DISCUSSION OF “INSPECTING THE MECHANISM: LEVERAGE AND THE GREAT RECESSION IN THE EUROZONE” BY MARTIN AND PHILIPPON

Emi Nakamura (Columbia University)
THEORIES FOR EUROZONE (AND US) BOOM & BUST

1. **Bank Lending Theories:** Banking crises led to tightening of credit constraints
   - “Sudden stops” of capital inflows in Europe

2. **Aggregate Demand Theories**
   - Reduction in consumer demand due to collapse in household wealth or credit availability

3. **Government Spending Theories:** Profligate government spending (e.g., Greece) was reversed

4. **Productivity decline**
Household Debt Growth Strongly Correlated with Output Growth Across Euro Zone Countries
Does this Prove that Shocks to Credit Constraints Were Important?

- Not necessarily: Borrowing could have been a reaction to boom/recession caused by bank lending channel
- Possible Instrument: Countries that had biggest 2001-2007 household debt increases also had largest 2008-2012 household debt declines
- If the run-up in debt was exogenous then can use 2001-2007 debt increase as an “instrument” for 2008-2012 debt decline
Strong negative correlation between household debt growth 2001-2007 and output growth 2008-2012
But much weaker correlation between 2001-2007 debt run-up and 2008-2012 deleveraging.
COULD THERE BE ANOTHER CHANNEL?

Average Output Growth 2008-2012

Average Growth Household Debt 2001-2007
Countries with greater 2001-2007 household debt run-up also had lower 2008-2012 government spending growth.
CHANGE IN AVERAGE TFP VS. AVERAGE OUTPUT GROWTH

Change in Average TFP 2008-2012 vs 2001-2007

Change in Average Y 2008-2012 vs. 2001-2007
MARTIN-PHILIPPON MODEL

- Extension of Eggertsson-Krugman and Midrigan-Philippon to small open economy monetary union

Model implications:
- Strong output response to relaxation of credit constraints
- Large government spending multiplier
SIMULATIONS

- Feed in “actual” time series of:
  - Household debt
  - Taxes, Transfers, Nominal government spending
  - Interest rate spreads

- Compare model to data in terms of:
  - Output, labor, wages, government debt etc.
AN ASIDE: THE DATA ARE “REBASED”

- Calculate “potential” output for each country using the following approach:
  - Assume average Eurozone output per capita growth rate 2001-2007
  - Assume 1.5% growth rate post 2008

- Analyze everything in relative terms relative to this definition of potential output
- Seems arbitrary!
SUCCESS! GDP: MODEL VS. DATA
KITCHEN SINK REGRESSION

\[ \Delta y_{it} = \beta_1 \Delta \text{household debt}_{it} + \beta_2 \Delta \text{gov debt}_{it} + \beta_3 \Delta \text{gov spending}_{it} + \beta_4 \Delta \text{transfers}_{it} + \beta_5 \Delta \text{interest payments}_{it} + \beta_6 \Delta \text{bank recapitalization dummy}_{it} + \text{year fixed effects} \]

- Year fixed effects “soak up” Euro level variation
- Subtract year fixed effects from predicted and observed \( \Delta y_{it} \) to obtain country-specific variation
- Analogous to Martin-Philippon “rebasing” approach
PREDICTIONS OF KITCHEN SINK REGRESSION

Graphs by country
MODEL WITH ONLY HOUSEHOLD DEBT AND GOV SPENDING WORKS ALMOST AS WELL

Graphs by country
Regression with Credit Constraint Interactions

\[ \Delta y_{it} = \beta_1 \Delta \text{household debt}_{it} + \beta_\varphi \varphi \times \Delta \text{household debt}_{it} + \beta_4 \Delta \text{gov spending}_{it} + \text{year fixed effects} \]

- \( \varphi \) is fraction of credit constrained households
- If \( \beta_\varphi > 0 \) then correlation with household debt is stronger in countries with more credit constrained consumers

- Result: \( \beta_\varphi \) is positive and essentially drives out \( \beta_1 \), though not statistically significant
CONCLUSIONS

- Eurozone growth deviations from average can be largely explained by:
  - Household debt (Some evidence for interaction w/ fraction of credit constrained consumers)
  - Government spending
- Martin-Philippon model generates these patterns
  - Quantitative magnitude of credit and government spending effects are “about right”
- Question of causality remains
  - Banking crises, construction bust etc. could cause reduction in household leverage
  - Matters for policy analysis