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Timing the Impact of Sanctions on Trade

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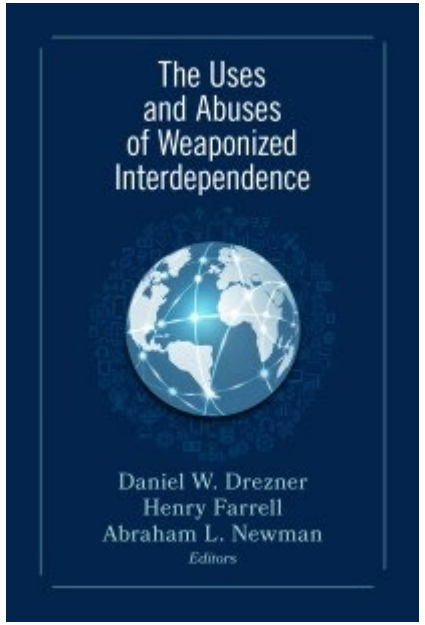
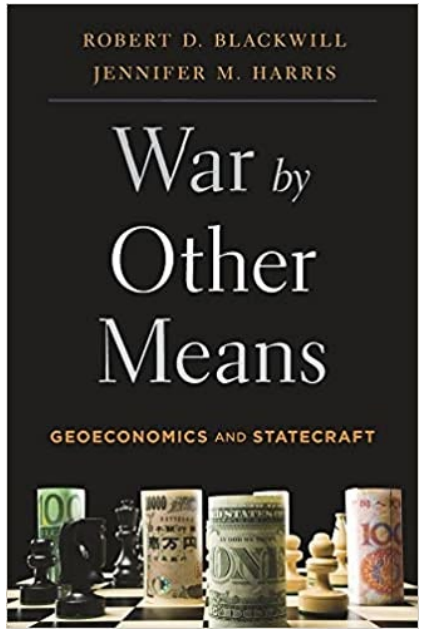
Geoeconomics

The pursuit of foreign policy objectives with econmic policy instruments

- Persuasive instruments (e.g., free trade agreements and other tariff cuts, and promise thereof)
- Coercive instruments (e.g., economic sanctions or withdrawal of earlier concessions, and promise thereof)





- Market integration creates mutual dependence („interdependence“) which can be used and abused
- „Make Trade, Not War?“ (Martin et al., AER 2008)
- Since 2008: „Dominance Politics“ increasingly replaces „Positive Sum Politics“
- Corrosion of trust in rule of (international) law
- Crisis of the WTO and other multilateral institutions

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Literature on Sanctions

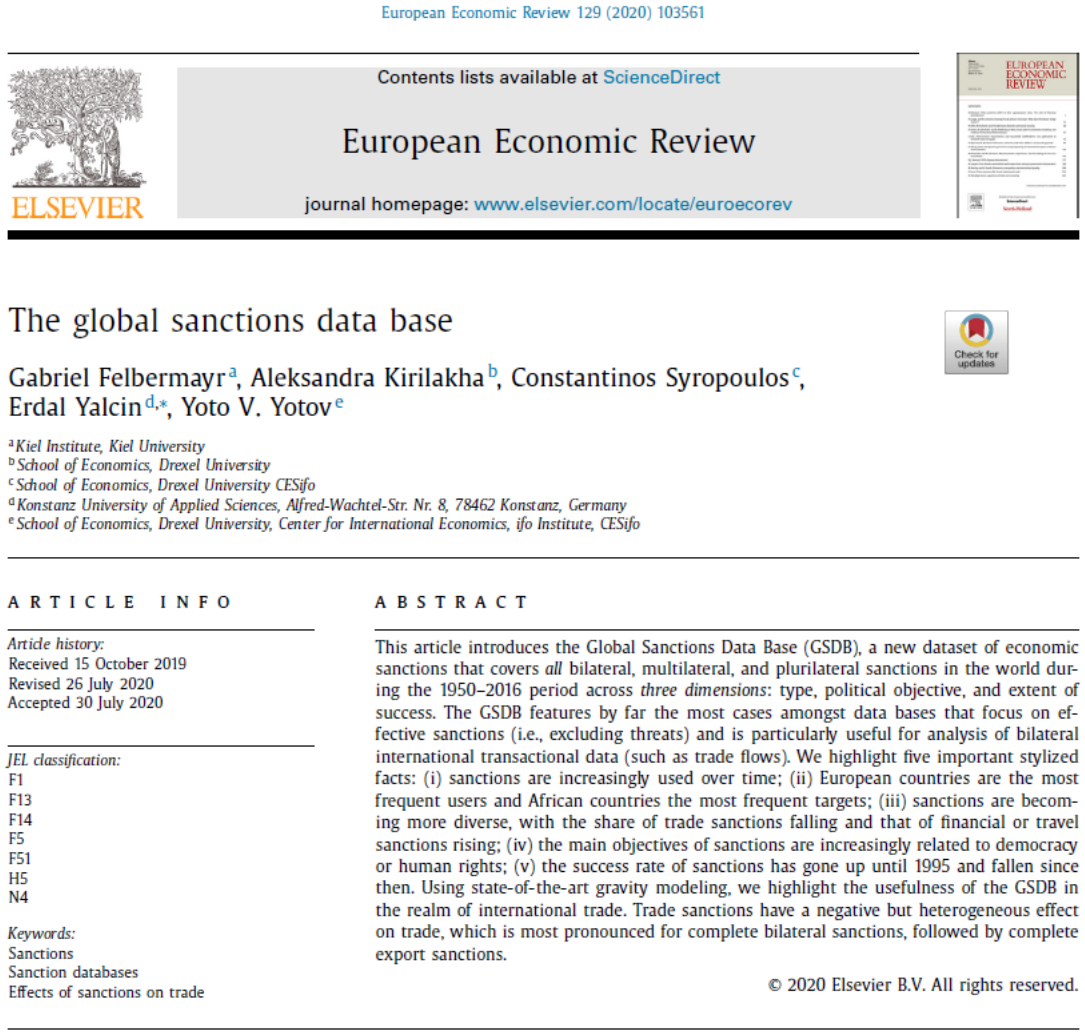
- Dominated by political scientists – with exceptions (early bird: Gary Hufbauer, PIIE)
- Theoretical literature distinguishes between implicit threats, explicit threats, and sanctions imposed
  - Threats are usually not observed (attempts towards measurements in Morgan et al. (2014) TIES-dataset) but should suffice to incentivize desired behavior otherwise no signal
  - Observed sanctions, therefore, are signs of unsuccessful threats – possibly only tip of the iceberg of what sanctions actually do
  - Successful sanction threats should not have any effects on measured bilateral economic activity (but they could …)
  - Escalation (=imposed sanctions) should have negative effects on economic activity in targetted country to make threats credible
- Empirical literature (e.g, own our previous work) tends to show such effects – sometimes hampered by data limitations, methodological concerns, specification problems, …
- Here: focus on damage done by sanctions and time patterns

AGENDA

- The Global Sanctions Data Base
- Gravity Estimates of Time Patterns
- General Equilibrium Results based on KITE

The Global Sanctions Data Base (GSDB)

- (Probably) the largest data set on economic sanctions (country coverage, time span, sanction types)
- Updated in Felbermayr et al. (2021) up to the year of 2020
- Distinguishes complete and partial import, export, and reciprocal sanctions
- Including different types classical trade sanctions, military sanctions, arms sanctions, but also travel bans or financial sanctions
- Differentiating between unilateral, plurilateral and multilateral sanctions
- But still „macro“ flavor



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The global sanctions data base

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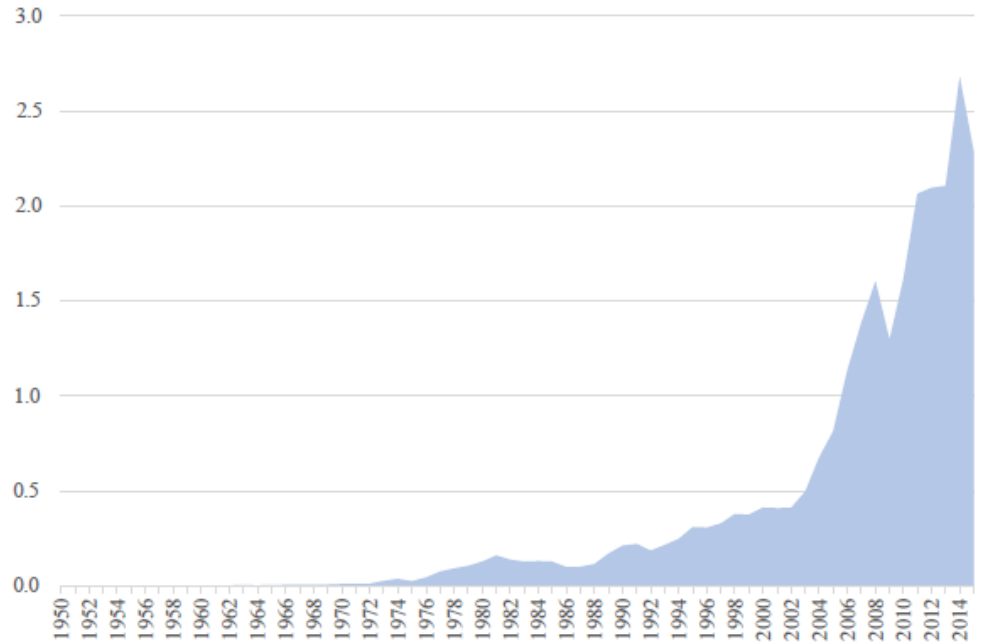
ABSTRACT

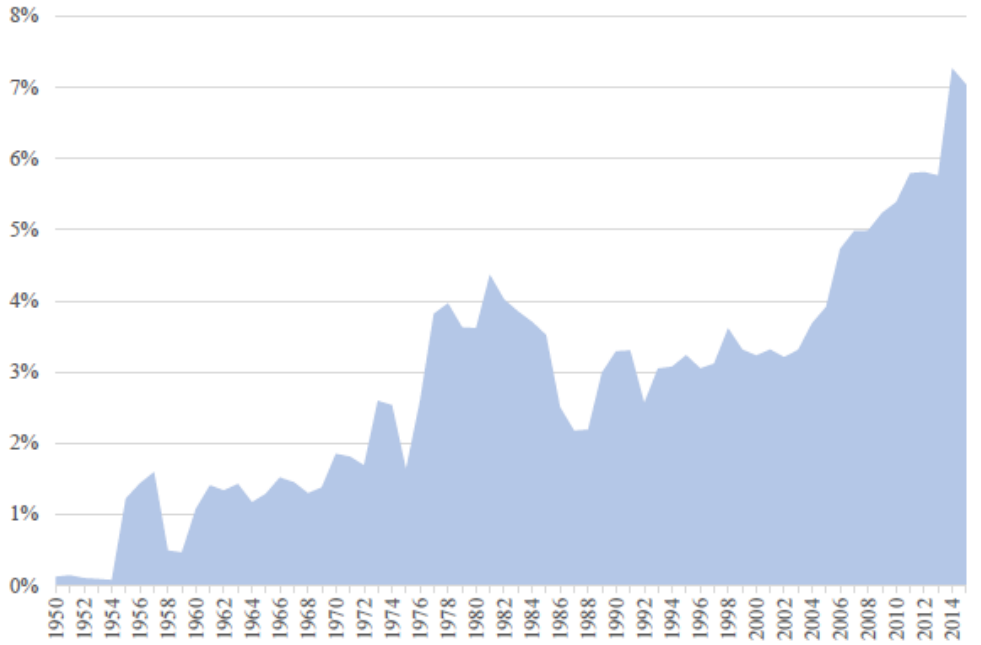
This article introduces the Global Sanctions Data Base (GSDB), a new dataset of economic sanctions that covers *all* bilateral, multilateral, and plurilateral sanctions in the world during the 1950–2016 period across *three dimensions*: type, political objective, and extent of success. The GSDB features by far the most cases amongst data bases that focus on effective sanctions (i.e., excluding threats) and is particularly useful for analysis of bilateral international transactional data (such as trade flows). We highlight five important stylized facts: (i) sanctions are increasingly used over time; (ii) European countries are the most frequent users and African countries the most frequent targets; (iii) sanctions are becoming more diverse, with the share of trade sanctions falling and that of financial or travel sanctions rising; (iv) the main objectives of sanctions are increasingly related to democracy or human rights; (v) the success rate of sanctions has gone up until 1995 and fallen since then. Using state-of-the-art gravity modeling, we highlight the usefulness of the GSDB in the realm of international trade. Trade sanctions have a negative but heterogeneous effect on trade, which is most pronounced for complete bilateral sanctions, followed by complete export sanctions.

Trade Potentially Affected by Sanctions Steadily on the Rise

(a) in trn. USD

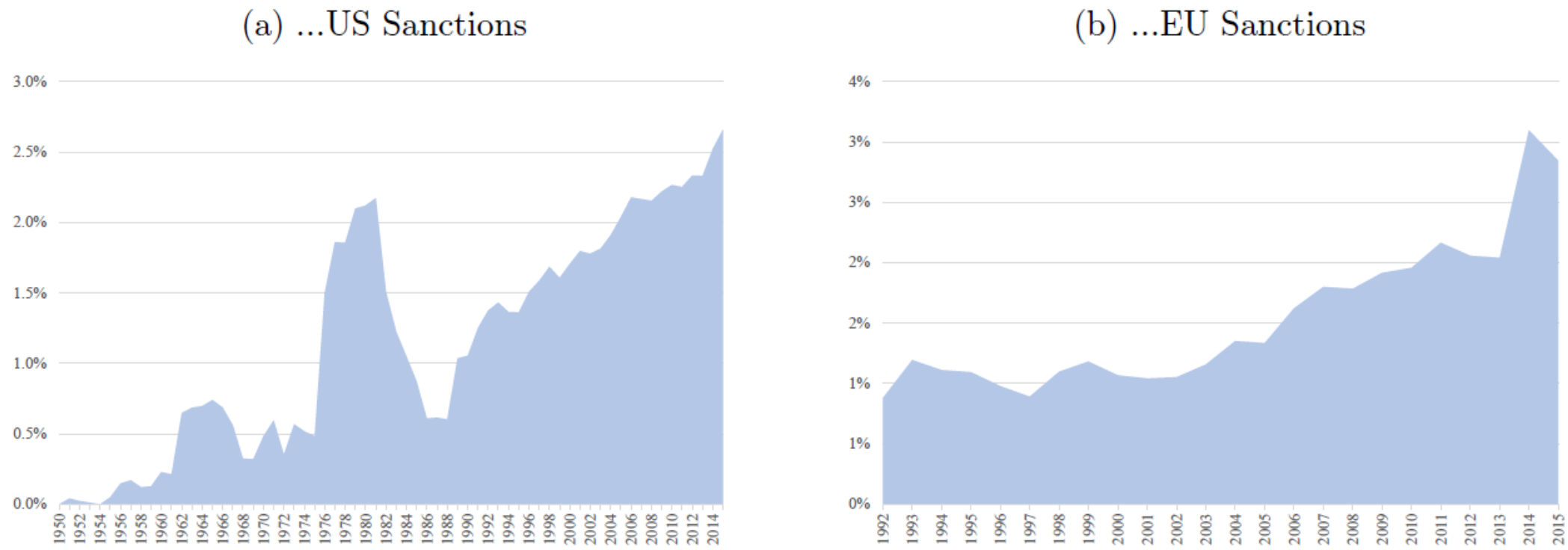


(b) in % of world trade



Note: These diagrams quantify the exposed value and the share of exposed trade in world trade to all observed sanctions for each year between 1950 and 2015. The presented trade volume is the amount of observed yearly trade between countries that introduce a sanctions policy in the same year. Trade data stem from the IMF Direction of Trade Statistics.

GSDB: US and EU Most Frequent Users of Sanctions



Note: The diagrams show the share of world exports exposed to US and EU sanctions. Trade data stem from the IMF Direction of Trade Statistics. EU statistics start in 1992 due to German unification.

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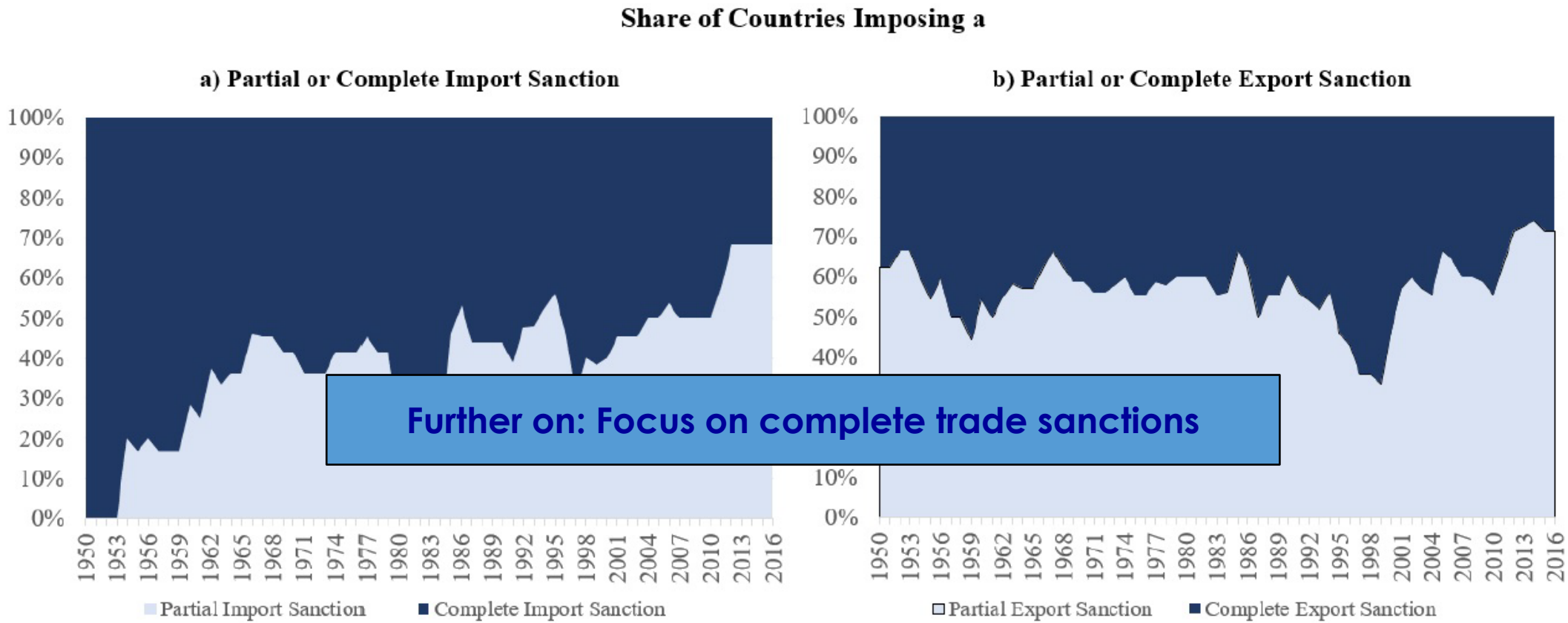
GSDB: Complete Sanctions Become Relatively Less Prevalent



Share of countries that have imposed partial and complete import (panel (a)) and export (panel (b)) sanctions over time (1950 to 2016).

GSDB: Duration (in years) of Complete Trade Sanctions

New Stylized Facts

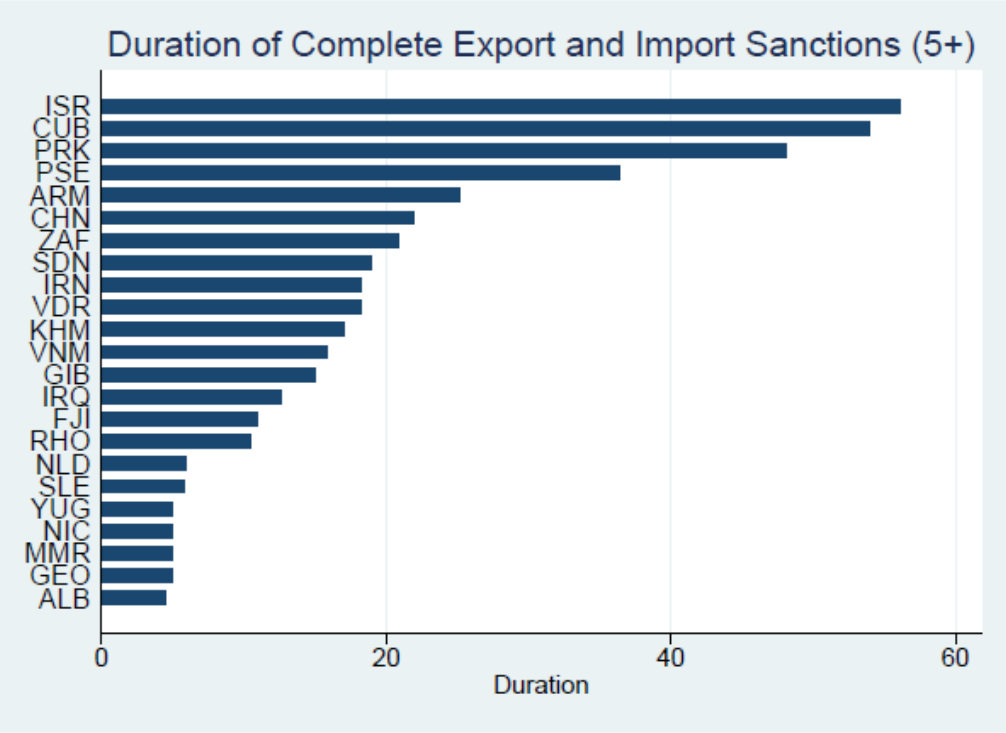
- Mean duration 6 years; Median duration 4 years => strong skewness
- 14% of all trade sanctions last more than 5 years

Duration of Sanctions is likely to matter in a two-fold way:

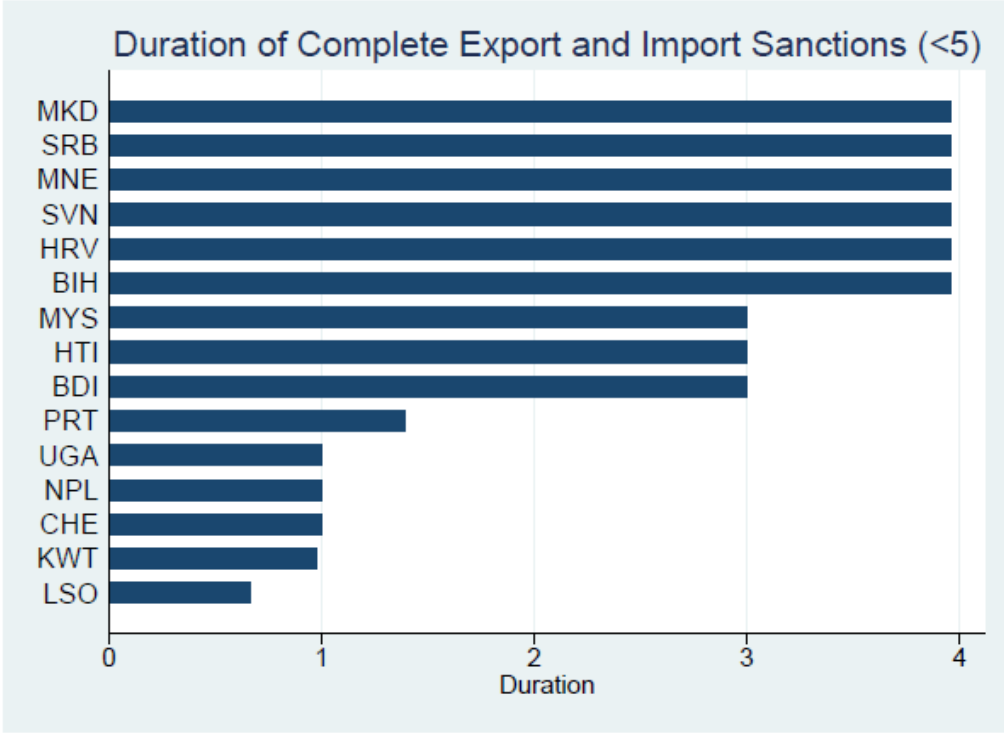
- depth of trade destruction,
- length of episode

GSDB: Duration (in years) of Sanctions by Targets – Long and Short

(a)



(b)



Note: The graphs show the average duration of complete trade sanctions for a given target (ranked from longest to shortest duration). The targets' names are written as USITC ISO-3 codes (refer to Table A.1 in the Appendix).

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Estimated Equation – State of the Art Gravity

$$X_{ij,t} = \exp[\pi_{i,t} + \chi_{j,t} + \mu_{ij} + \alpha CTS_{ij,t} + \sum_s \alpha_s CTS_{ij,t+s} + \sum_k \beta_k CTS_{ij,t-k} + GRAV_{ij,t}\gamma] \times \epsilon_{ij,t}.$$

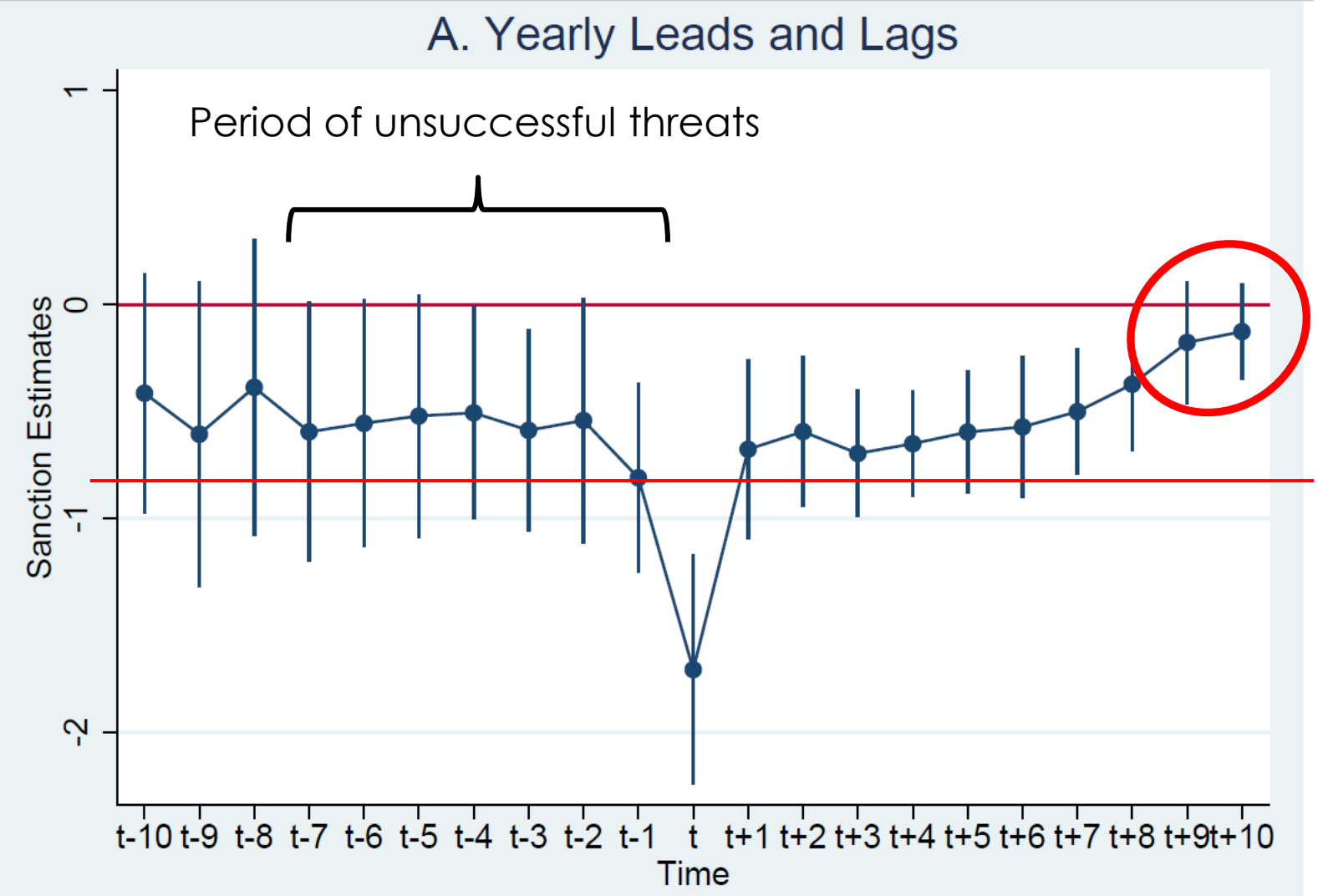
- Very general specification fittig many classes of trade models
- E.g., check the survey by Yotov et al. (2016)
- Nominal bilateral trade flows on RHS, from IMF's DoTS data set
- Standard gravity equation, estimated on pooled yearly data
- PPML to deal with heteroskedasticity and zeros

Estimated Equation – State of the Art Gravity

$$X_{ij,t} = \exp[\pi_{i,t} + \chi_{j,t} + \mu_{ij} + \alpha CTS_{ij,t} + \sum_s \alpha_s CTS_{ij,t+s} + \sum_k \beta_k CTS_{ij,t-k} + GRAV_{ij,t}\gamma] \times \epsilon_{ij,t}.$$

- Using an (almost) saturated set of fixed effects to deal with unobserved (time-varying) so-called multilateral resistance terms and (time-invariant) directional components of bilateral trade costs [computational cost: 50k bilateral FEs and 240k monadic FEs)
- $CTS_{ij,t}$: Dummy variable indicating the presence of a complete sanctions regime between countries i and j at time t
- Lags and leads of $CTS_{ij,t}$
- Usual gravity controls $GRAV_{ij,t}$ (such as FTAs, but also „other“ sanctions)
- Endogeneity issues reduced through use of large set of fixed effects

Main Result: The Pre and Post of Complete Sanctions



- Contemporaneous effect of complete sanctions is strong: trade falls by about 82%
- By 17% larger than when time patterns are ignored
- Before Sanctions are actually imposed, trade flows are already (slightly) below norm
- After sanctions are lifted, trade flows revert only very gradually to normal
- Robust to using 2-year-leads and –lags or 3-year-leads and –lags

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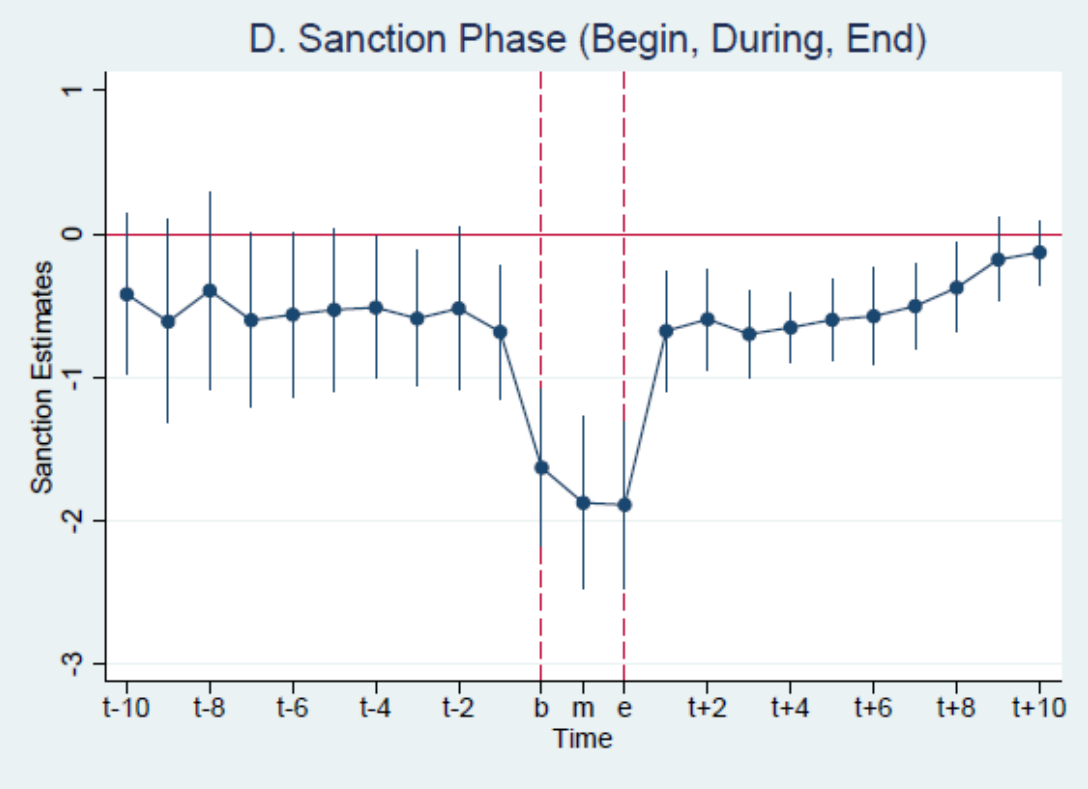
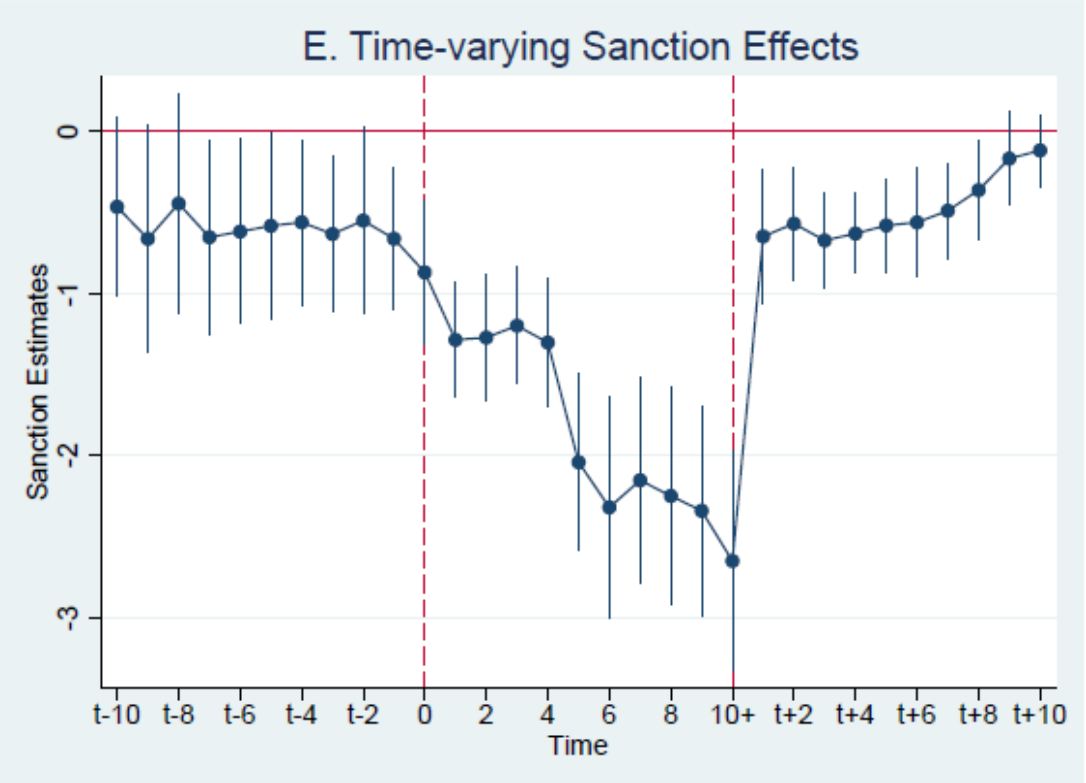
During Sanctions: Trade is Destroyed Slowly and Rebuilt Rather fast





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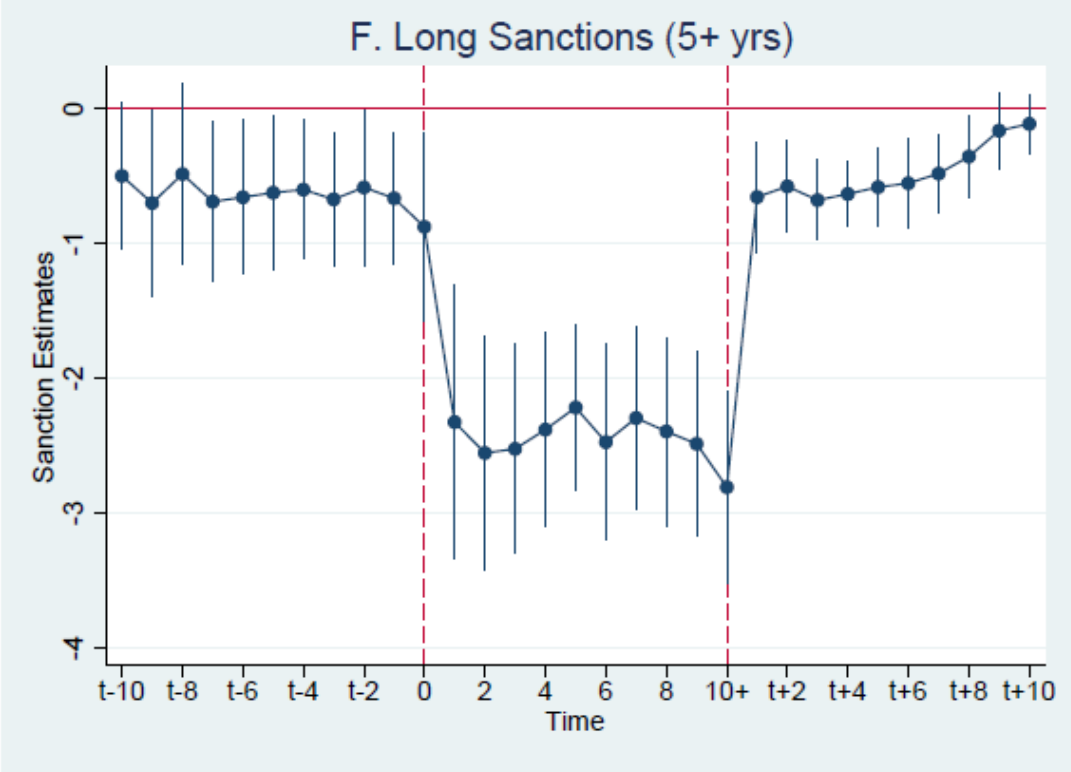
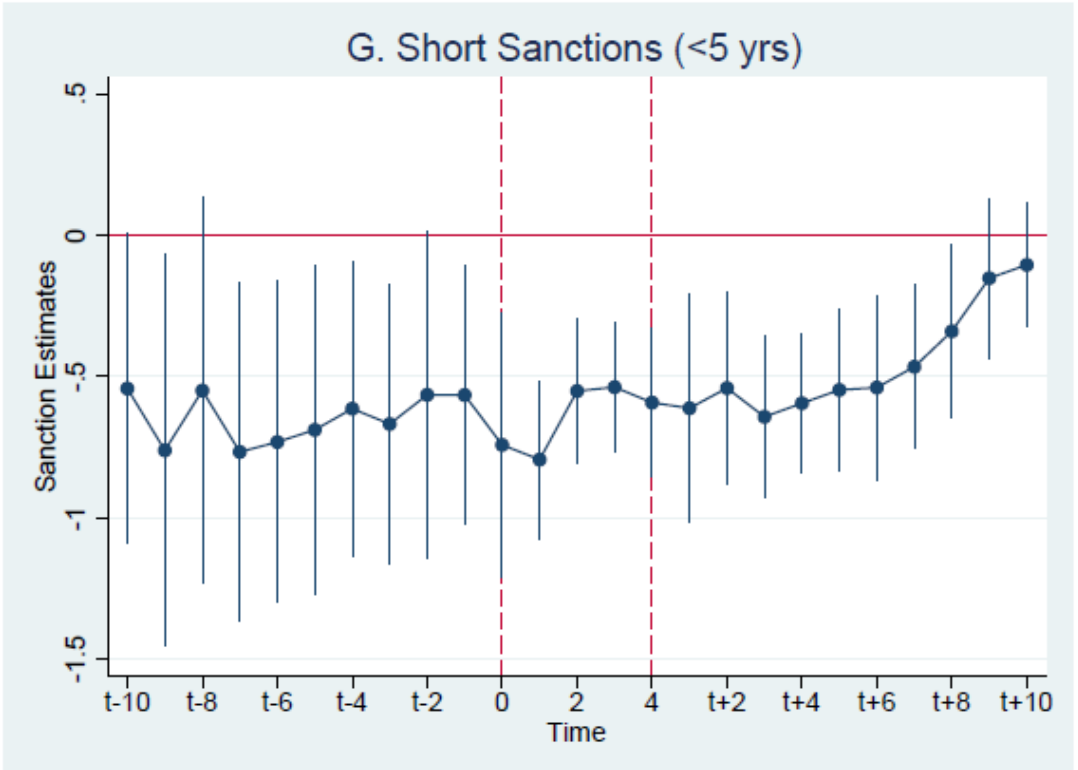
Long Sanctions Cut Much Deeper than Short Ones





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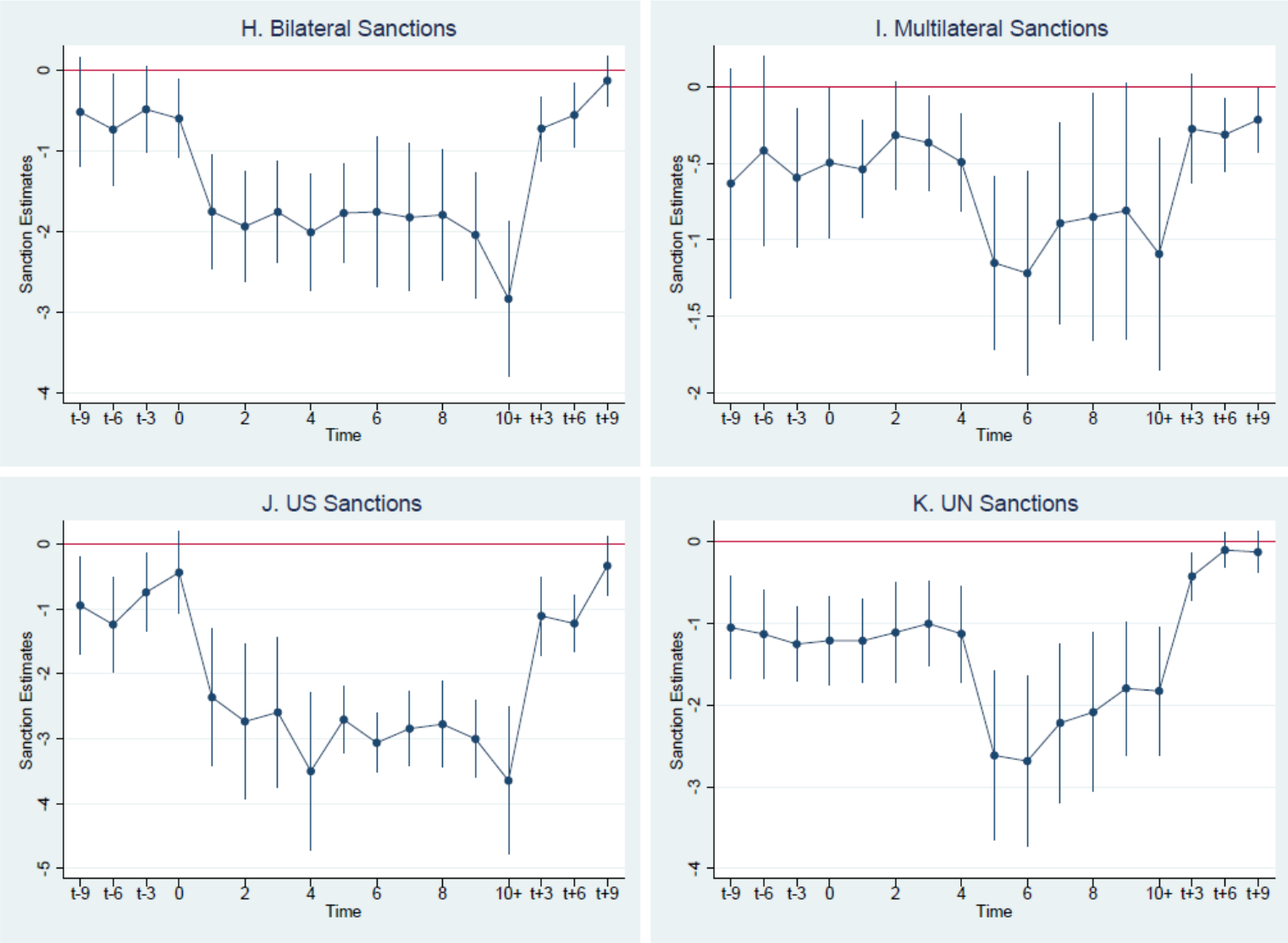
Bilateral and US-Sanctions Most Effective, No EU-Add-on over UN



Conclusions

1. Ignoring leads and lags leads to underestimation of trade effect of complete sanctions
2. Trade already lower during threat phase, sluggish revovery lasting 8 years after lifting of sanctions => ignoring adjustment underestimates total welfare costs of sanctions
3. The contemporaneous trade destruction effect increases over time within a given sanctions regime (from 77% to 94%) – no adjustment within the sanctioned relationship (but possibly outside: Dizaji and van Bergeijk (2014))
4. Longer sanctions regimes are (much) more damaging than shorter-lived ones
5. Some (weak) evidence, that trade can revert to above pre-sanctions levels – resolution of conflict

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The Economic Costs of War by Other Means

- Estimation of trade effects based on gravity model as before
- Only contemporaneous effect
- Moving from bilateral treatment effects to fully-fledged (long-run) general equilibrium effects
- Different trade data (UN-Comtrade, 2000-2016) to fit Kiel Institute Trade Evaluation (KITE) model – a quantitative CGE model
- Including all GSDB sanctions, but special focus on Russia and Iran sanctions
- Simulations based on base year 2020 – how would lifting sanctions affect real GDP per capita?

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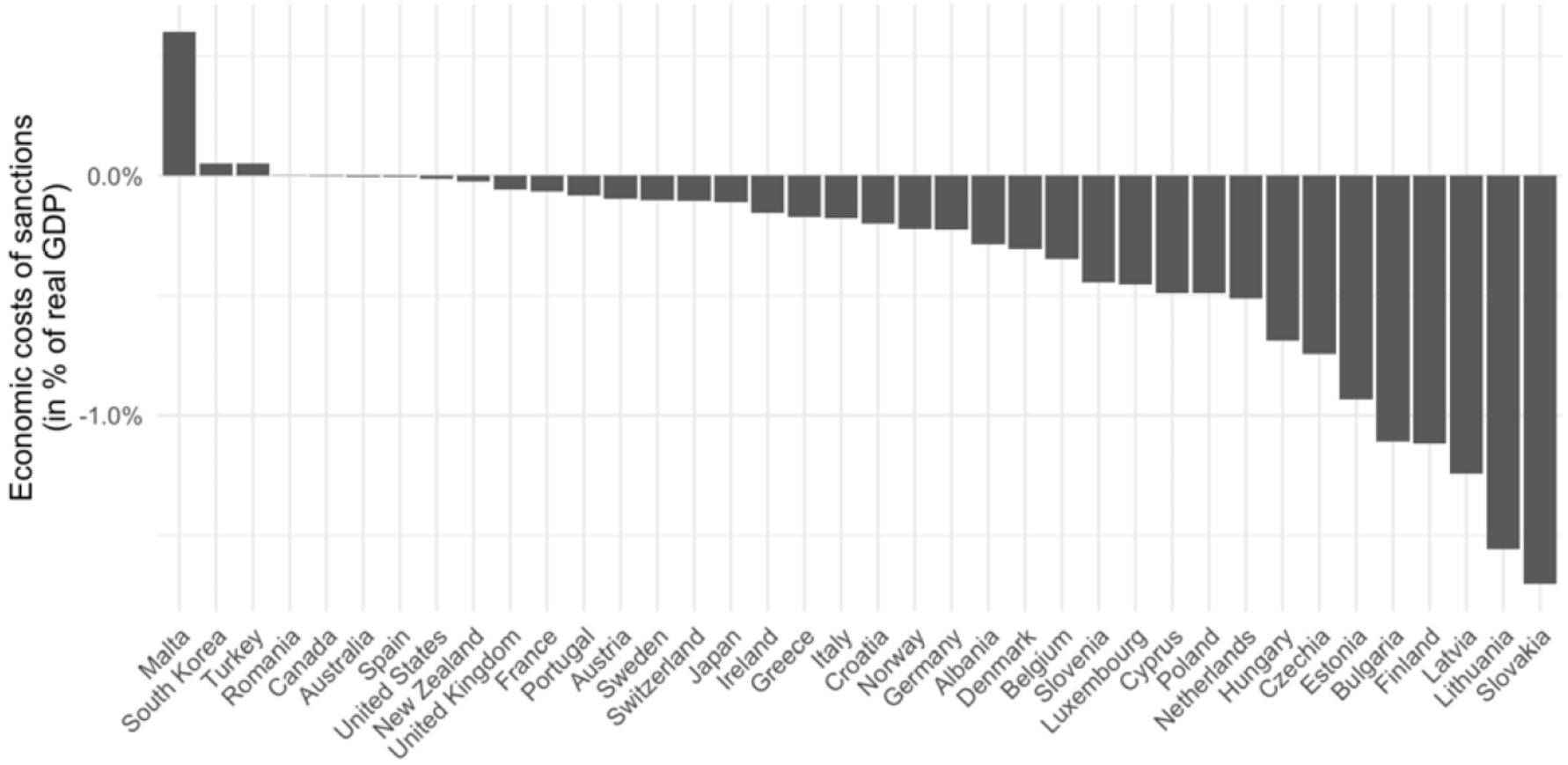
Real yearly GDP Costs of Current Sanctions Regime



Note: The figure shows the economic costs of the current sanctions regime for a selection of countries. The exercise simulates the opportunity costs of sanctions by assuming an end of all sanction regimes based on 2018 data and compares this situation with the current status quo where sanctions are in place.

Source: Chowdhry, Felbermayr et al. (2020)

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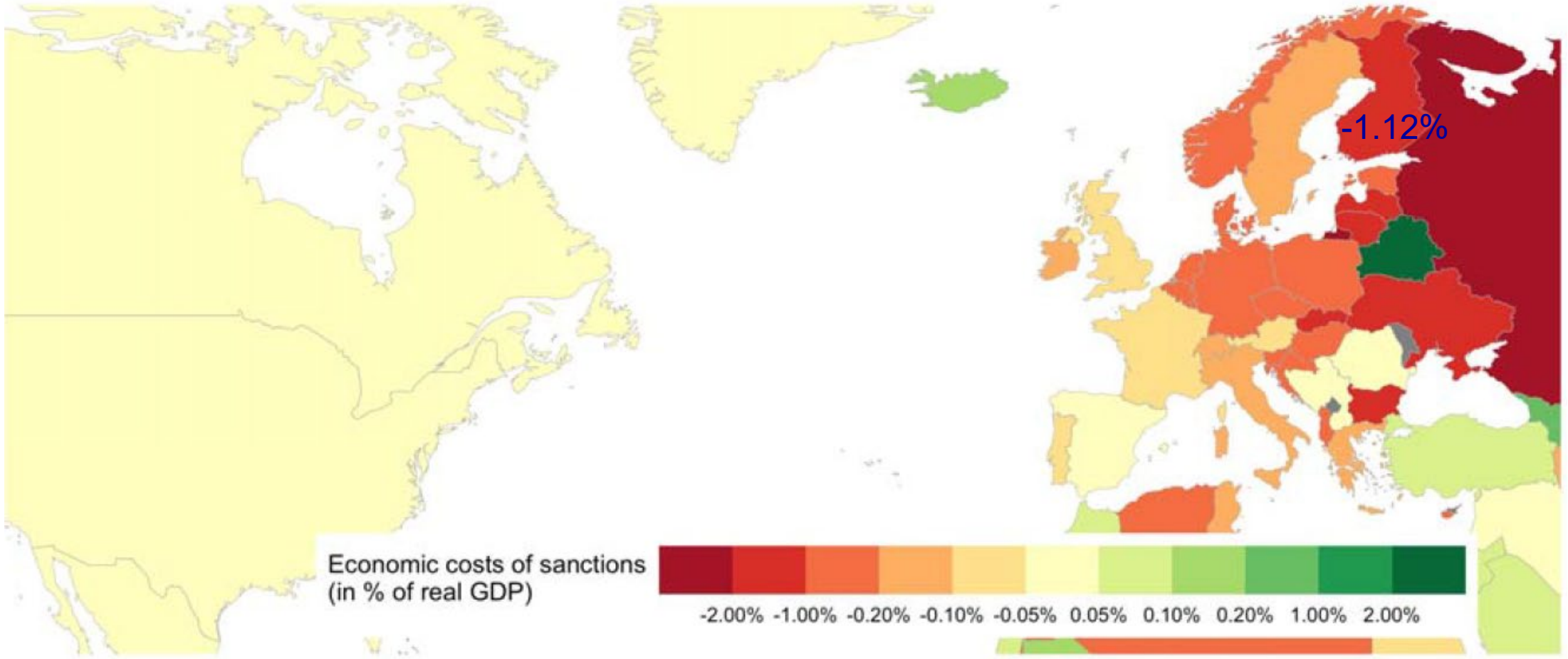
Real yearly GDP Costs of Current Sanctions Regime



Source: Chowdhry, Felbermayr et al. (2020)

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