DISCUSSION OF:
THE INTERNATIONAL MONETARY TRANSMISSION MECHANISM
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Empirical results:
- Foreign output falls in response to US monetary policy tightening
- EME output falls more than AE output

Theoretical results:
- Trade channel explains most of the fall in foreign output
Empirical Setup

- Sample period: 2006-2019 (monthly data)
- Monetary shocks: High frequency shocks from Bauer and Swanson (2023)
- Impulse responses: Panel Bayesian VARs with “Minnesota” priors
  - US VAR: 9 variables and 12 lags
  - Panel VAR: 2 lags and 11 variables (3 US + 8 local)
- AEs: Australia, Canada, UK, Germany, Japan, Korea, Switzerland, Sweden
- EMEs: Brazil, Chile, Colombia, Dominican Republic, Hungary, Indonesia, Mexico, Peru, Philippines, Poland, Russia, Serbia, South Africa, Turkey.
Figure 1: Response to Contractionary US Monetary Policy Shock, United States

- US GDP jumps down on impact
- Large fall of imports and exports
There are five other features of the results in Figure 3 worth noting. First, the AE’s exchange rate depreciates substantially after a US monetary tightening, as one would expect. In percent terms the magnitude is somewhat larger than the results for the trade-weighted US exchange rate reported in Figure 1. This may reflect the absence from our dataset of some countries that the US trades with, especially China. Second, the mode of our results suggest that AE central banks sell dollars after a monetary tightening. But, the probability intervals are sufficiently wide that they include the case of no FX response. Third, although the modal impulse response of GDP indicates that GDP falls, the percent drop is substantially smaller than the nearly 2 percent drop in US GDP. Fourth, the results show a substantial drop in exports, consistent with the fall in US imports. Fifth, the relatively weak fall in GDP may reflect the estimated significant accommodative response by the AE monetary authorities (see $R^*$).

Next, we turn to Figure 4, which displays our results for the EMEs. First, note that as in the case of the AE’s, there is a substantial currency depreciation. Second, the estimate of Central Bank FX interventions is fairly tightly centered on zero, with the 90 percent probability interval ranging from $-0.5$ to $0.5$ percent. This is somewhat surprising, in light of the evidence in Adler et al. (2024) which shows that EMEs conduct larger FX interventions than AEs. Third, the modal percent drop in GDP is substantial, roughly 3 times the drop in the US. Fourth, another difference

- Output and prices fall
- Large fall of imports and exports
- Monetary easing
- Rapid exchange rate appreciation after initial fall
The response of emerging markets to US monetary policy shocks involves:

- Larger output response
- Large fall of imports and exports
- Monetary policy tightening
- Rapid exchange rate appreciation after initial fall

Figure 4: Response to Contractionary US Monetary Policy Shock, Emerging Markets

Notes: response to a unit shock in \( \epsilon_m \) in panel VAR results for emerging market economies, Brazil, Chile, Colombia, Dominican Republic, Hungary, Indonesia, Mexico, Peru, Philippines, Poland, Russia, Serbia, South Africa, Turkey. Solid lines correspond to the mode of the Bayesian posterior, dark shaded areas correspond to the 68 percent probability intervals and the light shaded areas correspond to 90 probability intervals. The data sample is monthly, 2006-2019.
Degasperi, Hong, Ricco (2023): Advanced Economies

- Similar results (smaller NER response)
- 1990-2018
- 15 countries (rather than 8)
- 12 lags rather than 2
- Miranda-Agrippino and Ricci shock rather than Bauer and Swanson

(a) Median Advanced Economy
- Monetary easing
  (More in line with Kalemli-Özcan 19)
- Smaller response of output
  (More in line with results in appendix)

(b) Median Emerging Economy
Authors use a Bayesian VAR to estimate dynamic causal effects

Alternative would be to use local projections

Local projection: Direct regression of outcome of interest on shock

One might ask: Why would you not use a local projection?
Why Use a VAR?

1. For identification of shocks (Cholesky, long-run restrictions, sign restrictions)
   - This is NOT what authors are using the VAR for
   - Instead they use high frequency identified shocks

2. To enhance statistical power
   - This is what authors are using the VAR for
   - Very modest data set (14 years). Yet, lots of statistical significance.
   - They exploit VAR + priors to get statistical significance
Bias versus Variance

- Variance reduction comes at the potential cost of increased bias

- LP is not biased but can be very noisy
  - Minimal assumptions $\rightarrow$ no bias
  - But large variance (if data is not very informative)

- VAR is potentially biased but less noisy
  - Stronger assumptions $\rightarrow$ less variance
  - But potentially biased (if assumptions are not valid)
**Two Specific Issues**

- VARs are very highly parameterized
- This raises overfitting concern
- Machine learning literature all about this
  Lasso / Ridge / etc.
- Authors use “Minnesota” prior to shrink
  towards unit root

- VARs include lagged dependent variables
- Such regressions are biased
  (AR coefficient biased downward)
- With 14 years of data, bias may be
  significant
- Minnesota prior pushes against this
- Hard to tell if two biases wash out
**Two Specific Results**

- Large GDP response on impact
- Random walk response
- VAR has 108 parameters and 168 data points per equation
- Lots of shrinkage towards random walk?

**Nominal Exchange Rate**

- Usually we think of exchange rates as being close to a random walk
- Estimates very far from a random walk
- Downward bias in largest root of system?
Figure 21: Response to Contractionary US Monetary Policy Shock, AEs and EMEs

- Authors present LP in appendix
- Useful to assess what is coming purely from the data
- Average across countries
- Regressions include 24 controls (168 data points)
- Jagged confidence intervals (are they too small?)

Note: Starred red lines (shaded areas) represent the point estimates of $\beta_h$ (two-standard deviation intervals) corresponding to EMEs. Solid blue lines and shaded areas correspond to AEs. Standard deviations correspond to Newey-West robust standard errors. See text for further discussion.
Recent literature has emphasized financial channel of transmission of US monetary policy
- “Global Financial Cycle” (Rey, 2013, Miranda-Agrippino Rey, 2020)
- Kalemli-Özcan (2019), Degasperi, Hong, Ricco (2023), etc.

Emphasizes effects of US monetary policy on financial variables
- Global financial intermediation, international credit flows, global asset prices, VIX, etc.

Authors seek to assess this through the lens of a structural model
- Conclude that trade channel is vastly more important than financial channel
US monetary tightening has two effects on other countries:
- Expenditure switching effect boosts output
- Negative demand effect reduces output

If second effect is larger, foreign output will fall

I believe this is what authors are finding
- Dollar pricing helps mute expenditure switching effect
- But is the demand effect too large?
## Strength of the Trade Channel

Table 1: Estimated Model Parameters

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Peru</th>
<th>EME</th>
<th>AE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\gamma$</td>
<td>Portfolio Adjustment</td>
<td>2.70</td>
<td>1.84</td>
<td>4.68</td>
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<tr>
<td>$\gamma_R$</td>
<td>Portfolio Demand Shifter</td>
<td>0.91</td>
<td>28.42</td>
<td>27.90</td>
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<td>$\kappa$</td>
<td>Investment Adjustment</td>
<td>3.14</td>
<td>6.92</td>
<td>3.03</td>
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<td>$\theta_{R,c}$</td>
<td>FX Intervention Coefficient</td>
<td>0.36</td>
<td>0.34</td>
<td>0.00</td>
</tr>
<tr>
<td>$\rho_{FX}$</td>
<td>FX Intervention Persistence</td>
<td>0.71</td>
<td>0.89</td>
<td>0.00</td>
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<tr>
<td>$\eta_c$</td>
<td>Consumption Elasticity of Substitution</td>
<td>1.43</td>
<td>1.16</td>
<td>0.78</td>
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<tr>
<td>$\eta_x$</td>
<td>Export elasticity of Substitution</td>
<td>1.49</td>
<td>1.82</td>
<td>1.40</td>
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<tr>
<td>$\nu_i$</td>
<td>Investment Elasticity of Substitution</td>
<td>1.20</td>
<td>0.81</td>
<td>0.25</td>
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<tr>
<td>$\eta^F$</td>
<td>Price Elasticity of Exports</td>
<td>2.04</td>
<td>5.17</td>
<td>2.62</td>
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<tr>
<td>$\gamma_f$</td>
<td>Export Demand Shifter</td>
<td>2.67</td>
<td>5.71</td>
<td>4.50</td>
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<tr>
<td>$\theta^x$</td>
<td>Export Calvo Stickiness</td>
<td>0.79</td>
<td>0.89</td>
<td>0.82</td>
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<tr>
<td>$1 - \omega_c$</td>
<td>Home Bias, Consumption</td>
<td>0.53</td>
<td>0.54</td>
<td>0.93</td>
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<tr>
<td>$\gamma_I$</td>
<td>Home Bias, Investment</td>
<td>0.29</td>
<td>0.29</td>
<td>0.49</td>
</tr>
<tr>
<td>$\gamma_x$</td>
<td>Home Bias, Exports</td>
<td>0.42</td>
<td>0.41</td>
<td>0.61</td>
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<tr>
<td>$\gamma_f$</td>
<td>Export Demand Shifter</td>
<td>2.67</td>
<td>5.71</td>
<td>4.50</td>
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<tr>
<td>$\rho_R$</td>
<td>MP Persistence</td>
<td>0.86</td>
<td>0.95</td>
<td>0.89</td>
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<td>$1 - \phi$</td>
<td>Credit Dollarization</td>
<td>0.50</td>
<td>0.56</td>
<td>0.01</td>
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<tr>
<td>$\bar{T}_{F^*}$</td>
<td>Steady State Deposit Dollarization</td>
<td>0.40</td>
<td>0.40</td>
<td>0.05</td>
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<tr>
<td>$\bar{T}_{4\times GDP}$</td>
<td>Steady State Reserves/GDP</td>
<td>0.30</td>
<td>0.15</td>
<td>0.05</td>
</tr>
</tbody>
</table>

- Exposure of small open economy to US is very large
- All of “foreign” is US
- Consumption share of US goods 46% in EMEs
- Investment share of US goods 71% in EMEs
Model does incorporate financial frictions

- Households have quadratic cost of deviating from target portfolio share which is increasing in $R^*_t$

- Banks finance a fraction $\phi$ of lending in dollars

- Entrepreneurs face costly external finance and balance sheet effects
Large UIP deviations (High peso returns)

Could yield capital inflows (which would yield a boom)

This would not help explain fall in output

Model needs delayed overshooting (Low peso returns)
Thought provoking paper!

I learned a lot from reading it and thinking about it

Striking how large the effects of US monetary policy are on other countries

A lot more work needed to model international financial frictions