How Debt Markets Have Malfunctioned in the Crisis

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Introduction

- The financial crisis that began in 2007 is especially a crisis in debt markets. A full understanding of what happened in the financial crisis requires inquiring into the plumbing of debt markets.
- Trades in debt markets are predominantly made by financial institutions—like banks, hedge funds, and insurance companies—rather than households.
- One key feature of markets in debt instruments is that whenever a trader wishes to make an investment, it must first raise money.
  - If funds can be raised fairly easily and quickly, debt markets should function fairly smoothly. But during a financial crisis, funds often cannot be raised easily or quickly.
Three Considerations in Every Debt Market Purchase

- Crucial in all debt markets
  - risk capital and risk aversion
  - repo financing and haircuts
  - counterparty risk
- In each of these areas, feedback effects can arise so that less liquidity and a higher cost for finance can reinforce each other in a contagious spiral.
- remarkable rises in the premium that investors placed on liquidity during the crisis.
Risk capital and risk aversion

- suppose that the trader/management of the financial institution is considering selling some Treasuries and buying a higher-return mortgage-backed security.
- suppose that there are potentially large costs of financial distress (like risks of bankruptcy) that the trader/management accounts for in making investment decisions.
- A higher proportion of debt—or conversely, a lower level of risk capital—tends to make a financial institution more risk-averse in its portfolio choices.
Risk aversion and trading strategies

- For commercial banks, it is embodied in regulatory capital requirements.
- For other financial institutions, decision making at the level of a trader is often formulated in terms of a value-at-risk constraint, which imposes a constraint on a trader’s portfolio choice such that the probability of a large loss must fall below a given threshold. The tighter constraint induces risk aversion into the portfolio decisions of the trader.
- The financial institution’s reduced risk capital may affect its trading decisions: It may be less willing to purchase more mortgage-backed securities.
- If the event is systemic — When aggregate risk capital is affected, this will have an effect on asset prices.
Perverse feedback effect

- The widespread loss in risk capital seems fully sufficient to reduce liquidity in debt markets in a way that, at a minimum, puts downward pressure on prices.
- A perverse feedback effect arises here that has played a part in the financial crisis. Risk capital falls, causing institutional risk aversion to rise and asset values to fall, causing risk capital to fall further, and so on.
Repo financing and haircuts

- For most financial institutions that actively trade in debt markets on a day-to-day basis, cash needs are met by borrowing through repurchase agreements.
- The repo market lies at the heart of all debt markets.
- The speed of transaction in the repo market plays an important role in supporting the trading and liquidity of debt markets.
- On the repo lending side, the typical cash investor in a repo is a money market fund that is looking for a relatively safe place to invest a large amount of cash over a short period.
- repo is attractive—say, relative to placing money in a large time deposit in a bank—because it is over-collateralized.
Haircuts

- When repo lenders determine haircuts, they have two main considerations: 1) the probability of a borrower defaulting on the repo loan; and 2) the recovery value when liquidating the collateral in the secondary market if default occurs.

- The secondary market for mortgage-backed securities is less liquid than the secondary market for Treasuries. As a result, a lender will be more concerned when lending against mortgage-backed security collateral than Treasury collateral.

- In practice, haircuts vary across borrowers at every given point in time; for example, a hedge fund typically will face higher haircuts than a large Wall Street bond dealer.
Haircuts during crisis

- Haircuts on all classes of securities rise during a financial crisis.
  - The haircuts rise the least for the most liquid securities.
  - The more exotic asset-backed securities with the least liquid secondary markets had the highest haircuts in the fall of 2008.
- Rising haircuts during the financial crisis were accompanied by shrinkage of the repo market.
- The decline in the repo market in the second half of 2008 is referred as “deleveraging”— borrowers take on a lower level of repo market loans.
Counterparty risk

Whether the counterparty that is arranging the debt market transaction makes good on its obligations supporting the investment.

- As counterparty risk grows, financial institutions reduce their reliance on repo, but then have to shift to slower financing arrangements. The trading decisions of financial institutions are affected, and with that, the prices and liquidity of the traded debt instruments suffer.
- Counterparty risk arises in any bilateral transaction.