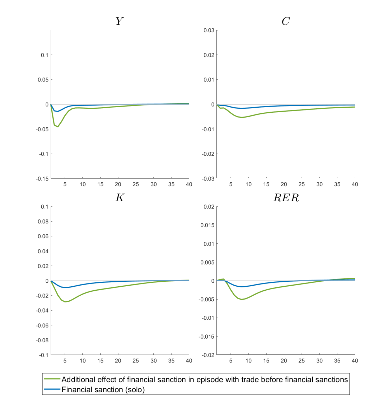


(b) Financial sanctions

Financial before trade *vs.* trade before financial sanctions

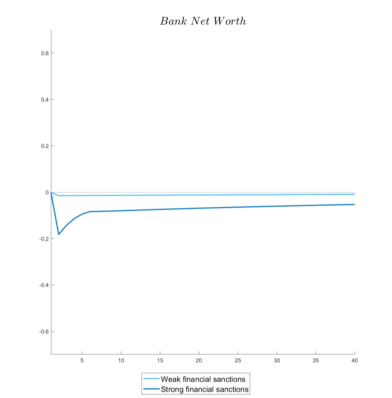


(a) Financial before trade sanctions

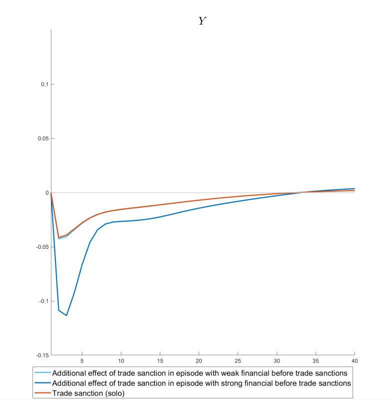


(b) Trade before financial sanctions

Necessary to have a sufficiently large shock to bank net worth



(a) Strong vs weak financial sanction

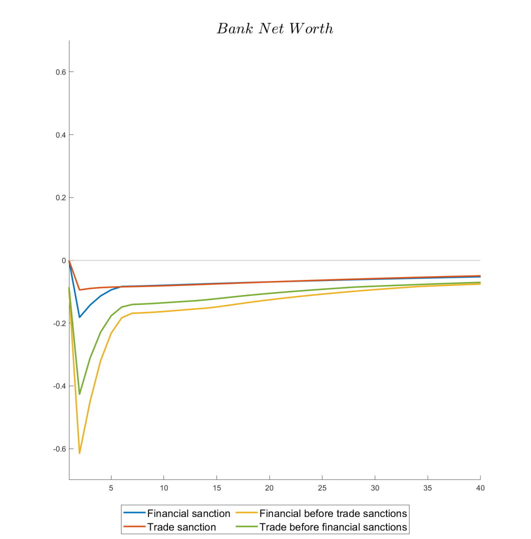


(b) Financial before trade sanctions

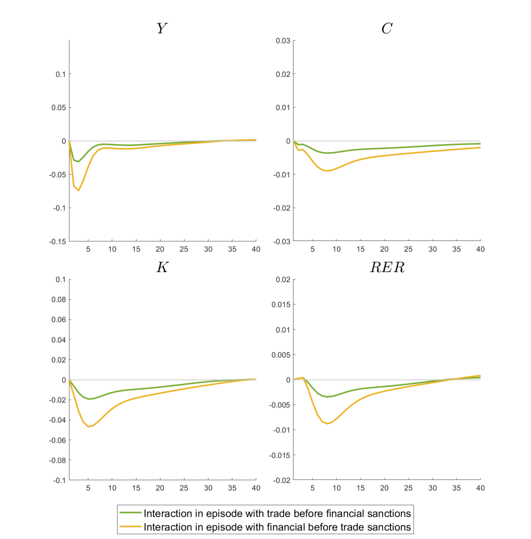
Conclusion

- Effectiveness of sanction episodes
    1. Combination of financial and trade (export) sanctions (Itskhoki and Ribakova, 2024)
    2. Sequencing
- Financial before trade sanctions more effective in harming the target economy than the reverse
    - **Rationale:** decline in banking sector's net worth governs the target economy's sensitivity to external shocks
    - Business cycle effects of trade sanctions amplified by a constrained financial sector

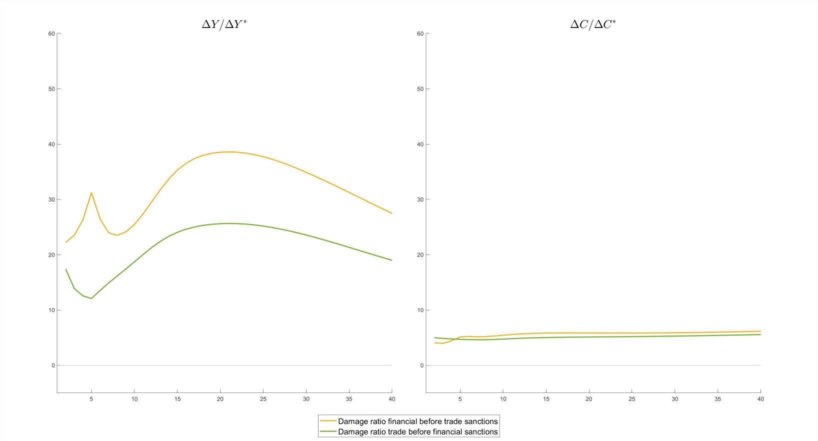
Bank net worth in all scenarios



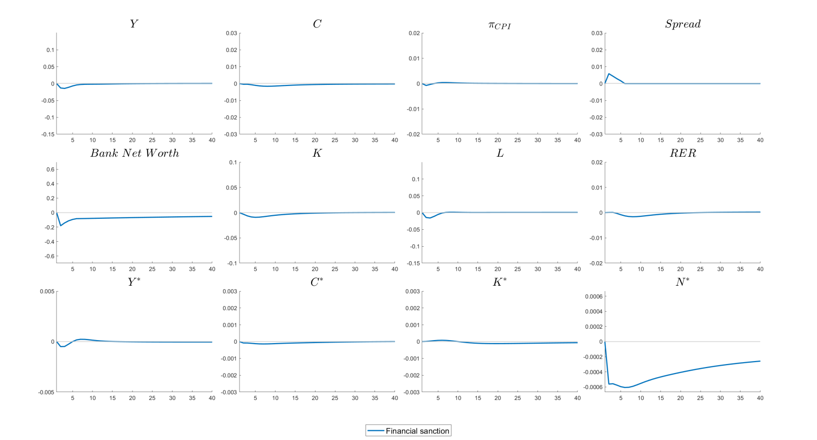
Interaction effects



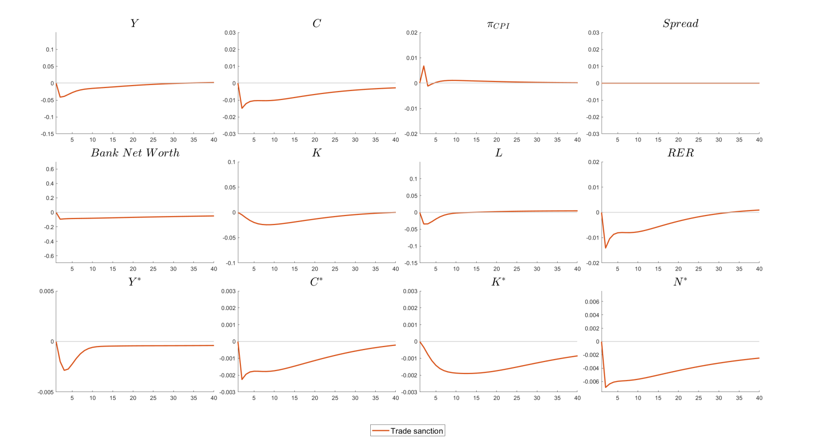
Cumulative damage ratios



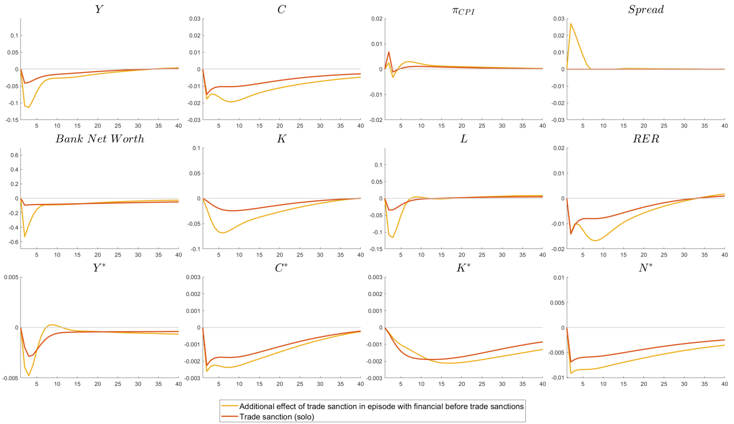
Financial sanction



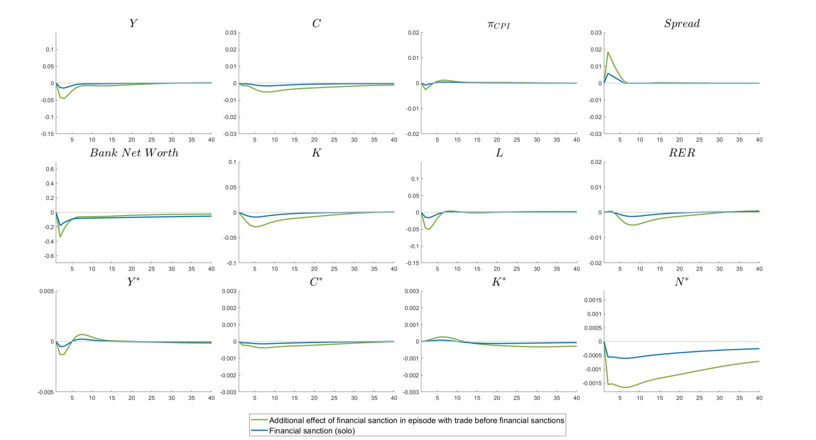
Trade sanction



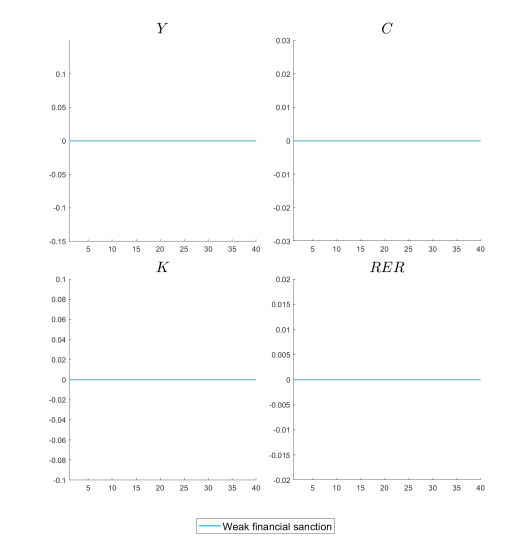
Financial before trade sanction



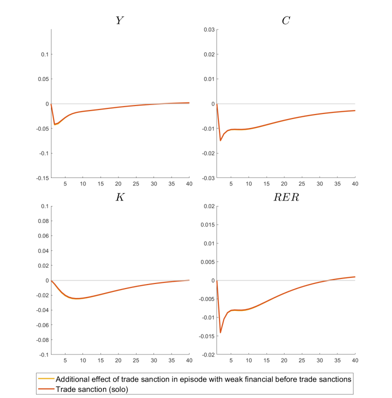
Trade before financial sanction



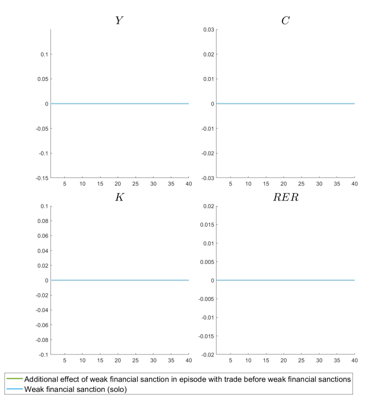
Weak financial sanction



Weak financial and trade sanctions interacted



(a) Financial before trade sanctions



(b) Trade before financial sanctions