Debt Runs and the Value of Liquidity Reserves

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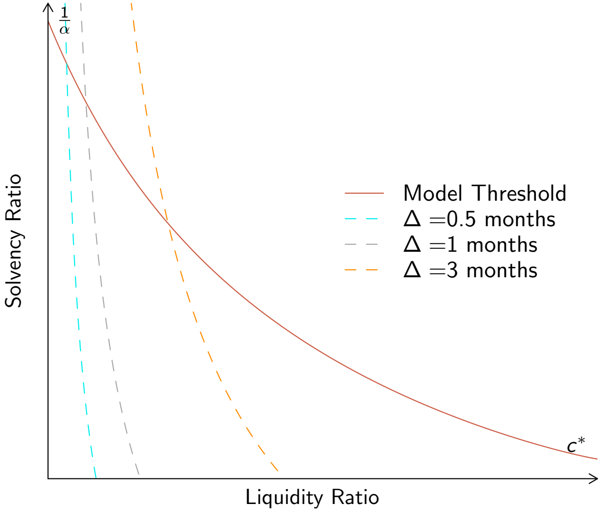
Research Questions

- Motivation: BIS Liquidity Coverage Ratio
- Research goal: study influence of portfolio liquidity composition on run behavior of creditors of banks and broker-dealers
- Stylized facts about modern-day bank runs:
  - Not so much about demand deposit runs than about wholesale term funding runs (Northern Rock, Lehman, Bear)
  - Not overnight, but prolonged over multiple weeks
  - Preceded by declines in liquid asset reserves
  - Might not be fatal to a bank

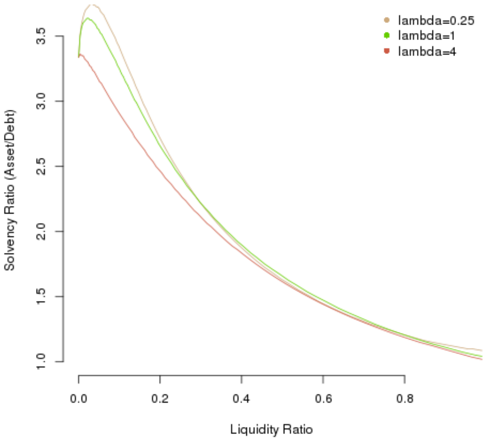
What I Do

- Continuous time partial equilibrium model
- One financial firm holding a portfolio consisting of:
  - Illiquid assets (GBM cashflow dynamics and liquidation cost)
  - Cash
- Liability side of the firm consists of a continuum of creditors:
  - Each debt contract expires with some fixed Poisson intensity;
  - Debt interest rate $>$ creditors' discount rate
- Imperfect capital markets: no outside debt or equity financing.
- Solution concept: symmetric cutoff Markov perfect equilibrium
- Key externality: running creditors do not internalize the cost of their action on remaining creditors

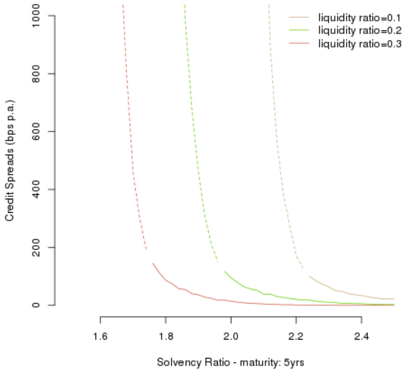
Liquidity vs. Solvency Boundary vs. LCR Requirement

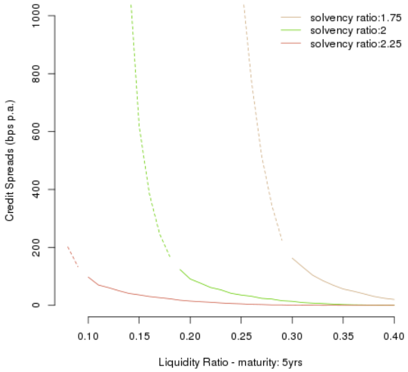


Extending Bank Liabilities' Duration?

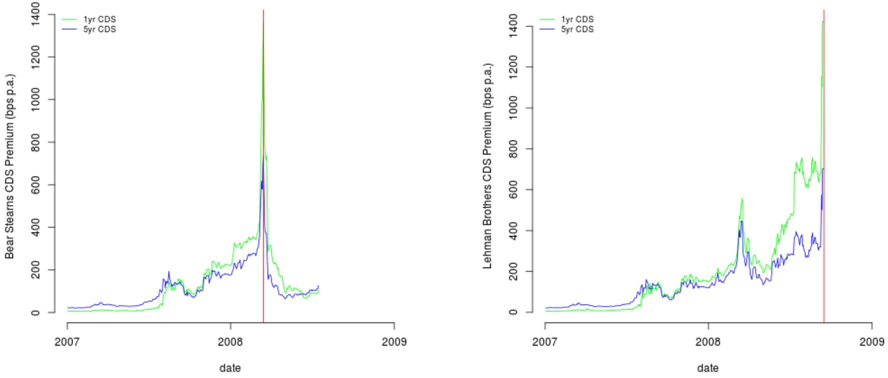


Par CDS Spreads





Bear and Lehman CDS Pre-Default



Conclusion

- Quantitative model taken to the data;
- Novel role for cash in corporate finance, as run deterrent;
- Link established between liquidity, solvency and runs;
- Current liquidity regulations are too conservative for certain firms, and not conservative enough for others;
- Longer term debt does not always reduce creditor run propensity;
- Default mechanism different from traditonal "Leland" literature.