# Discussion of Supply & Demand Shocks, Global Networks and Inflation

- Attempt to quantify drivers of inflation in 2020-2022 using a simple structural model of the global economy
- Model includes a multi-regional input-output structure with trade in intermediate and final goods, to capture the effect of international price increases that can cascade through the international supply chain
- The model can allow for different decompositions of the contributions to inflation, and counterfactual exercises
- I will give a brief overview and commentary on the structure, results, and future directions of the paper.

# Structure

- Ricardian consumers optimizing over current v future consumption
  - Ricardian assumption may miss some of the causes of increased expenditure that may partially stem from big transfers and increases in government debt that will be paid for by future generations
- Households have Cobb-Douglas Preferences over J sectoral consumption bundles
  - Relatively easy to work with but may miss some important substitution possibilities (such as food at home v take-out v food away from home)
- Final consumption goods can be supplied by N countries
- Production  uses sector-specific labor and capital, and intermediate goods from potentially all sectors and countries. Capital is assumed to be at its steady state level, but labor employed may be lower due to downward nominal wage rigidity
- Income may differ from GDP (factor income) due to current account
  - Paper assumes that claims on foreign production is driven by bilateral current account balance, which is unnecessary, likely counterfactual, and inconsistent with optimal portfolio theory
- Price indexes are defined consistent with CES demand structure

# Solution

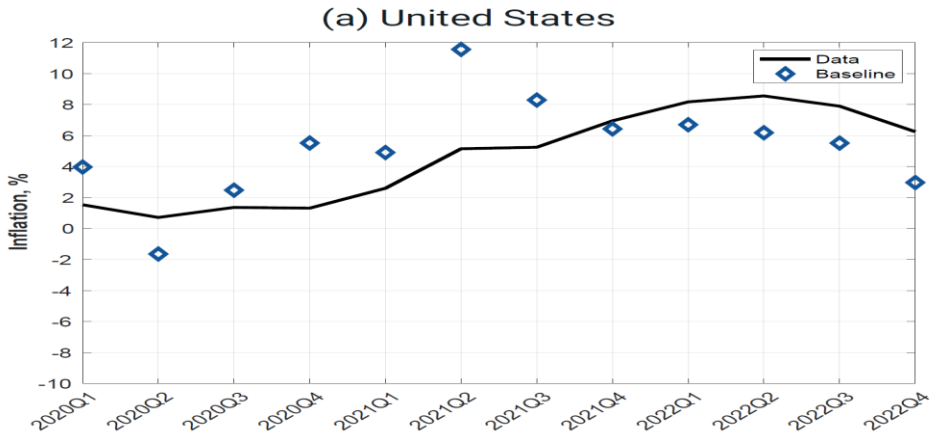
- Model structure is collected into an augmented input-out put matrix $\Omega$
- Leontief inverse of this matrix $[I-\Omega]^{-1}$ traces through the effect on prices of local and domestic shocks to aggregate demand, sectoral demand, sectoral factor supply, and productivity.
- The model generates a first-order approximation of CPI as:

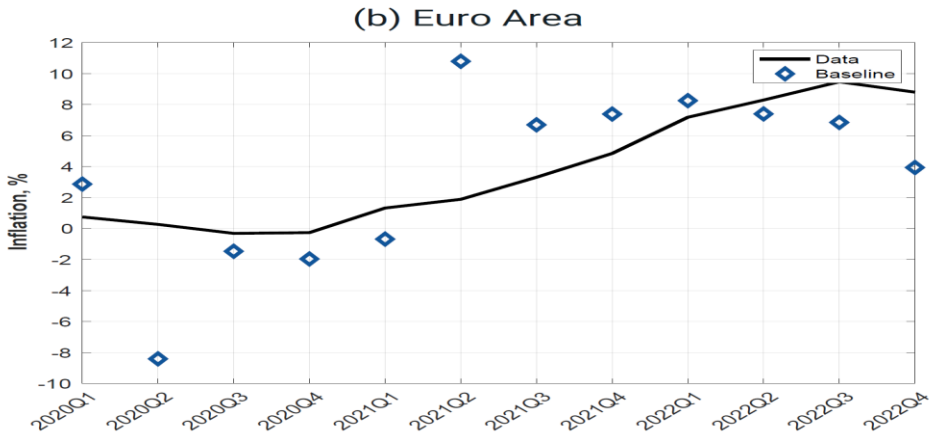
  $d lnCPI^n = d lnI^n - (\Lambda^n)^T d ln\ L - (\lambda^n)^T d lnA$

  - The first term on the right collect aggregate demand shocks
  - The third term on the right collects productivity shocks, where the weights are the shares of household expenditure directly or indirectly falling on the supplying country & sector
  - The second term on the right collects the labour supply shocks, where the weights are further modified by the labour share of output in a country & sector

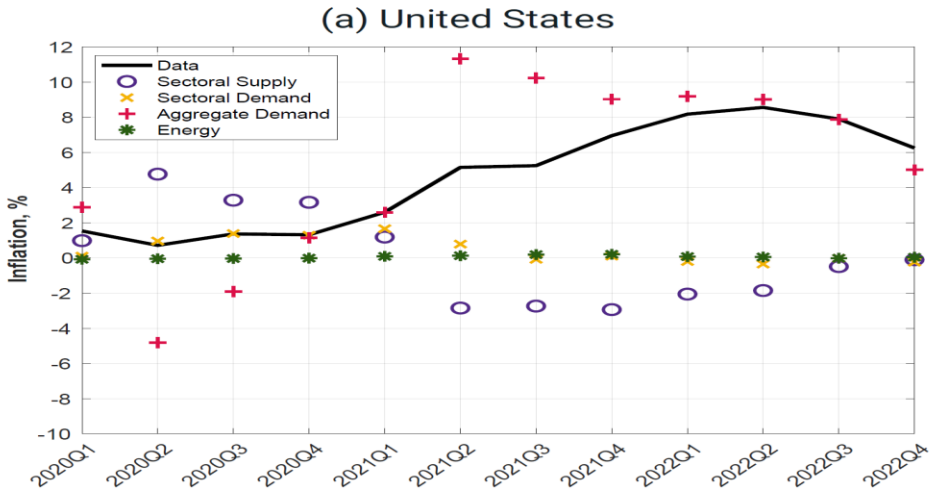
# Data

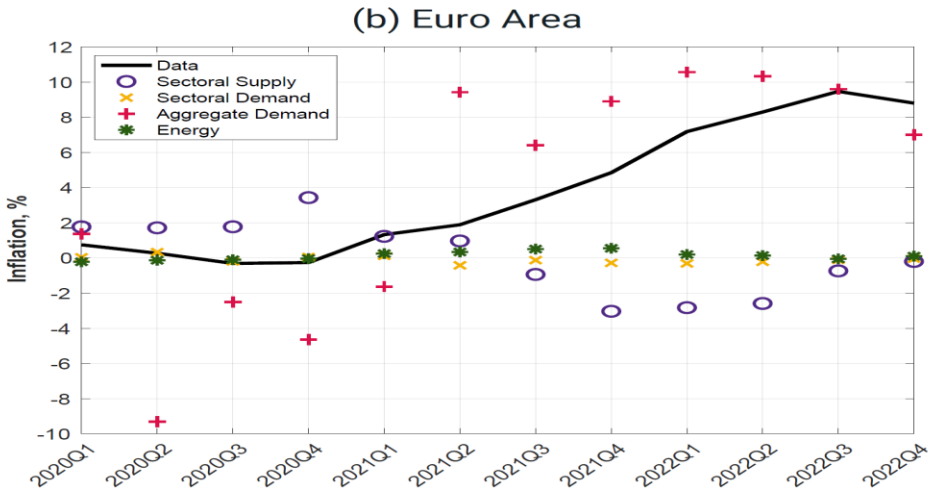
- Data collection seems a little rudimentary at this stage; just 3 countries (USA, EU, Russia) and a ROW grouping. I suspect this will be improved.
- Labor market shocks seem a little crude, using the US to estimate the relationship between hours worked and Covid restrictions, and using that relationship to estimate foreign hours worked. I suspect that more data is available here, or perhaps authors could use Google mobility data to get a more sensitive estimate of the impact of covid restrictions.
- Model results very broadly fit inflation experience, but some big jumps in model predictions might partly reflect current data collection

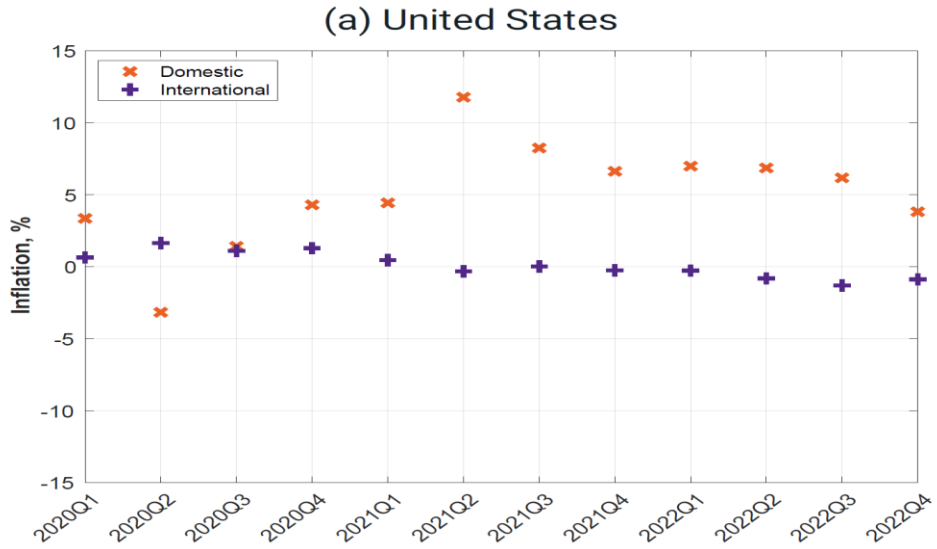


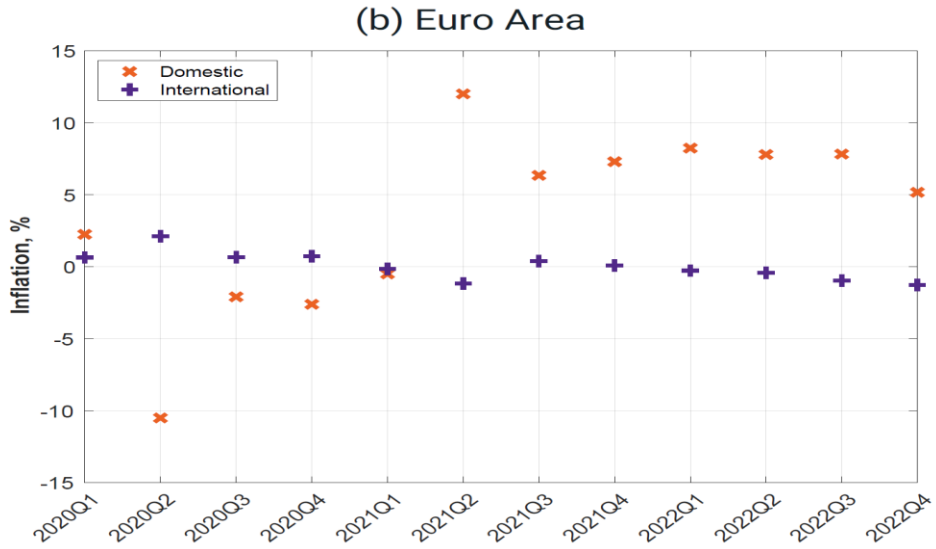



# Results: Mostly AD; Mostly Domestic (not surprising in large countries)



# Other brief comments

- Trade costs in augmented IO matrix?
- Is more data needed (few countries modelled, especially smaller countries)?
- Labour supply: more actual data, or Google mobility data instead of covid restriction indices?
- Suitability of model to study longer periods?
- Mismeasured inflation due to unavailability (travel, accommodation, dining, stock-outs of some goods…)