

Discussion of “Supply chains shocks and inflation in Europe” by Jakub Mućk and Łukasz Postek

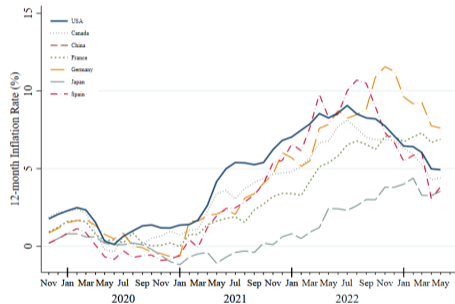
Oleksiy Kryvtsov
Bank of Canada

NBP-NBU-IMF Annual Research Conference “Economic Policies during Wartime and
Post-War Recovery”, 22-23 June 2023

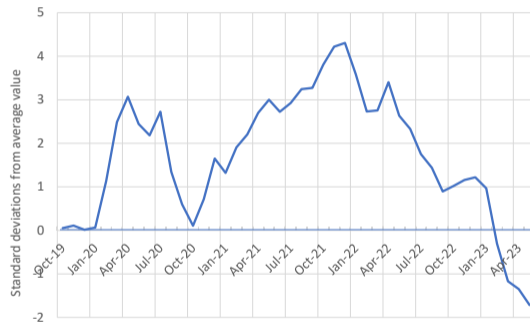
The views expressed here are ours, and they do not necessarily reflect the views of the Bank of Canada

What is the effect of supply chain disruptions on inflation?

CPI inflation



Global Supply Chain Pressure Index (GSCPI, NY Fed)

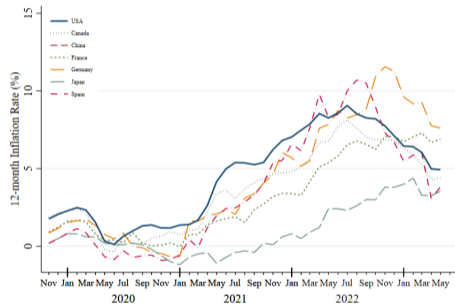


Challenges:

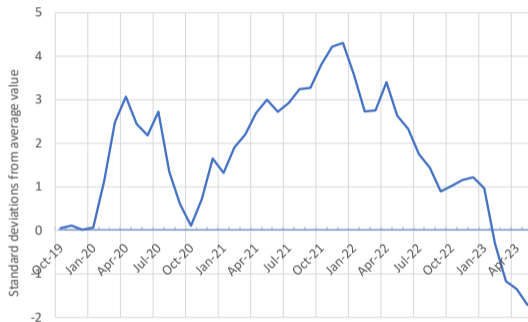
- ▶ Identification of inflationary effects (supply vs demand, COVID vs Ukraine war)
- ▶ Measures of supply disruptions (global vs domestic, upstream vs downstream)

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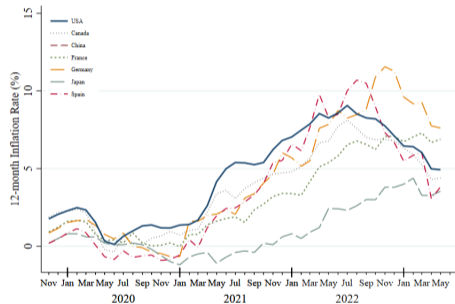


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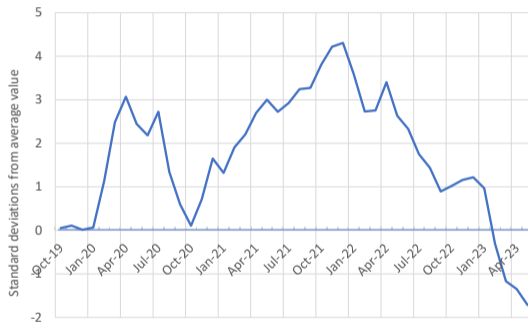
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European Commission's Business and Consumer Survey

- 19 EU countries (33 in the survey)
- 24 2-digit NACE industries:
Investment, Intermediate, Consumer goods
(Durables, Non-durables, Food & Bev)
- Quarterly, \approx 2000 to 2022
- **Share of firms** reporting current shortages of materials and/or equip
- Linear projections identify the effect of **variation of shortages** over time/industries on inflation

Q8 What main factors are currently limiting your production?

- none
- insufficient demand
- shortage of labour force
- **shortage of material and/or equipment**
- financial constraints
- other factors

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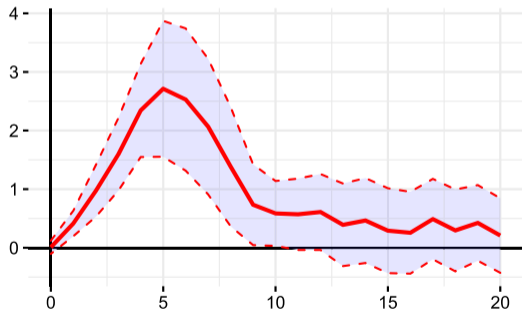
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Inflation responses (annual %) to a +1std increase in shortages

Local projections for 2000–2022 period

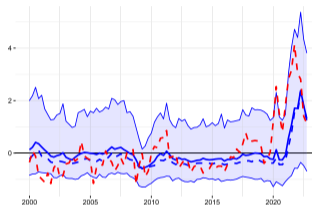
HICP – goods



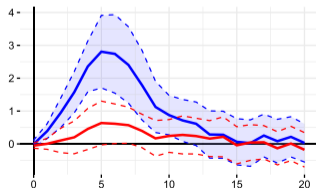
- **Large** (between 1% and 4%)
- **Gradual** (peak after 4–6 quarters)
- **Persistent** (last 8–12 quarters)

Comment 1. Variation in data dominated by COVID period

Shortages (industry level, standardized)



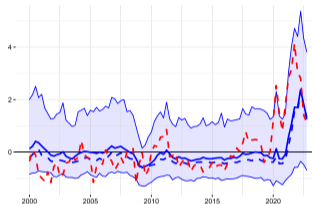
HCPI goods (with/without COVID)



- Focus more on COVID period
- Puzzle 1: Persistence of inflation responses
 - ▶ Theory: shortages affect cost level, not growth
- Puzzle 2: Gradual inflation responses
 - ▶ Theory: prices respond sooner and by more
- Can improve identification?
 - ▶ coarse data (quarterly, broad sectors)
 - ▶ shortages are serially correlated
 - ▶ endogenous to price decisions

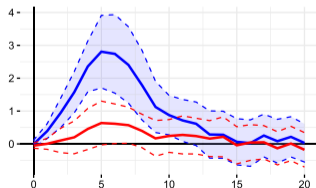
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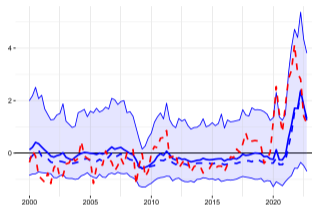
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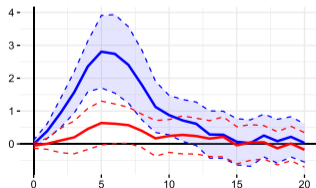
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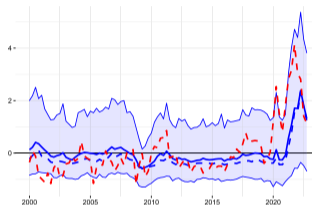
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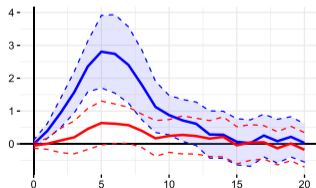
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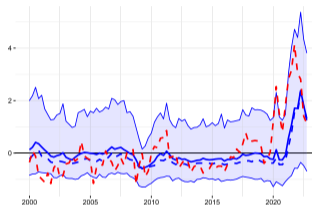
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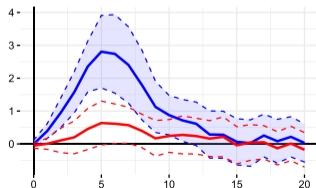
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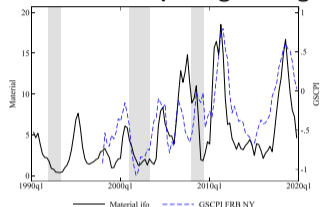
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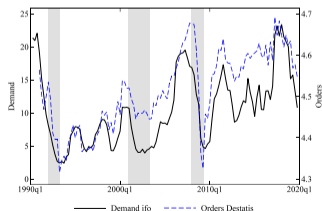
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Example from Balleer and Nöller [BN] (2023, “Monetary policy in the presence of supply constraints...”)

Share of firms reporting shortages



Share of firms reporting excess demand

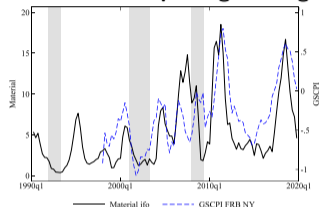


- **ifo Business Climate Survey for Germany**
 - ▶ firm-level data (5000 manufacturing firms)
 - ▶ 1990–2019
 - ▶ monthly/quarterly data
- Firms report long spells of material shortages
 - ▶ Mean 5.6 quarters, Median 2 quarters
- ... and often tend to report excess demand
- LP requires **exogenous** variation in shortages

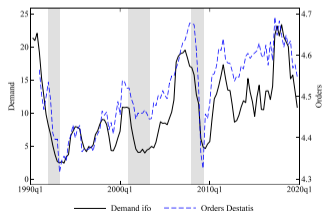
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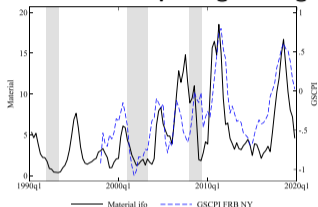


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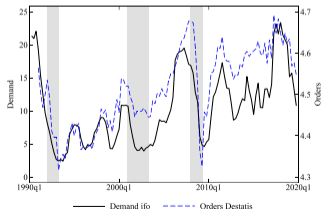
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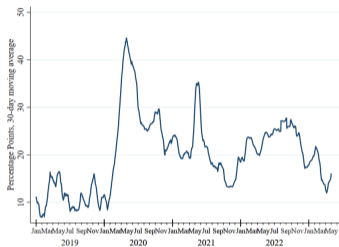


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Example from Cavallo and Kryvtsov [CK] (JIE, 2023)

Stockouts in retail, United States



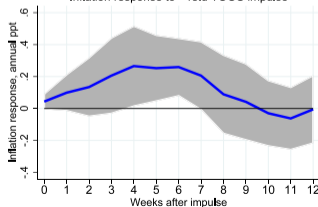
- Shortages are measured by **stockouts in retail**

- ▶ 199 3-digit sectors, 7 countries
- ▶ daily/weekly data

- **Purge shortages of persistent component**

- ▶ Identify responses using LP on shortage shocks
- ▶ Inflation irfs **faster, smaller** and **short-lived**

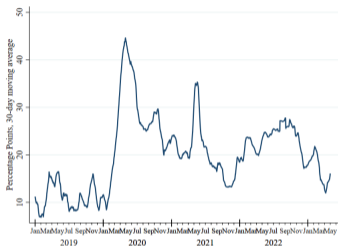
Inflation response to +1std TOOS impulse



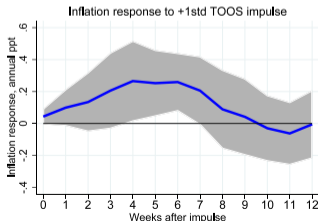
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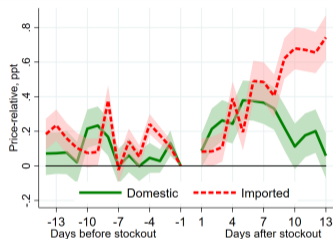


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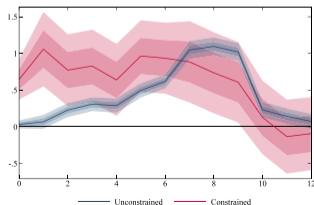
Comment 3. Price effects materialize much sooner

Product prices after stockout (CK)



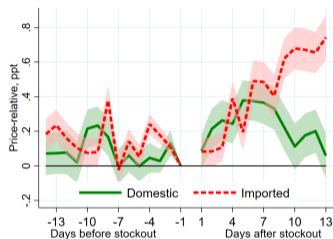
- Expand cross-section
 - ▶ Differentiate countries by share of food imports from Ukraine
 - ▶ Firm-level evidence?
- Endogeneity: price increases dampen increase in shortages
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Cum P responses to monetary shock (BN)



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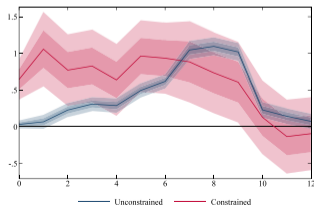
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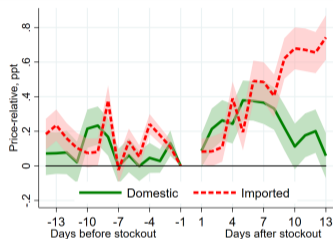
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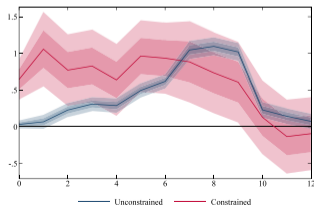
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Summary

- Interesting paper!
- Contribution to literature studying inflationary effects of supply disruptions
- Suggestion: refine identification of inflation responses
 - ▶ Expand cross-section detail
 - ▶ Exploit more survey data (e.g., on firms' price expectations)