Discussion of “What Do We Learn From Cross-Sectional Empirical Estimates in Macro?”
by Guren, McKay, Nakamura and Steinsson

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Stanford

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Past decade has seen a “credibility revolution” in macro:

- Turned to cross-section for identification
- Very influential papers used heterogeneous cross-sectional exposure to identify effects of: fiscal policy [Nakamura Steinsson 2014], housing net worth channel [Mian Sufi 2014], China shock [Autor Dorn Hanson 2013], credit market disruptions [Chodorow-Reich 2014], UI extensions [Hagedorn Manovskii Mitman 2015]...

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This paper offers the following answer:

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Example: local to national fiscal multiplier [Nakamura Steinsson 2014]

This paper proposes a method to \textit{take out} the local GE effects in 1

Objective: “pure” MPCH
Why is this important?

- Why do we care about PE objects such as the pure MPCH?
  - From intro: “for [model] calibration purposes”
- But these models are ultimately designed to answer GE questions!
  - eg “what’s the contribution of net worth channel to Great Recession?”
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1. Does this extra leg make GE answer more credible? **Yes sometimes**
2. Can’t we get the PE from some other type of cross-X? **Maybe not**
3. What can we learn about the final step, PE to GE? **Or can we?**
What is the core idea of the method?

- Start from Theorem 4 in Auclert-Rognlie (2018), or Proposition 6 in Auclert-Rognlie-Straub (2018), which say:

\[ GE = M \cdot PE \]  \hspace{1cm} (1)

where \( M \) is multiplier matrix; \( PE, GE \) are impulse response vectors.

- Here, GMNS show a regional version of this result:

\[ GE_{local} = M_{local} \cdot PE \]

so, the paper proposes to calculate

\[ PE = \left( M_{local} \right)^{-1} GE_{local} \]  \hspace{1cm} (2)

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- Why not combine (2) with (1) to get \( GE \) from \( GE^{\text{local}} \)?

  - **A**: \( M \) too complex, \( M^{\text{local}} \) may be simpler, and \( PE \) useful for \( M \) (eg MPC out of lotteries used for fiscal policy in ARS 2018, MPC out of stock market used for monetary policy in ARS 2020)
What can we say about PE to GE in this paper?

- Model is textbook example in which PE-to-GE map $M$ is highly sensitive to parameters.
- Why? GHH preferences! From Nakamura-Steinsson:

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<th>Panel A. Sticky prices</th>
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- Makes it reasonable to focus on stopping at PE rather than GE
- Is this going too far? GHH arguably extreme
  - Rejected by other data, such as direct estimates of GE multipliers?
  - HANK may deliver large local multipliers without need for GHH
Implementation

- Implementation: assume $M^{local}$ is diagonal and apply static version

$$PE \approx \frac{GE^{local}}{M^{local}}$$  \hspace{1cm} (3)

In simplest case of paper with no residential investment, this is

$$MPCH = \frac{\text{Measured Housing Wealth Effect}}{\text{Local Fiscal Multiplier}} = \frac{0.033}{1.5} = 0.022$$
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  - In all but simplest model, “relative error” of 0.33 to 0.57
    $\rightarrow$ multiplier should be multiplied by 1.5 to 2
  - Very dependent on exact model: (2) is structural, but (3) is not
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- Underlying issue is non-diagonal $M_{\text{local}}$ (dynamic linkages)
  - Think $(I - \text{Home Bias} \cdot MPC)^{-1}$ and MPC matrix not diagonal!
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- Underlying issue is non-diagonal $M^{local}$ (dynamic linkages)
  - One solution: study model $M^{local}$ to find a good parametrization for off-diagonal elements, use to correct the approximation error
Conclusion

- What Do We Learn From Cross-X Empirical Estimates in Macro?
- Question of the decade, paper makes significant progress!

*From regional variation, you may be able to learn about partial equilibrium effects (here: MPCH)*

- My suggestions:
  1. Provide extra context as to why PE is useful
  2. Parametrize $M_{\text{local}}$ to improve quality of approximation
  3. Justify using regional variation to get MPCH