Discussion of:

Diversification Disasters

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The views expressed herein are my own and do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve System.
The Question

- Much discussion about the degree of *interconnectedness* among financial institutions
  - leads to systemic risk; one failure causes many others
  - Bear Stearns was thought to be “too interconnected to fail”

- But interconnectedness is the result of diversification
  - usually we think of diversification as a stabilizing force

- Paper studies a model of diversification/interconnectedness and asks:
  - when is diversification socially optimal?
  - when will it arise in equilibrium?
A simplified setup

- Consider the case of two intermediaries, no diversification
  - each earns profit $x_i$; fails if $x_i < -K$ (capital)
Diversification

- If intermediaries diversify, each earns $\frac{x_1 + x_2}{2}$

  - both fail if and only if $x_1 + x_2 < -2K$
Comparison

- Diversification “shifts” failures across states of nature
  - one failure occurs in fewer states, two failures in more states
Is diversification desirable?

- Depends on the cost of 1 failure vs. the cost of 2 failures
  - *and* on the probability distribution across states
The difficulty

• If the probability distribution over \((x_1, x_2)\) is fixed, this is relatively straightforward
  
  – integrate gain/loss from diversification using this distribution

• In a reasonably rich model, however, this distribution is *endogenous*
  
  – depends on investment choices
  
  – will in general be different in the two cases

⇒ This fact complicates the comparison substantially
What the paper does

• Sets up a model in which the distribution of $x_1$ and $x_2$ are Pareto type
  – intermediaries have fixed capital $K$ and a VAR constraint
  – invests in a large number of correlated projects (where the correlations themselves are random)

• Looks at the limiting case of $K \to \infty$

⇒ Analysis is about the tails of Pareto-type distributions
  – works out remarkably nicely
Results

• If tails are very thin, diversification is socially optimal and occurs in equilibrium

• If tails are very fat, separation is socially optimal and occurs in equilibrium

• In between, there is a region where separation is optimal but diversification occurs in equilibrium
  – potential role for policy arises in this case

• Authors discussion regulations to prevent undesirable diversification
  – argue in favor of Glass-Steagall-like restrictions
Comments

• This is an interesting paper
  – addresses an important and timely question
  – offers a parsimonious model of portfolio choice with nontrivial implications
  – elegant analysis of tail risk

• My comments are essentially a series of questions
(1) Measuring social welfare

• Here:

\[ \text{welfare} = \text{present value of all future profits from intermediation} \]

• Does this capture all of the social benefits of intermediation?
  
  – what about \((1 - d) c \) and losses \(> K\)?

  – more generally, if firms and consumers derive benefit …

• Would it matter for the analysis if the social cost of failure is larger?

  – would it enlarge the set of situations in which equilibrium is suboptimal?
(2) Equilibrium concept (technical)

- Paper compares:
  - payoff received by an intermediary in the separated system
  - corresponding payoff in the decentralized system

- Says separation is an equilibrium if the former is larger

- Equilibrium is usually defined in terms of unilateral deviations
  - if everyone else is separated and I diversify ...

- Is that equivalent to what is done here? Or is it different?
(3) Partial diversification

- Paper studies the cases of no diversification and full diversification
  - could the model be extended to allow partial diversification?

- Here: the equilibrium outcome is often optimal (\(\sim 2.5\) out of 3 cases)
  - but the solution is always a “corner”

- If diversification where a continuous choice, it seems like the equilibrium and optimum would diverge more often
  - might this change the policy conclusions?
(4) Policy conclusions

• Authors argue in favor of portfolio restrictions to prevent undesirable diversification ...

• ... and against focused capital requirements
  – this second argument is less clear to me

• Proposal: set $K$ much higher for an intermediary that diversifies
  – presumably diversification is observable
  – for $K_D$ large enough, diversification will be unattractive

• Can the model be enriched to distinguish these policies?
  – allowing partial diversification might be helpful in this regard