Discussion of "The End of Market Discipline" Acharya, Anginer, Warburton

Andrew Atkeson
November 2013

What this paper does

- Estimate a “hedonic” model of corporate bond spreads
- with Bond-specific, firm-specific, and macro controls
- including Merton distance to default (DD) as a measure of firm-specific risk
- estimates that TBTF firms have lower spreads than their smaller financial peers
- The estimated gap in spreads for TBTF firms is interpreted as measure of an implicit TBTF subsidy
- **I find the estimated pre-crisis subsidy to be “disappointingly” small.**

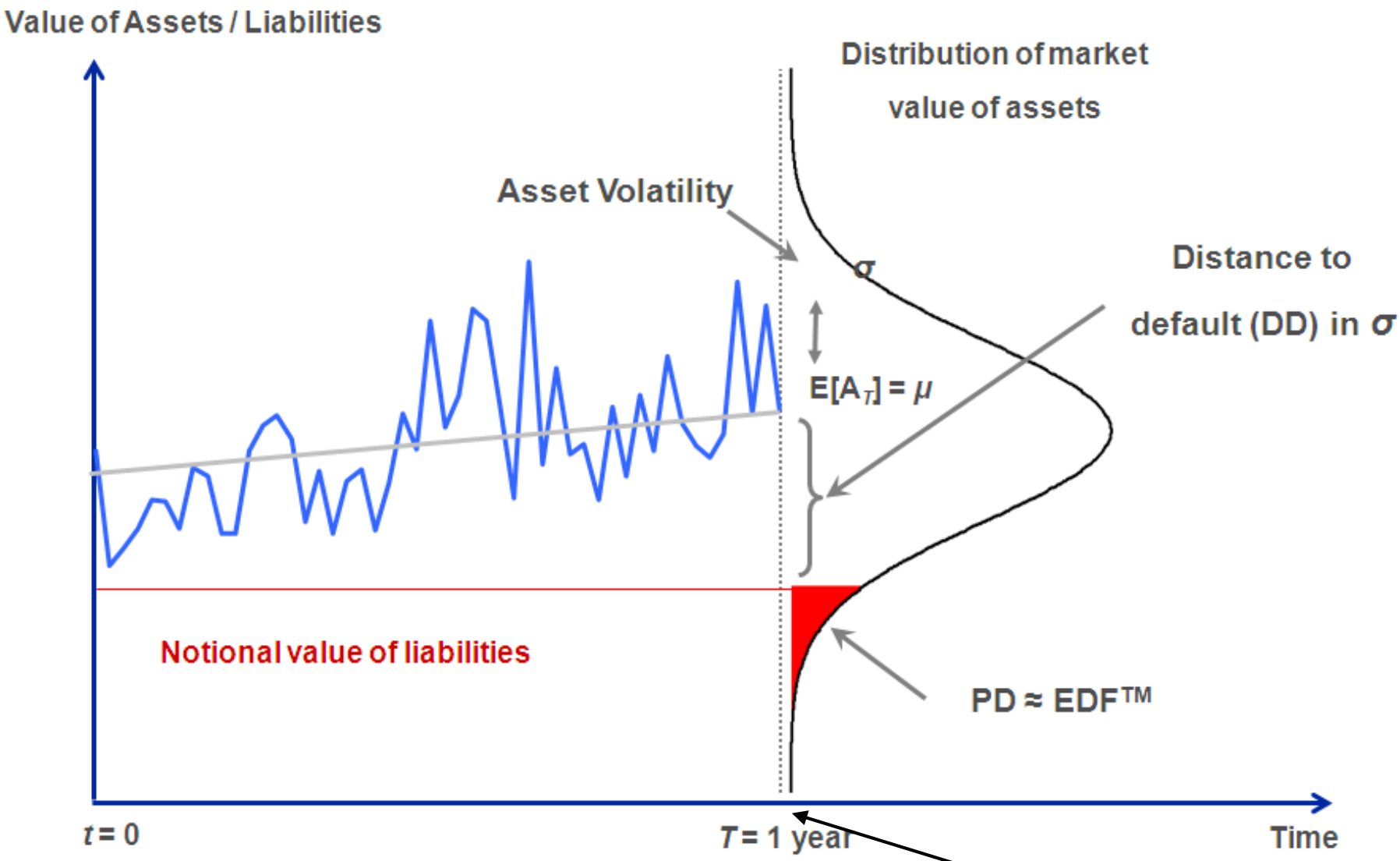
Discussion Outline

- Concern about Merton DD as measure of risk
  - Do regulatory changes show up in DD?
  - Was risk priced in advance of the crisis?
- Does DD capture the “risk” that occurred?
  - The term structure of credit risk in the crisis
- How should we even think about the cost of TBTF?
  - a pricing versus an engineering approach
  - pricing: how much individual firms would have to pay for unbacked funding under current market arrangements
  - engineering: how much would it cost firms in the aggregate to implement safer market arrangements?

Theory behind Merton's DD

- **Theory:** Equity holders exercise option to walk away from the firm when two conditions hold
  - 1) Firm is insolvent
  - 2) Creditors are demanding cash

Figure 11 - Default Process in the Structural Model

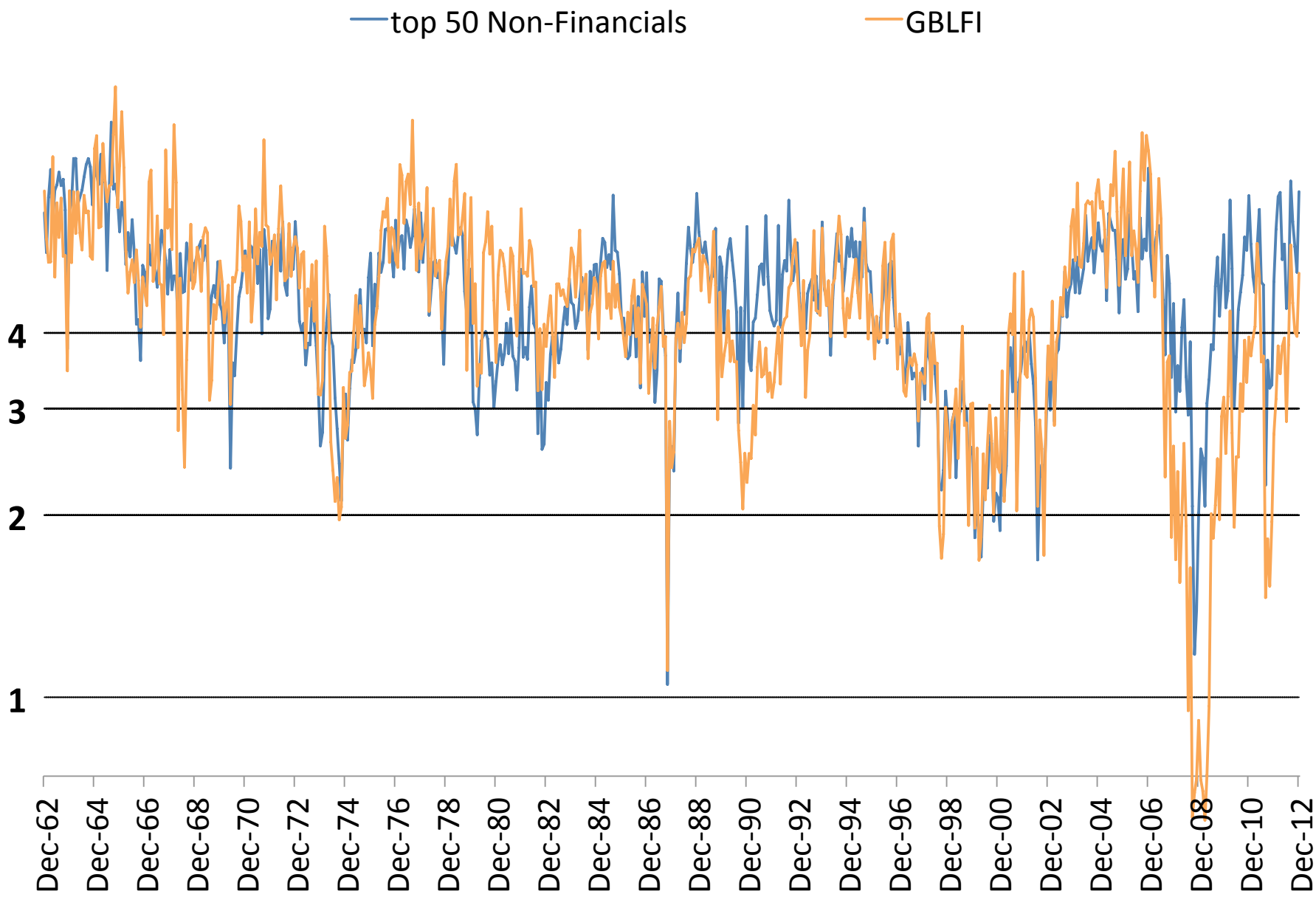


Creditors demand cash here
default happens if firm is insolvent on this date

Theory behind Merton's DD

- **Key Parameters:**
  - 1) Leverage adjusted for asset volatility
  - 2) Timing of cash flows demanded by creditors
- **Regulation** should impact financial firms' choice of 1) and 2)
- Do we see that in the data?

Do we see evidence of the impact of **regulatory changes** on DD for big banks?

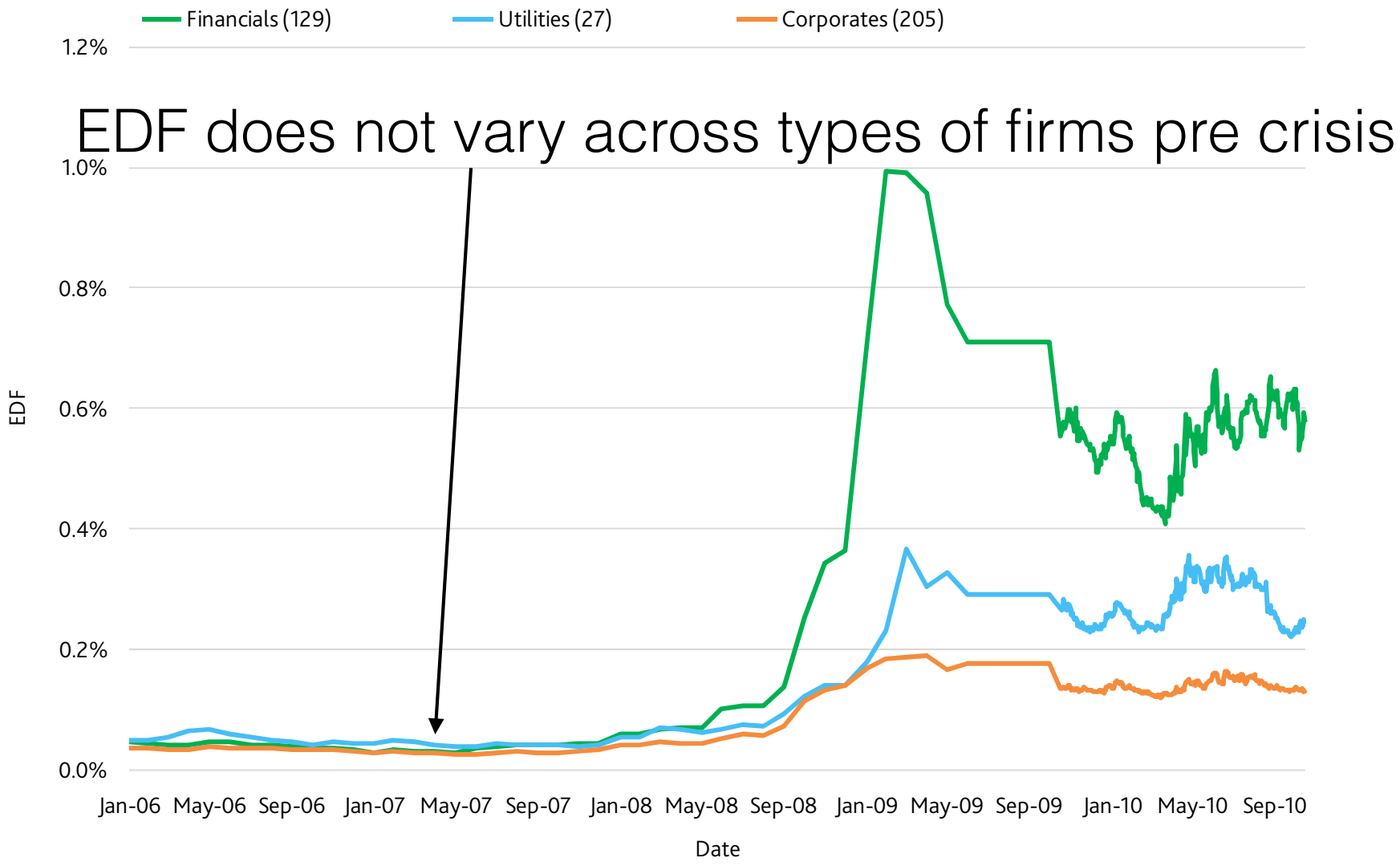


Do we see evidence of the impact of regulatory changes in DD for big banks?

- My guess is that the answer to this question is **no**
- The authors should be able to check this easily comparing DD for large and small financials back into the 1960's or 1970's

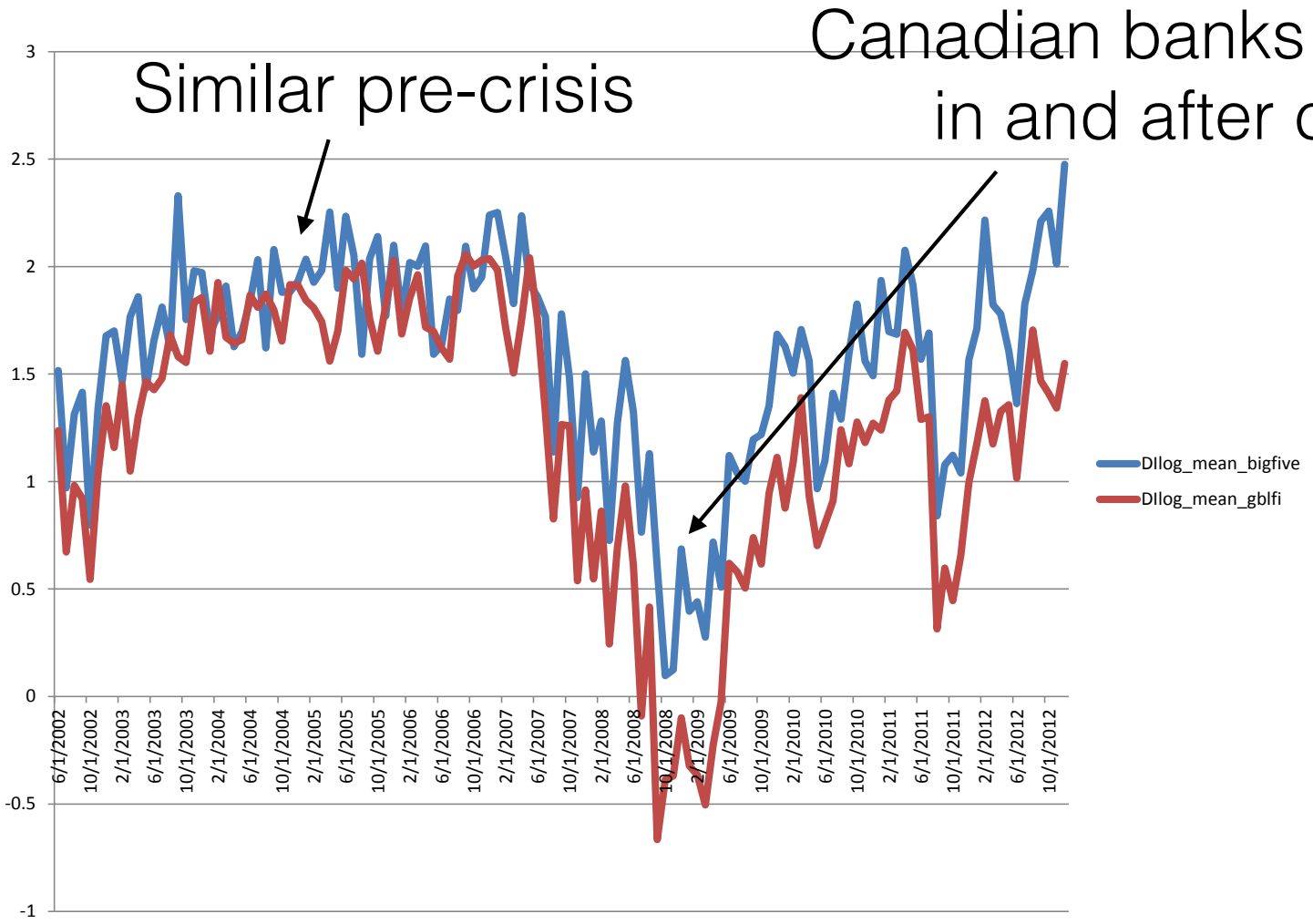
Was risked price before this crisis **in the cross section**? A look at Moody's EDF by sector

Figure 5 — Median EDF Metrics for Single A Entities by Sector

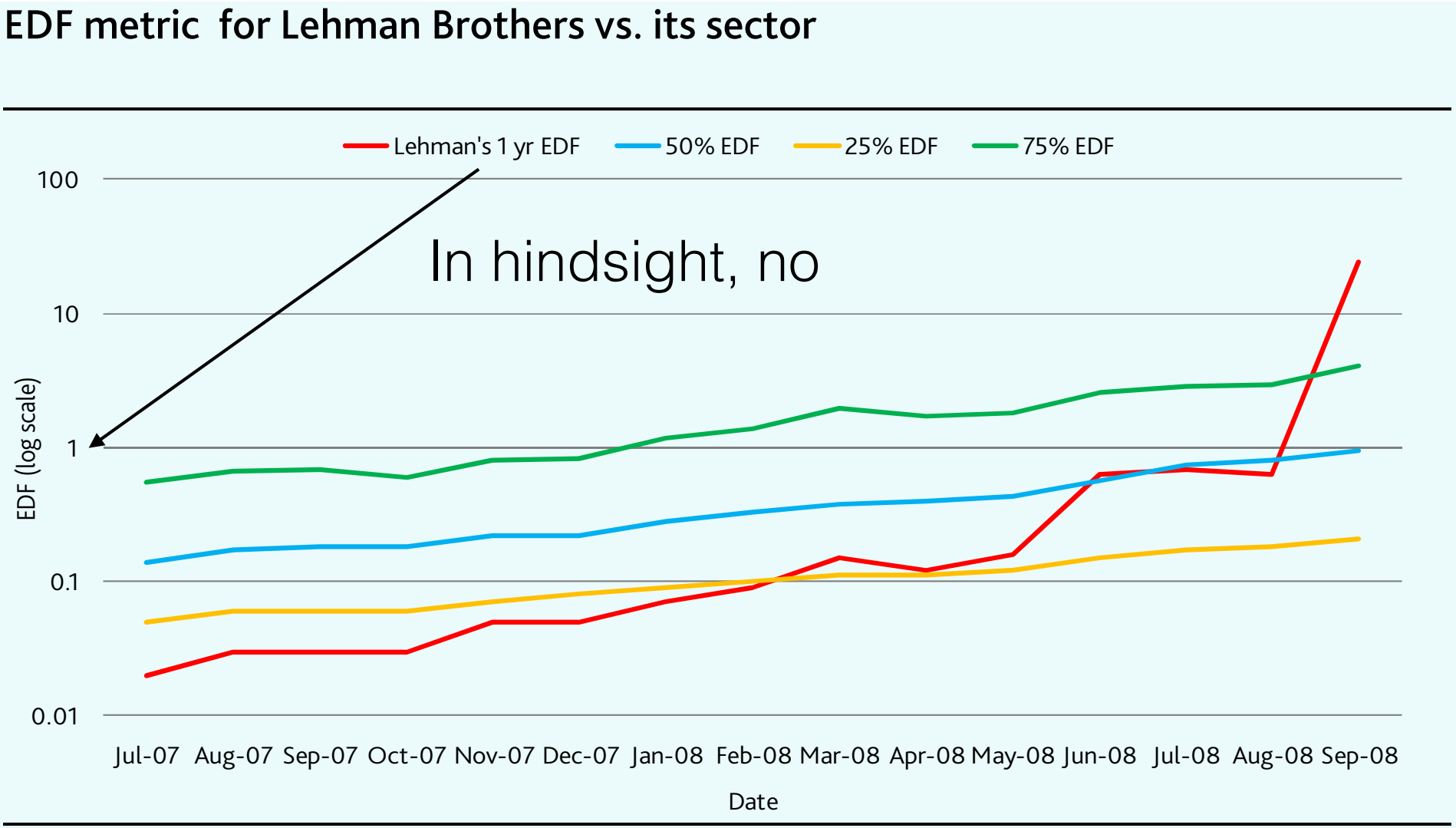


Was risked price before this crisis **in the cross section**?
A look at Big US Financial Firms vs. Big Canadian Banks

Canadian Big 5 vs. US Big GBLFI's



Was the **level of risk** priced before this crisis?



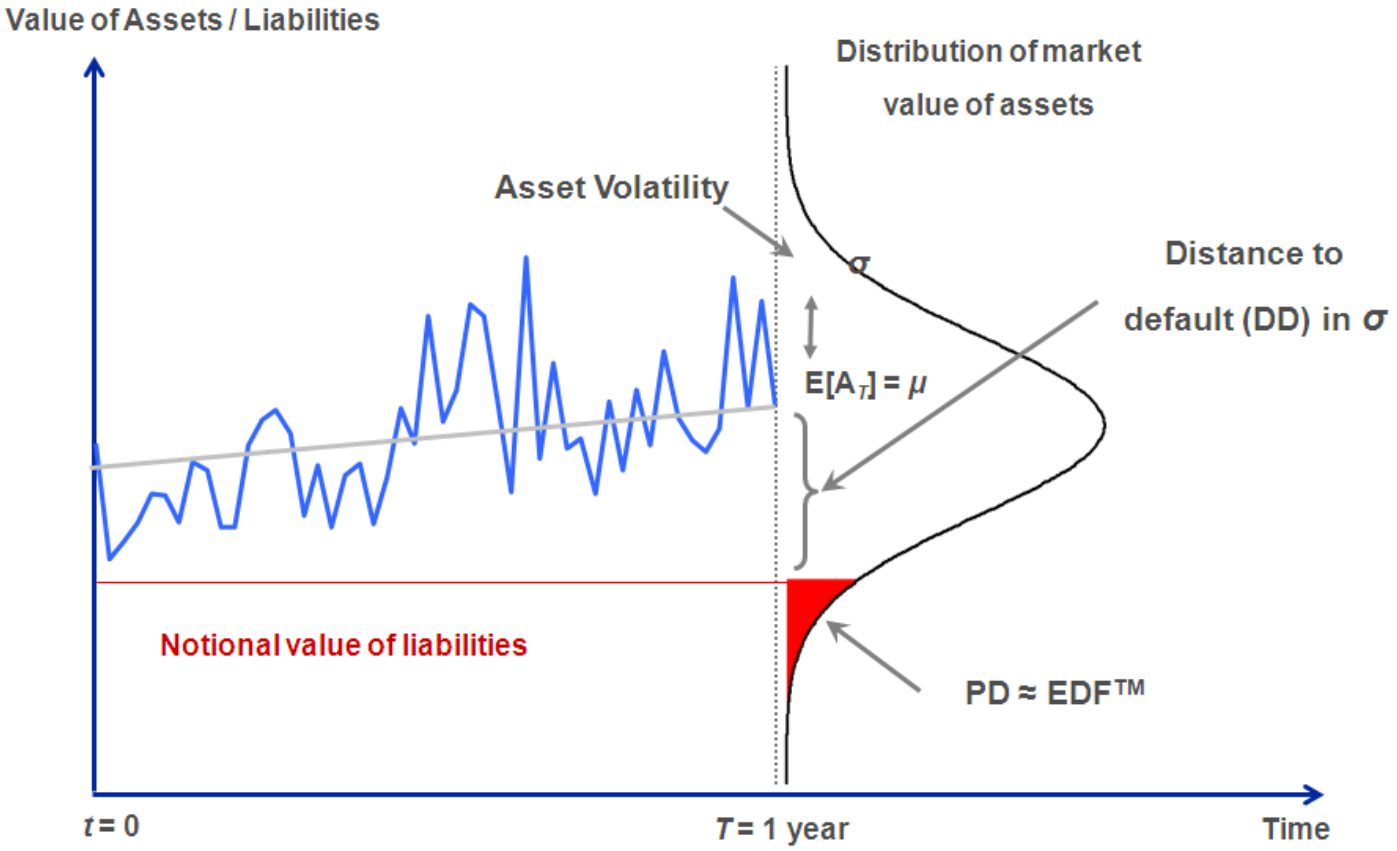
EDF was low in absolute terms for large financials pre crisis

Does DD (or EDF) measure the risk we care about for banks?

- In structural credit risk models, two parts to risk
  - Risk the firm is or becomes insolvent over some time horizon
  - Risk that the creditors demand cash of the firm when it is insolvent
- Merton's DD measures the first but not the second since the timing of payments is fixed
- Can we see these two risks separately in the term structure of credit spreads?

Mechanical credit risk term structure in Merton model

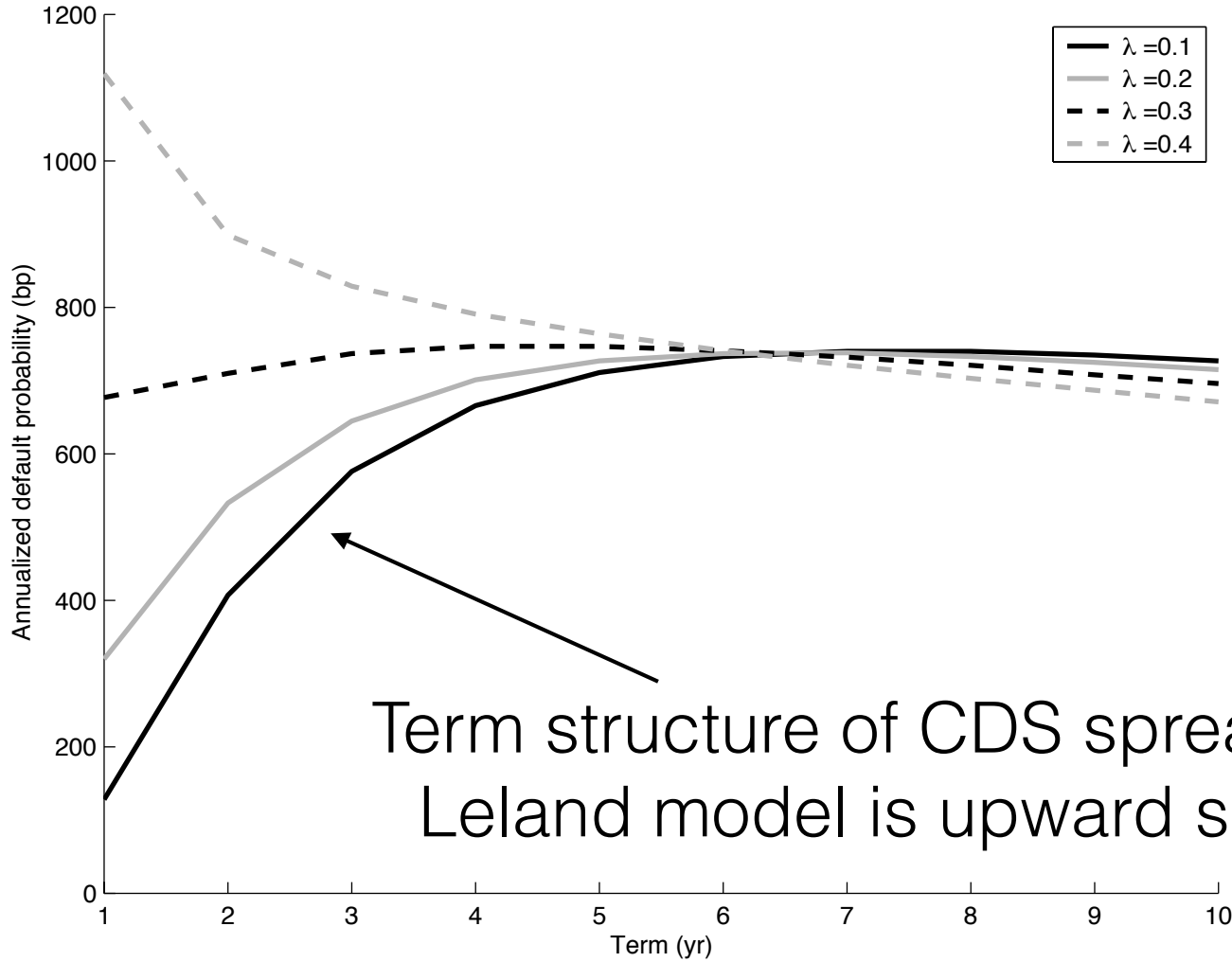
Figure 11 - Default Process in the Structural Model



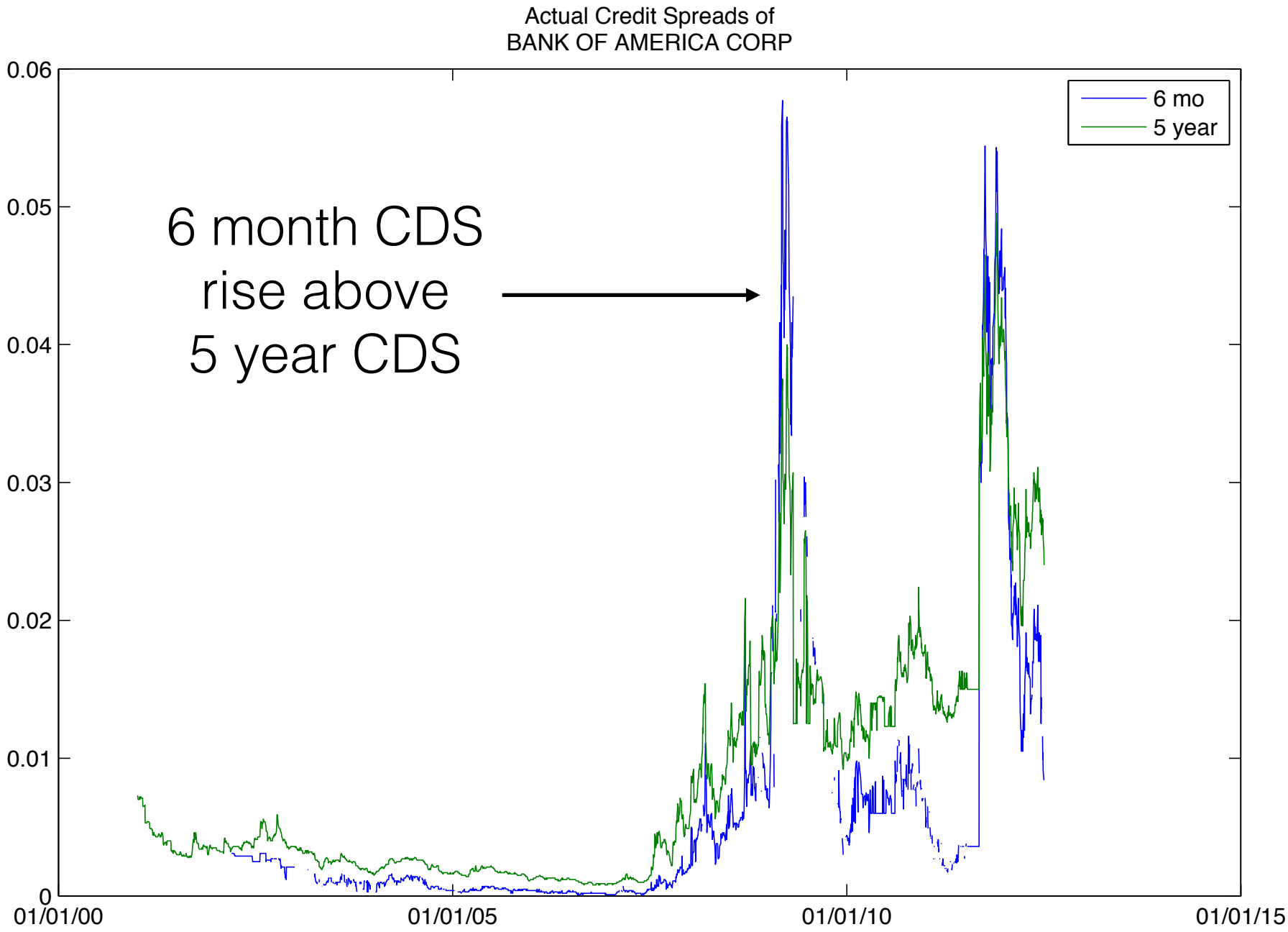
No possibility of default except here

Upward sloping term structure in a Leland Model

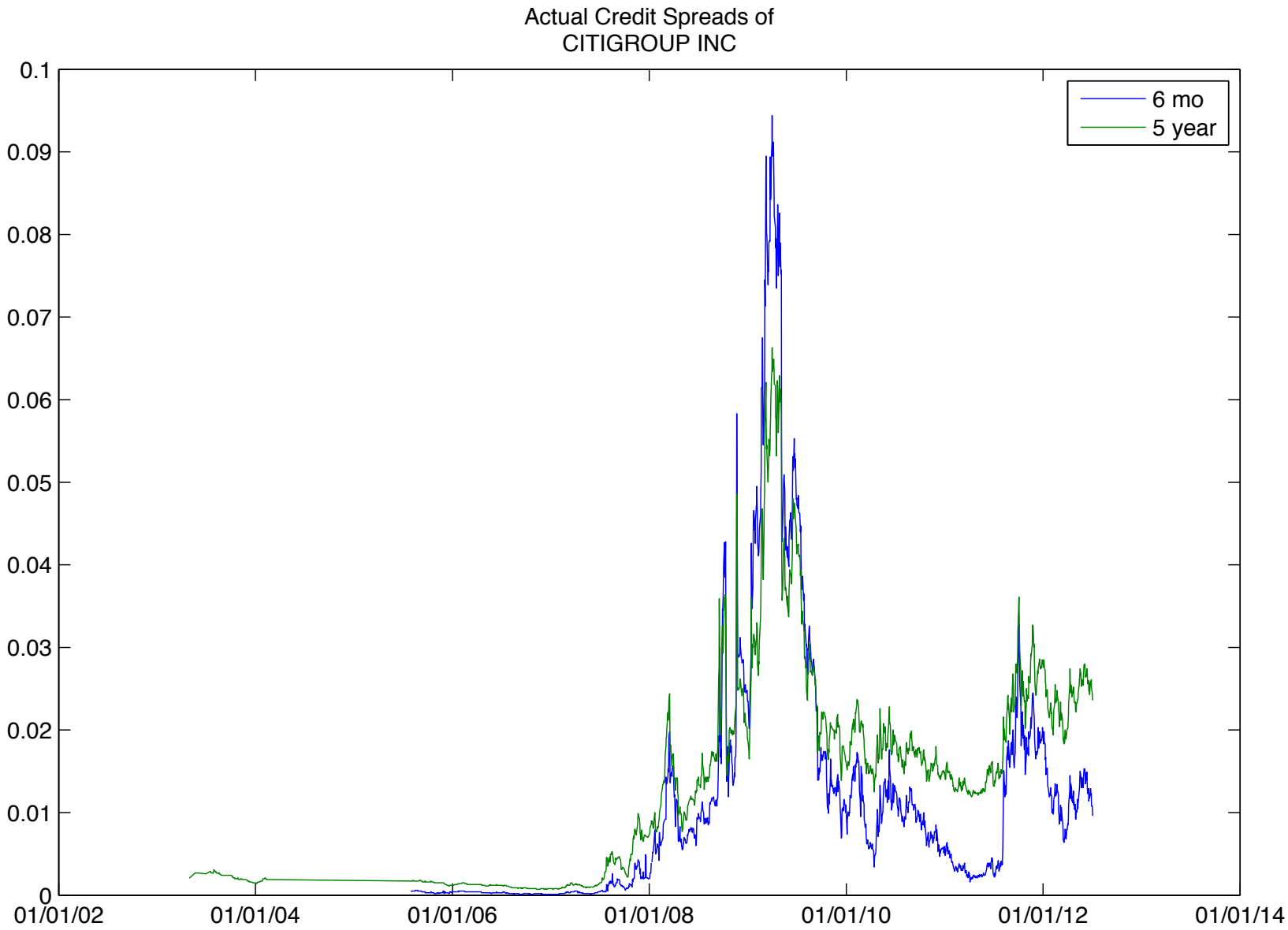
Figure 2.2: Impact of λ on Default Probability $(V_0/(\bar{L}D) = 2, \sigma = 0.25)$



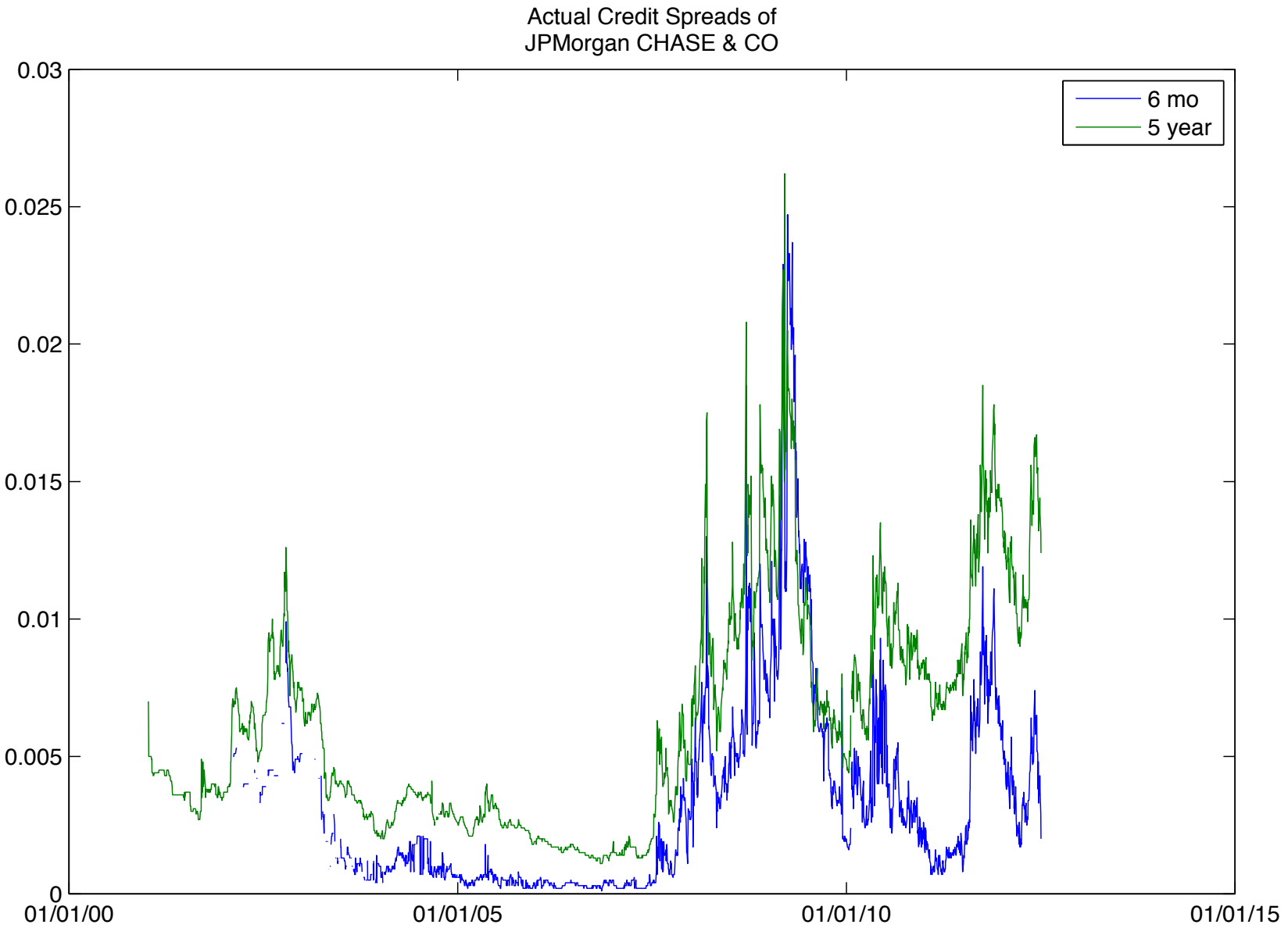
In the crisis, the term structure of credit risk **inverted**



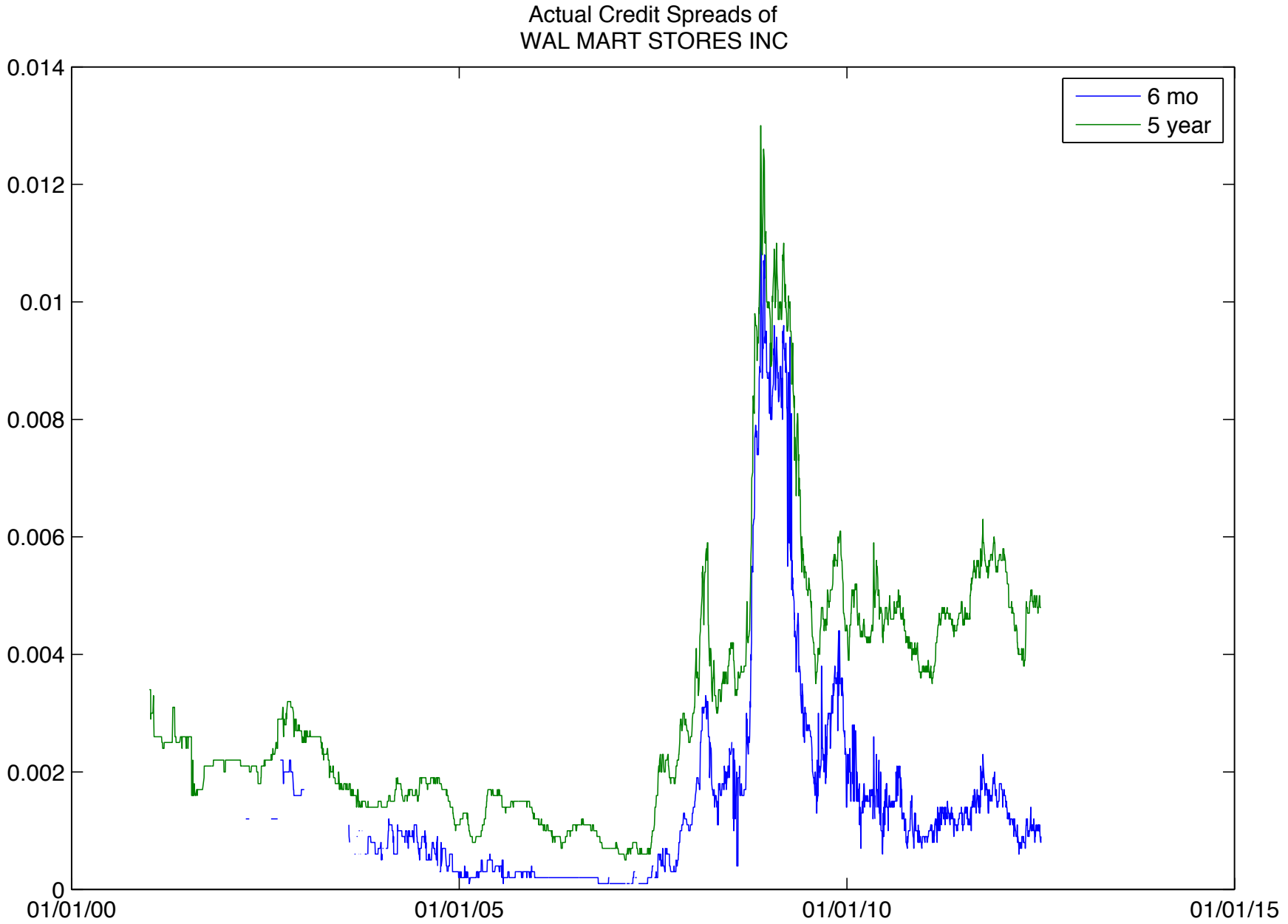
Extremely so for Citigroup



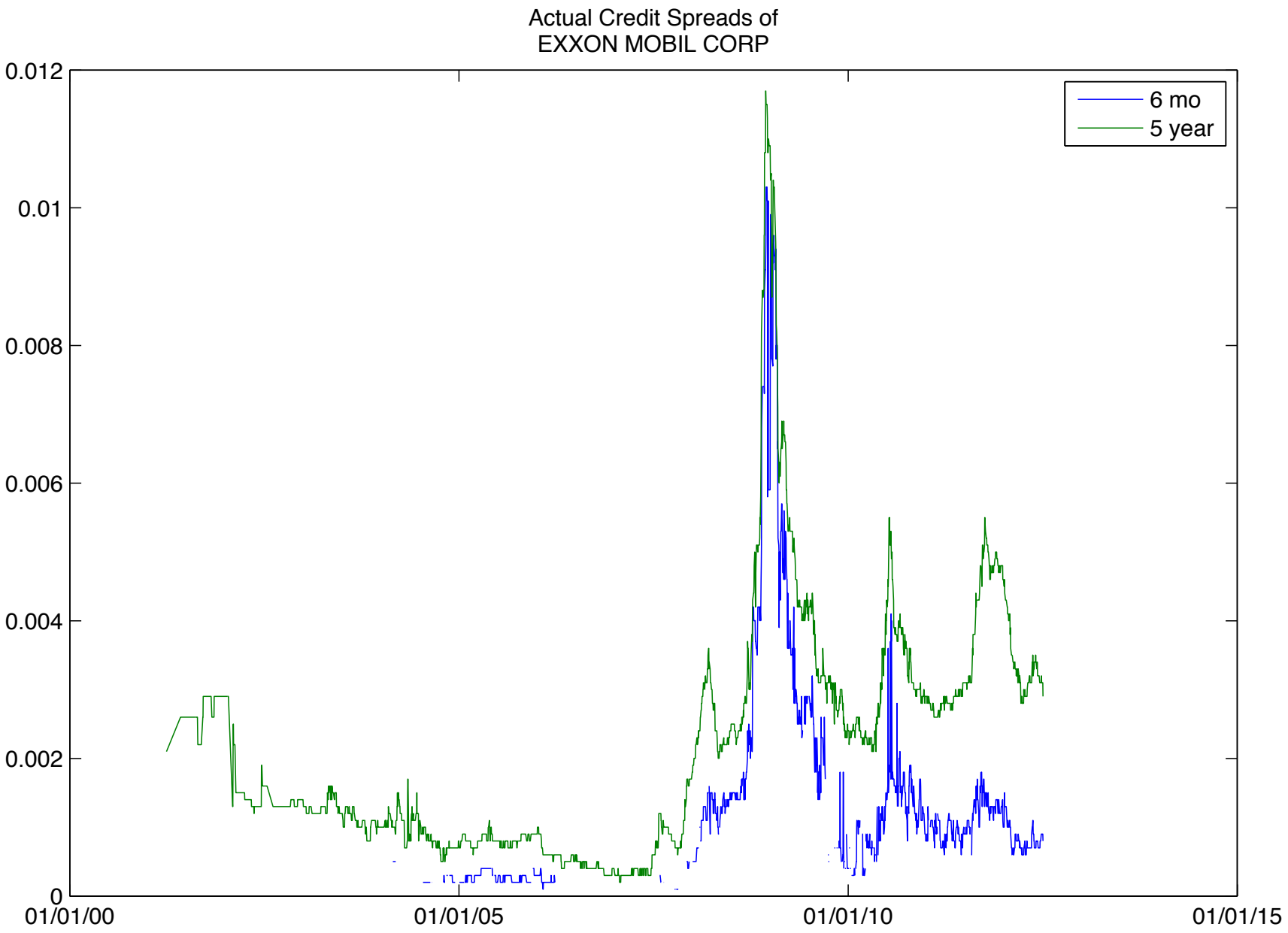
Less so for a sounder bank?



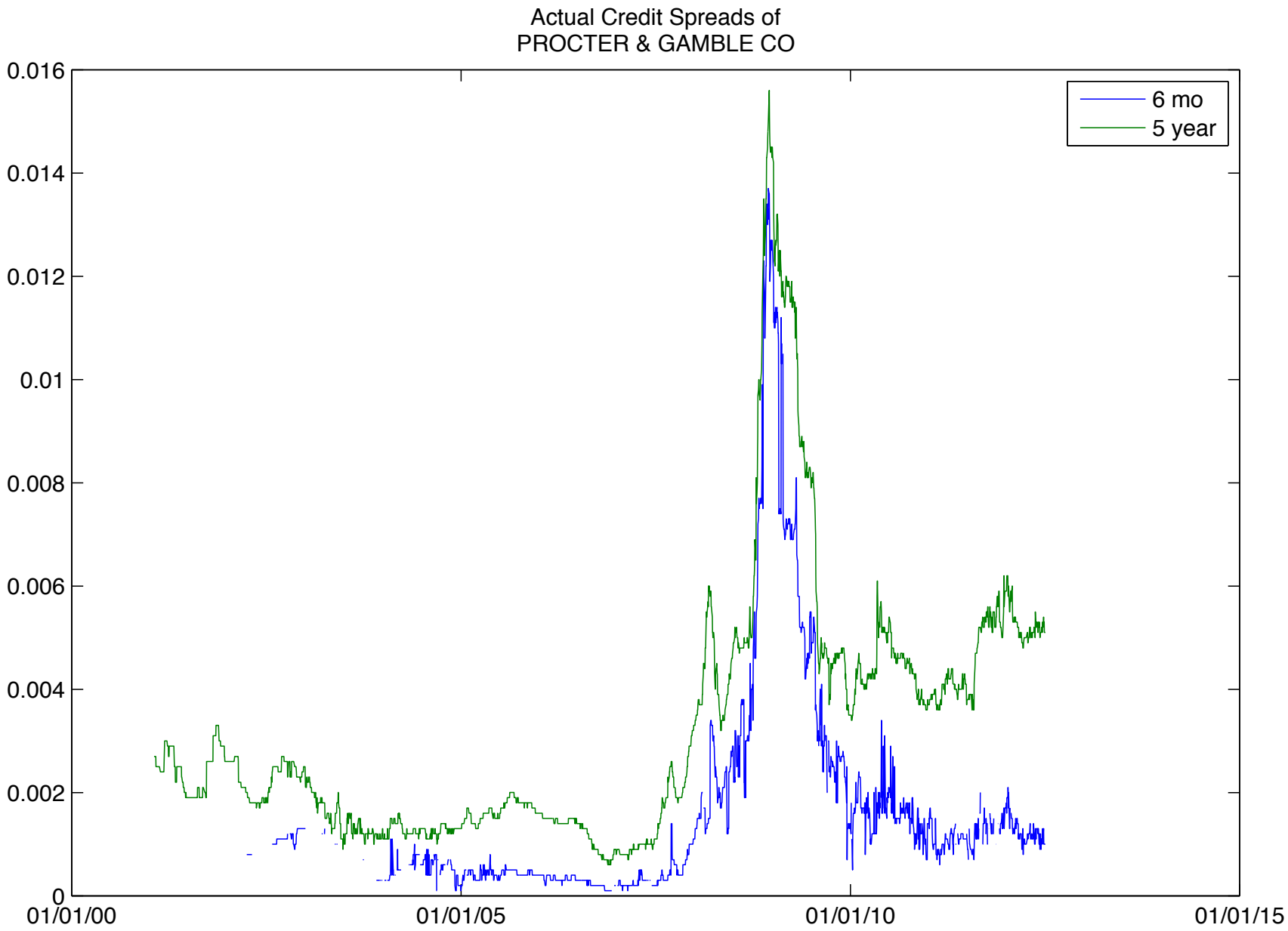
Does this make sense for Walmart too?



And Exxon-Mobil?



And Procter and Gamble?

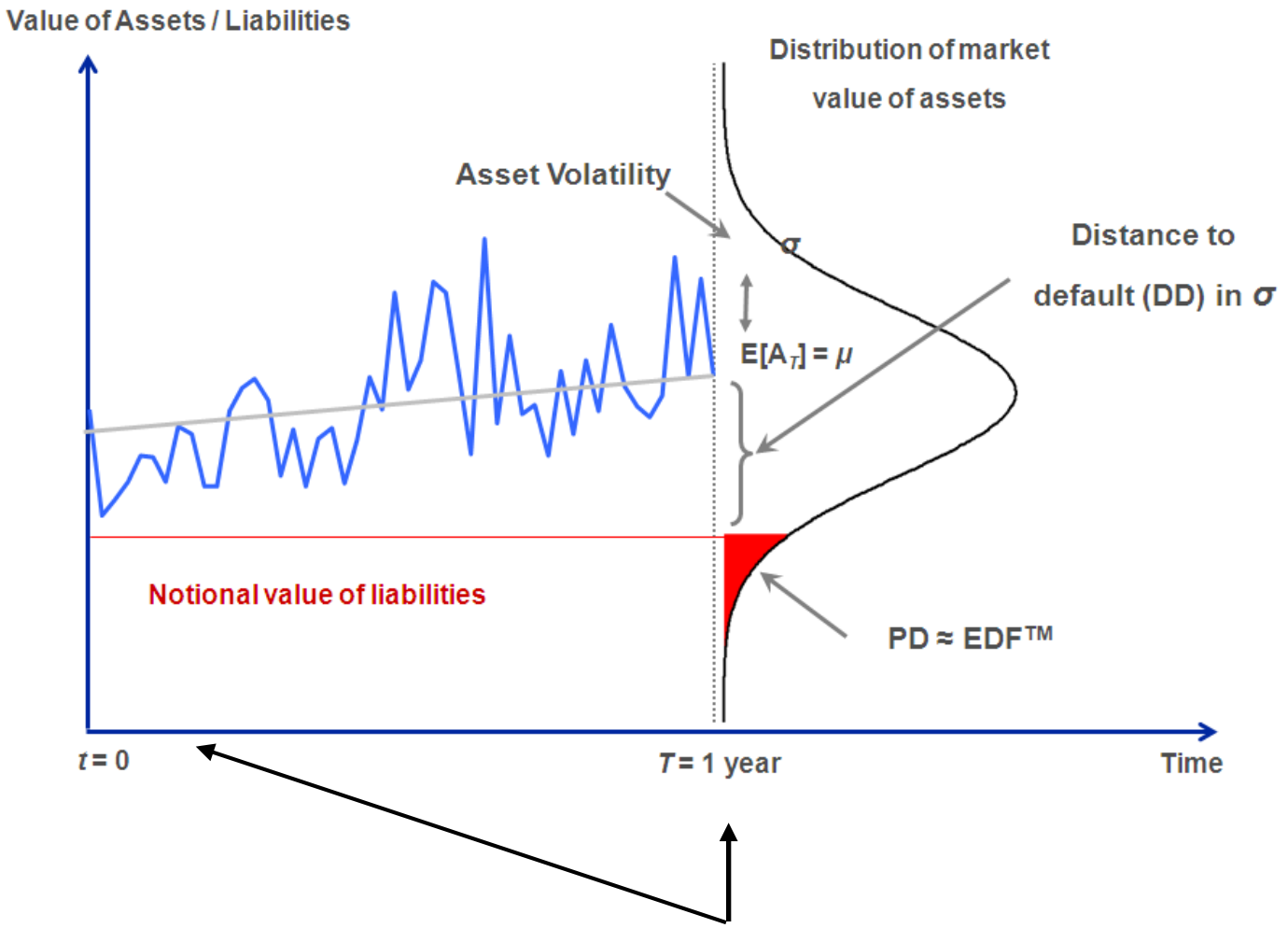


What was the risk?

- Whatever happened in the crisis, it raised near term credit spreads to very high levels for lots of firms.
- See the same phenomenon in short-term lending rates during the crisis
- Merton Model does not capture this risk
- Might call this **“liquidity risk”**
- Risk of a sudden demand for a large amount of cash when a firm is insolvent
- Is the short term credit spread a measure of this risk?

Modeling the liquidity risk

Figure 11 - Default Process in the Structural Model

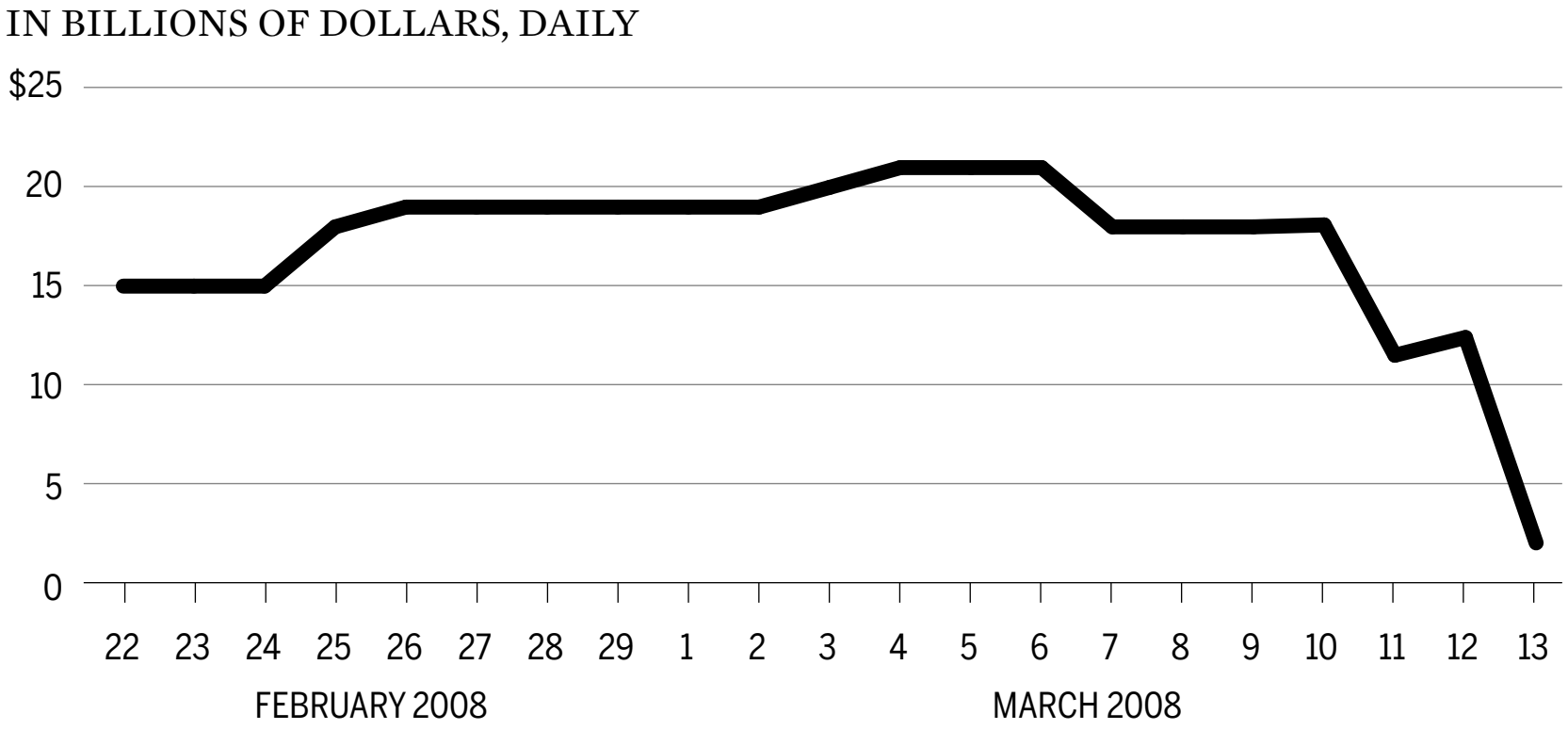


The payment date T can jump forward if short term creditors don't roll over debt. If insolvent, this triggers default

Example of a sudden demand for cash

Bear Stearns Liquidity

In the four days before Bear Stearns collapsed, the company's liquidity dropped by $16 billion.



SOURCE: Securities and Exchange Commission

Measuring the TBTF Subsidy

- a **pricing** versus an **engineering** approach
- pricing: how much firms would have to pay for funding without the TBTF policy under current market arrangements
  - a measure of the subsidy to each firm
  - this paper is an example of a pricing approach
- engineering: how much would it cost firms in the aggregate to implement safer market arrangements?
- Get different answers if their are spillovers in risk

An Engineering Approach to measuring the TBTF subsidy

- How much capital and long term debt do TBTF firms need to for the system as a whole to have to have stable funding?
- Is the cost gap between their current (or pre-crisis) funding model and a safe (immune to runs) funding model the subsidy afforded by TBTF policies?
- **Can we measure this funding cost gap?**