Comments by Rafael Repullo on

Fund Managers and Defaultable Debt

Veronica Guerrieri and Péter Kondor

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Motivation

- Changes in fundamentals seem to have very large effects

  $\rightarrow$ On prices: very low or very high bond yield spreads

  $\rightarrow$ On quantities: "search for yield" or "flight to quality"

- What is the amplification mechanism?

This paper

- Model of delegated portfolio management

  – Investors hire and fire fund managers

  – Managers can be good (informed) or bad (uninformed)

  – Fund performance reveals information → Firing decisions

  – Fund managers care about their reputation

    → Distort investment decisions

    → Effect on equilibrium prices and quantities

- Key assumption: Risk neutrality of investors and fund managers

Overview

- Model setup

  – Entrepreneurs

  – Investors

  – Fund managers

  – Bond market

- Equilibrium analysis & main results

- Main comments

- A simple model

- Concluding remarks

Entrepreneurs

• Overlapping generations of measure 1

• No initial wealth + outside option $\overline{V}$

• Investment project with cost k and random return $a \rightarrow$ cdf $F(a)$

• Debt finance + Strategic default (zero repayment) for $a < \overline{a}$

• Probability of default $q = F(\overline{a})$

• Entrepreneurs choose present and future consumption

Investors

- Continuum of measure Γ

- Each investor has 1 unit of capital at each date

- Investment requires hiring single fund manager

- Sharing contract: manager keeps fraction γ of returns

Fund managers (i)

- Large continuum of managers

- Two types

    → Informed: know return a at time of investment

    → Uninformed: know expected return of investment

- Two assets

    → Bonds issued by entrepreneurs (with endogenous returns)

    → Safe asset (with infinitely elastic supply at rate R)

Fund managers (ii)

- Cost κ of becoming "active"

- Probability μ of finding an investor

- Type revealed ex-post with probability $1 - \omega$

- Death with probability $1 - \delta$

- Investors observe fund performance

　　$\rightarrow$ Update beliefs on type of manager

　　$\rightarrow$ Decide on firing

Bond market

- Informed managers send demand schedule

- Uninformed managers send demand correspondence

- Noise traders send inelastic demand $y \sim U[0, \overline{y}]$

- Auctioneer sets bond price p to clear the market

    $\rightarrow$ Price will in general reveal information

    $\rightarrow$ Uninformed managers take this into account

Equilibrium analysis

- Focus on stationary equilibria

- Focus on equilibria where uninformed managers are indifferent

   $\rightarrow$ Interior stationary equilibria

- Focus on case where measure of informed managers tends to 0

   $\rightarrow$ Limit interior stationary equilibria

- Compare this with benchmark with no informed managers

Main results (i)

- In benchmark equilibrium (without informed managers)

  → Expected return of bond = Risk-free rate

  $$\frac{1-q}{p} = R$$

- In limit equilibrium

  → Reputational premium or discount

  $$\Pi = \frac{1-q}{p} - R \geq 0 \quad \Leftrightarrow \quad q \geq \frac{1}{2}$$

Main results (ii)

- Change in fundamentals (such as the riskless rate R)

    $\rightarrow$ Larger effects in limit equilibrium (relative to benchmark)

    $\rightarrow$ Amplification mechanism

- Premium is positive during crises times (high q)

Main comment (i)

- Model is very complicated → Many different ingredients

  – Strategic default by entrepreneurs

  – Learning about fund managers' types

  – Search and matching of investors and fund managers

  – Information revelation by prices

  – Limit equilibrium where informed managers disappear

Main comment (ii)

• Some ad-hoc assumptions

  – Entrepreneurial finance: Debt contracts

  – Management compensation: Sharing contracts

  – Preferences of investors and fund managers

  – Uniform distribution of noise trading

$\rightarrow$ How robust are the results?

$\rightarrow$ What is the intuition?

A simple model (i)

- Static model with two dates ($t = 0, 1$) and two states ($s = s_0, s_1$)

- Continuum of investors that employ continuum of managers

    – Fraction λ of managers are informed at $t = 0$ about state s

    – Sharing contract: manager keeps fraction γ of returns

    – Uninformed manager gets utility loss c when found out

A simple model (ii)

- Unit investment in one of two assets

    – Safe asset with gross return R

    – Risky asset with stochastic return

$$1 \; \rightarrow \; \begin{cases} H(x) & \text{with probability } 1-q \quad (\text{in state } s_1) \\ 0 & \text{with probability } q \quad\;\; (\text{in state } s_0) \end{cases}$$

    where x = aggregate investment in risky asset

$$H(x) > R \;\; \text{and} \;\; H'(x) < 0$$

    $\rightarrow$ decreasing returns

A simple model (iii)

- Informed manager invests in

    – Safe asset in state s_0 (when return of risky asset is 0)

    – Risky asset in state s_1

- Uninformed manager invests in safe asset if

    Expected payoff (safe) > Expected payoff (risky)

A simple model (iv)

- Payoff of uninformed manager when she invests in safe asset

    – If state is s_0: γR

    – If state is s_1: $\gamma R - c$

    $\rightarrow$ Expected payoff: $\gamma R - (1-q)c$

- Payoff of uninformed manager when she invests in risky asset

    – If state is s_0: $-c$

    – If state is s_1: $\gamma H(x)$

    $\rightarrow$ Expected payoff: $(1-q)\gamma H(x) - qc$

Equilibrium analysis (i)

- Focus on equilibria where uninformed managers are indifferent

  $\rightarrow$ Interior equilibria

- Equilibrium condition

$$(1-q)\gamma H(\lambda + (1-\lambda)\eta) - qc = \gamma R - (1-q)c$$

  where η = fraction of uninformed that invest in risky asset

- Focus on case where measure of informed managers tends to 0

  $\rightarrow$ Limit interior equilibria

$$(1-q)\gamma H(\eta) - qc = \gamma R - (1-q)c$$

Equilibrium analysis (ii)

- Equilibrium of benchmark model with no informed managers

$$(1-q)\gamma H(\eta) = \gamma R$$

$\rightarrow$ Expected return of risky asset $= R$

- In limit equilibrium

$\rightarrow$ Reputational premium or discount

$$\Pi = (1-q)H(\eta) - R = \frac{(2q-1)c}{\gamma} \geq 0 \quad \Leftrightarrow \quad q \geq \frac{1}{2}$$

$\rightarrow$ Same result as in paper!

Comparative statics

- Effect of an increase in the probability q of the bad state s_0

  $\rightarrow$ In benchmark equilibrium $\quad \dfrac{d\Pi}{dq} = 0$

  $\rightarrow$ In limit equilibrium $\quad \dfrac{d\Pi}{dq} = \dfrac{2c}{\gamma} > 0$

- Changes in fundamentals may have large effects on spreads

  $\rightarrow$ Especially when c is large or γ is small

Intuition

- When the probability q of the bad state s_0 is high

  $\rightarrow$ Uninformed investors have more incentives to be prudent

  $\rightarrow$ Low investment η in risky asset ("flight to quality")

  $\rightarrow$ High return $H(\eta)$ of risky asset (positive premium)

Concluding remarks

- Nice paper on amplification mechanism

    → Does not rely on changes in "risk appetite"

- Model should focus on key ingredients

    → Get rid of information revealed by prices

- Look at equilibrium away from the limit ($\lambda > 0$)

- Could you get $\Pi > 0$ for smaller values of q?

- Mechanism also applies to assets other than debt

    → Change title!