BANCA D'ITALIA
EUROSISTEMA

Banks, Credit Markets Frictions, and Business Cycles

by Ali Dib

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Praise

- Ambitious attempt to move beyond what W. Buiter called the "*unfortunate uselessness of modern monetary economics*":
  - complete mkts, representative agent, no role of financial interm., irrelevance of the financing policy, etc…
- A model of the demand and the supply side of (bank) credit:
  - Demand: loans to entrepreneurs are risky and command a risk premium
  - Supply: bank capital, interbank markets, monopolistic competitive banks
- And MP can engage in unconventional operations!

More praise

- Important contribution to the policy debate:
  - a coherent framework in which to conduct cost-benefit analysis of the many proposals currently under scrutiny:
    - to restore confidence in financial mkts
    - to channel liquidity to constrained agents
    - to reform financial supervision
    - to mitigate financial pro-cyclicality …

More praise

- Long tradition of microeconomic and/or partial equilibrium bank models (Freixas & Rochet 1997)
- But much less in quantitative general equilibrium models!
- Dib's paper is a nice (non-convex) combination of some of those:
  - **Bernanke, Gertler and Girchrist** (financial accelerator)
  - **Christiano, Motto and Rostagno**
  - **De Walque et al.** (interbank markets & default penalties)
  - **Gerali et al.** (MC banks and bank capital)

Outline

- Model recap
- Results
- Comments / questions
- Suggestions and policy implications

Key model features

- Heterogenous agents:
  - Workers consume, work and hold bank deposits
  - Bankers own banks and accumulate bank K
  - Entrepr. need loans to finance risky projects
- Two banks ($\Rightarrow$ an interbank market) which set rates under MC subject to adjustment costs
- Bank capital: rented by bankers to (lending) banks & needed in making loans
- Endogenous (strategic) default possibilities on interbank market and bank capital

Recap of main results

- Preliminary evidence from a calib. version
- Comparison btw benchmark and FA model (?)
- Dynamic responses from conventional shocks seem reasonable:
  - Technology sk: small amplification of output responses. Responses of I_t, C_t and Loans peaked later (propagation)
  - MP sk: strong attenuation of all responses. This might be due to parametrization (markups)

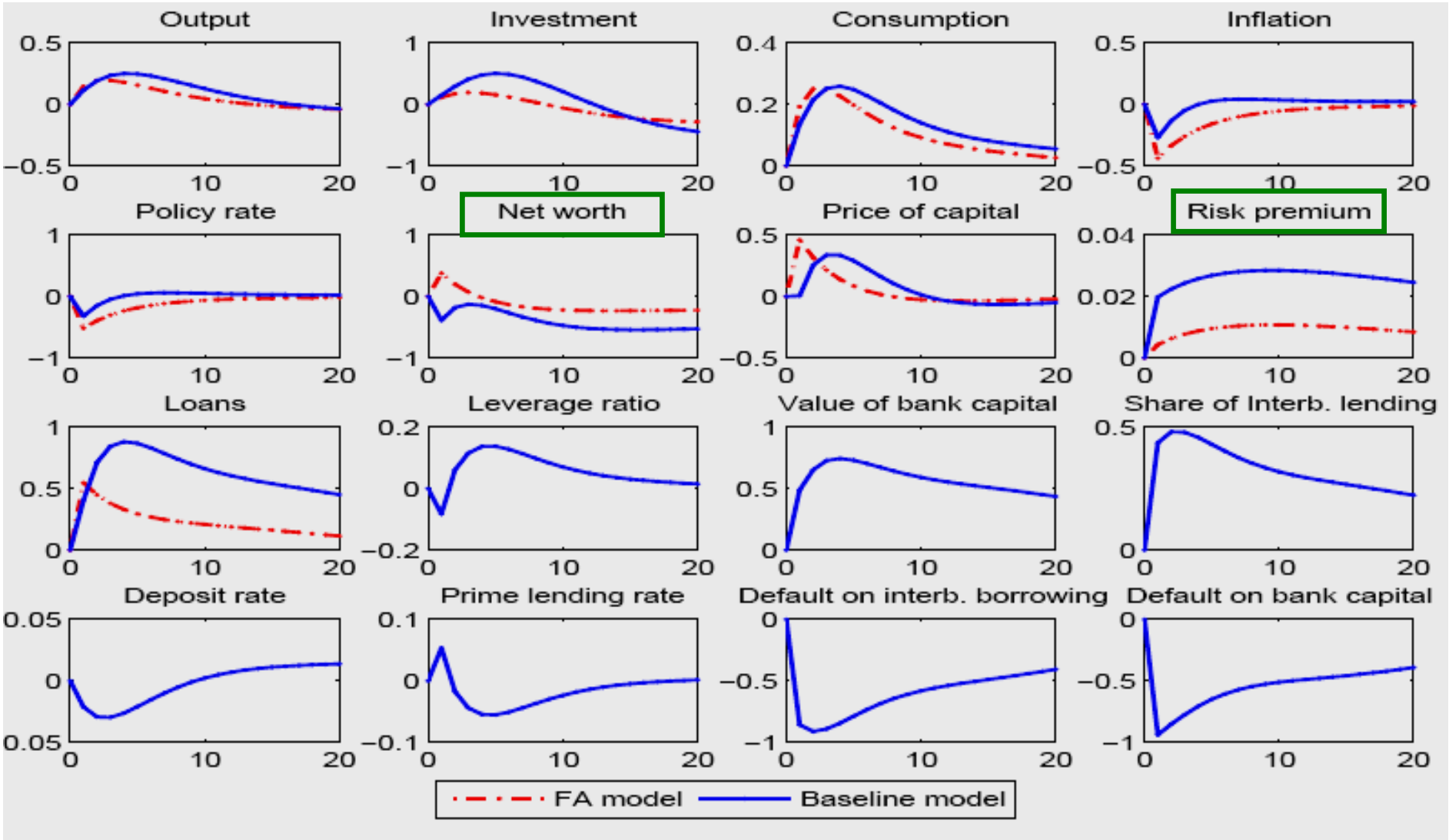
Recap of main results

- … with some surprises:
  - Net Worth of E goes **down** after a positive tech. sk.It goes up in the std FA model. This makes the risk premium go up persistently!
  - Drop in loans after a reduction of the policy rate is mitigated compared to the FA model. Even if the default rate on IB is above ss for most of the periods (reduce loan supply)
  - Prime lending rate tends to move in opposite direction with the policy rate!

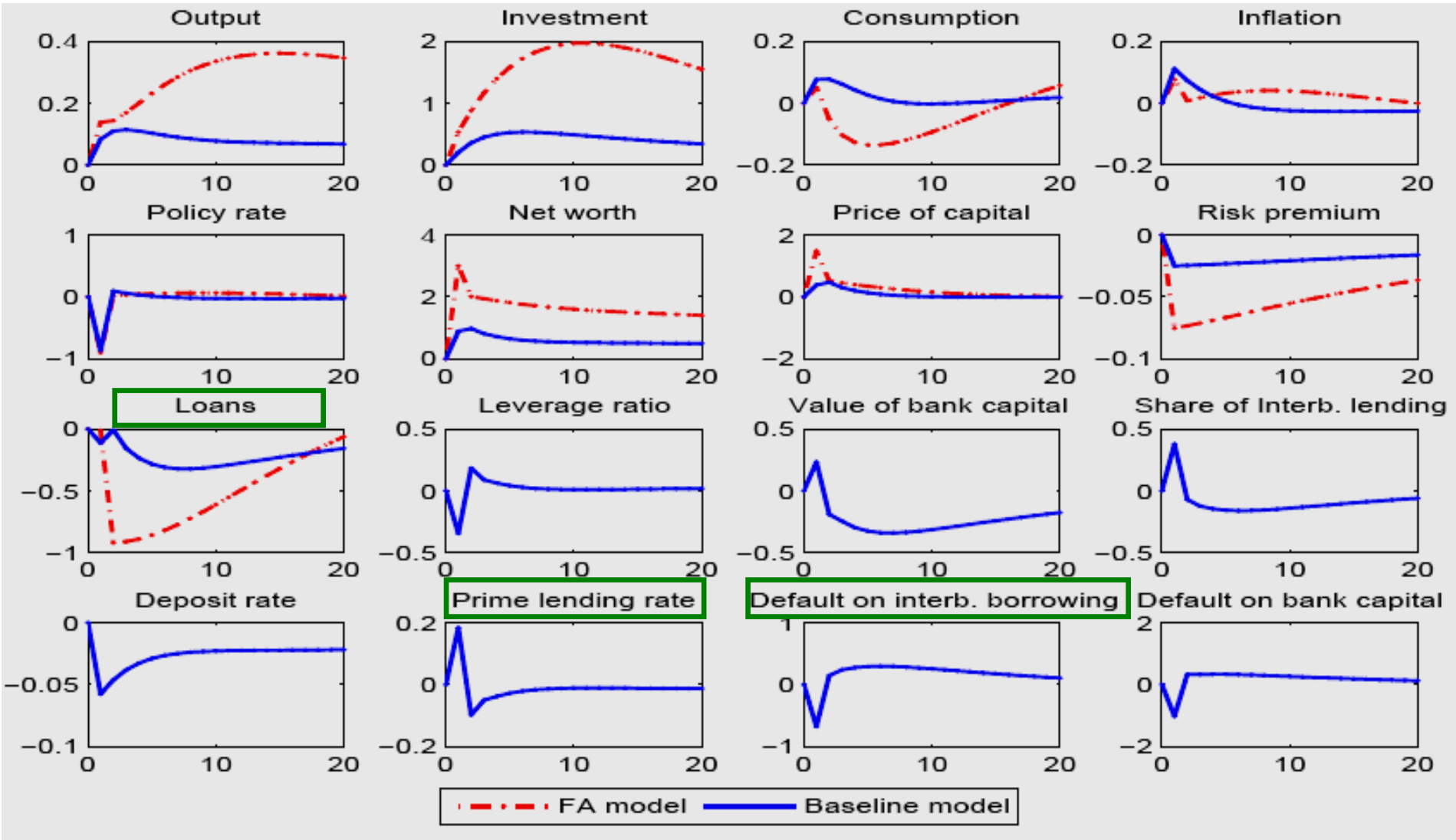
Unconventional shocks

- After an exogenous increase in ‘riskyness’, banks provide some insurance to workers
- Quantitative easing is more effective in raising output than qualitative easing (assets swapping)

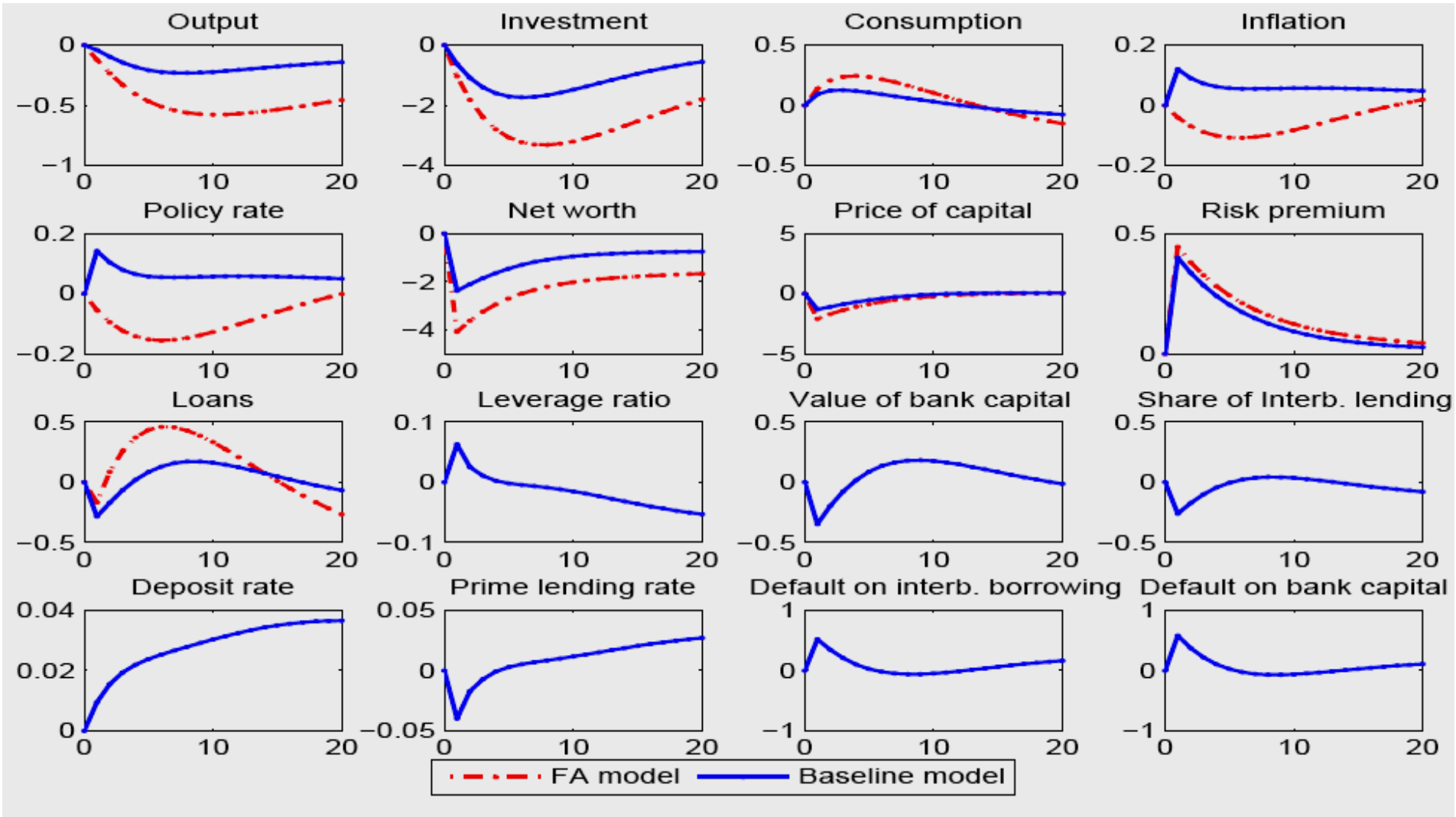
An expansionary technology sk



An expansionary MP sk



An increase in ‘riskyness’



Q1: Transmission mechanism?

- Model is big, complex and w/ novel features
- Understand his almost inextricable transmission mechanism is a daunting task
- Need careful investigation of the interaction between credit demand (FA) and credit supply features (MC and bank capital)
- Not there in the present version

Q2: Modeling choices?

- Without it, model is somewhat of a ‘black box’ at present
- But with some novel/unconventional features that deserve close scrutiny:
  - Interbank market
  - Nature of bank capital
  - Defaults possibilities
- Wouldn’t a simpler model be easier to understand and to take to the data?

Q3: Empirical strategy?

- Currently, model is validated by looking at model-implied volatilities, auto- and cross-correlations
- But shocks params are hand-picked from the literature ➔ exercise is not that informative
- I strongly encourage the author to embark in a fully fledged estimation exercise of the model

Modeling choices 1: interbank market

- Interbank market is a sideshow:
- Price (interest rate) is set by the CB equal to the risk-free rate
- Quantities supplied & demanded on this market are equal by asstn
- The two banks in this market are owned by the same subject (bankers)
- So default is almost unconsequential

Modeling choices 2: bank capital

- An elusive object in this model!
- What are the empirical counterparts of Z_t and Q^Z_t ?
- Z_t is rented out by bkrs to lending banks (owned by bkrs) but it can be defaulted on
- $Q^Z \neq 1$ only because of adj. costs
- A financial asset (shares)? A real asset?
- Why not collateralizable?

Modeling choices 3: defaults

- Lending banks can default on bank capital and on funds raised on the IB market
- Not clear what purpose these two features are supposed to serve:
  - No risk spreads, no quantity rationing
- Moreover, are empirically difficult (impossible?) to match

Suggestions for the future

- Derive analytical results from simplified versions of the model to develop intuition
- Consider stripping the model from dubious/unnecessary features
- Report irfs from models of increasing complexity to understand where are the smoking guns
- Empirical validation: ESTIMATE IT

Policy implications

- **Unconventional monetary policies**: model favors liquidity injections over asset swapping (or credit insurance schemes)
- The reason is that banks dampen effects of financial shocks on real variables, and liquidity injections make banks more important for the economy
- Instead, Fed (and other major central banks) have expanded **their** balance sheets, extending credit directly to the private sector and thus bypassing banks!

Policy implications

- **Optimal bank capital requirements**: model can be used to study (and rank) regulatory environments with different levels of capital requirements or with provisions to make them countercyclical
- **Fiscal policies:** It can also rank fiscal stimulus plans. US Treasury has recently engaged in massive equity injection into the banking system. What if the same money had been given directly to workers and/or entrepreneurs?

Summary

- Very nice paper:
  - Timely and important topic
  - Useful model
- At this stage of development, difficult to judge its empirical relevance
- First step forward should be to estimate (several variants of) this model