Research Challenges Faced by Regulators?
Or Is It: Policy Challenges Faced by Researchers?

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The Role of the IMF

Surveillance (not regulation)

- Bilateral Surveillance: every member country receives an Article IV Consultation every year—a review of their economic and financial situation and policy advice.

- Multilateral Surveillance: examination of global and regional developments with (general) policy advice directed at main players
  - Flagship publications: World Economic Outlook, Global Financial Stability Report; Fiscal Monitor
  - Spillover Report, [Early Warning Exercise, Vulnerability Exercises]
  - Membership in the Basel Committee, Financial Stability Board, etc...
What kinds of basic questions arise?

- How do we determine whether an economy is vulnerable of some set of risks/shocks?
- Can we discover ‘why’ it is vulnerable?
- Which policy tools will work to mitigate the risks that are detected?
- How do we judge the effectiveness of the tools?
Types of macro-fin models

- Macroeconomic models (DSGE) with “add-ons” of financial “frictions”
  - First generation: with agents that have equity/collateral causing “accelerator” behavior
  - Second generation: with bona fide “intermediaries” that create credit and hold capital

- Asset pricing models with links to the real economy
  - Consumption and investment main variables

- Microstructure models with types of agents
  - Informed/uninformed traders, speculators, noise traders
Types of macro-fin models

- Empirical models that link (aggregated) financial and real variables
  - Structural VARs
  - Bayesian VARs; Bayesian SVARs
  - Regime-shift models/volatility models
  - Panel data regressions

- Raw (big) data/information the tools to discern relationships or behaviors
  - Factor analysis/cluster analysis
  - Network analysis
  - Agent-Based Modeling
Given many macro-financial linkages, *unified* framework to remain elusive

Financial exposures (stocks and flows) between sectors

- Household sector
- Corporate sector
- Banking system
- Financial markets
- Other financial intermediaries
- Public sector
- External sector
Challenge: match model to policy question

- How likely is China to end up in a “doom loop” between fiscal and financial risks like the euro area?
  - The correct model to use is ... ?

- Are low (or negative) interest rates likely to be effective in spurring demand?
  - The correct model to use is ... ?

- Is the low-for-long interest rate environment building into the financial system “excessive” risk-taking?
  - The correct model to use is ... ?
Challenge: match model to policy question

- Which countries have housing “bubbles” at the moment? Is there a threshold overvaluation that requires action?
  - The correct model to use is ...?

- Which macroprudential tools (loan-to-value restrictions; debt to income restrictions; real estate transaction taxes, other) will work best to lower housing risks?
  - The correct model to use is ...?
Some (personal) guidelines

- Think hard about endogeneity
  - What is it that you want to explain or understand or determine?
  - What can reasonably be assumed to be outside the “system”? What is a “shock”?

- Think hard about the robustness of the model
  - Along what dimensions does it matter that it is robust?
  - Can it be used across countries? Across markets? Across sectors? Across institutions?
  - How much do you trust your model? Does it pass the “smell test.”
Some more (personal) guidelines

- Can you link the model to a policy?
  - Can a new measure of (systemic) risk help to design a “charge” or “tax” to mitigate the risk?
  - Can you build a DSGE model in which you can examine the effect of, say, capital charges, liquidity charges, lump-sum taxes.
  - Can network or big-data relationships shed light on whether certain entities are helpful or harmful to the system? If harmful should they be “removed” or cut off from the system?

- If no direct link to policy, what next steps are needed? Is there a policy implication? What did we learn?
A digression on IMF data

- Macro data (quarterly/annual)
- Direction of Trade Statistics (DOTS)
- Coordinated Portfolio Investment Survey (CPIS)
- Coordinated Direct Investment Survey
- Balance of Payment Statistics (BOPS)
- Joint External Data Hub (e.g., with BIS)
- Public Debt Statistics
- Financial Soundness Indicators (FSIs)
- Housing price data
- Global Macroprudential Policy Instruments (GMPI) (new)
- Global Flow of Funds (coming...)


Constrained optimization (for policymakers)

- Policymakers need to make decisions:
  - In real time
  - Without the correct or complete data
  - With “time-varying parameters” (some of which can change based on which policies are utilized)
  - In conjunction with other economic policies
  - Within a political environment with (less than perfectly “rational”) agents.

- Can we embed some of these elements into the models themselves?
Macroeconomics is becoming more “risk” focused
- Predictions are less about the “means” and more about the variance, skewness, tail-fatness (kurtosis)

Macroeconomics is becoming more “linkage” focused
- Examining how agents and/or sectors are linked? How their behaviors interact?
- More conscious of non-linearities? How and under what conditions?
Macroeconomics needs to be more “policy tools” focused
- Connections between the “outcome” and the “tools” needs to be better described
- “Tools” need to be “incentive compatible” – that is, they should work by relying on the natural tendencies of the agents.

Macroeconomics needs to be more engaged with alternative disciplines – “speak their languages”
- With finance: financial intermediation is not a friction but the grease
- With Sociology, Psychology, Biology/Neuroscience, Engineering are a few such disciplines.
Regulatory Arbitrage in Action

“These new regulations will fundamentally change the way we get around them.”
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