Paper Summary

• Paper develops a GE model of the UK’s system of market finance:
  o 7 representative agents: Pension funds, Life insurers, Investment funds (Long-term investors), hedge funds (arbitrageurs), MMFs and banks (cash providers), and broker dealers (intermediary).
  o 3 markets: bond, Repo, and derivatives.

• Authors use the model to assess resilience of market-based finance and the system performance under stress scenarios:
  o Agents optimization (e.g., max. expected return of asset portfolios) include regulatory (solvency and liquidity) and other (e.g., margin calls) constraints.
  o Liquidity in asset and funding markets is endogenously determined.
  o Agent interactions in these markets generate feedback loops and contagion channels leading to fire sale externalities.
  o Individual and multi-shock stress scenarios leading to portfolio rebalancing (e.g. deleveraging) and funding strains illustrate “tipping points” beyond which shock amplifications generate large illiquidity premium.
Paper Contribution

• Paper addresses a very interesting and hot topic: significant post-crisis expansion of nonbank financial institutions (NBFI):
  o New and unique dataset on NBFI’s balance sheet information.
  o Heterogeneous behavior of NBFIs with focus on interconnectedness and fire sales externalities.

• Lots of institutional details for behavior of NBFIs and their interactions in asset, funding, and derivatives markets.

• Novelty: liquidity and asset prices are endogenously determined
  o Nonlinear price adjustments when agents hit constraints lead to shock amplification.
  o Model illustrates how the interplay of capital and liquidity constraints could mitigate impact of the shocks.
Comments I: Model

• Very ambitious and complex model:
  o Many simplifying assumptions, sectors with passive behavior, sectors not modeled, markets that are unconstrained or do not clear domestically.
  o No macro variables.
  o Shocks (e.g., deteriorating outlook for credit risk and corporate profits) are changes in parameters.

• No model dynamics
  o Two periods, but one-shot game: agents react today to expectations of a shock tomorrow (e.g. corporate bond defaults).
  o What are fire sales externalities? (asset unwinding happens all at once but how about sequential decisions according to liquidation rules?).
  o Price determination and role of (exogenous) price targets of arbitrageurs (hedge funds) need more explanation.

• Model layout and description makes it hard to follow
  o Notation issues and missing (e.g. more explicit) identities.
Comments II: Assumptions and Notation

• Lots of simplifying assumptions:
  o Investment funds and Insurers do not participate in repo markets.
  o MMF and banks do not participate in derivatives (IRS) markets.
  o Broker-dealers do not maximize profits.
  o Endogenous prices: Why is the repo rate exogenous?
  o Broker-Dealers and investment funds are exposed to IRS markets: Initial and Variation margin constraints are missing (only $IM^{IF}$ in Table B6)

• Notational issues:
  o Model splits repo into short-term and long-term, sometimes constraints use $A^{i}_{R,t}$ and $L^{i}_{R,t}$. Other times you only see: $A^{i}_{SR,t}$ and $L^{i}_{SR,t}$
  o Duration: sometimes as exponents, $T^{I}$ (insurers’ obligations); other times as variables: $D^{PF}_{GB}$ (pension funds’ government bonds). How are these determined? Parameters in Table B8 do not include them!
  o Mixed funds target their leverage ratio by adjusting their IRS exposure: No expression for this!
  o Derivatives (IRS) gross positions modeled only for some but not all exposed agents.
Comments III: Results

- Single shocks have only modest impact (no fire sales)
- Large Multi-shocks (stress scenario) illustrate contagion channels:
  - Need to impose binding constraints on both broker dealers and commercial banks to amplify drop in prices and to generate fire sales, illiquidity and presumably real effects.
  - Bank capital and insurer’s solvency constraint, as well as liquidity of investment funds matter.

Concerns

- Can’t rule out multiple equilibria
- Are small effects of large shocks surprising?
  - Bank capital in the model calibrated to Basel III requirements (solvency issues?)
- Model separation of banking into commercial banks and broker dealers does not allow assessing real effects.
  - CBs only supply repo and loan losses to HH and firms are exogenous.
  - DBs in repo markets explain all the action on liquidity and funding.
Comment IV: Conclusions

• Model predictions: what do we learn?
  o Qualitatively (e.g. directionally): contagion, fire sales, and illiquidity due to large shocks and binding constraints seem reasonable but not surprising.
  o Quantitatively: model only generates “tipping points” or thresholds for deleveraging and fire sales.

• Do we need a very complex model with 7 representative agents and 3 markets for those outcomes?
  o Model complexity forces too many simplifying assumptions which may defeat the purpose of quantifying effects.
  o Complexity also obscures identification of driving forces.
  o Are there new policy implications for financial stability?
• Paper considers a very interesting and hot topic.

• Authors have created new and unique dataset for NBFIs

• Model illustrates interaction of shocks and binding (capital, liquidity, and institutional) constraints in generating deleveraging, fire sales, and illiquidity.

• General suggestions:
  o Model seems too complex to deliver quantitative results with new financial stability implications and more relevant policy discussions.
  o Authors may want to simplify the model.