Financial Innovation for Rent Extraction

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Presentation at the OFR-FRBC-Maryland Conference on Financial Stability and Fintech

Washington, DC

November 2017
Motivation

Observation 1: Financial losses during crises magnified by financial innovation:

- Numerous “innovations” to leverage bailouts from deposit insurance:
  - rise of repos
  - effective seniority through short-term liabilities
  - ...

- “Innovations” to circumvent capital adequacy requirements
- “Innovative” types of mortgages
- Role of CDSs in the demise of AIG
- ...

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Financial losses during crises magnified by financial innovation

**Observation 2:**
Unprecedented losses have led to unprecedented bailouts

**Key Message of the Paper:** this is not by coincidence, but by design

- Financial innovation massively increases the scope for rent extraction from government guarantees

→ understanding this mechanism allows us to better counteract it
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Key Considerations

- Study an economy with two agents:
  - bankers (risk-takers)
  - households (enablers)

- Analyze two mechanisms to transfer resources between the two:
  - market [created by financial innovation]
  - bailouts
Key Results

1. insurance markets and bailouts are close substitutes:
   ▶ both can allocate resources to agents who really need them
   → bailouts reduce incentive for beneficial innovation

2. if both are present, however, arbitrage opportunities arise
   → bailouts induce financial innovation for rent extraction

3. aggregate implications:
   ▶ large bank profits in good times, large losses in bad times
   ▶ redistribution from households to bankers
   ▶ higher output volatility and negative NPV investments
   ▶ increased consumption volatility
   ▶ increased risk premia

4. delineate policy lessons
Benchmark Model

Benchmark model:

- two types of agents: households (enablers) and bankers (risk-takers)
- two states of nature $s \in \{L, H\}$
- three dates:
  - date 0: collect endowments
  - date 1: payouts from insurance market and/or bailouts
    → determine net worth that is carried into next period
  - date 2: production and consumption
    → sufficient banker net worth is essential for economic activity
- observe: if banker net worth is low, workers benefit (ex-post) from providing bailouts to support economic activity and wages
  → endogenous model of bailouts
Walrasian Market Vs Transfer Allocation

1) Consider Walrasian market to trade states L and H in period 0:
   - agents equate their MRS to the ratio of market prices
   - gains from trade

2) Consider transfer to bankers when period 1 net worth low:
   - similar effect: bankers receive resources when social marginal value of their net worth is high
   - gains from “bailout” transfers

→ illustrates that insurance markets and bailouts are close cousins
→ market-provided vs. government-provided insurance
Combining Walrasian Market and Transfers

Assume a Walrasian market *followed by* a transfer rule (with lack of commitment by households)

Bankers can follow two strategies:

1. **Insurance regime:** trade in the market to optimally insure
2. **Rent extraction regime:** trade to maximize transfers

→ choose strategy that maximizes utility
→ rent extraction more likely:
  ▶ the lower banker wealth
  ▶ the lower the probability of low state
  ▶ the higher the endowment $e$ of households

→ rent extraction increases output volatility and risk premia
Market Structure and Financial Innovation

Assume bankers can create market between $s = L, H$ at a fixed cost $f$ (see e.g. Allen and Gale, 1988, 1991)

**Proposition (Financial Innovation for Rent Extraction)**

*Bankers are willing to pay a higher fixed cost $f$ to create a market if they do so for rent extraction than if they do so for insurance.*

Note: financial innovation directed at creating an arbitrage opportunity
- bailout $\approx$ Arrow-Debreu security at zero (underpriced) cost
- traded securities sell at a positive price
→ modern financial markets extremely efficient at arbitrage
Market Structure and Financial Innovation

Proposition (Reduced Incentives for Beneficial Innovation)

*If bailouts are available, bankers are willing to pay a lower fixed cost $f$ to create a market for insurance.*

Intuition:

- bailouts are substitutes for markets
- less incentive to create a market if substitute already exists

→ bailouts increase incentives for “bad” innovation
→ reduce incentives for “good” innovation
Production Economy

**Production in an economy with rent extraction:**
- bankers only care about payoffs in high state
  $\rightarrow$ fund projects with highly pro-cyclical profits even if negative NPV
  (e.g. housing bubble)
- aggregate wealth is reduced
Policy Measures against Rent Extraction

Taxonomy:

1. Financial market interventions (ex-ante):
   - Taxes/quantity limits on state-contingent trades:
     - Low state: limit short positions (risk-taking)
     - High state: limit long positions (growth)
   - Limits on financial innovation

2. Limiting the bounty at stake (ex-post, but ex-ante implications):
   - Low state: limits on bailouts:
     - maximize losses on bankers/risk-takers (“skin-in-the-game”):
       → ensures owners do no receive rents in state $L$
     - limited liability: maximize losses on claim holders (“enablers”):
       → ensures owners cannot shift rents into state $H$
       (but this, of course, conflicts with goal of forestalling runs)
   - High state: progressive taxation lowers bounty obtained
   → difficult to implement so we want a combination of all of these
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Policy Measures against Rent Extraction

Focus: Price-based instruments on risk-taking (e.g. deposit insurance premia):
On the face of it, they seem like an effective measure

BUT: two significant caveats:

- small mis-pricing of premium allows for large rent extraction: bankers are very efficient at arbitrage
  → arbitrage between underpriced bailout “security” and market

- market price of low state in rent extraction regime differs from market price in insurance regime
  → purely price-based instruments cannot solve the problem!
  → need discrete jump once a certain level of risk is surpassed
Cat-and-Mouse Game of Bankers and Regulators

With multiple states of nature:
Ranking of states by scope for rent extraction

1. bankers focus innovation on highest-bounty state to extract rents
2. regulators [should] limit risk-taking in that state
3. if successful, bankers focus on next-highest bounty state
4. regulators [should] limit risk-taking there too
5. etc.
6. ...

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Conclusions

1. Bailouts play a dual role: substituting for missing markets versus rent extraction.

2. Financial innovation:
   - shifts the balance of the two
   - is most profitable if directed at rent extraction

3. Rent extraction equilibria:
   - redistribute surplus to bankers in good states
   - increase volatility and reduce efficiency
   - may lead to negative NPV investments

4. Cat-and-mouse game