Financial modeling after the crisis – a few thoughts

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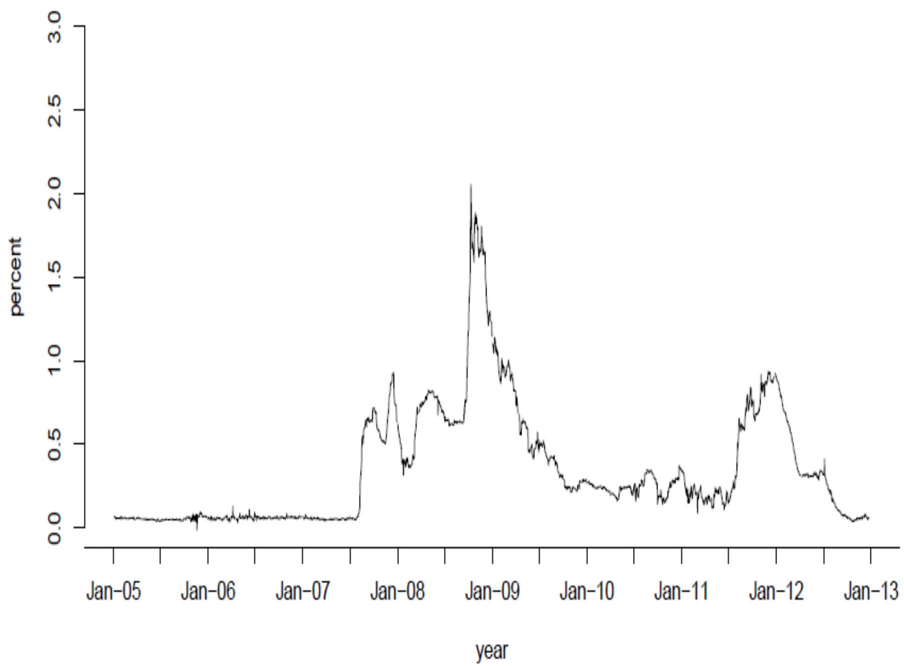
Agenda

- Benchmark cases are (still) important
- Institutions matter
- Modern asset pricing takes frictions seriously
- Concluding remarks

Benchmark cases are important

- Efficient Market Hypothesis
  - Look for a rational explanation before you argue markets are irrational (and before you invest)
  - Look for a better model if your model does not fit
- Modigliani-Miller
  - Please identify the friction when you argue capital structure matters for firm value, bank lending, etc.
- Law of one price
  - Still a powerful tool! But look for frictions again when there is a breakdown

1-yr EURIBOR – OIS-spread



- Before the crisis, a law-of-one price equates the two
- The argument assumes interbank credit risk is negligible, and that there is no reluctance to give up liquidity
- Both assumptions break down – but existing tools can factor in both credit risk and hoarding

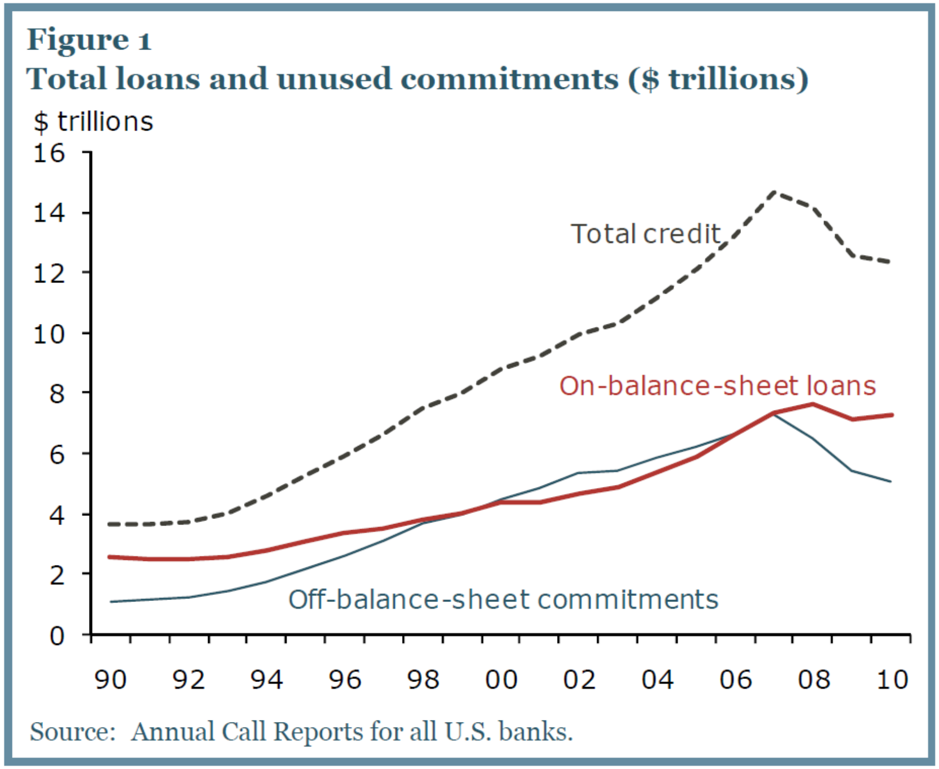
Benchmark cases are important

- Understanding the deviations from the benchmarks means taking institutions and markets seriously
- One can build models with structural breaks and everything: $(P_\theta)_{\theta \in \Theta}$ knows no limits
- But hard to justify a 'wild' assumption without an institutional argument – why would EUREPO – OIS suddenly jump to a new regime?
- The 'first order' shortcomings of our models have not been in our toolbox, but in abstracting away – and failing to see – changes in institutions and market practices

Leverage and maturity mismatch

- Few (if any) realized the simultaneous build-up and vulnerability arising from
  - Undrawn loan commitments
  - Subprime mortgages
  - Credit and liquidity guarantees for ABCP conduits
  - Repo (changes in haircuts)
  - Wholesale funding
  - Margin calls on derivatives
  - …and more

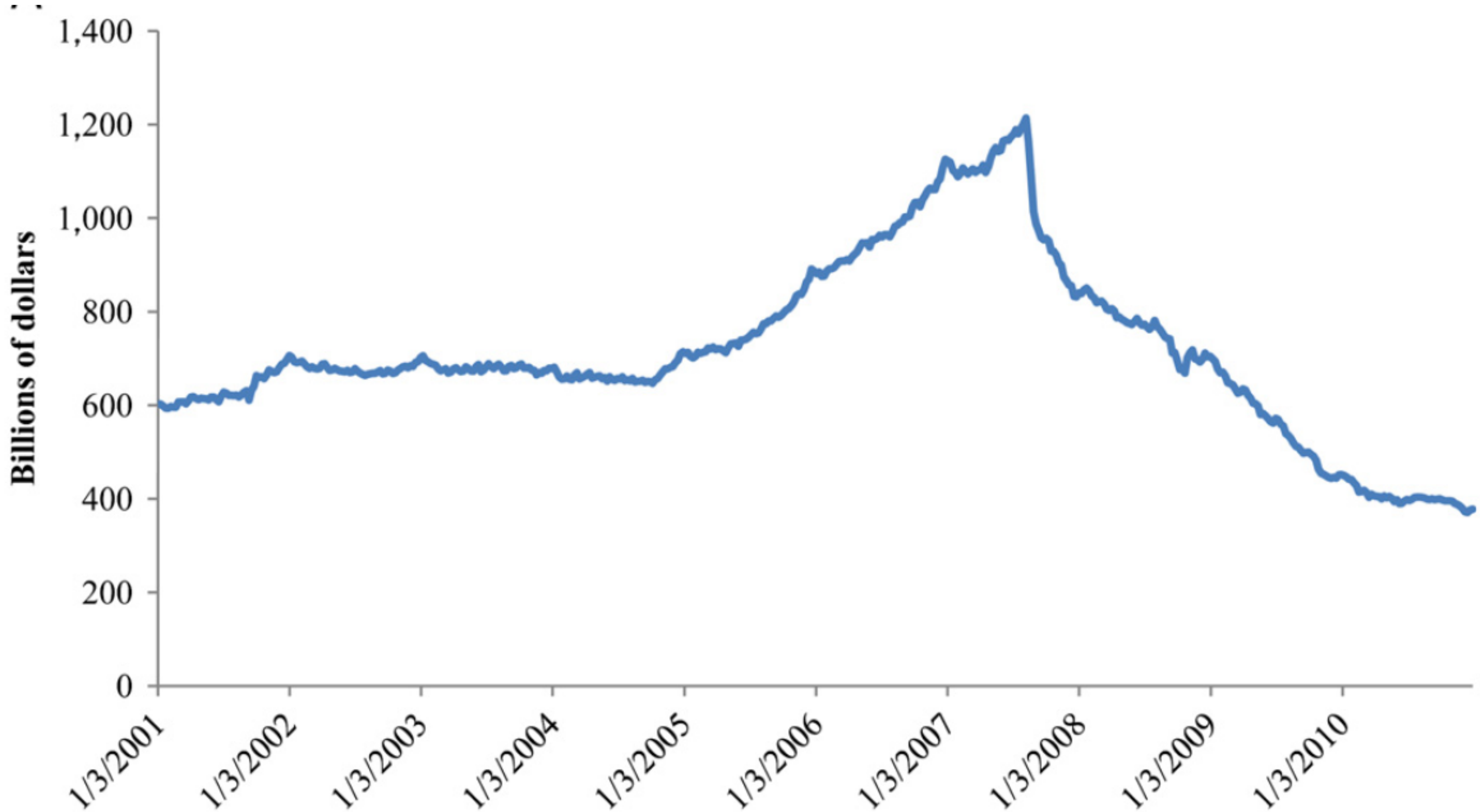
Undrawn loan commitments



- Off-balance sheet commitments are brought on balance sheet
- CP issuers shift to existing credit lines
- Non-financial businesses draw from credit lines to have cash

Source: Strahan (2012)

The dry-up in US ABCP



Source: Acharya, Schnabl and Suarez (2013)

Repo run because of haircuts

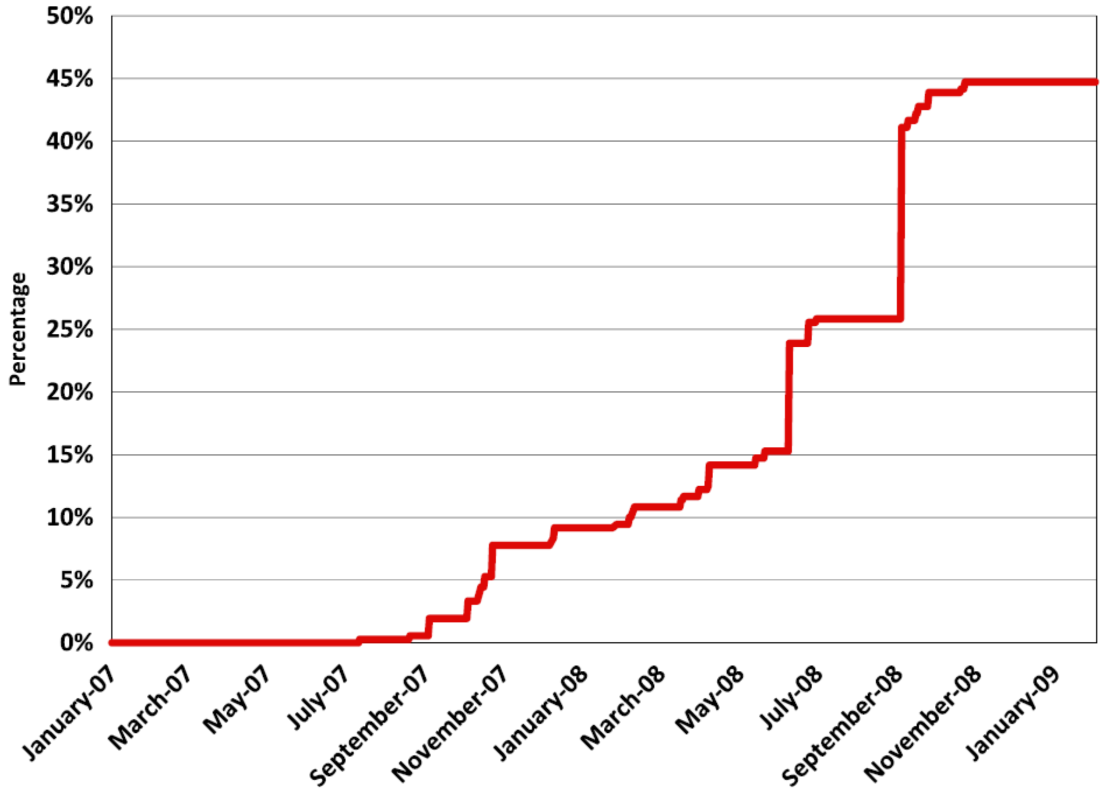


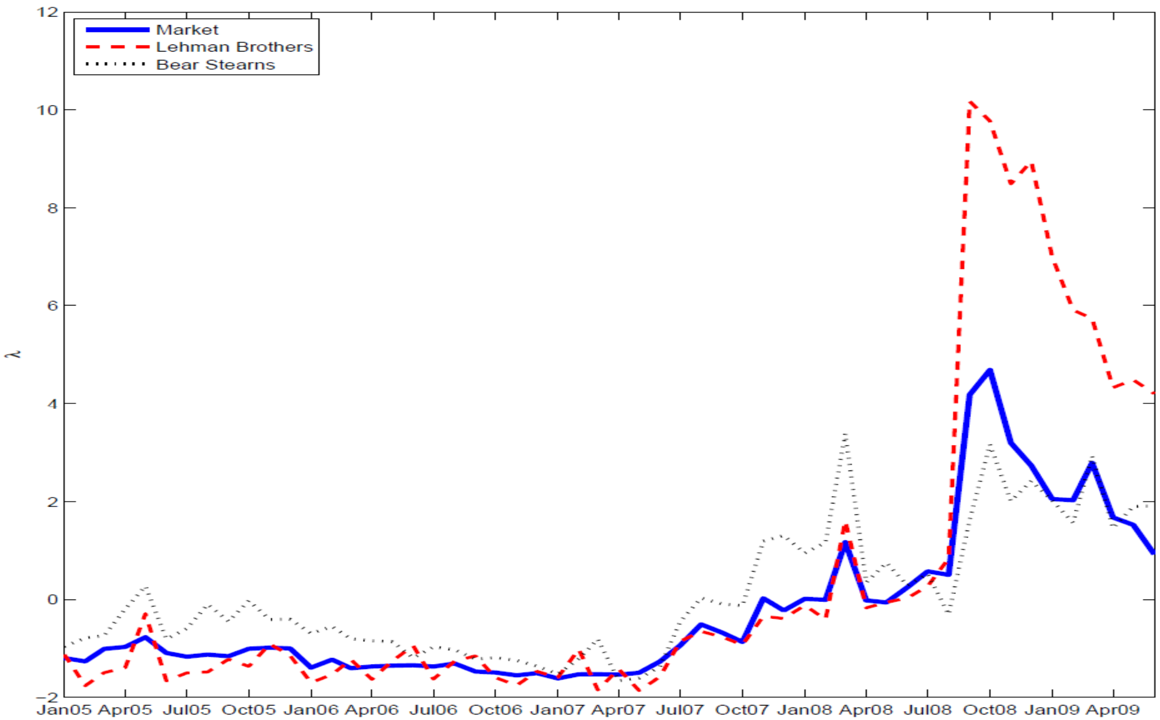
Fig. 4. The repo-haircut index. The repo-haircut index is the equally weighted average haircut for all nine asset classes = included in Table 2, Panel D.

Source: Gorton and Metrick (2012)

The newer models take into account

- That trading requires capital, and therefore the law of one price may break down due to capital constraints of arbitrageurs, or because of counterparty credit risk
- The role of counterparty credit risk
- That the price of an asset or derivative is affected by its haircut in repo transactions and its margin requirements
- That liquidity and liquidity risk affect the price of an asset
- That there are leverage constraints
- …and many other features that are rooted in the institutional and regulatory setting

Effect of funding illiquidity



- Y-axis shows a measure of illiquidity
- Higher value means more illiquid
- Graph compares average illiquidity for bonds underwritten by Bear Stearns, Lehman and others

Source: Dick-Nielsen, Feldhütter, Lando (2012)

Concluding remarks

- We have not reached the limits of our toolbox
- Our first order challenge is to better capture the role of institutions, regulation, frictions
- Our models inform us about what data to gather and what imbalances to look for
- It may matter less to which degree these imbalances are caused by rational or irrational agents

Literature

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