Discussion of

Shock transmission in a monetary union: aggregate impacts and cross-sectional incidence across EA countries

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What this paper does

Question: why do common shocks generate heterogeneous effects across EA members?

Reduced form: country(-industry) LPs of quantities and prices on identified shocks.

- **Mon pol:** largest, fastest, most dispersed on *quantities* (empl., hours, cons.). Flexible sectors absorb more in prices.
- **Energy:** largest, fastest, most dispersed on *prices* (HICP). Cross-country heterogeneity larger still.

Model: 20 countries $\times$ 62 industries $\times$ 23 factors, I–O network.

- **Toy version:** 2 countries, 2 sectors, 2 occupations, 2 households (Poor: labor; Rich: inelastic labor + all capital).
- **Mechanism:** sticky/elastic segments absorb in *quantities*; flexible/inelastic in *prices*.
- **Dispersion:** driven by capital intensity and labour composition (ownership: *minor*); aggregate $\approx$ conventional NK $\rightarrow$ dispersion is the key result.

Contributions & why we should care

Contributions

- Empirical evidence on the transmission of monetary and oil shocks across EA countries.
- Multi-country NK–IO model of the EA: segmented factor markets, with *measured* rigidities, networks, baskets, and ownership.
- Quantify the cross-country incidence of common shocks and its structural drivers.

Why should we care?

- One policy rate, heterogeneous incidence $\rightarrow$ uneven stabilization is a design constraint.
- Energy security: who bears the (next) supply shock, and through which channels?

1. Reduced form: inference and asymmetry

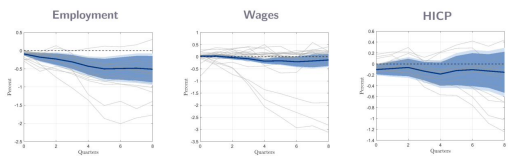
Inference on dispersion: biased upwards

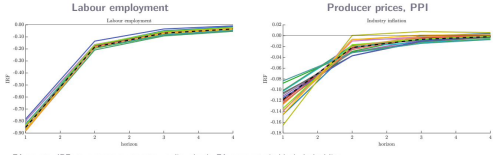
- Point estimates OK: same regressor across equations $\Rightarrow$ SUR = OLS (Kruskal's theorem).
- But residuals are correlated across countries (e.g. shared EA disturbances).
- Measured dispersion is biased upwards and needs full covariance matrix: $\mathbb{E}[\mathrm{Var}(\hat{\beta})] = \mathrm{Var}(\beta) + \overline{\text{s.e.}^2} - \overline{\text{cov}}$. (see also comment 2).
- Solution: (i) keep OLS $\hat{\beta}$'s, (ii) moving block bootstrap (serial correlation; all countries), (iii) correct dispersion estimate.

Symmetry is imposed by linearity: you can test it

- Paper states monetary tightening / negative oil supply shock.
- "Tightening" is a sign normalisation in linear LP: it pools ε^+ and ε^-.
- Cheap test: split $\varepsilon^+/\varepsilon^-$, test $\beta_k^+ = -\beta_k^-$ country by country.
- Payoff: out-of-model validation of the supply-side channel: contractions should bite harder than easings help, especially in the most rigid sectors/countries.

2. How much dispersion should the model explain?





Step 1 – Use same centering.

- Empirics: separate EA aggregate LP. Model: weighted average.
- Composition effect: part of gap is wedge between both EA aggregates → use model weights.

Step 2 – Use same noise.

- Large SEs for most dispersed → overestimates dispersion. Shrink using covariance matrix (comment 1): $\mathrm{Var}(\beta) = \mathrm{Var}(\hat{\beta}) - \overline{\text{s.e.}^2} + \overline{\text{cov}}$. How much survives?
- Mirror image on the model side: PPI rigidity is measured for FR/PT and imputed to all → the model dispersion is too *narrow* by construction.

Step 3 – Calculate share. Model dispersion over true dispersion → quantifies supply-side channel. Remainder is plausibly demand-side heterogeneity.

3. Two country model: mechanisms and quantitative results

Stark calibration, yet modest dispersion:

- Stark rigidities (sticky wages/prices, fixed capital) are common to both countries.
- Cross-country gaps only from composition: 60/40 vs. 40/60 skill mix, 75/55 services → moderate wedge in average slopes.
- GE compresses further: CES arbitrages price gaps (Fig. 8: prices near-identical) & openness anchors EE to DE (70% of EE consumption).

→ Dispersion is bounded by composition, not by params: what share can mechanism claim in data?

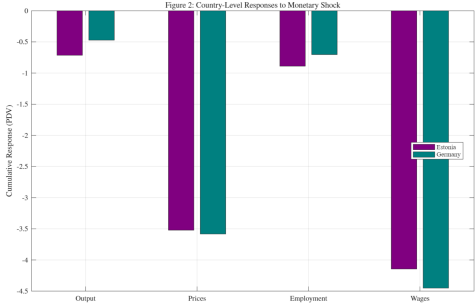


Fig. 8: cumulative country responses.

4. The general model: measurement or calibration?

Dimensions: 20 countries $\times$ 62 industries $\times$ 23 factors; I–O network, segmented factor mkts.

All heterogeneity collapses into two matrices: incidence of common shock $= (I + \Theta\kappa)^{-1}\mathbf{1}$.

- κ: each segment's supply slope = rigidity $\times$ 1/Frisch $\times$ I–O network.
  Flat (sticky, elastic) absorbs in *quantities*; steep (flexible, inelastic) in *prices*.
- Θ: expenditure switching (cf Type II and Miyazawa).

$\Rightarrow$ Country's incidence = its mix of flat and steep segments. One shock $\rightarrow$ twenty outcomes.

What varies across countries in the data, and what is assumed common?

- **Measured, country-varying:** I–O, composition, Domar weights, baskets, wage rigidities.
- **Assumed, common:** Frisch elasticities, σ's, PPI rigidity (FR/PT $\rightarrow$ all) — i.e. the *slopes*.

Model dispersion = mixes $\times$ common slopes: *narrow by construction*.

Taking stock

For academics

- A unified supply-side framework for shock incidence in a currency union: measurable structure (rigidities, factor markets, networks, baskets, ownership) $\rightarrow$ two sufficient objects (κ, Θ) $\rightarrow$ closed-form incidence.
- Bridges the currency-union NK literature (Benigno; Galí–Monacelli), production networks (Rubbo; Baqaee–Farhi), and factor markets.

For policy

- Makes uneven transmission *diagnosable*: which national structures drive exposure to a common rate or energy supply shocks?

What can we say about optimal policy?

- What is the objective function? Stabilize prices, or also to minimize dispersion?
- Does it survive the Tinbergen targeting failure?

Important paper & looking forward to the next iteration!

Thank you