GAMBLING for Redemption or Ripoff, and the Impact of Superpriority

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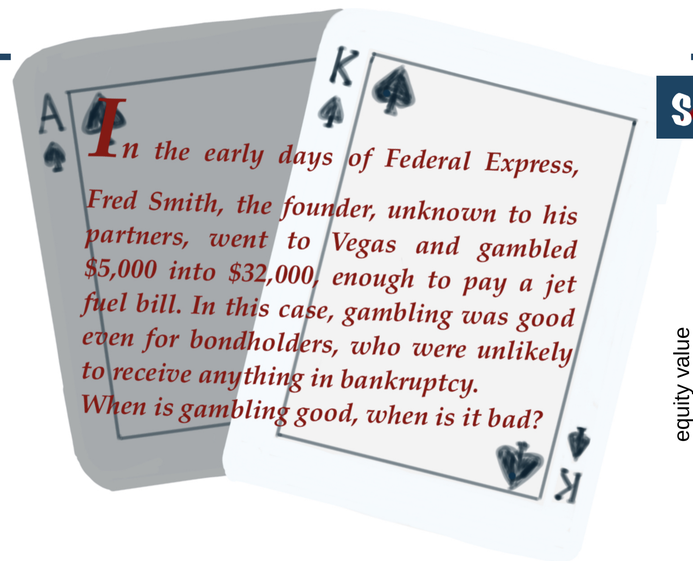


Main Results

Redemption: if owners lose from increased probability of bankruptcy
- gamble just enough to stay in business
- preserves continuation value
- good for bondholders, socially efficient

Ripoff: if owners gain from increased probability of bankruptcy
- gamble a lot to fail most of the time
- destroys continuation value
- bad for bondholders, socially inefficient

Superpriority:
- makes gambling at large scale easier
- pushes towards ripoff

Multi-period model (ex ante analysis):
- superpriority makes raising debt harder
- reduces the value of equity

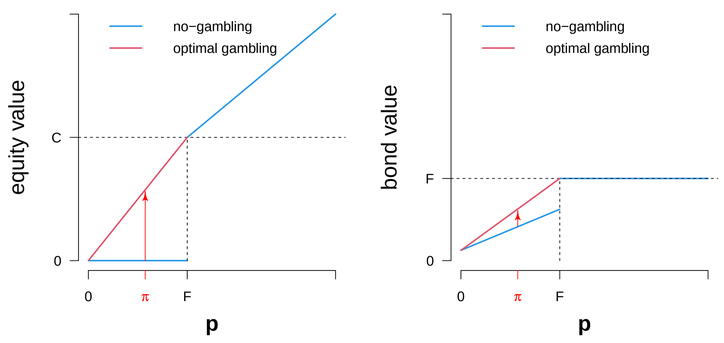
What is Superpriority?

Traditionally, asset sales and security transfers before bankruptcy in satisfaction of a claim are avoidable.

However, new U.S. bankruptcy laws exempt repos and derivatives from the automatic stay and clawbacks, giving them "superpriority" over claims resolved in bankruptcy. Motivated by the new laws, we study gambling by firms.

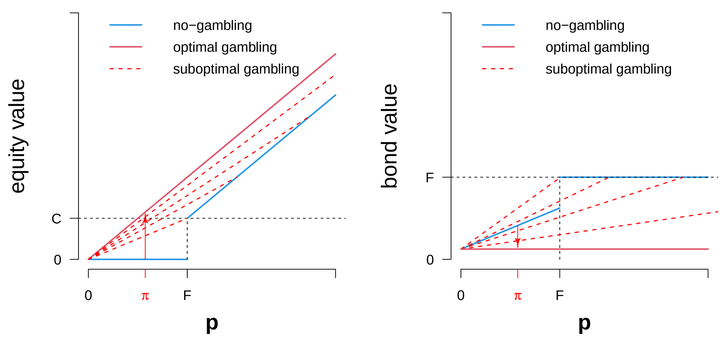
Single-Period Model

Gambling for redemption ($\pi < F < C$)



Optimal gambling (—) concavifies the objective function (—). When minimizing the probability of bankruptcy is good for owners (because $F < C$), it is also good for bondholders and society.

Gambling for ripoff ($F > C$)

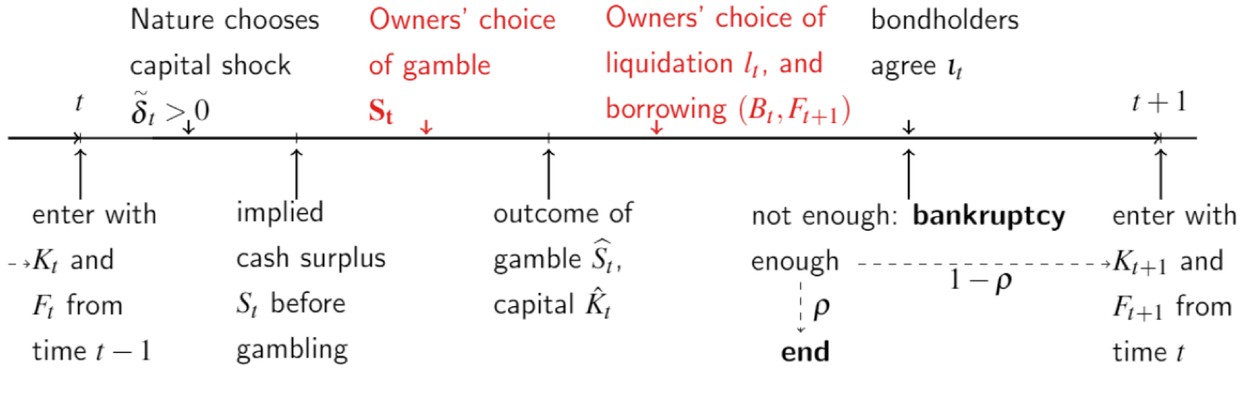


"Take the money and run": When maximizing the probability of bankruptcy is good for owners (because $F > C$), it is at the expense of bondholders and society.

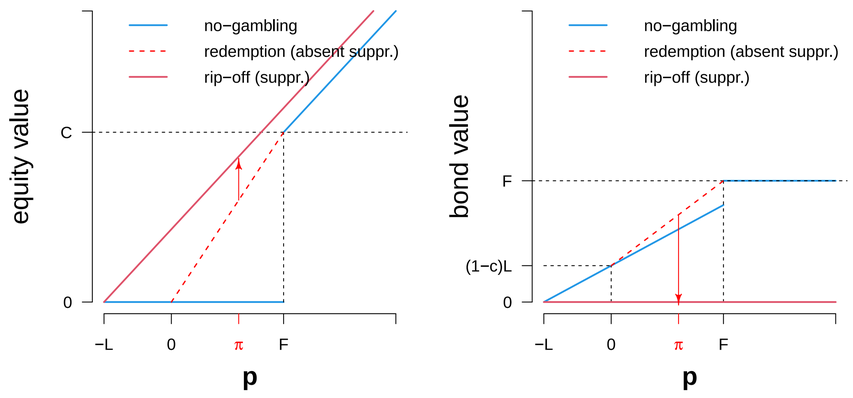
Multi-Period Model

allows
- **endogenous borrowing**
- **endogenous continuation value**
- borrowing to repay debt (debt "rollover")
- endogenous investment

Multi-period timeline



Superpriority favors Ripoff



Superpriority favors gambling for ripoff, because owners can do better in bankruptcy by liquidating assets.

Setting: a firm has cash flow $\pi > 0$ today, maturing debt with face value $F > 0$, and continuation value C. On bankruptcy, the owners lose the continuation value, and a fraction $1 - c$ of remaining value $(\pi + L)$ goes to the bondholders.
Gambling is fair and with underlying randomness $\tilde{x} \sim_d U(0, 1)$.

Firm's problem: Given π, C and F, choose a **fair gamble** $\mathbf{p}(\tilde{x})$ to maximize

$$\mathrm{E}[(\mathbf{p}(\tilde{x}) - F)^+ + (\mathbf{p}(\tilde{x}) \geq F) \cdot C],$$

subject to the gamble **being fair**,

$$\mathrm{E}[\mathbf{p}(\tilde{x})] = \pi,$$

and gambling outcome(s) **being feasible**

$$0 \leq \mathbf{p}(\tilde{x}) \leq \bar{\pi} \ (\to +\infty) \qquad \text{if no superpriority}$$

$$\text{or,} \qquad -L \leq \mathbf{p}(\tilde{x}) \leq \bar{\pi} \qquad \text{with superpriority}$$

Fair: using derivatives makes gambling more efficient.
Feasible: superpriority makes it easier for the firm to gamble away assets, even if the firm is in bad shape.

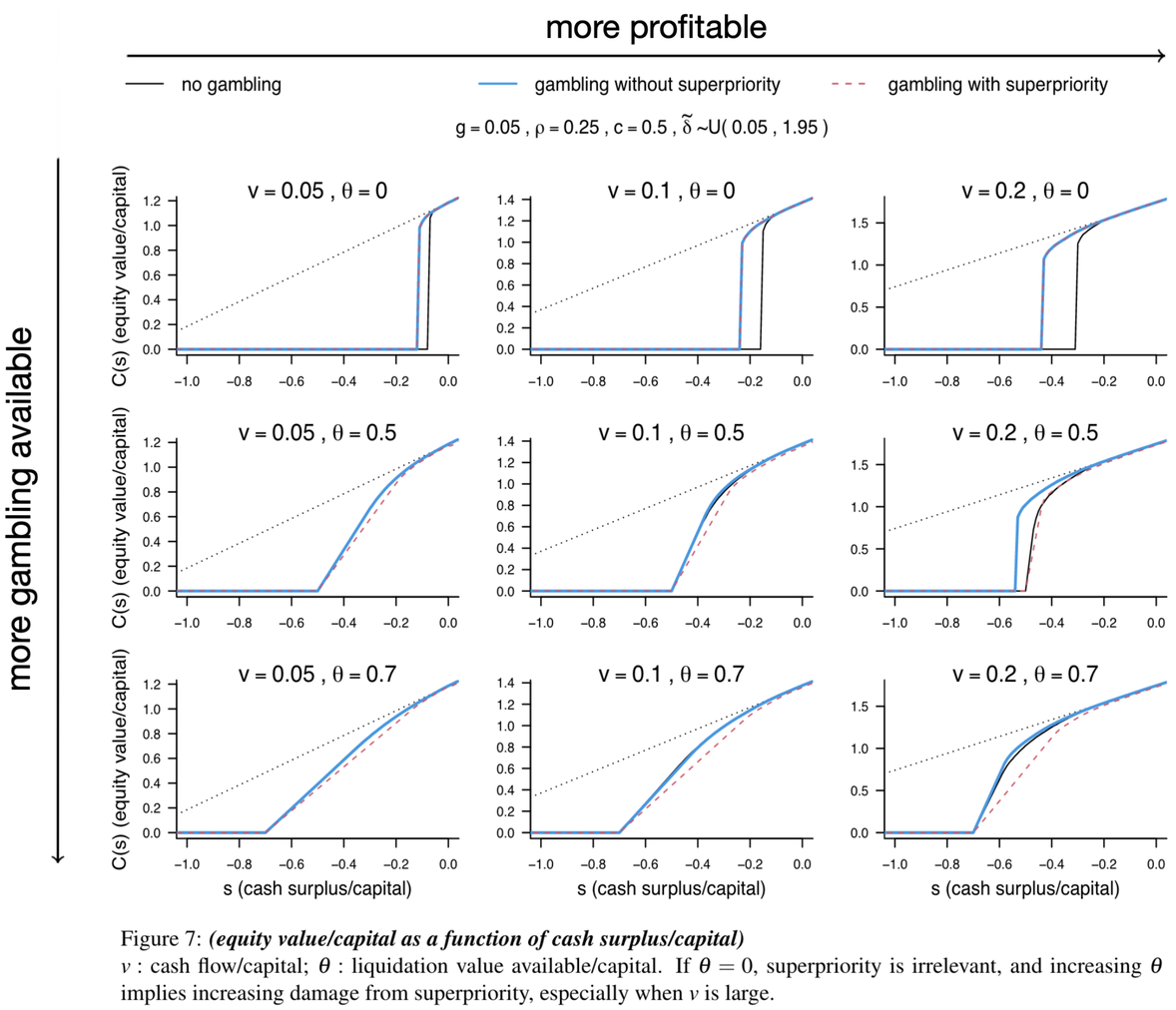


Figure 7: ***(equity value/capital as a function of cash surplus/capital)***
v : cash flow/capital; θ : liquidation value available/capital. If $\theta = 0$, superpriority is irrelevant, and increasing θ implies increasing damage from superpriority, especially when v is large.