# Discussion of "Aggregate Risk and the Choice between Cash and Lines of Credit" by Viral Acharya, Heitor Almeida, and Murillo Campello

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Moody's and NYU Credit Risk Conference

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# Summary

- Very interesting paper, well done!
- How do financially constrained firms manage their liquidity needs?
- This paper focuses on the margin of cash vs. lines of credit (LC)
- LC: hedge against high costs of financing in the future
- High systematic risk $\Rightarrow$ needing to access LC in "bad times" $\Rightarrow$ LC more costly $\Rightarrow$ LC/Cash $\downarrow$

# Testable Implications

- High systematic risk $\Rightarrow$ low LC/Cash
- Trade-off between cash and credit lines more important when:
  - systematic risk is higher
  - firm is more financially constrained
  - firm is more exposed to "banking risk"

# Comments

- How does LC depend on systematic risk?
- Empirical: reverse causality?
- Does systematic risk also affect the costs of hoarding cash?

# LC and systematic risk

- One period riskfree rate at $t = 0$: $r$
- Firm needs financing at $t = 1$:
  - wait to borrow at $t = 1$: spot borrowing rate will be $r_H$ or $r_L$ with risk-neutral probability $q$ and $1 - q$
  - get an LC at date 0: pay commitment fee $y$ at $t = 0$, lock in rate $\bar{r}$ for $t = 1$

$$r_L < \bar{r} < r_H$$

- Fair pricing for LC:

$$y = \frac{q(r_H - \bar{r})}{1 + r}$$

- High systematic risk:

$$q \uparrow \quad \Rightarrow \quad y \uparrow$$

# Reverse causality?

- Using asset beta to measure firm's systematic risk exposure
- Holding cash fixed, more credit line commitment helps relax firm's financing constraint
- Firm value will become less sensitive to cash flow shocks

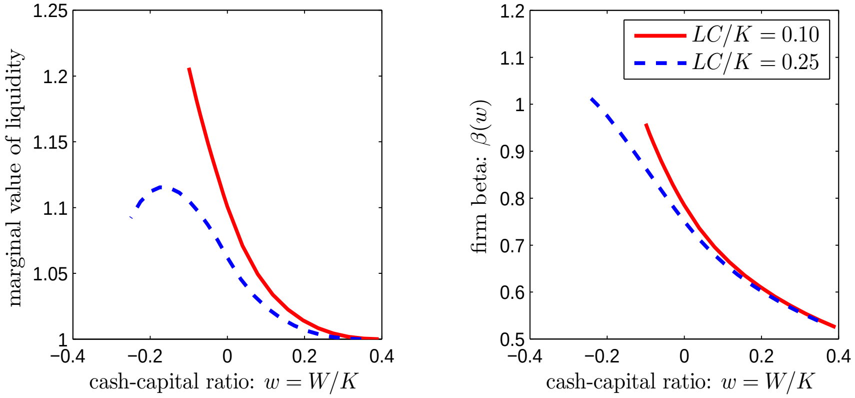
$$LC/Cash \uparrow \quad \Rightarrow \quad beta \downarrow$$

- Solution: cash flow beta?

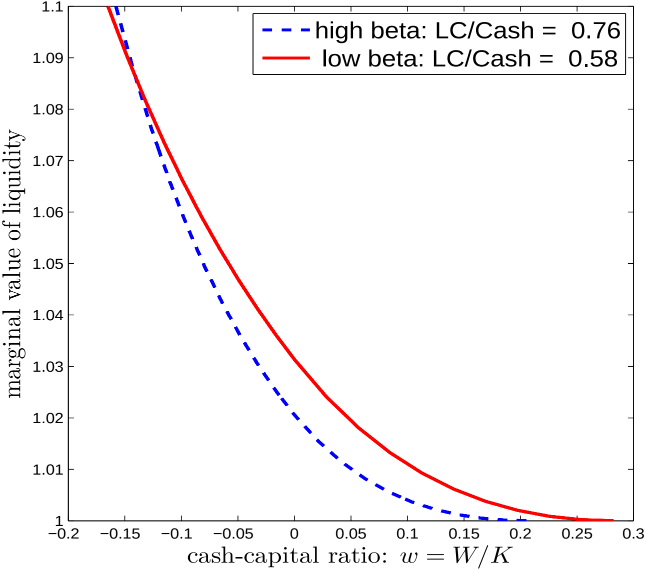
# A Dynamic Model of Cash and Credit Line

Bolton, Chen, and Wang (2009)

- constant investment opportunity, AK technology
- sources of financing: internal cash, credit line, equity
- analytically characterize the dynamics of: marginal value of liquidity, average/marginal $q$, investment, investment-cash sensitivity, beta, ...
- a useful setting to study tradeoff between cash and LC


1.25
1.2
1.15
1.1
1.05
1
−0.4
−0.2
0
0.2
0.4
marginal value of liquidity
cash-capital ratio: $w = W/K$
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
−0.4
−0.2
0
0.2
0.4
firm beta: $\beta(w)$
cash-capital ratio: $w = W/K$
$LC/K = 0.10$
$LC/K = 0.25$

# Optimal Choice of Cash and Credit Line (Holding Financing Cost Constant)



# Conclusion

- Nice paper!
- Rich predictions of systematic risk on investment, financing, and risk management
- This calls for more interaction between asset pricing, corporate finance, and macroeconomics