Balance-Sheet Adjustment

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Main Question

- What was the flow of funds during the crisis?
  - Estimate the net purchases of various classes of investors:

    (a) Change in asset values (self reported)

    (b) Trading profits
  - Concentrate on certain asset classes: mortgages and credit securities
- Motivation: Help understand asset returns
  - What happened to the balance sheets of the marginal investors?
  - May their objectives have changed? How?

Main Findings

- Brokers/dealers, hedge funds, and insurance companies sold about $1.25tn
- Commercial banks bought about $730bn
- Government:
  - Assumed some of the risk on banks' balance sheets
  - Fed bought (low-risk) MBS debt; also GSEs
- Question: How did banks finance purchases?

Leverage

- Hedge funds:
  - Dropped from 2.8 to 2.3 (!)
  - Note also that maximum haircut during crisis was 0.40 (on CMOs); a large proportion of "hedge-fund money" not levered
- Broker/dealers:
  - Similar to hedge funds?
- Perhaps leverage went down for all entities that sold mortgage/credit assets

Commercial Banks: Liabilities

- Repo and Fed Funds:

  $463bn - $1327bn = -$864bn
- Deposits:

  $7146bn - $6592bn = $554bn
- Bonds:

  $1216bn - $688bn = $528bn
- Total: $218bn
- Asset purchases: $730bn

=> ¿ Leverage ↓ ? (2009Q1 equity: ~$700bn)

Commercial Banks: Implications

- Borrow large amounts ($1.25tn) with government guarantees
- Seem to also have raised equity capital
- Purchases roughly same as potential increase in bank holdings of assets underlying ABCPs
- Implications for banks' trading objectives?
  - Guarantees => banks more aggressive? Needn't.
  - Taking advantage of attractive risk premia?
  - Obligation to assume certain assets?

A Couple of Relevant Theories

1. A group of investors (“intermediaries”) lever up to hold all credit securities. Sequence of events:
   - Fundamentals drop
   - Losses, and higher leverage (or capital influx)
   - More risk taken (per $1) => high excess returns

   (He and Krishnamurthy 2007)

2. Groups of investors with different risk appetites:
   - Fundamentals drop; margin requirements (haircuts) go up
   - Most aggressive investors sell
   - Less aggressive investors must be attracted to buy => high excess return

   (Gârleanu and Pedersen 2009)

Conclusion

- Paper answers a very interesting question
- Who bought the credit assets sold by hedge funds and investment banks? Commercial banks. How much? About $700bn.
- Answer requires
  - looking through a number of data sets
  - making some regularity assumptions
- Some uncertainty persists regarding amounts; type of securities traded (e.g., ABCP); liability side
- Relevant for the identity of the marginal investors