Discussion of Saki Bigio, Financial Risk Capacity

By

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Banco de Portugal Conference, June 2012

- Introduces a potentially important financial amplification mechanism for recessions.
  - Dynamics of bank net worth.

- Addresses a theoretical weakness in models that associate the 2008 crisis with a collapse of of bank net worth.
  - Those models assume net worth cannot be expanded with external funds (e.g., BGG, Gertler-Kiyotaki).
  - Presumably, if that assumption were dropped, net worth in those models would expand dramatically and shortage of net worth would cease to be a problem.

- In Bigio's model, bank net worth is endogenous.
  - Yet, little expansion in net worth using external funds.

- Model captures idea that shock to bank net worth could trigger a long-lasting recession.
  - Formalizes the idea, 'this time it is different'.

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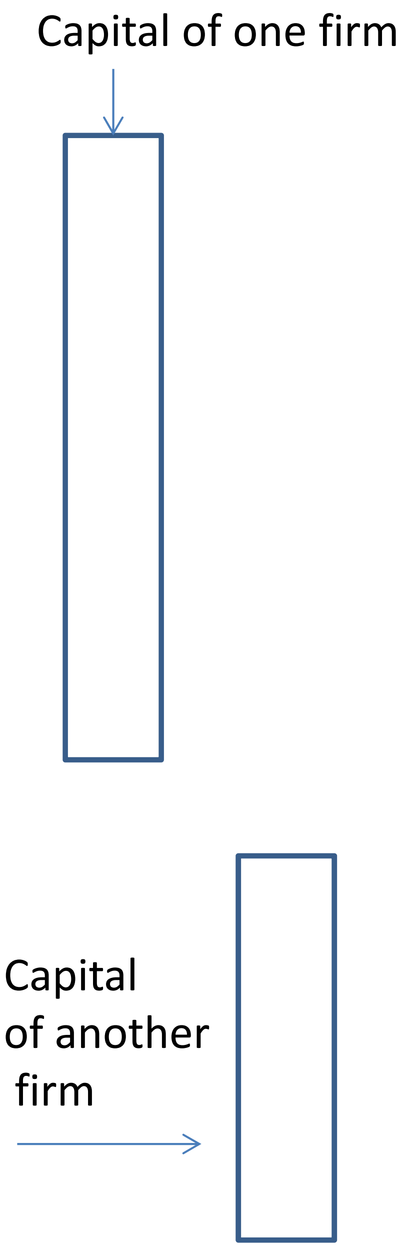

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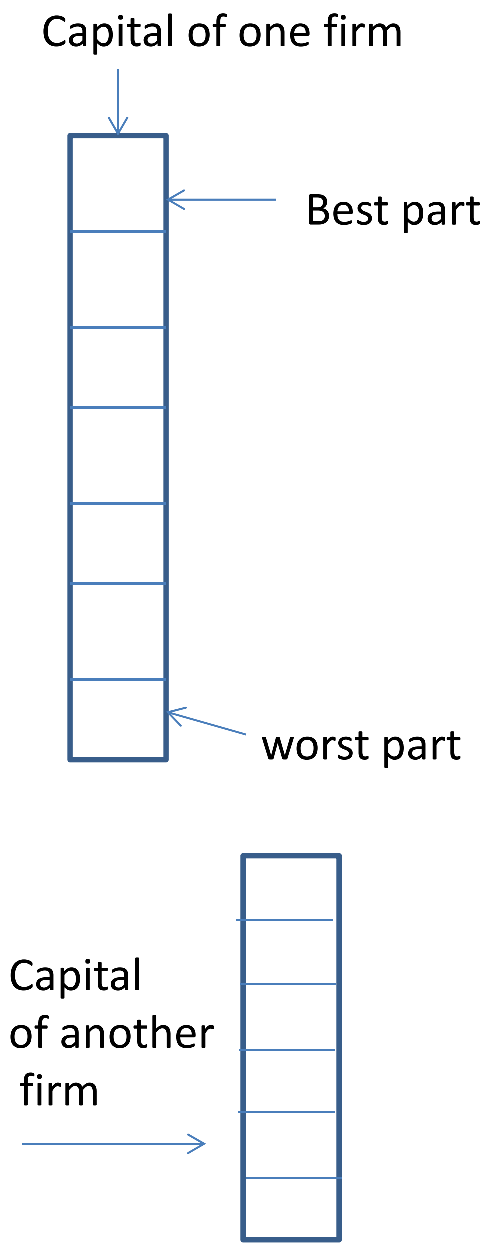

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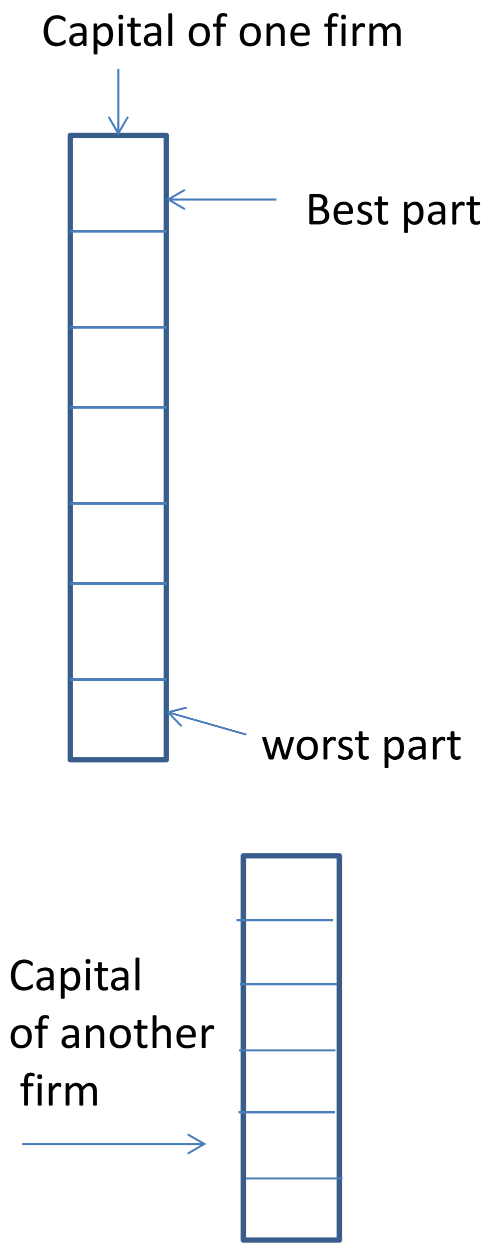

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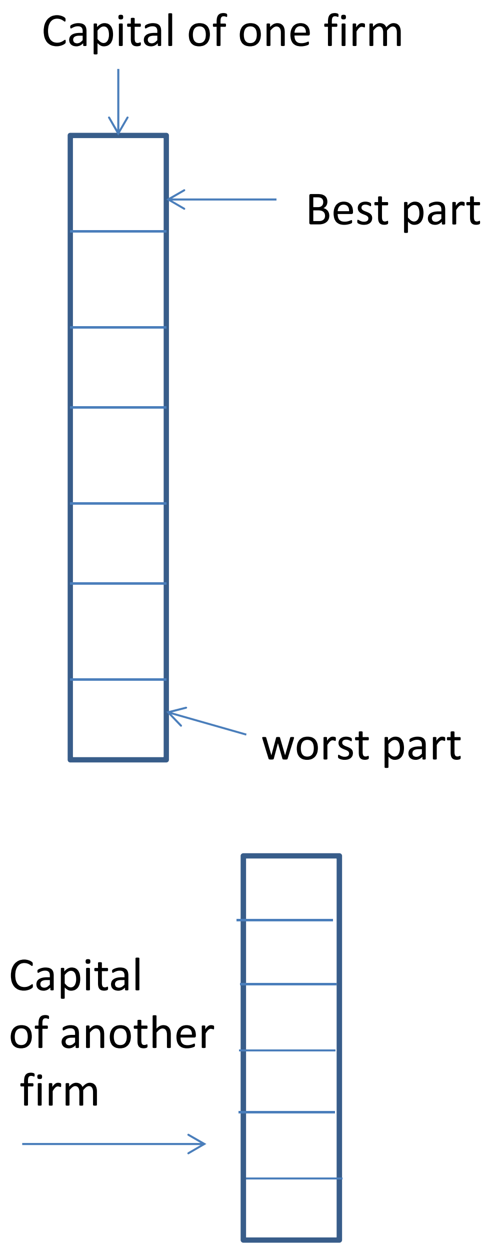

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Firms respond to a market price for capital by selling all the lower qualities up to that price.

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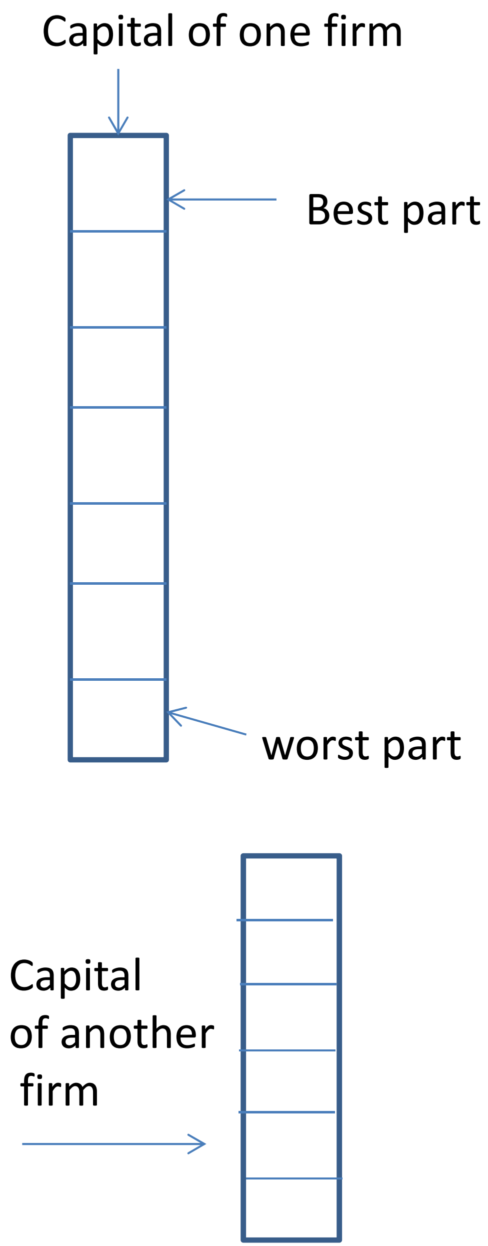

Bank balance sheet

Assets (firm capital)	Deposits (risk free)
	Net worth (must be big enough to absorb all asset risk)

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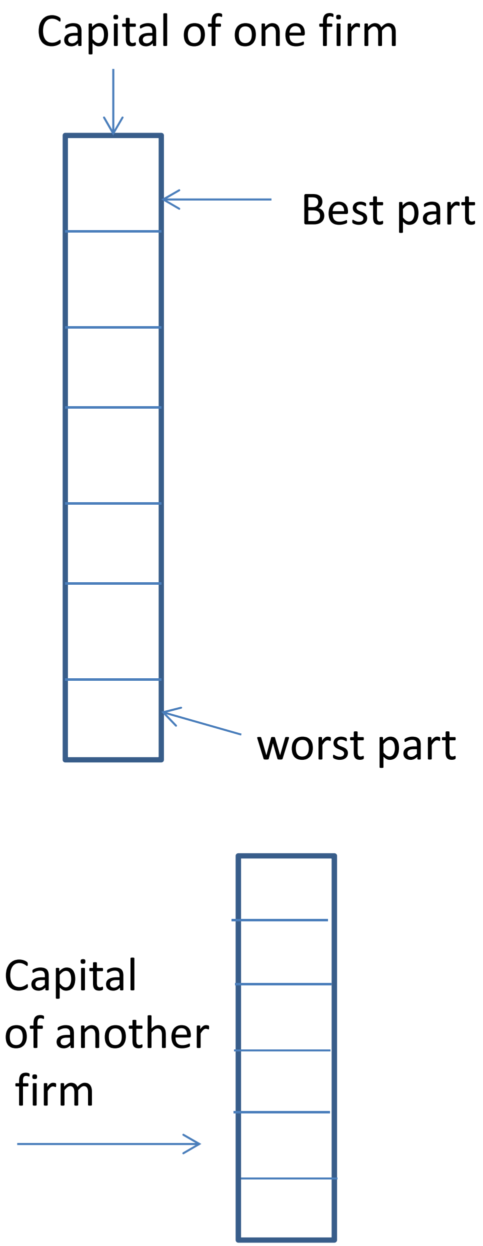

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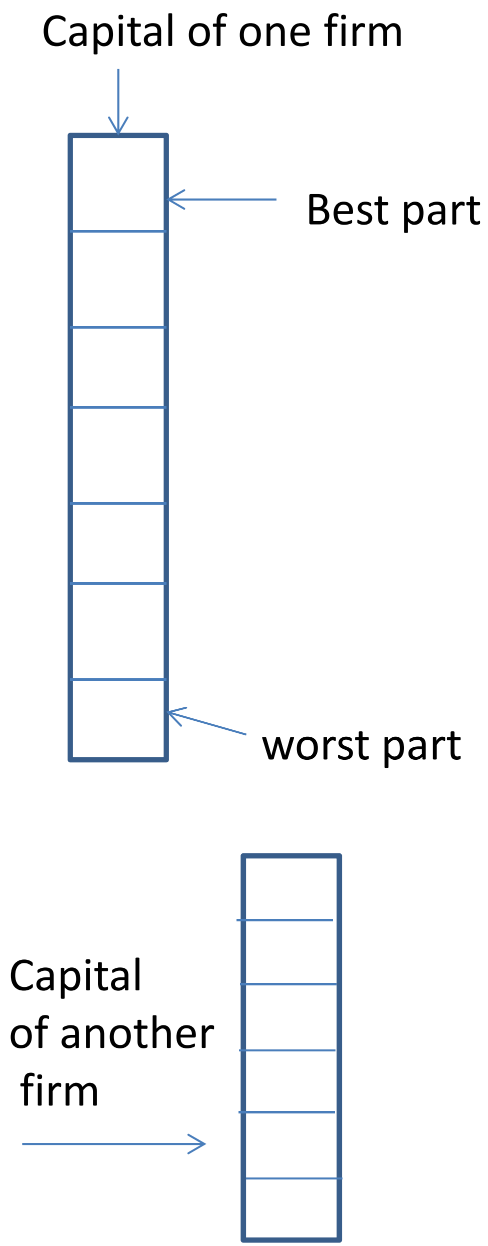

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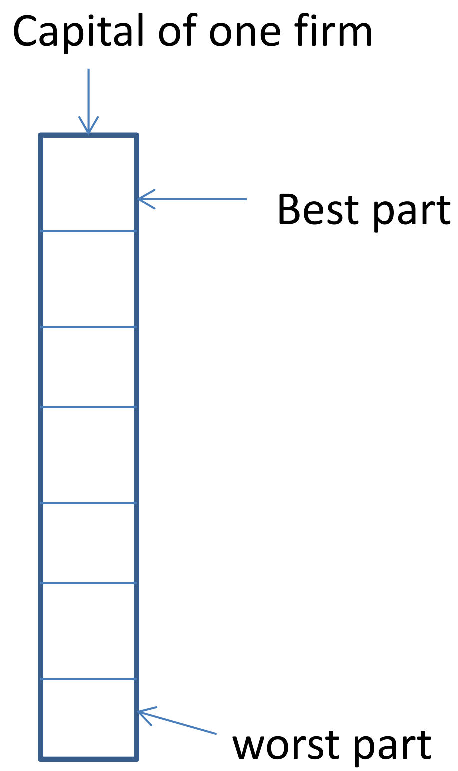

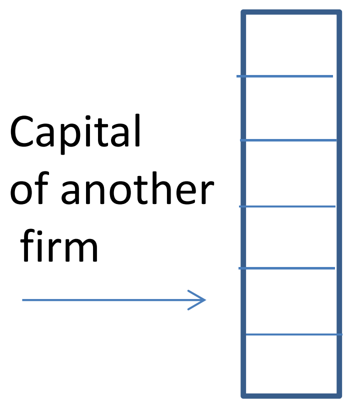

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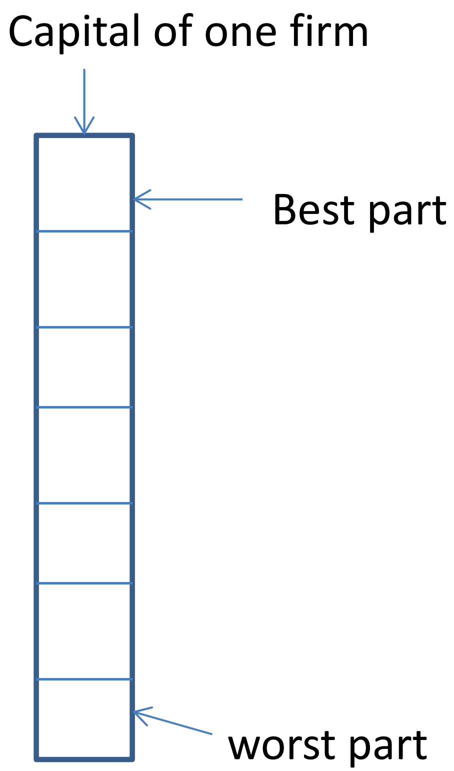

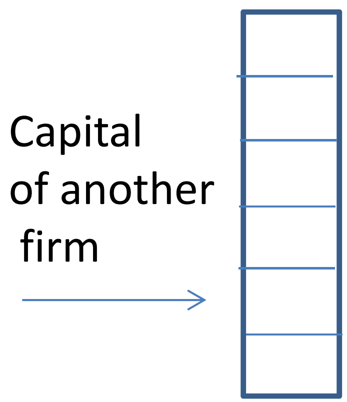

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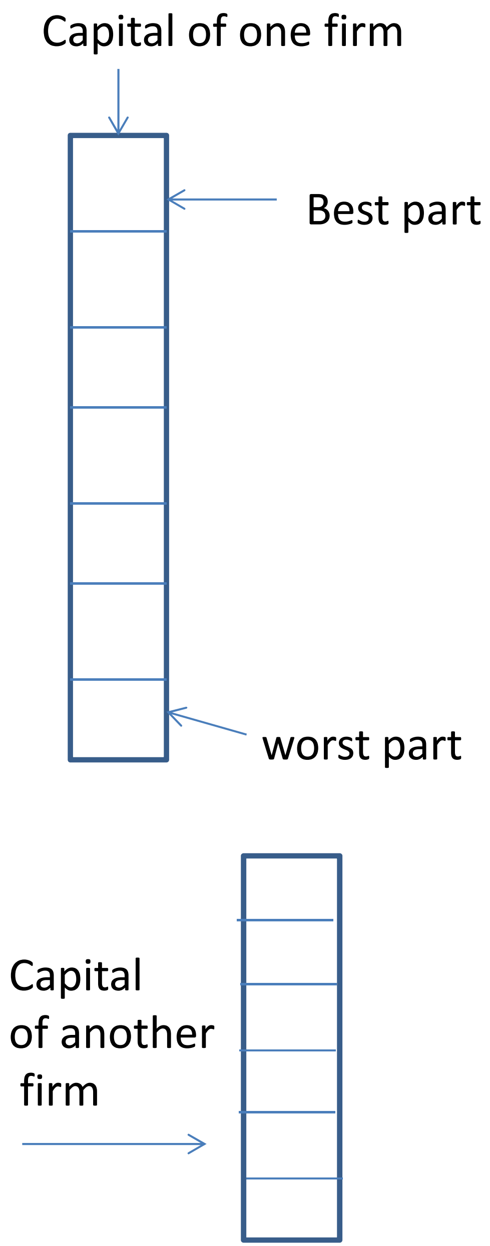

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This justifies bank decision not to add external funds to net worth

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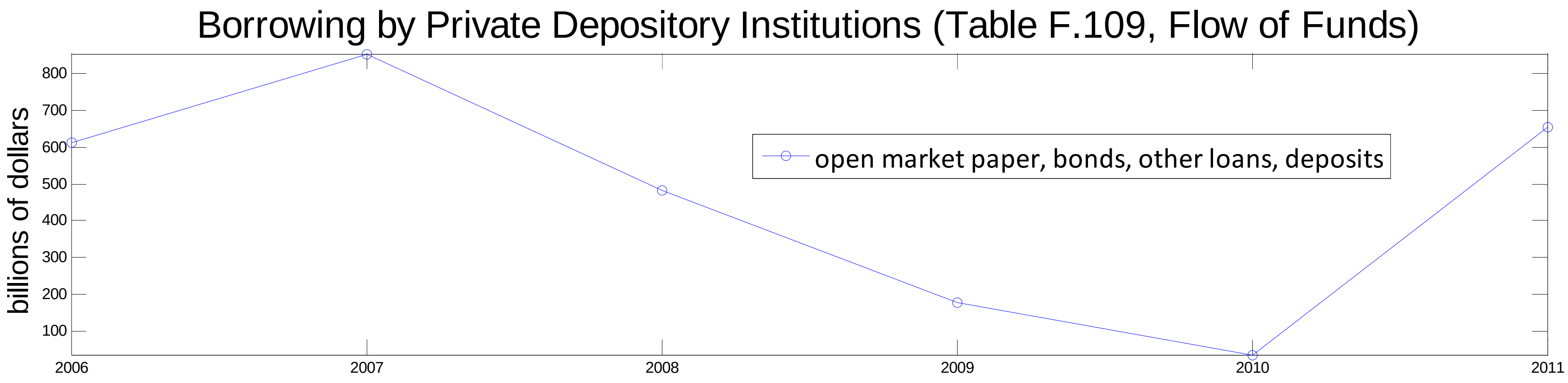

This shows how major debt instruments were used at private depository institutions in the wake of the crisis.

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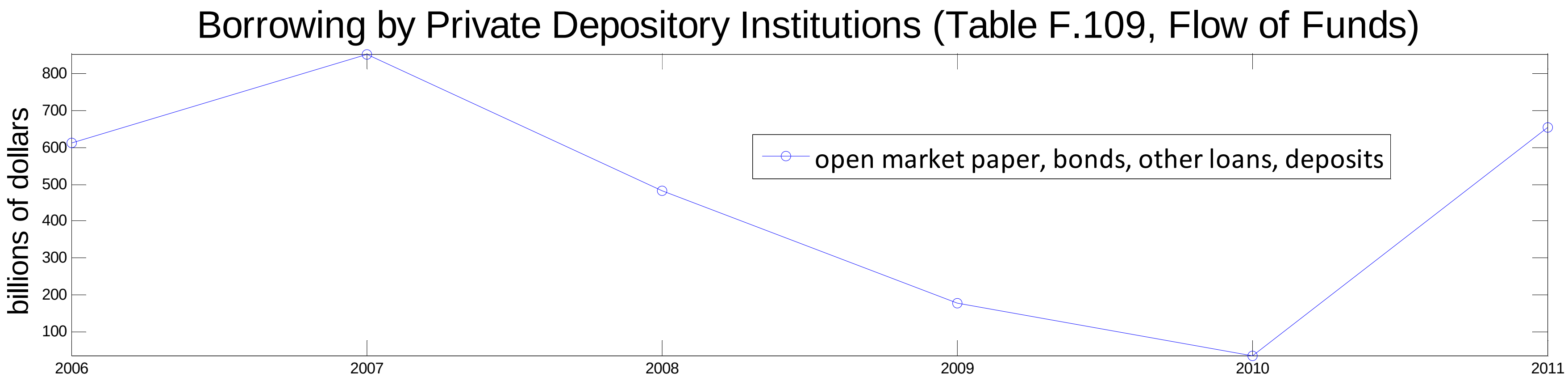

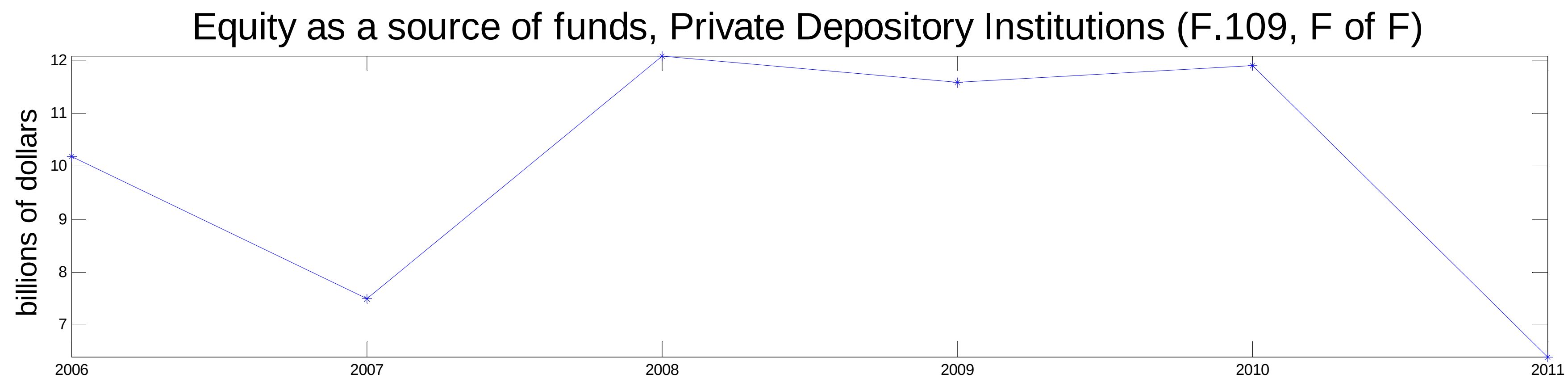

Comments

- How important, in practice, is the adverse selection problem in the model?
  - Seller of capital could offer warrantees, or other credible signals of value.
  - Model assumes information about quality of capital and identity of seller are never revealed to bank.
    - In practice, different units of capital are distinct and it should be possible to keep a record of the original owner.
    - With reputation at stake, banks should be able to elicit truthful revelation from firms.

What about a *debt* contract?

- Paper offers a debt contract interpretation of the equilibrium:
  - Firm pledges a specific piece of its capital.
  - Involves `interest rate’ that corresponds to return obtained by bank in best state.
  - Default in all other states.

- How about a debt contract in which the firm pledges *all* its assets?
  - Adverse selection problem gone. Requires costly monitoring in bankruptcy, to verify size of firms’ capital stock.
  - Like in standard debt contract, interest rate must not be too high, to conserve on bankruptcy costs.

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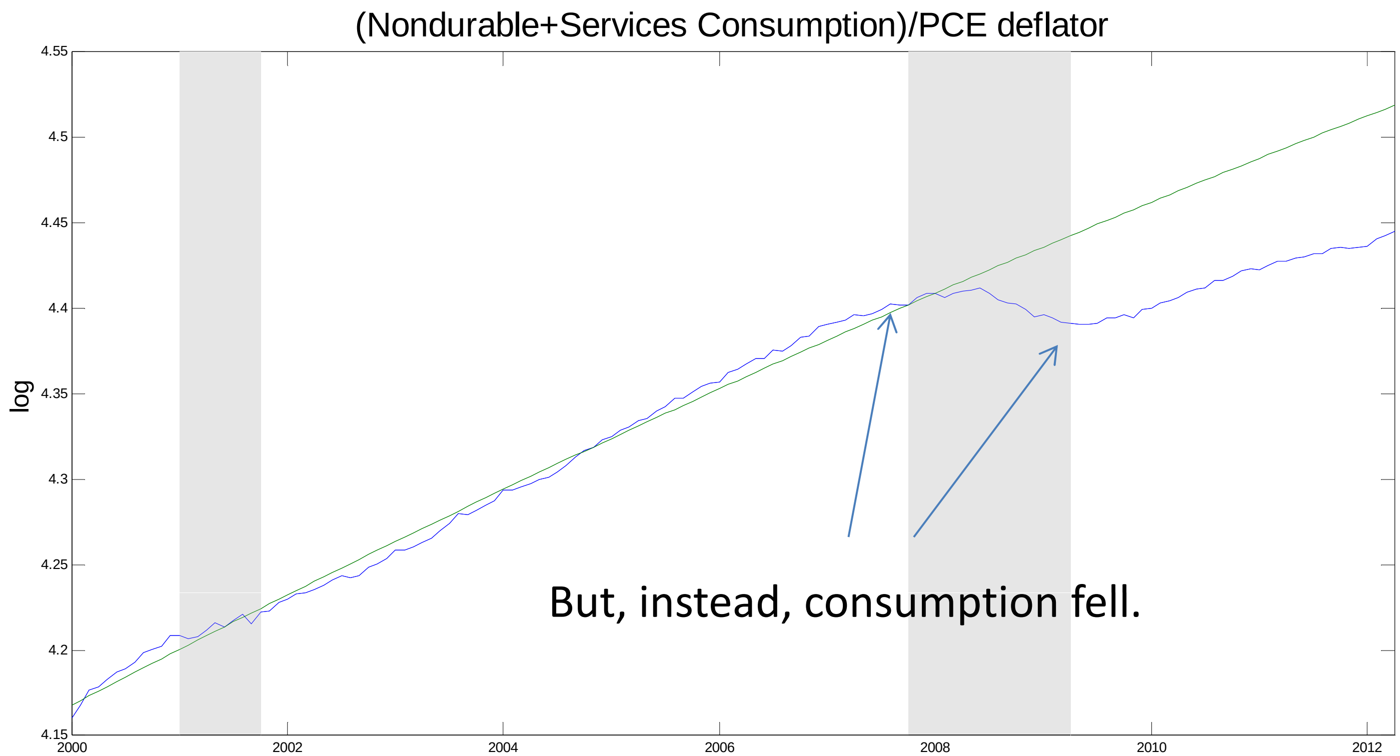

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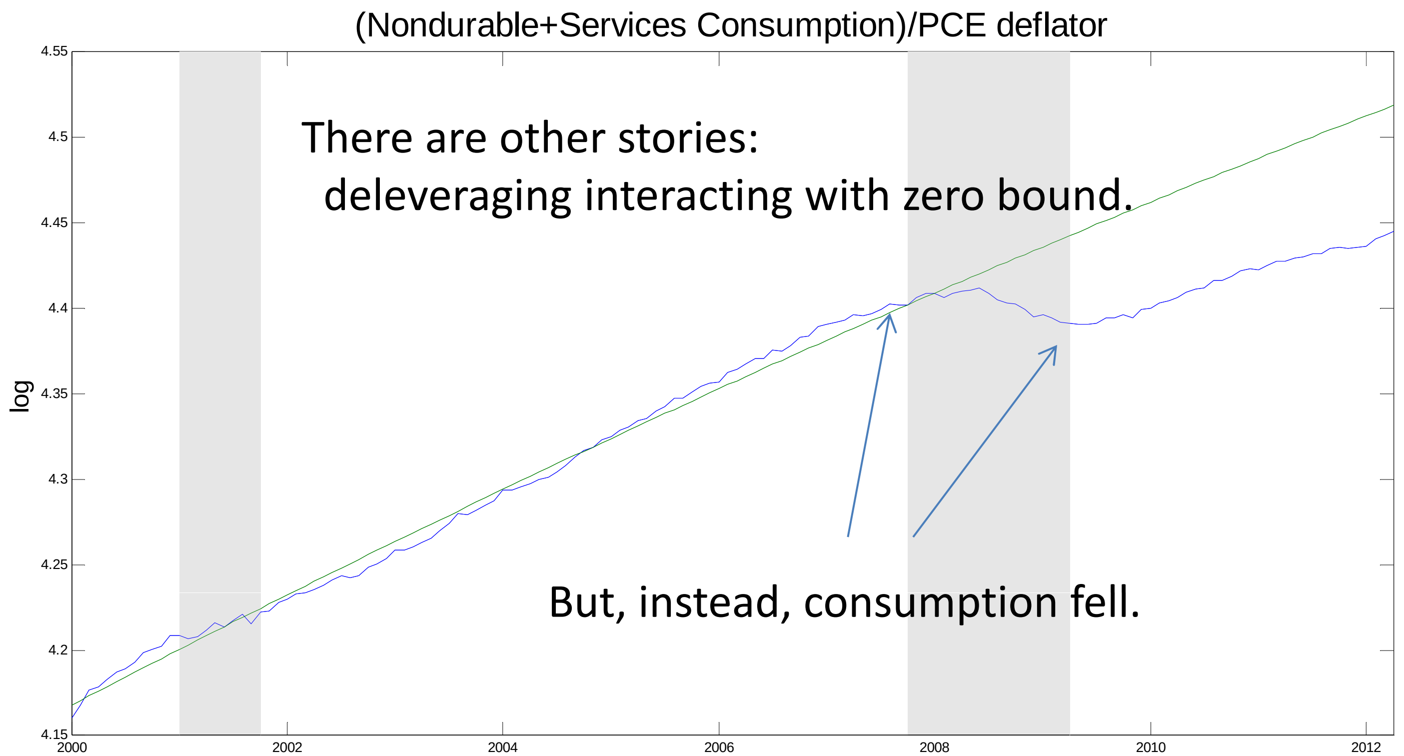


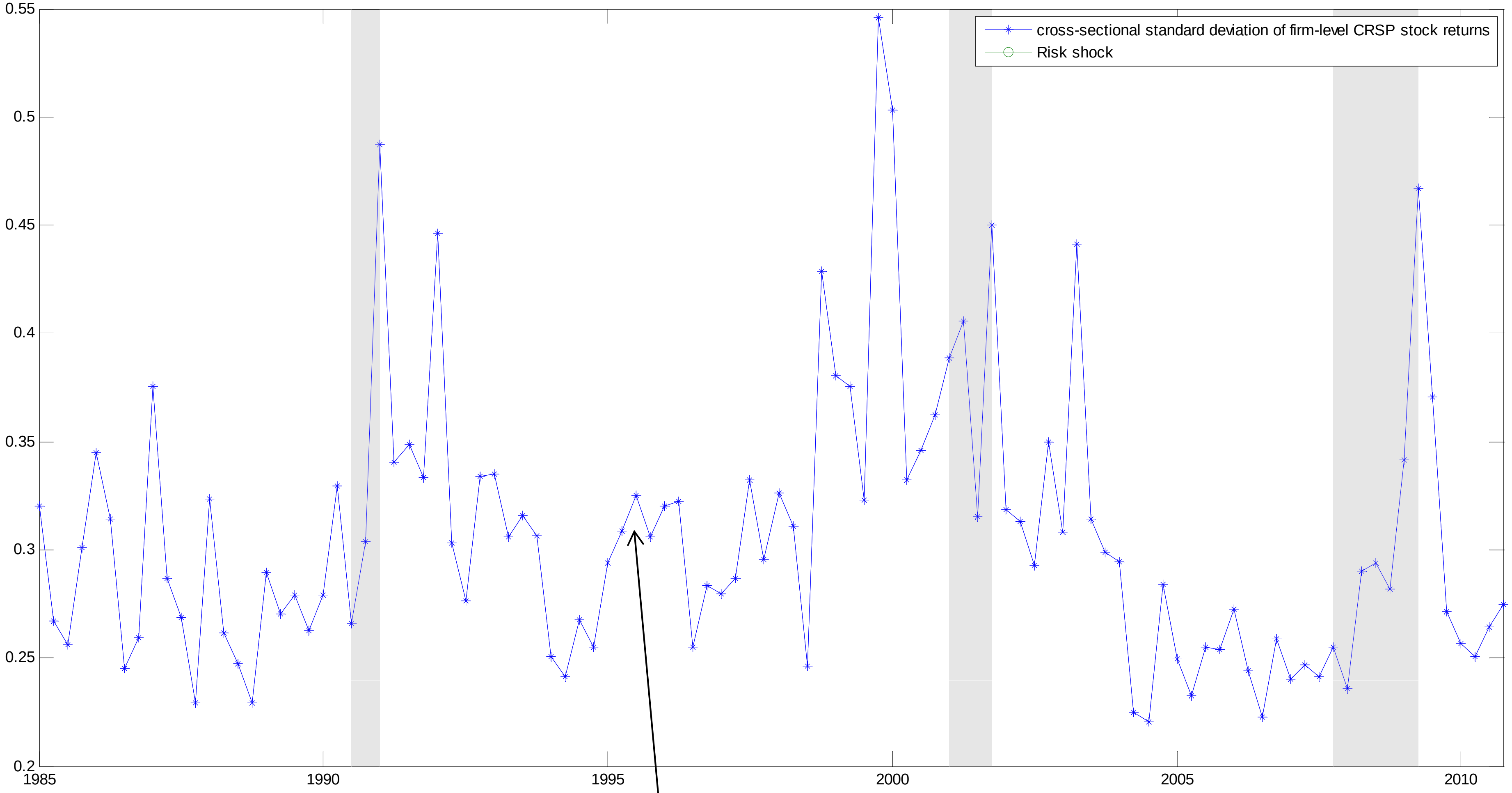
Evidence of Heterogeneity in Capital?

- In the model, there is no heterogeneity across firms in their average quality of capital.

- I assume that one could interpret each capital quality type as an individual firm.

- In this case, the fundamental friction in the model is that there is substantial heterogeneity across firms in quality of capital.
  - Look at firm-level stock returns
  - Center for Research in Securities Prices (CRSP)

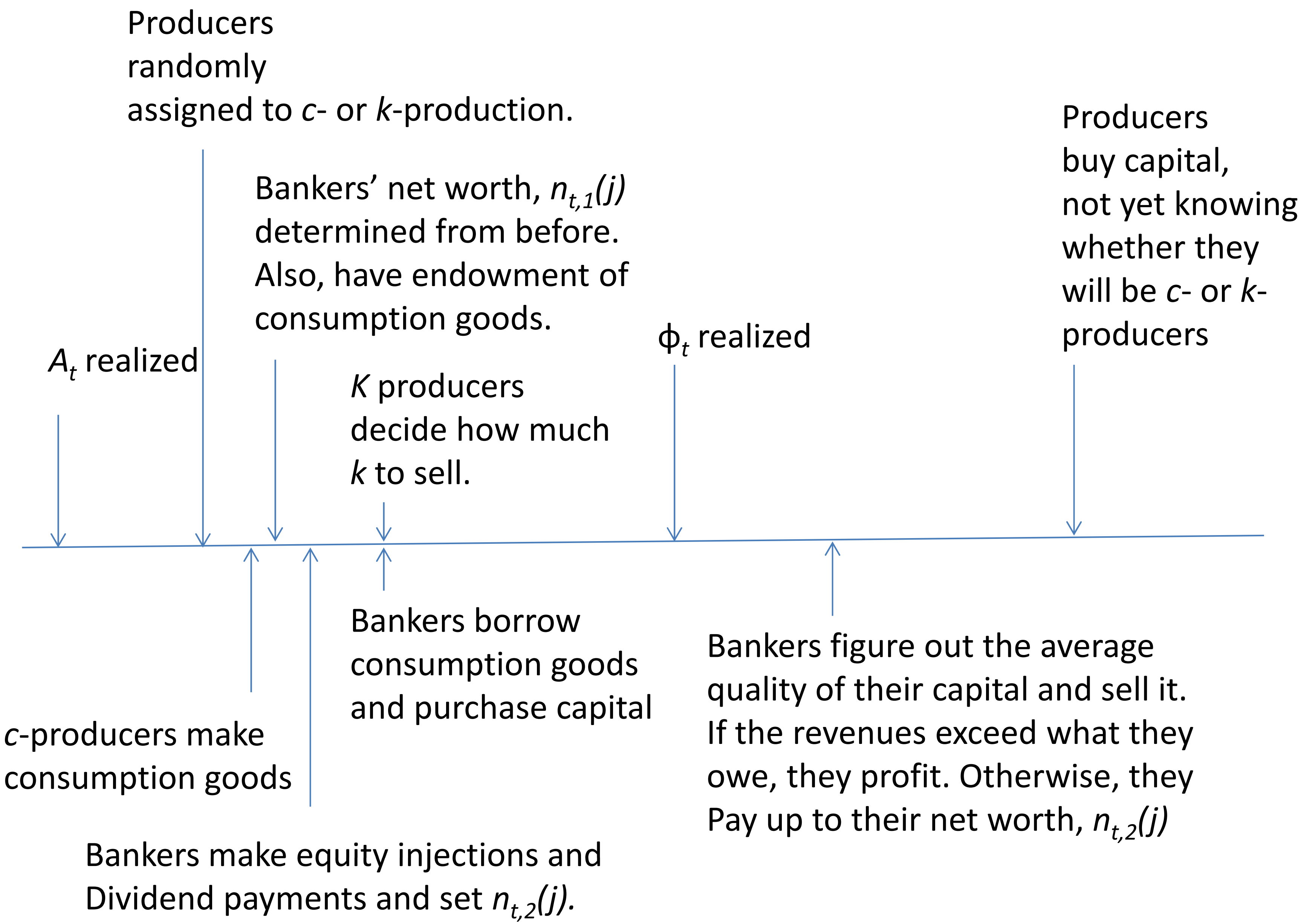
CRSP-based Measure of Uncertainty and Risk



Cross-sectional standard deviation of CRSP stock returns, as in Bloom (2009)

Conclusion

- Very interesting paper!



Producers randomly assigned to c- or k-production.
Bankers' net worth, $n_{t,1}(j)$ determined from before. Also, have endowment of consumption goods.
A_t realized
K producers decide how much k to sell.
ϕ_t realized
Producers buy capital, not yet knowing whether they will be c- or k-producers
Bankers borrow consumption goods and purchase capital
c-producers make consumption goods
Bankers figure out the average quality of their capital and sell it. If the revenues exceed what they owe, they profit. Otherwise, they Pay up to their net worth, $n_{t,2}(j)$
Bankers make equity injections and Dividend payments and set $n_{t,2}(j)$.