ANTON KORINEK, MARTIN NOWAK
RISK-TAKING DYNAMICS AND FINANCIAL STABILITY

Discussion by Jaroslav Borovička
April 2016
An important topic

- How does heterogeneity in the economy (in financial markets) affect
  - short-run dynamics
  - long-run outcomes
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Approach

- Set up and study an “evolutionary” model of the financial sector
  - heterogeneous investments strategies / technologies
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Questions

- How different is this from the existing literature?
- Is this the right economic mechanism?
Bankers with heterogenous types $i$ and initial stock of financial assets $k_{i0}$ (‘capital’ stock).

- Each type access to a set of investment technologies with exogenous returns.
- Maximizing the objective

$$E \left[ U \left( k_T^i \right) \right] = E \left[ \ln \left( k_T^i \right) \right]$$

leads to the well-known Kelly (1956) rule allocation.
- Each banker lives in complete autarky.
Individually maximizing the log growth rate of capital stocks is not the same as maximizing the log growth rate of total capital stock:

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Solution

- Open the markets!
- Either let the banks trade capital, or let bank owners trade capital shares in banks.
- Monopolize everything!
- One large bank will solve $$\max E \left[ \log \sum_i k^i_T \right]$$.

There is no other friction in the model = problem solved.
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RESULT: AFTER A GOOD SHOCK, RISK-TAKING INCREASES

Is this bad?
That depends!
Two interpretations.
1. Heterogeneous technologies, homogeneous preferences.
   - After a good shock, riskier technologies earn more.
   - Markets would then reallocate capital.
2. Heterogeneous preferences (risk types)
   - Reallocation of capital to more risky types after a good shock is an outcome of efficient risk sharing.
Authors are quite ambiguous. E.g., they give the following interpretations of ‘capital reallocations’
   - Random changes in technologies
   - Changes in decision makers
   - Changes in the set of financial institutions
   - Reallocations of funds by external investors
… but it becomes important when considering policies.
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Computational tools

- Mertens, Judd (2013), Judd, Maliar, Maliar (2011 etc.), Kaplan, Moll (2016), Kaplan, Moll, Violante (2015), ...
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  - The key variation is in leverage.
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- But how does the data look like?
Household sector: Consistent with the model — asset growth and leverage negatively correlated.

Fig. 1. Total assets and leverage of household.
Non-financial firms: No relationship.
Commercial banks: Riskiness completely driven by leverage.
Brokers and dealers: Asset growth and riskiness completely driven by leverage.

![Graph showing total assets and leverage of security brokers and dealers.](image)

**Fig. 4.** Total assets and leverage of security brokers and dealers.
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- (constrained) optimal allocation
- planner’s welfare function
- implementation.
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This is unfortunately a bit of a moving target in the paper (and also between versions).
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- Authors state that first welfare theorem holds in this framework.
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- Bankers are endowed with log preferences over terminal capital.
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- But policies evaluated based on reduction in volatility.
Extension with bankers and workers.

- Workers are exogenously restricted to be hand to mouth.
- Collect and **consume** a fraction $1 - \alpha$ of total output (Cobb–Douglas technology)
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**But why bailout?**

- Notice that the main friction is autarky.
- But if the government is able to undo autarky through bailouts, why not provide workers with equity shares in the banks?
- This is what a market for bank capital would do! (There is no other friction that would prevent it.)
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SUMMARY

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- use it!