Macro Finance

Xiang Fang

The University of Hong Kong

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So Far...

- Consumption-based asset pricing
- Dynamic consumption portfolio choice
- Production-based asset pricing
- Idiosyncratic risk in incomplete market
- Quantitative banking and fintech in macro finance
- Some basics of bonds and currencies

The "Finance" Side of Macro Finance

- Take the "real" side (SDF) as given and explore the asset pricing implications
  - Consumption AP: Given cash flow
  - Production AP: Derive cash flow from partial equilibrium
- Key equation: $E(MR) = 1$
- Main goals
  - Describe the properties of SDF, and relate it to observed macroeconomic variables
  - Describe the CF of firms, and relate it to firm characteristics
- For bonds and currencies, knowing SDF is enough
  - Market completeness matters for currencies

The "Finance" Side of Macro Finance

- Essentially a valuation problem
  - What properties of SDF can reconcile the macro and finance facts we observe, i.e., the equity premium, consumption dynamics and return predictability, etc?
  - Why do different firms have different betas with respect to certain risk factors?
  - What drives bond and currency risks?
- From asset pricing to macro finance
  - Take SDF as given and conduct empirical AP test
  - The factors are macro factors, instead of statistical factor constructed from returns
  - Models are further restricted: not only disciplined by the financial market, but also disciplined by macroeconomic data
- From macroeconomics to macro finance
  - Macroeconomic models start with utility maximization and solves consumption/output/investment endogenously (RBC)
  - Why can we take SDF as given?

Taking SDF as Given?

- From an empirical perspective, testing $E(MR) = 1$ for given M is essentially testing a moment condition
  - One advantage of GMM is that the econometrician does not need to specify the full model. The variables in the moment condition can be endogenous
  - Whatever underlying GE model there is, equilibrium condition boils down to $E(MR) = 1$
- Limitation: there is no two-way macro-finance feedback
  - With representative agent, there is no two-way macro-finance feedback (everyone makes the same decision)
  - With heterogeneous agent under complete market, there is no two-way macro-finance feedback because risks are perfectly shared after all
- Modeling two-way macro-finance feedback requires heterogeneous agents + incomplete market

The "Macro" Side of Macro Finance

- How to endogenize the SDF?
  - Preference: Habit, EZ, ...
  - Macro dynamics: LRR, rare disaster, ...
- How do real economic decisions depend on asset prices?
  - Labor hiring, investment, human capital, consumption, ...?
- What's the role of financial market in the macroeconomy?
  - Modigliani-Miller theorem and deviations
  - Credit constraint, intermediation and the role of net worth, ...
  - Amplification and financial disturbances
- Why should macroeconomists care about finance?

Topics I will Cover

1. Intermediaries in macro finance
2. Bond risk premia and the macroeconomy
3. Currency risk premia and exchange rates
4. Demand system approach to asset pricing

Prerequisites

- Empirical asset pricing
- Asset pricing theory
- Macroeconomic theory and quantitative tools
- Applied econometrics

Some Resources on (Quantitative) Macroeconomics

- "Macroeconomic theory" by Professor Dirk Krueger: a must-read if you want to learn macro seriously
- A course taught by Thomas Drechsel (Maryland) on how finance affects the macroeconomy
- Numerical methods — The only way to learn: coding!
  - Jeremy Greenwood lecture notes (hands-on, for beginners)
  - Lecture notes from Fatih Guvenen
  - Fabrice Collard's notes and code (hands-on, for beginners)
  - Heer and Maussner, "Dynamic General Equilibrium Modeling"
  - Jesus Fernandez-Villarverde's lecture notes (advanced)
  - Handbook chapters
    - Jesus Fernandez-Villarverde, Juan Rubio-Ramirez and Frank Schorfheide, "Solution and Estimation Methods for DSGE Models", Handbook of Macroeconomics
    - Lilia Maliar and Serguei Maliar, "Numerical Methods for Large Scale Dynamic Economic Models", Handbook of Computational Economics

Other Useful Resources

- International macroeconomics and finance
  - Charles Engel's lecture notes
  - Zhengyang Jiang's lecture notes
  - Stanford Initiatives on international macro and finance
  - A course taught by Rosen Valchev
  - A course taught by Enrique Mendoza
- Continuous-time macro-finance
  - Ben Moll's lecture and sample code on the website
  - Markus Brunnermeier's online macro finance class
- Macro finance society lectures
- Demand system approach workshop