Macroeconomic and Distributional Impact of Sanctions News: Evidence from Russia

Anna Pestova[1,2] Mikhail Mamonov[1]

[1] Toulouse Business School

[2] CERGE-EI

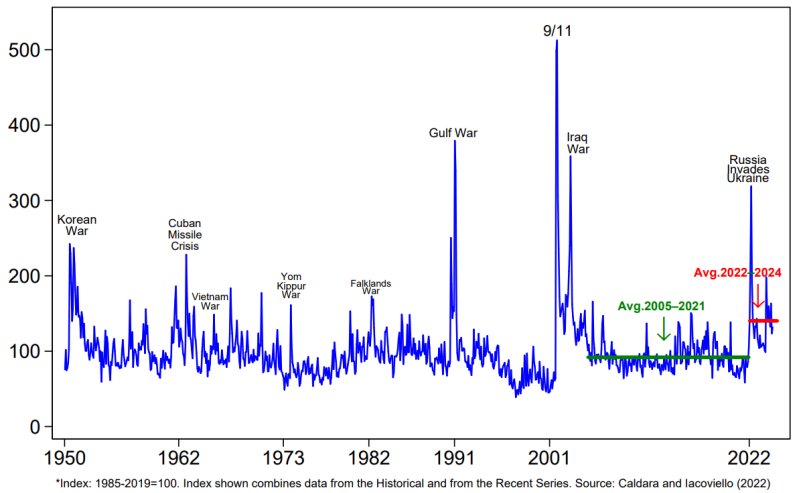
BSE Summer Forum

ADVANCES IN STRUCTURAL SHOCKS IDENTIFICATION

June 5, 2025

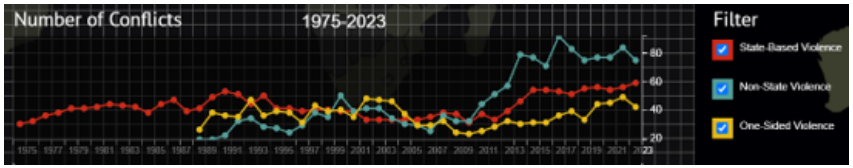
Rising Geopolitical Risk and Armed Conflict Incidence

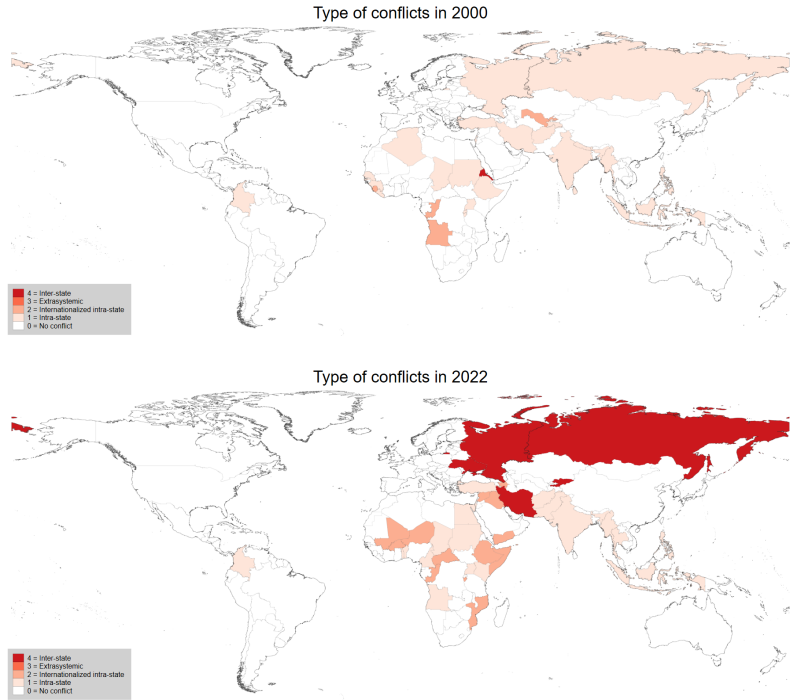
- **Caldara & Iacoviello 2022 AER**
  Geopolitical Risk Index



*Index: 1985-2019=100. Index shown combines data from the Historical and from the Recent Series. Source: Caldara and Iacoviello (2022)

- *N* armed conflicts

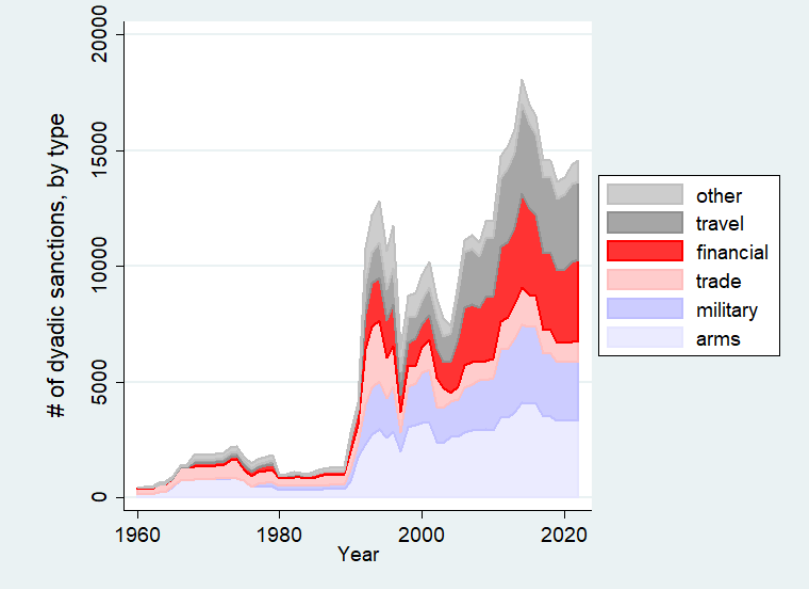


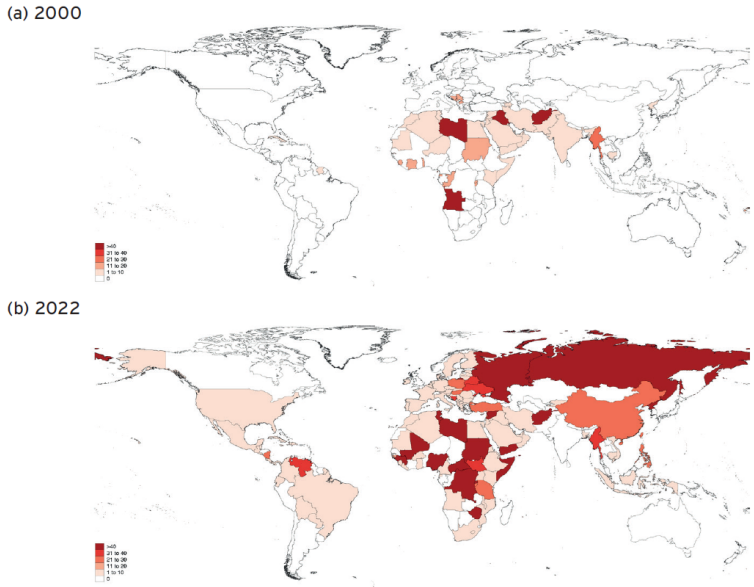


Source: Uppsala Conflict Data Program

Sanctions as Punishment for Undesired Actions

- **Felbermayr et al. 2020 EER**
  Global Sanction Database
  - Over **100 countries** have faced trade, financial, and other sanctions since the 1940s





Source: Global Sanction Database

Sanctions Timeline

The Russo-Ukrainian War (2014 — ...)

- **2014**: Sanctions for Crimea's annexation and support for separatist movements in Eastern Ukraine

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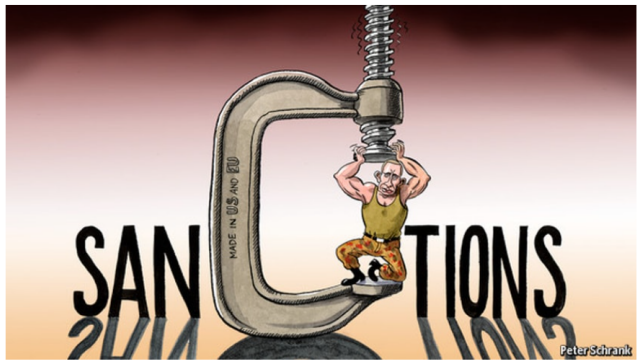
2014

Europe | Sanctions on Russia

This is going to hurt

The Economist

The cost of Vladimir Putin's gamble in Ukraine is going up, but he shows no sign of changing course



Aug 2nd 2014 | LONDON AND MOSCOW

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2022

Leaders | Russia, geopolitics and the world economy

Are sanctions on Russia working?

The lessons from a new era of economic warfare



Aug 25th 2022

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This Paper: New Identification & Cross Sections

- Sanctions news shock using *high-frequency identification* (*HFI*) around sanctions announcements

  Gertler & Karadi'15 AEJ Macro; Altavilla et al.'19 JME; Kaenzig'21 AER; Geiger & Guntner'24 JME

  (Anticipation of) Sanctions Announcement $\Rightarrow$ *Russia's sovereign FC debt mkt reaction* $\Rightarrow$ *changes in YTM*

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- Aggregate effects + cross-sectional implications of sanctions: *who is hurt the most?* $\Rightarrow$ implications for policies & inequality

Preview of Findings

1. The macro effects of sanctions news are negative and sizable. Sanctions news bite!

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2. Sanctions compress inequality
    - Rich HHs' income declines sharply, poor HHs' income unaffected
    - Market sales of high-TFP, large firms collapse; low-TFP, small firms unaffected.
3. Robust to a battery of additional checks

Relation & Contribution to the Literature

- **High frequency identification of shocks**

  Gertler & Karadi'15 AEJ Macro; Altavilla et al.'19 JME; Kaenzig'21 AER; Geiger & Guntner'24 JME

  ⇒ *This paper: New shock*

- **Cross-sectional implications of aggregate shocks**

  Cloyne et al.'20 Restud; Kaenzig'23; Del Canto et al.'23; Lenza & Slacalek'24 JAE; Chetty et al.'24 QJE

  ⇒ *This paper: Heterogeneous effects of the sanctions shock*

- **The effects of sanctions**

  Elliot & Hufbauer'99 AER; Jayachandran & Kremer'06 AER; Dreger et al.'16 JCE; Barseghyan'19; Ahn & Ludema'20 EER; Laudati & Pesaran'23 JAE; Efing et al.'23 RFS; Itskhoki & Mukhin'23 AER P&P; Bianchi & Sosa-Padilla'23 AER P&P; Kim et al.'23 JIE; Bondarenko et al.'24 JIE; de Souza et al.'24 JME; Itskhoki & Mukhin'25

  ⇒ *This paper: Empirical macro, novel HFI identification*

High Frequency Identification

The Idea of Sanctions Shock Identification

- **Sanctions announcements** = new information for market participants
    - Sanctions impair the prospects of the sanctioned economy

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  - Market participants revisit their expectations about the sanctioned economy
- Sanctions increase a **sovereign bond yield** demanded by risk-neutral foreign investors to compensate for an increased risk of (gov't) default

  — Useful framework Mendoza & Yue 2012 QJE

List of OFAC Sanctions Announcements under Russia-Related Programs, 2013-2019

N	Date	Program	SSI	SDN	Source
1	12/04/2013	Magnitsky		SDN	Link
2	17/03/2014	Ukraine-/Russia-related		SDN	Link
3	20/03/2014	Ukraine-/Russia-related		SDN	Link
4	11/04/2014	Ukraine-/Russia-related		SDN	Link
5	28/04/2014	Ukraine-/Russia-related		SDN	Link
6	20/05/2014	Magnitsky		SDN	Link
7	20/06/2014	Ukraine-/Russia-related		SDN	Link
8	16/07/2014	Ukraine-/Russia-related	SSI	SDN	Link
9	29/07/2014	Ukraine-/Russia-related	SSI	SDN	Link
10	12/09/2014	Ukraine-/Russia-related	SSI	SDN	Link
11	19/12/2014	Ukraine-/Russia-related		SDN	Link
12	29/12/2014	Magnitsky		SDN	Link
13	11/03/2015	Ukraine-/Russia-related		SDN	Link
14	30/07/2015	Ukraine-/Russia-related	SSI	SDN	Link
15	22/12/2015	Ukraine-/Russia-related	SSI	SDN	Link
16	01/02/2016	Magnitsky		SDN	Link
17	01/09/2016	Ukraine-/Russia-related	SSI	SDN	Link
18	14/11/2016	Ukraine-/Russia-related		SDN	Link
19	20/12/2016	Ukraine-/Russia-related	SSI	SDN	Link
20	29/12/2016	Cyber-Related		SDN	Link
21	09/01/2017	Magnitsky		SDN	Link
22	20/06/2017	Ukraine-/Russia-related	SSI	SDN	Link
23	20/12/2017	Magnitsky		SDN	Link
24	21/12/2017	Global Magnitsky		SDN	Link
25	26/01/2018	Ukraine-/Russia-related	SSI	SDN	Link

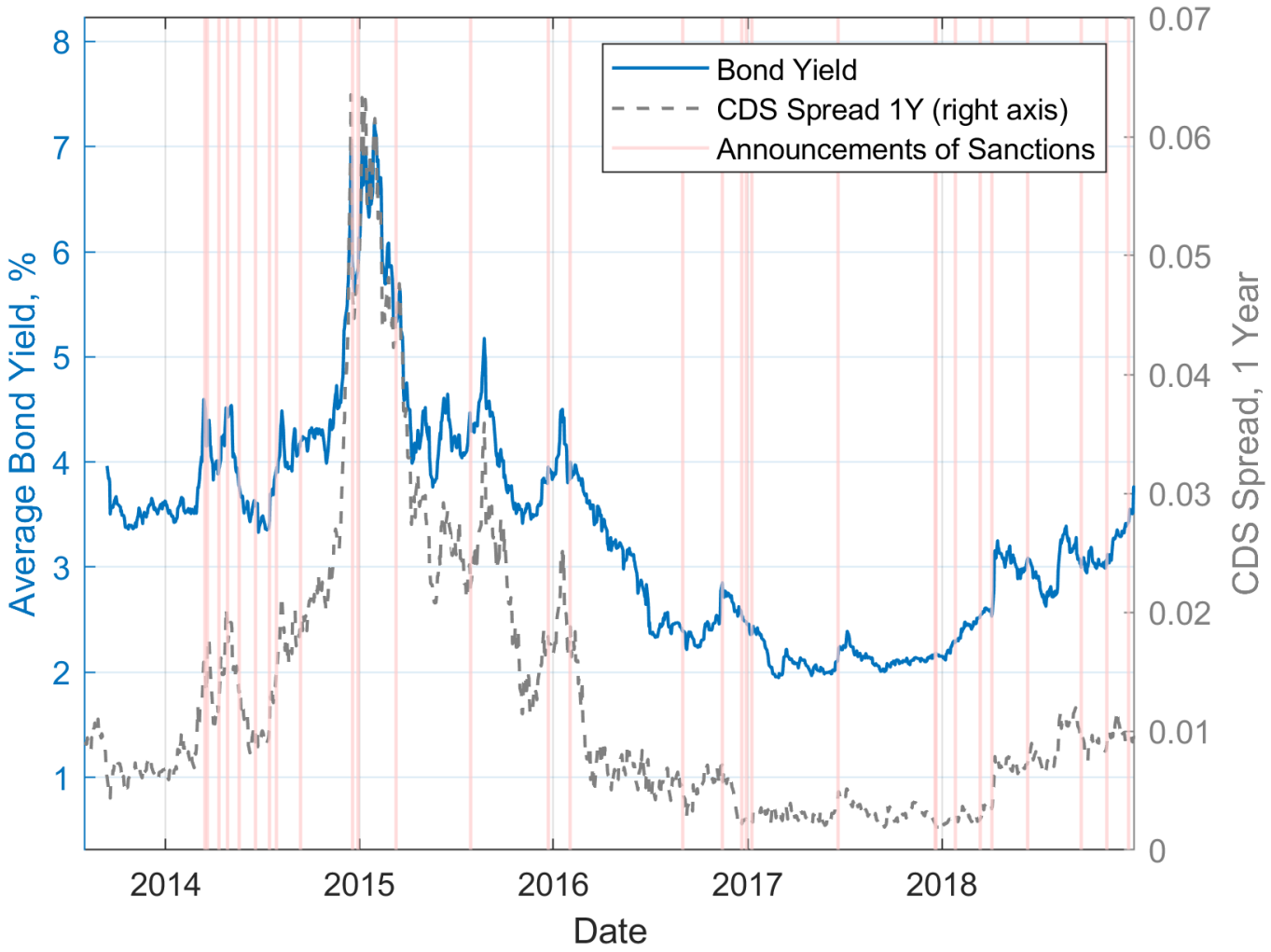
The list of Russia's sovereign US Dollar-denominated bonds

Eikon Identifier	Maturity date	Coverage from	Included into the average
RUGV 4.5000	04-Apr-2022	29-Mar-2012	Yes
RUGV 3.6250	16-Sep-2022	13-Sep-2013	Yes
RUGV 3.2500	04-Apr-2017	29-Mar-2012	No
RUGV 5.0000	29-Apr-2020	23-Apr-2010	Yes
RUGV 4.5000	04-Apr-2022	29-Mar-2012	Yes
RUGV 3.5000	16-Jan-2019	11-Sep-2013	Yes
RUGV 3.2500	04-Apr-2017	29-Mar-2012	No
RUGV 3.5000	16-Jan-2019	10-Sep-2013	Yes
RUGV 11.0000	24-Jul-2018	14-Feb-2001	No
RUGV 5.0000	29-Apr-2020	22-Apr-2010	Yes
RUGV 3.6250	29-Apr-2015	30-Apr-2010	No
RUGV 3.6250	16-Sep-2020	11-Sep-2013	Yes
RUGV 11.0000	24-Jul-2018	19-Aug-2005	No

Source: Refinitiv Eikon

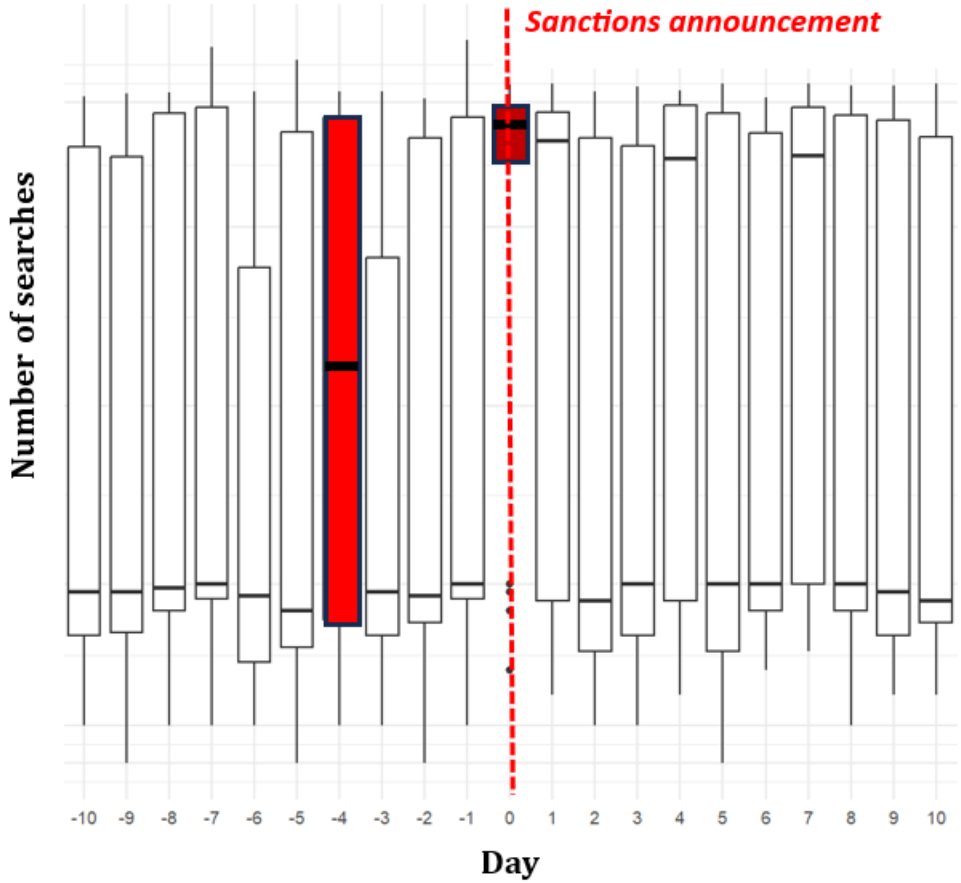
OFAC Sanctions Announcements and the YTM of Russia's Sovereign USD Bonds

- Yield-to-maturity averaged across 8 relevant issues of Russia's US Dollar-denominated sovereign bonds, 2014–2019



Anticipation of OFAC sanctions announcements

- Google search "(Russia OR Russian firm) AND sanctions" in $[d-10, d+10]$



Example #1: d =17 March 2014 | Example #2: d =16 July 2014 | Example #3: d =12 September 2014

Daily to Monthly Sanctions Surprises

- A priori unknown time window & Potential (media) leakages
- Assume: One-day window & k-day shifting due to leakages

$$Surprise_{t,d,k} = \begin{cases} YTM_{t,d+k} - YTM_{t,d+k-1} & \text{if } \mathbf{1}\{d = announc.\} = 1 \\ 0 & \text{if } \mathbf{1}\{d = announc.\} = 0 \end{cases}$$

where $k = -5, ..., -3, ..., +2$

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Monthly Sanctions Surprises:

$$z_{t,k} = Sanctions\ Surprise_{t,k} = \sum_{d \in t} Surprise_{t,d,k}$$

Econometric Approach: LP-IV

Local Projection – Instrumental Variable approach
(Stock & Whatson 2018 EJ; Kaenzig'23; Jorda et al.'20 JME)

$$y_{i,t+h} = \alpha_{i,h} + \theta_{i,h} \cdot y_{1,t} + \delta'_{i,h}\mathbf{x}_t + v_{i,t+h},$$

where $y_{i,t+h}$ is i-th endogenous variable in month $t+h$, $h = 1, 2...36$ is the prediction horizon, and the vector $\mathbf{x}_t$ contains controls

Instrument Russia's country spread $y_{1,t}$ (*JP Morgan's EMBI+* for Russia) using $z_{t,k} = Surprise_{t,k}$, for $k = -5...0$

— Validity: Plagborg-Moller & Wolf 2021 Ecca

— Robustness: Internal instrument approach, Plagborg-Moller & Wolf 2021 Ecca

Identification Assumptions

- **Changes in bond yields are correlated with the sanctions news shock**

  — Satisfied as long as sanctions matter and investors care about sanctions

- **Changes in bond yields around announcement days are not correlated with other shocks affecting the economy**

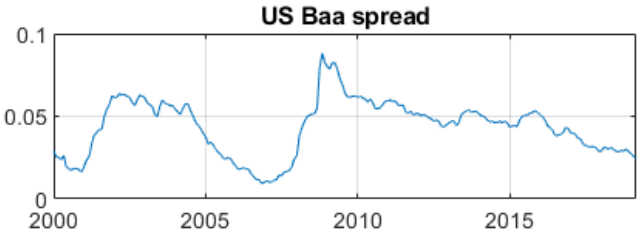
  — Sanctions are induced by military and geopolitical events

  Robustness: Exclude large monetary event, December 16, 2014

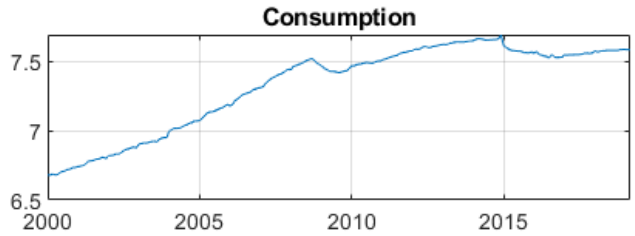
Data


Commodity terms of trade
4.7
4.6
4.5
4.4
2000
2005
2010
2015


Real US Interest Rate
0.05
0
-0.05
2000
2005
2010
2015

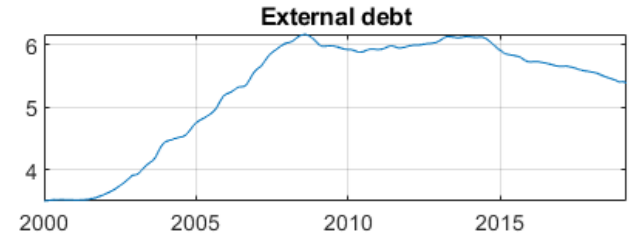

US Baa spread
0.1
0.05
0
2000
2005
2010
2015

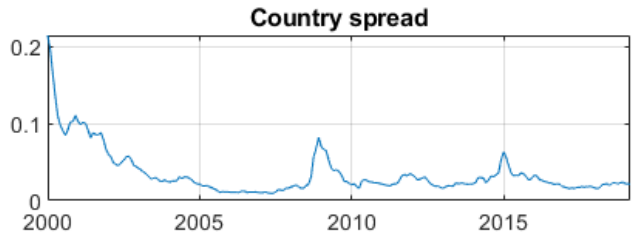

Industrial Production
8
7.8
7.6
7.4
2000
2005
2010
2015

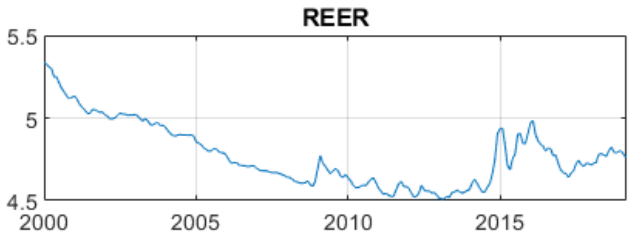

Consumption
7.5
7
6.5
2000
2005
2010
2015


Investment
7
6.5
6
5.5
2000
2005
2010
2015


Trade Balance
3
2
1
2000
2005
2010
2015


External debt
6
5
4
2000
2005
2010
2015

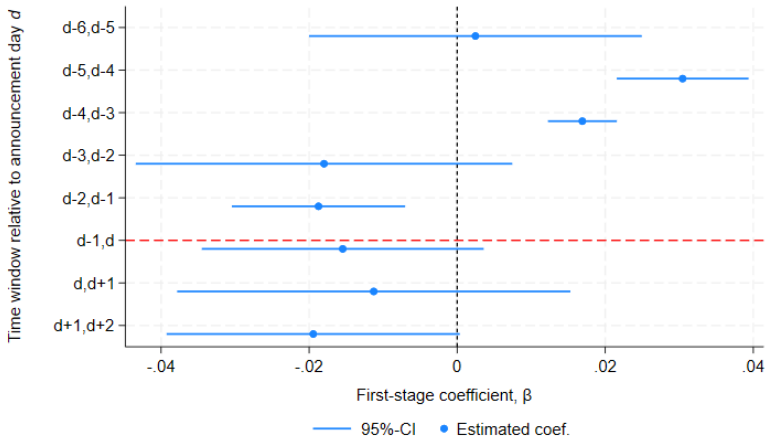

Country spread
0.2
0.1
0
2000
2005
2010
2015


REER
5.5
5
4.5
2000
2005
2010
2015

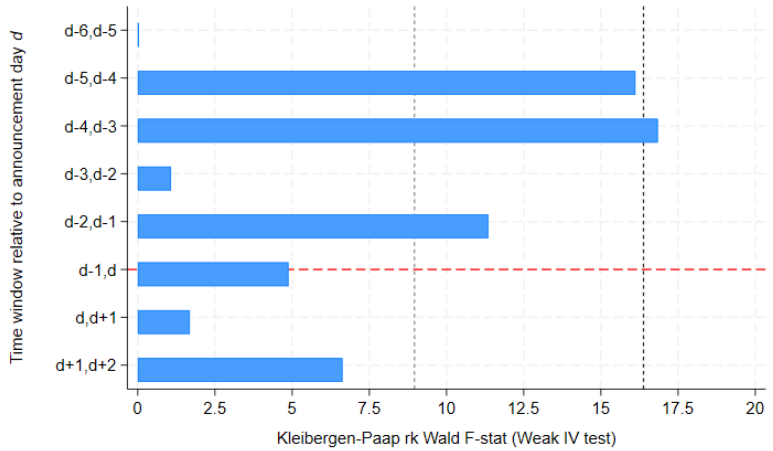
Aggregate Effects of Sanctions Announcements

HFI: The First Stage

$$\underbrace{y_{1,t}}_{\text{Country Spread}} = \alpha_k + \beta_k \cdot \underbrace{z_{t,k}}_{k^{th}\text{ Sanctions Surprise}} + else, \text{ for } k = -5...2$$

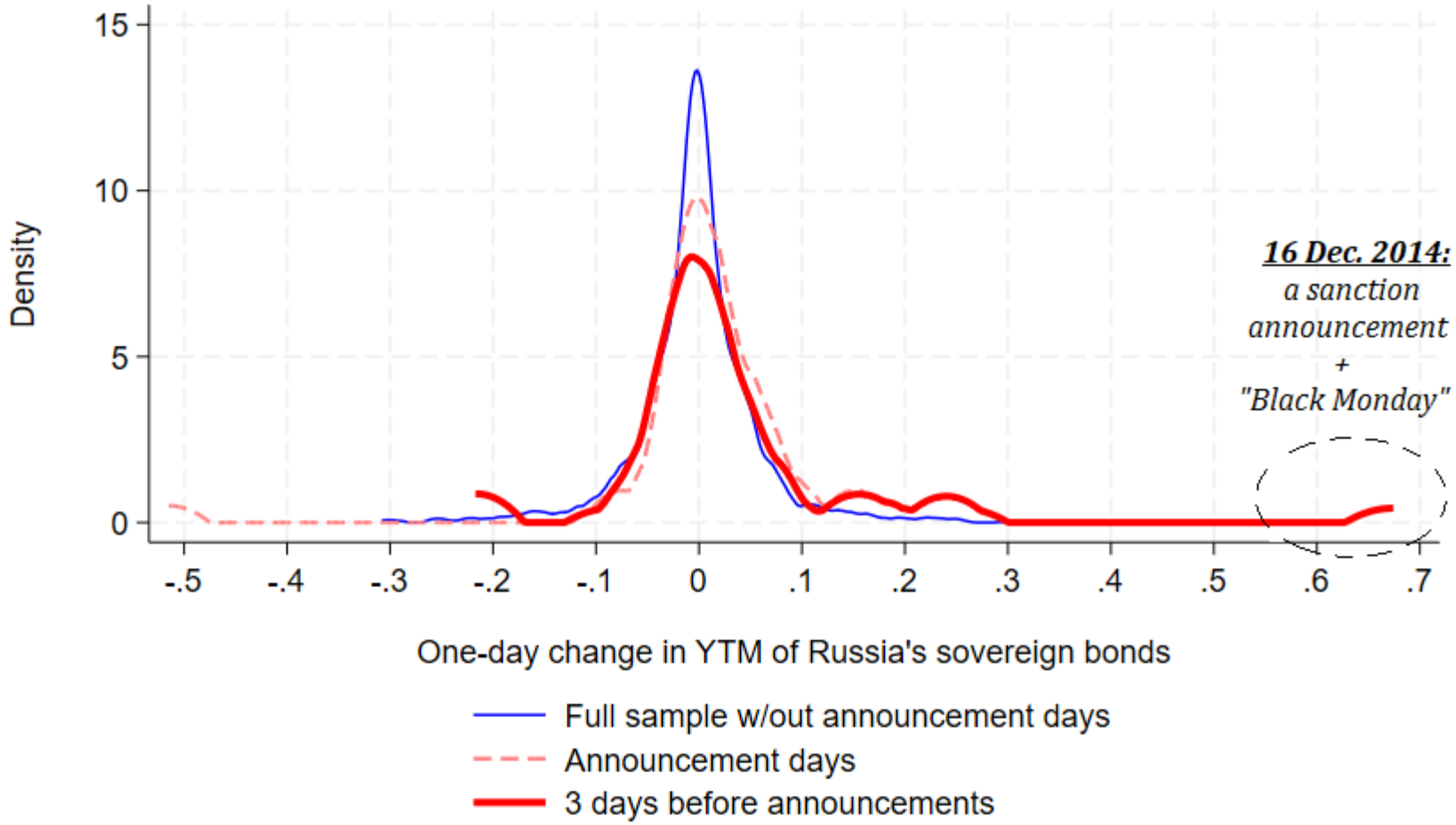


(a) The effect of k-th instrument $z_{k,t}$

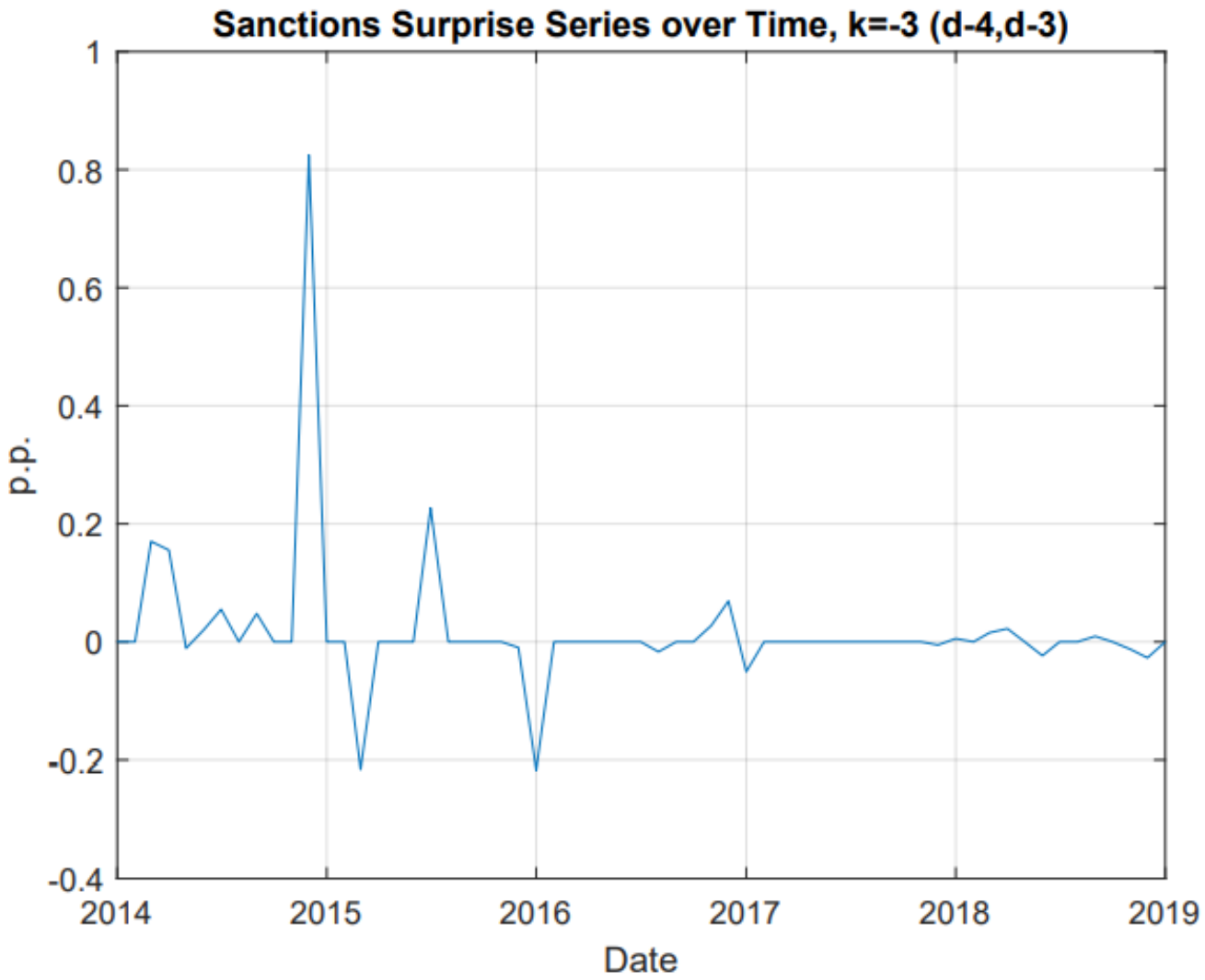


(b) F-stat of the weak IV test

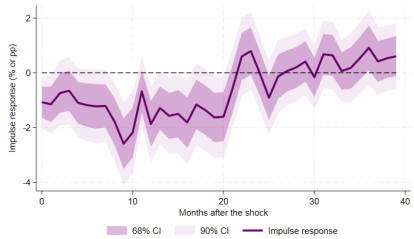
Are Announcement Days Different from "Normal" days?



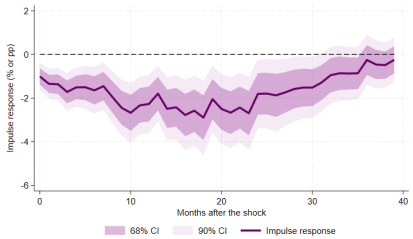
Monthly Sanctions Surprises



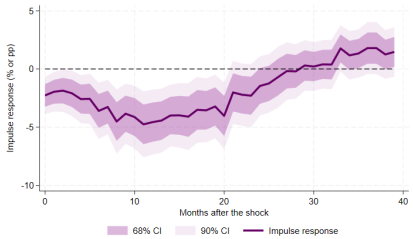
Results: Sanctions News Shock and the Macroeconomy



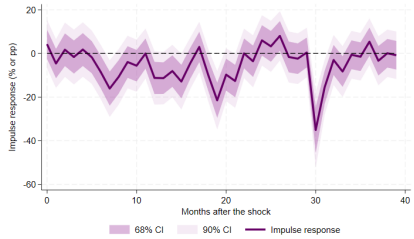
(a) Industrial production



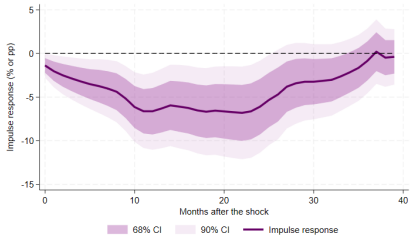
(b) Consumption



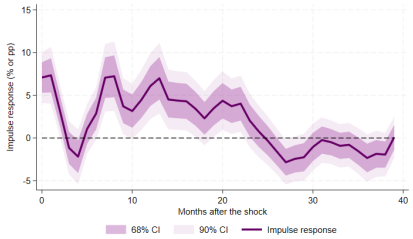
(c) Investment



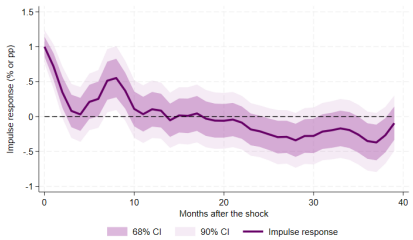
(d) Trade Balance



(e) External Debt

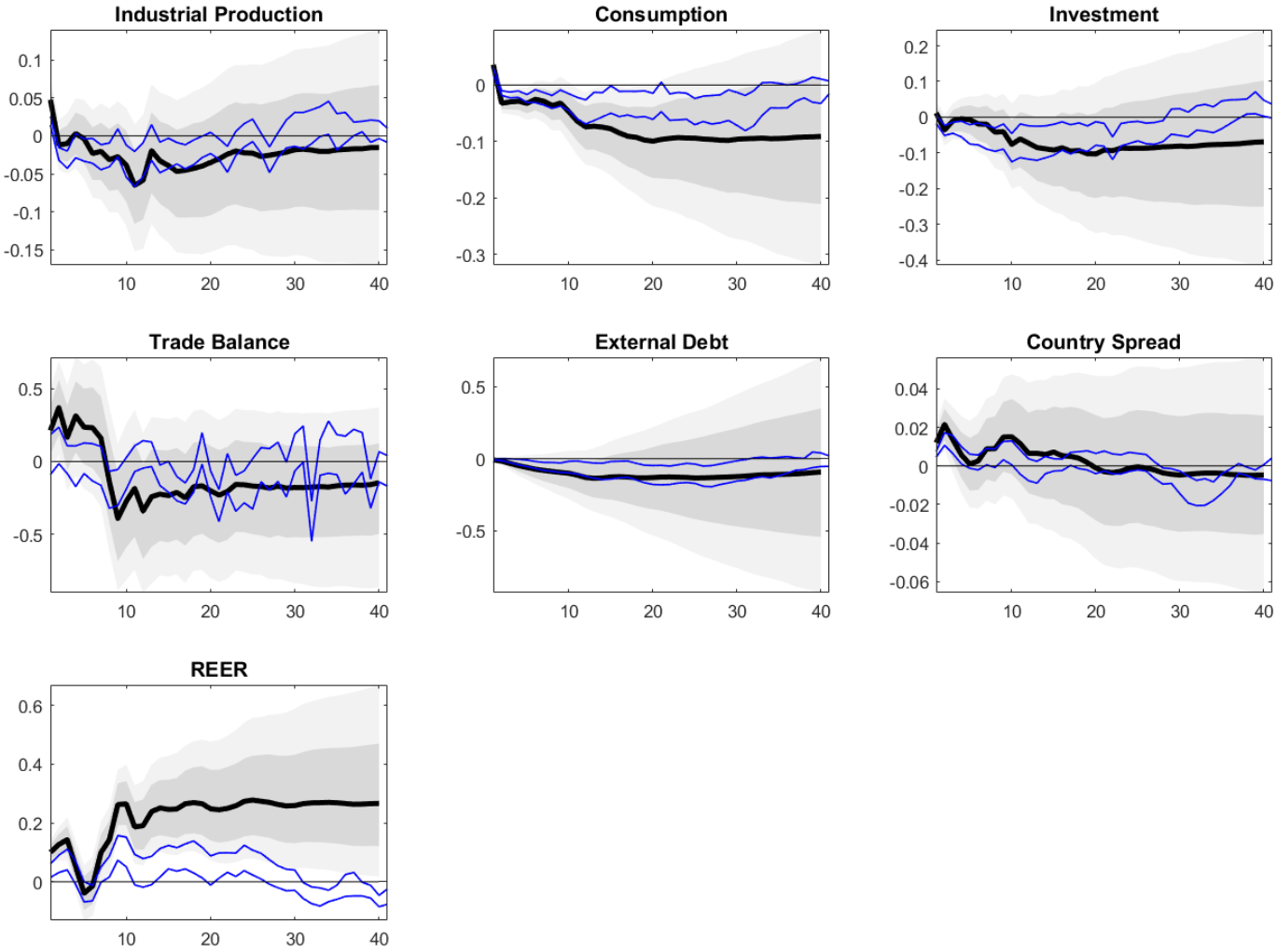


(f) REER



(g) Country spread

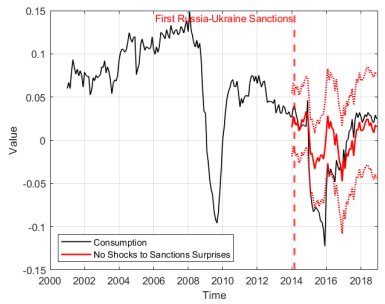
Robustness: Internal IV Approach, Minnesota Prior



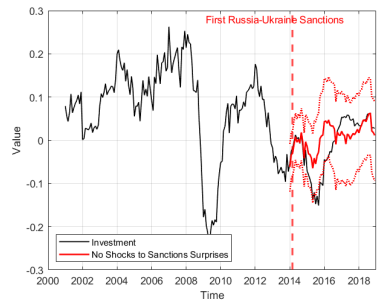
Counterfact Analysis: What if There Were No Sanctions?



(a) Industrial Production



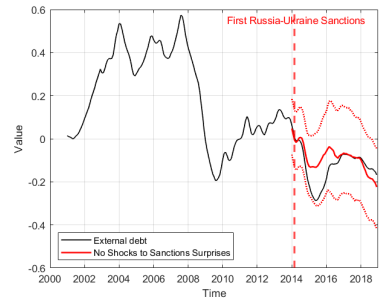
(b) Consumption



(c) Investment



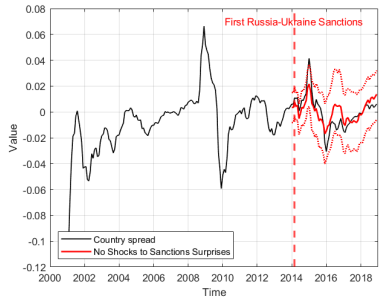
(d) Trade Balance



(e) External Debt



(f) REER



(g) Country spread

Further Robustness Checks

- Domestic monetary policy
  1st stage | 2nd stage
- Credit default swaps
  1st stage | 2nd stage
- Leakage parameter
  $k = -4$ | $k = 0$ | $k = -5 \ldots 0$

Distributional Effects of Sanctions

Firm-Level Data

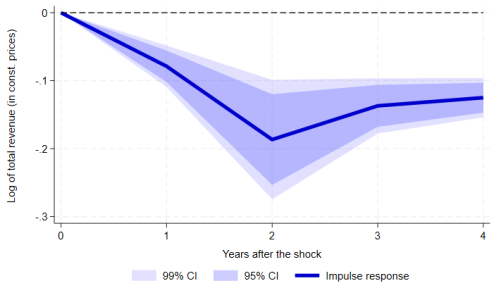
- SPARK-Interfax database
- $\sim 500,000$ reporting firms, 2010–2019

	Obs	Mean	SD	Min	Max
The full sample					
$\ln TR_{f,t}$	2,235,286	17.1	2.5	0.0	31.1
$\ln W_{f,t}$	1,428,912	14.8	2.5	0.8	26.9
$\ln K_{f,t}$	1,629,154	15.5	2.9	–0.3	30.0
$\ln TFP_{f,t}$	1,201,238	10.4	1.8	–3.2	24.9
$ROA_{f,t}$	2,130,049	0.040	0.2	–0.6	0.6
$Leverage_{f,t}$	2,230,933	0.5	1.8	–3.0	18.7
$Net\ asset\ growth_{f,t}$	1,761,401	0.19	0.81	–1.90	5.81
20% most productive (Q5 TFP as of 2013)					
$\ln TR_{f,t}$	127,050	19.5	2.2	6.6	31.1
$\ln W_{f,t}$	85,580	15.9	2.1	5.2	25.0
$\ln K_{f,t}$	116,268	14.7	2.8	4.0	27.9
$\ln TFP_{f,t}$	75,078	12.4	1.7	0.1	22.4
$ROA_{f,t}$	123,427	0.040	0.1	–0.6	0.6
$Leverage_{f,t}$	118,557	1.1	2.6	–3.0	18.7
$Net\ asset\ growth_{f,t}$	104,069	0.19	0.73	–1.90	5.71
20% least productive (Q1 TFP as of 2013)					
$\ln TR_{f,t}$	141,282	17.0	2.3	3.2	28.1
$\ln W_{f,t}$	102,879	16.1	2.1	3.0	26.9
$\ln K_{f,t}$	142,293	17.5	2.5	3.6	29.5
$\ln TFP_{f,t}$	100,788	8.7	1.3	–3.2	19.4
$ROA_{f,t}$	134,878	–0.009	0.1	–0.6	0.6
$Leverage_{f,t}$	132,838	0.4	1.7	–3.0	18.7
$Net\ asset\ growth_{f,t}$	118,651	0.03	0.58	–1.90	5.81

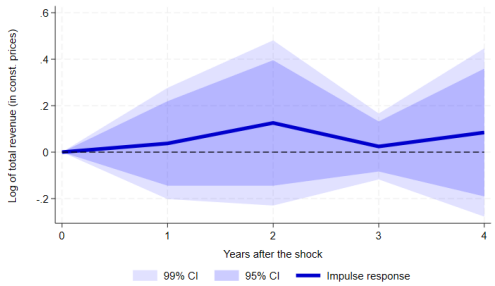
Results: Firms' Responses to the Sanctions News Shock

Reduced-form LP:

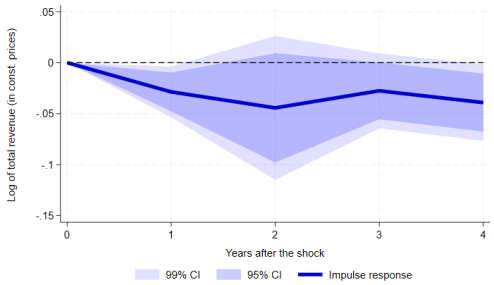
$$\underbrace{\ln TR_{f,t+h}}_{\text{Total Revenue}} = \theta_h \cdot \underbrace{\bar{z}_{k,t}}_{\text{Sanctions Surprise}} + \mathbf{X}_{f,t}\mathbf{\Phi}'_h + \alpha_f + \alpha_i + \alpha_s + \varepsilon_{f,t+h}$$



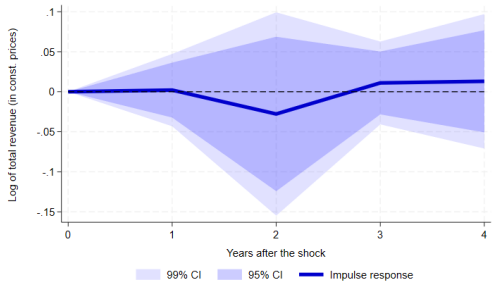
(a) High-TFP, large firms



(b) High-TFP, small firms



(c) Low-TFP, large firms



(d) Low-TFP, small firms

Household-Level Data

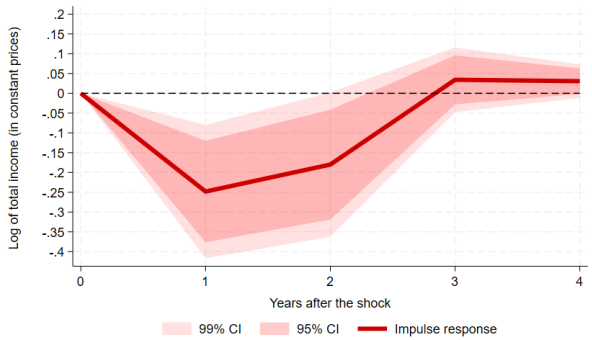
- RLMS-HSE dataset, 2010–2019
- Representative panel of 5,000 households

	Obs	Mean	SD	Min	Max
	(1)	(2)	(3)	(4)	(5)
The full sample					
$\ln Y_{h,t}$	80,246	6,3	0,6	4,8	7,8
$\ln C_{h,t}$	83,682	5,8	0,7	4,3	7,8
$\ln C^D_{h,t}$	41,731	3,5	1,5	0,2	7,0
$\ln C^N_{h,t}$	83,693	5,7	0,6	4,2	7,5
20% richest as of 2013					
$\ln Y_{h,t}$	13,128	6,6	0,6	4,8	7,7
$\ln C_{h,t}$	15,387	6,0	0,7	4,3	7,4
$\ln C^D_{h,t}$	9,377	3,6	1,5	0,2	6,8
$\ln C^N_{h,t}$	15,321	5,9	0,7	4,2	7,2
20% poorest as of 2013					
$\ln Y_{h,t}$	9,400	5,7	0,4	4,8	7,6
$\ln C_{h,t}$	9,109	5,3	0,5	4,3	7,4
$\ln C^D_{h,t}$	2,771	3,3	1,4	0,2	6,6
$\ln C^N_{h,t}$	9,147	5,3	0,5	4,2	7,1

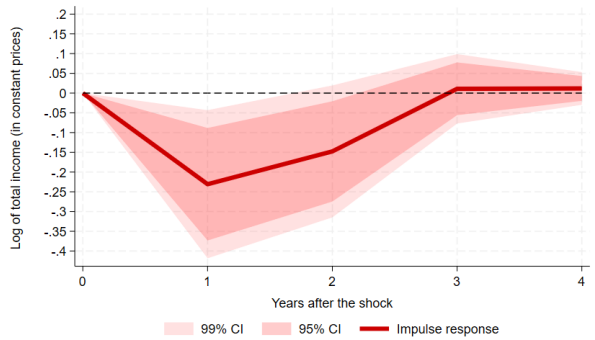
Results: HHs' Responses to the Sanctions News Shock

Reduced-form LP:

$$\underbrace{\ln Income_{i,t+h}}_{\text{Total Income}} = \theta_h \cdot \underbrace{\overline{z}_{k,t}}_{\text{Sanctions Surprise}} + \mathbf{X}_{f,t}\mathbf{\Phi}'_h + \alpha_i + \alpha_s + \alpha_j + \varepsilon_{f,t+h}$$



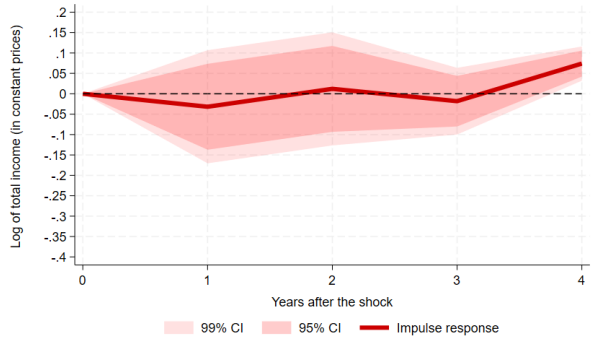
(a) 20% richest, region's capital city



(b) 20% richest, region's non-cap areas



(c) 20% poorest, region's capital city



(d) 20% poorest, region's non-cap areas

Conclusions

- **Novel HFI identification of sanctions shock**
  - Sanctions News: Changes in YTM on sovereign FC bonds around announcement days
  - Anticipation and media leakages: 3-4 days in advance window

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Conclusions

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  - Most productive and high earners are affected **the most** while least productive and low-income are **barely affected**
- Robust to IV and anticipation window selection, and exclusion of large monetary events

Back-up slides

Sanctions Leakage Example #1: d =17 March 2014

Back

guardian.com sanctions russia

All | News | Videos | Images | Books | More | To

Mar 10, 2014 – Mar 16, 2014 | Sorted by relevance | Clear

The Guardian

Europe braces for Kremlin reprisals over Ukraine conflict

EU officials prepare for sanctions against Moscow if it goes ahead with referendum on Crimea, but fears Russian retaliation may lead to trade war and...

Mar 14, 2014



The Guardian

Russia vetoes Crimea motion as Kiev claims it repelled Russian troops in south Ukraine

Spurred by the Ukrainian crisis, anti-Putin activists in Moscow staged their largest protest for two years. France said next stage of sanctions against...

Mar 15, 2014



Sanctions Leakage Example #2: d =16 July 2014

Back

new york times sanctions russia

WSJ Wall Street Journal

Ukraine Says Plane Downed by Missile Probably Fired From Russia

Ukraine said a powerful rocket probably fired from Russian territory downed a ... European Union leaders may consider new sanctions against Russia when they...

Jul 14, 2014



B Bloomberg.com

Ukraine Uses Air Strikes in East as EU Readies Sanctions

The U.S. also said more Russian sanctions are possible. ... Most of the new EU targets for penalties are separatists, one of two officials said.

Jul 11, 2014



B Bloomberg.com

U.S. Says Russia Is Stoking Ukraine Conflict Before Talks

The U.S. urged its European allies to support deeper sanctions against Russia and accused its former Cold War foe of sending heavy weapons and other support...

Jul 15, 2014



Sanctions Leakage Example #3: d =12 September 2014

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new york times sanctions russia

New York Post

Russia developing new nuclear weapons to counter US, NATO



They appear to show that the Russian leader is determined to pursue a tough course in the face of more Western sanctions. Advertisement. Addressing a Kremlin...

Sep 10, 2014

The Guardian

Ukraine says most Russian troops have moved back across border



The latest sanctions are expected to target Russia's energy and arms sectors, ... to allow more time for the peace process before imposing further sanctions...

Sep 10, 2014

BBC

Nato agrees on new 'spearhead' force amid Ukraine crisis



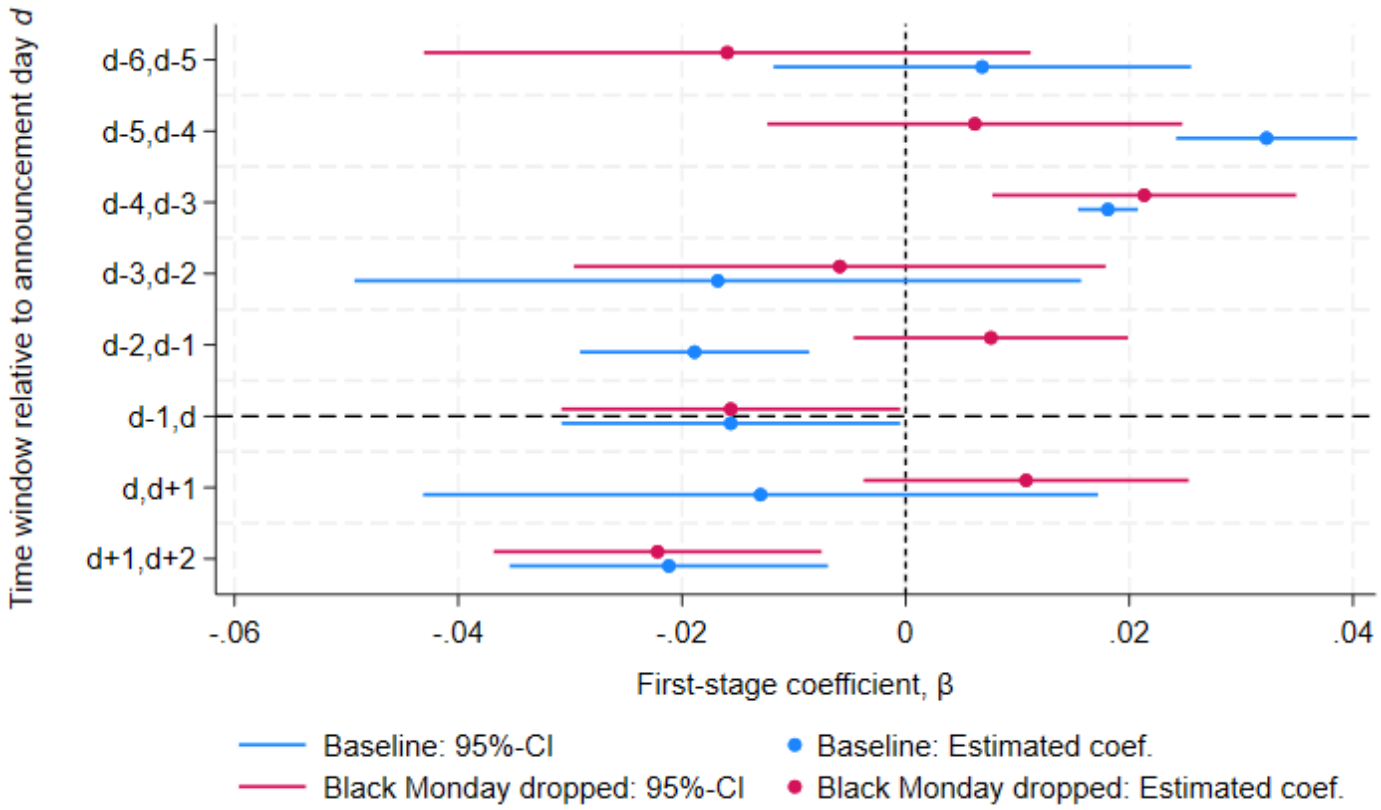
The enhanced sanctions are expected to target Russian banking, energy and defence, as well as what British sources call "Putin cronies". But the UK says the...

Sep 5, 2014

Domestic Monetary Policy: Excluding December 16, 2014

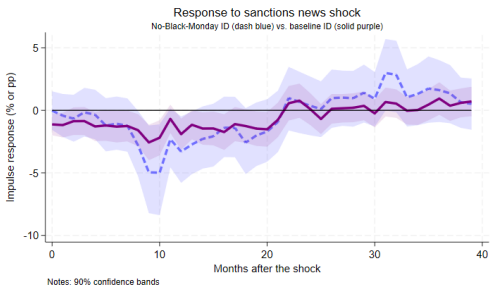
Back

First stage

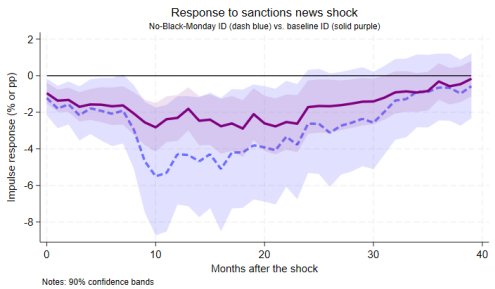


Second Stage: Excluding December 16, 2014

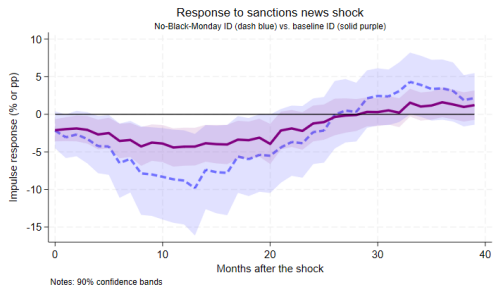
Back



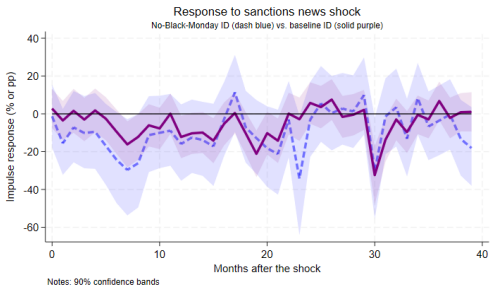
(a) Industrial production



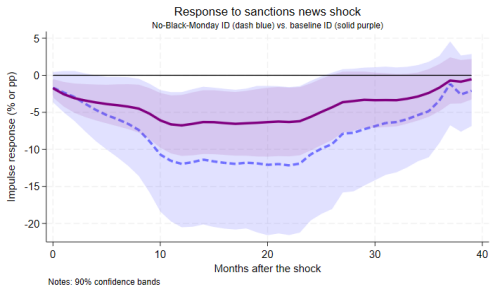
(b) Consumption



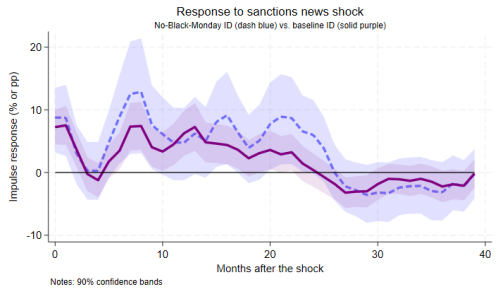
(c) Investment



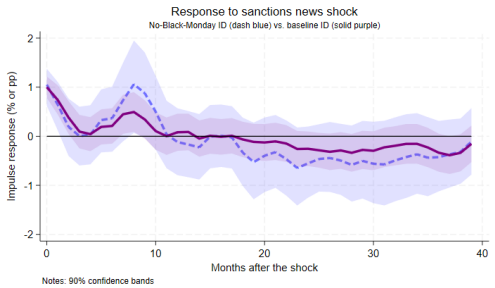
(d) Trade Balance



(e) External Debt



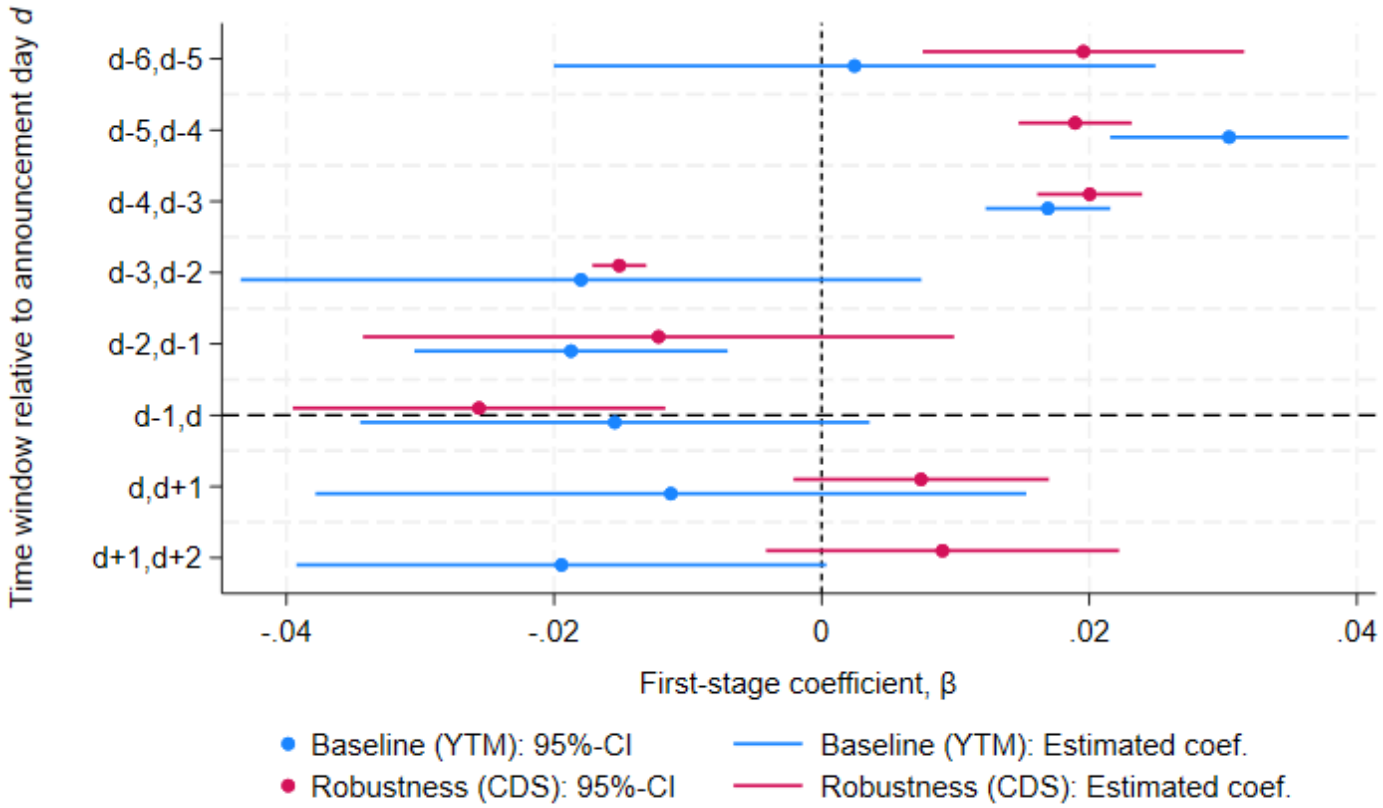
(f) REER



(g) Country spread

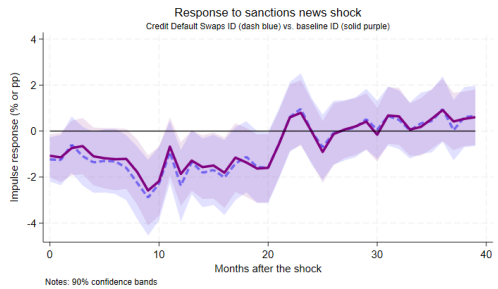
First Stage: CDS instead of Bond Yields

Back

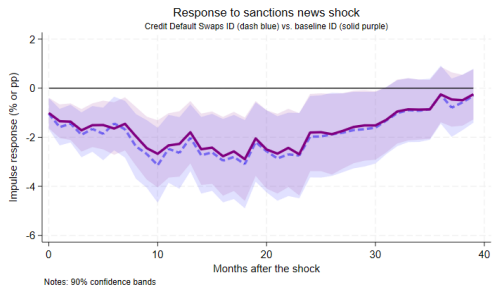


Second Stage: CDS instead of Bond Yields

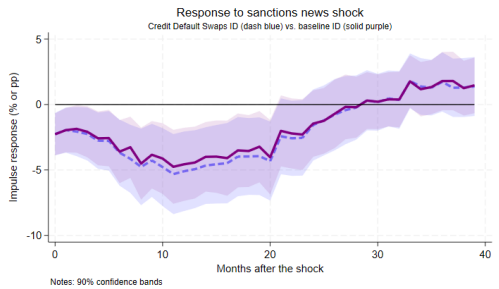
Back



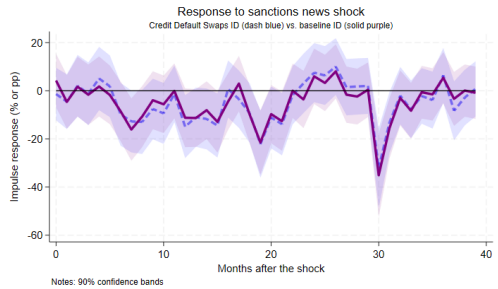
(a) Industrial production



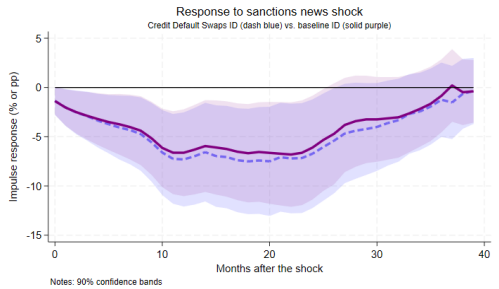
(b) Consumption



(c) Investment



(d) Trade Balance



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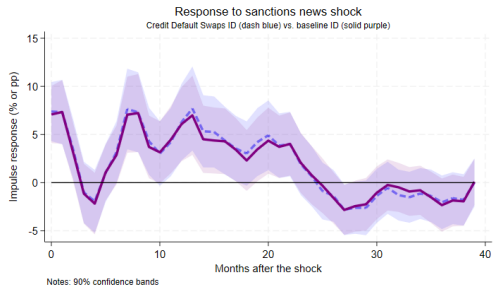

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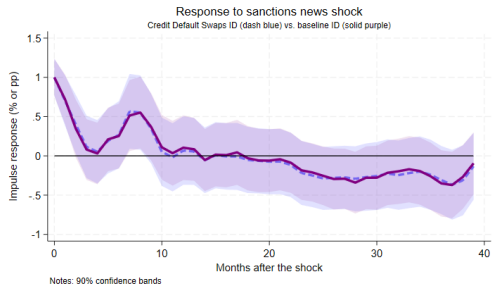
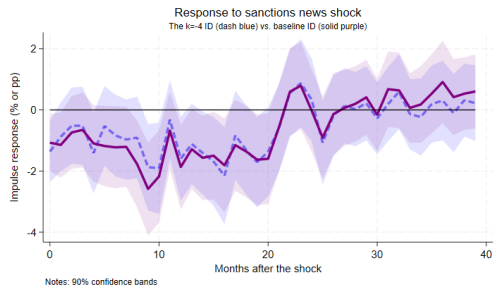


(g) Country spread

Second Stage: Varying the leakage parameter

Back



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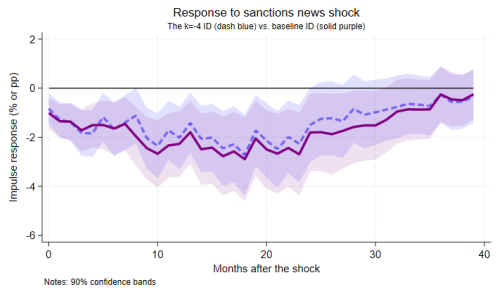
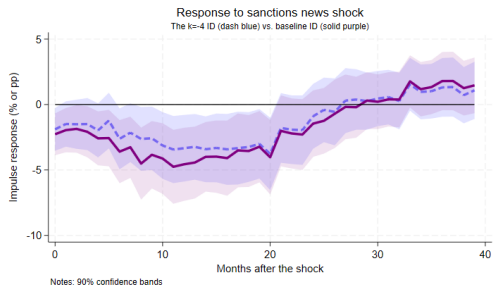
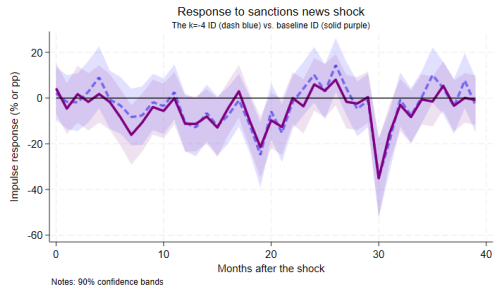


(b) Consumption



(c) Investment



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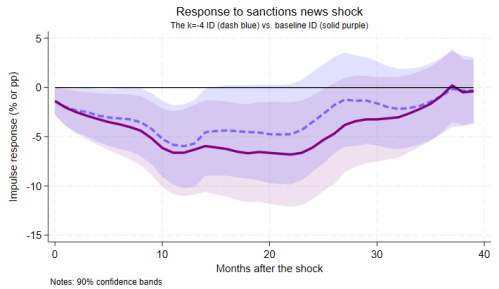

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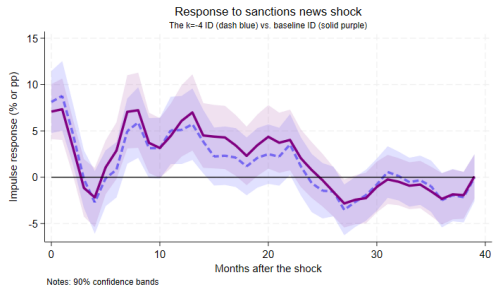

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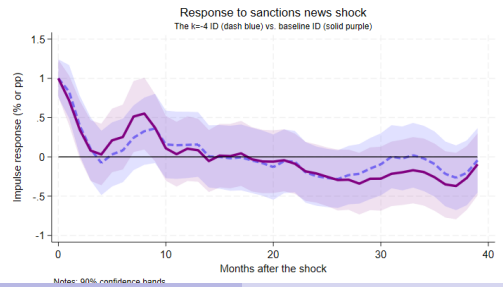
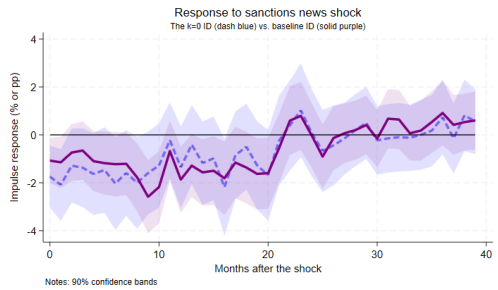


Second Stage: Varying the leakage parameter

Back



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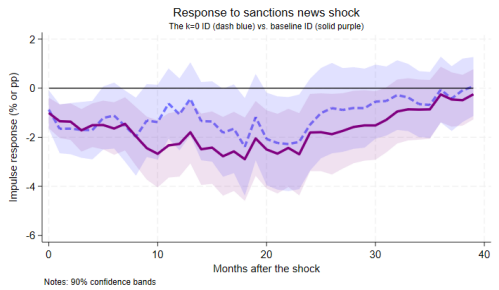
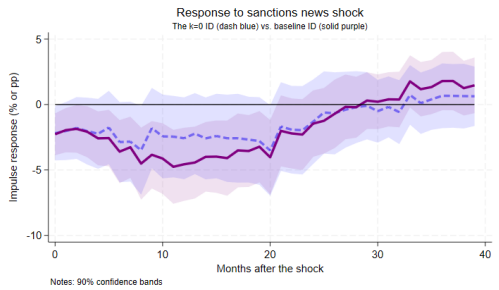
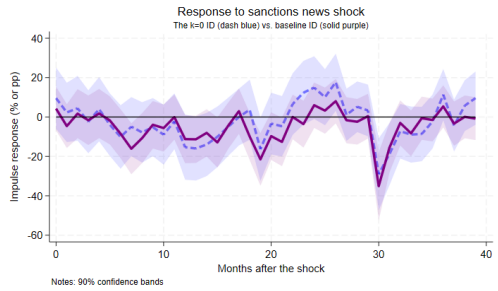


(b) Consumption



(c) Investment



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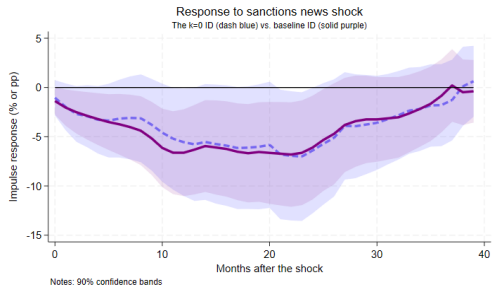

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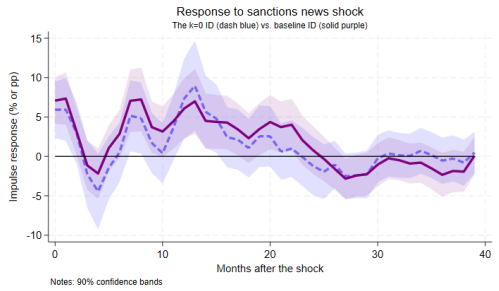

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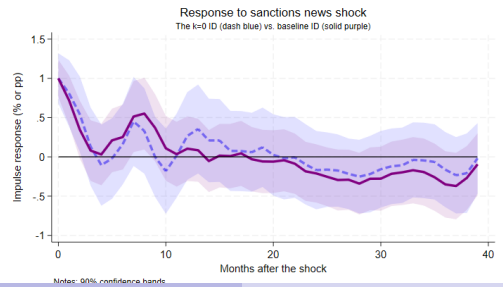
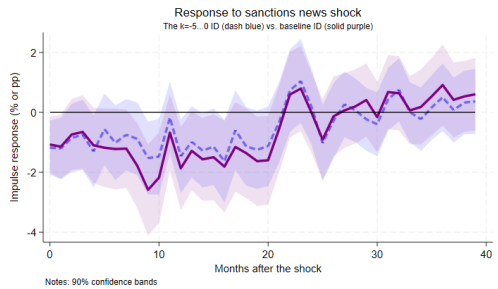


Second Stage: Varying the leakage parameter

Back



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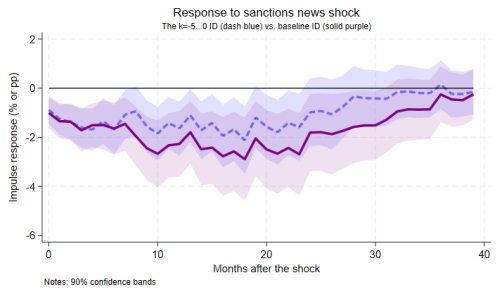
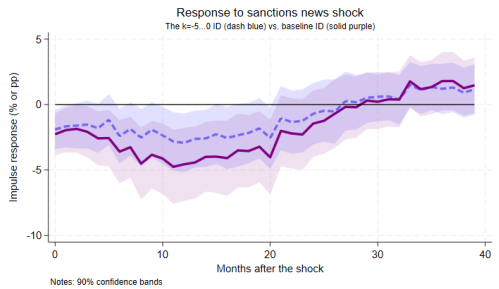
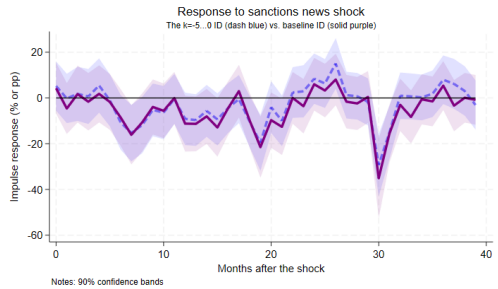


(b) Consumption



(c) Investment



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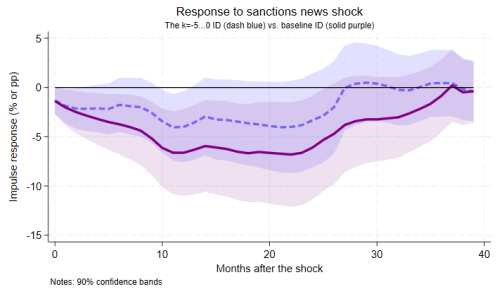
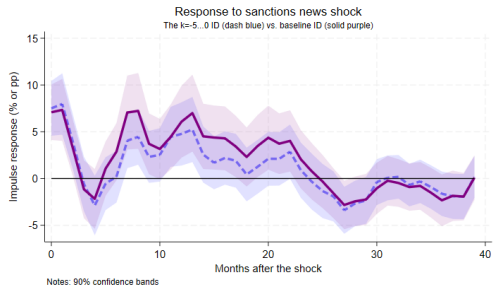


(e) External Debt



(f) REER

