

# The New Basel Capital Accord and Questions for Practice and Research

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\* Any views expressed represent those of the author only and not necessarily those of the Federal Reserve Bank of New York or the Federal Reserve System

# Objectives of the New Basel Accord

- Develop a measure of capital adequacy that is:
  - More risk-sensitive
  - Better suited to the complex activities of large, internationally-active banks
  - Capable of adapting to the evolution of markets and products
- Encourage improvements in risk management and emphasize internal assessments of capital adequacy and market discipline
- Key challenges for development and calibration include:
  - Better alignment of regulatory and economic capital measures
  - Desire to balance risk sensitivity for all bank activities against overall detail and complexity

# Questions for Practice and Research on 3 Fronts

- 1) Impact of proposal on banking system
  - Currently tailored for developed markets
    - Impact on emerging markets?
  - Pro-cyclicality
  - Competition
  
- 2) Risk analytics
  - Validation
  - The 4 parameters: LGD, PD (transition matrices), Maturity, Exposure
  - Correlation and credit portfolio analysis
  - Operational risk metrics
  - Coherent risk measures
  
- 3) Pillars 2 and 3
  - Supervision, regulatory forbearance
  - What to disclose?
  
- We focus broadly on estimation and validation
  - Leave out any discussion of the challenges of rating system structure development and implementation

# 1) Impact of Proposal on Banking System

- Target audience: internationally active (developed market) banks
- Designed to provide incentives for banks to enhance their risk management capabilities
  - Capital under advanced IRB should be  $<$  than under standardized approach
- Will that be true for emerging markets?
  - BIS 2 parameters “calibrated” for target audience
  - 1996 Market Risk Amendment provided dis-incentive for EM banks to migrate to internal models approach
  - Will this be true for BIS 2?

# 1) Impact of Proposal on Banking System

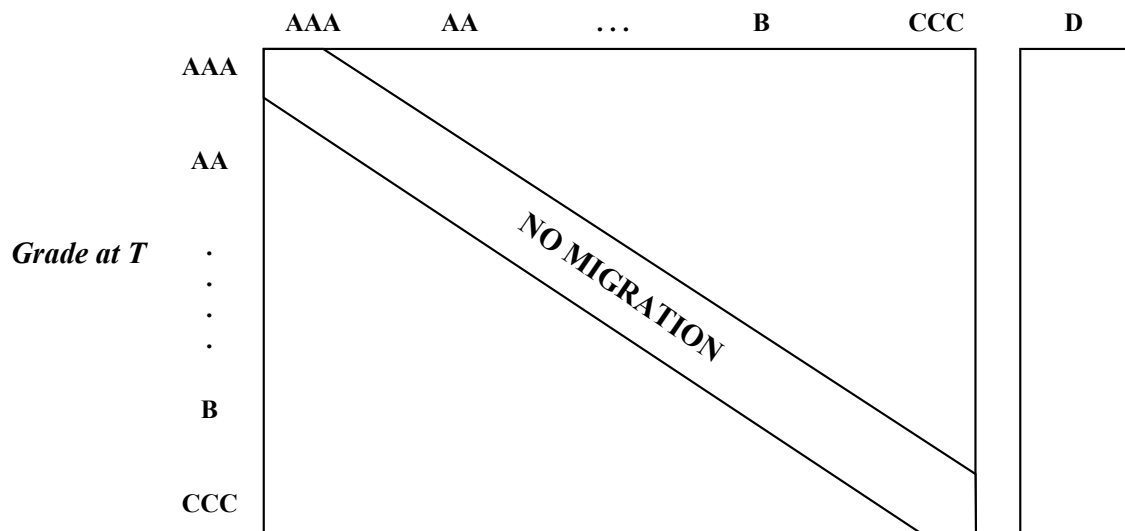
- “Lucas critique:” the very introduction of the New Basel Accord will likely influence bank behavior
  - Through increased transparency and disclosure of risk measures/metrics
  - Through changes in behavior due to better measurement
    - Risk-based pricing
    - Capital allocation
    - Compensation design
  
- Impact on competitiveness, especially in U.S. (bifurcated capital framework)
  - More mergers as freed up capital is redeployed?
  - Or is it good to be small
    - No requirement to invest in risk management systems

## 2) Risk Analytics: LGD, EAD, M

- LGD: relatively little is known about what drives variance in loss-given-default
  - Secured vs. unsecured
  - Place in the capital structure (senior vs. subordinated)
  - Business cycle sensitivity (high/low default years)
- EAD: very little research on what drives exposure at default for commitments
  - Credit cards
  - Corporate loan commitments (CP backup, other)
- Impact of different maturities
  - Linear (proportional) or non-linear?

## 2) Risk Analytics: PD

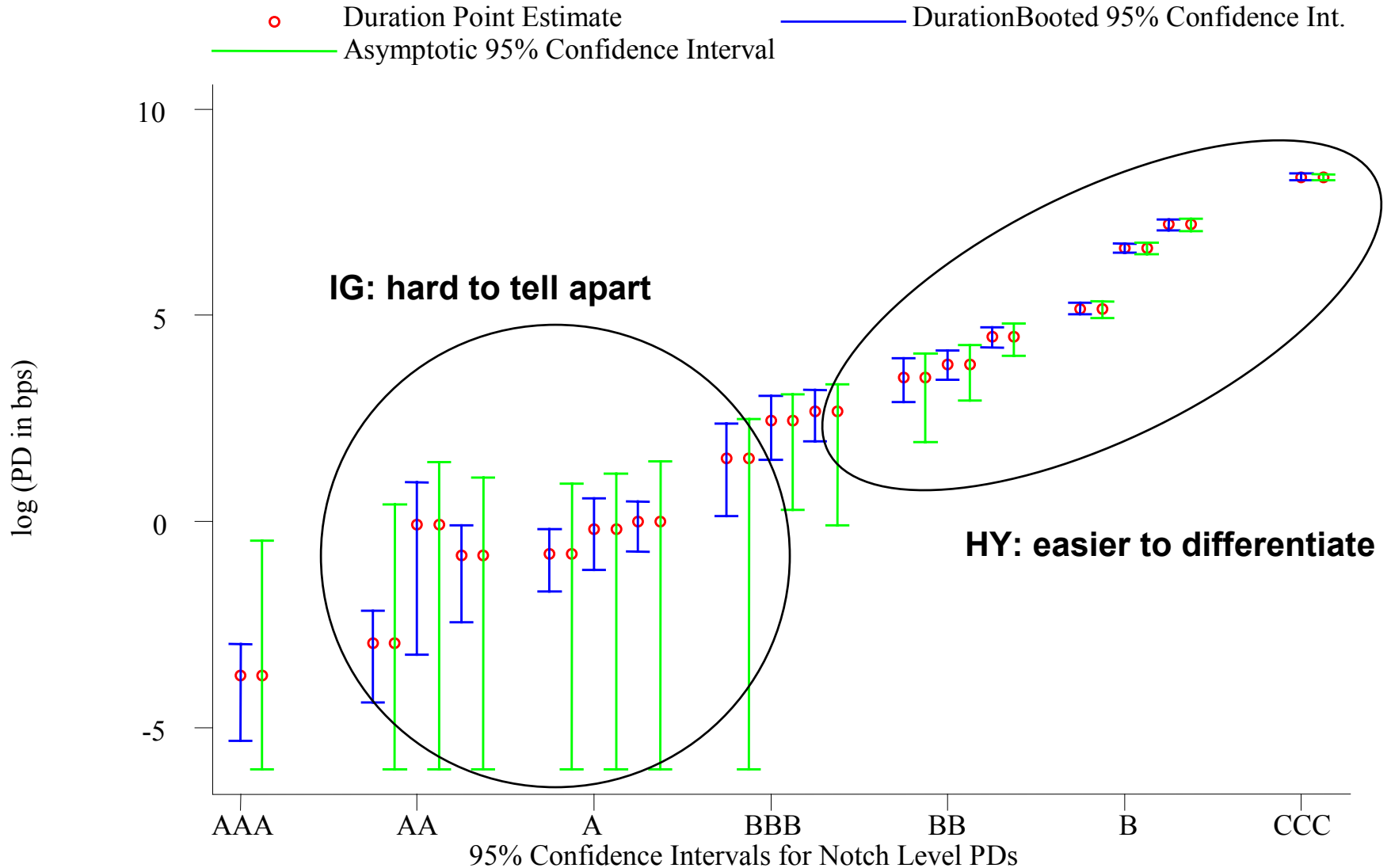
- Perhaps most important parameter is PD
  - Just the last column of the transition/migration matrix



- Different methods for estimating matrix from ratings histories (either public bonds or internal customers)
  - Cohort: most popular, not efficient
  - Duration: used by credit asset traders, efficient
- How to bucket into ratings (how to discretize the estimated PDs)
  - How many buckets/ratings?
  - How do I know if I have too many/few?

# Estimating PDs from Credit Rating Histories

- S&P, 1981-2002 (U.S. obligors only)



## 2) Risk Analytics: PDs

<b>Rating</b>	<b>Cohort</b>	<b>Duration</b>
<b>AAA</b>	0	0.030
<b>AA</b>	1.036	0.397
<b>A</b>	5.368	0.927
<b>BBB</b>	38.72	11.35
<b>BB</b>	149.99	67.65
<b>B</b>	684.74	506.01
<b>CCC</b>	3092.24	4381.22

Annual PDs in Basis Points

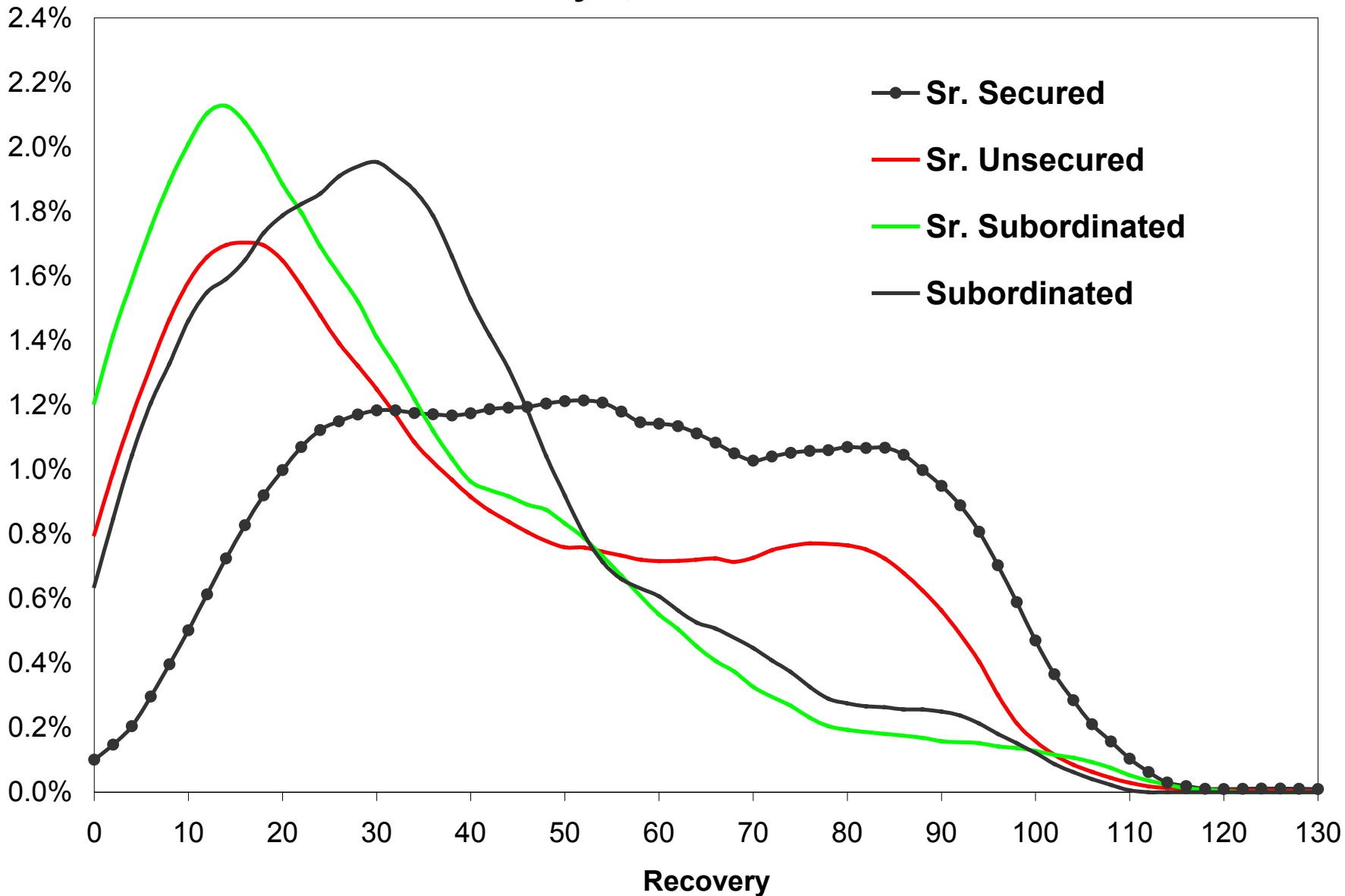
S&P, 1981-2002, Global (all obligors)

## 2) Risk Analytics: LGD

- Recoveries tend to be bimodal (two-humped)
  - Most of the time you recover either a lot or little
- Seniority really matters, secured instruments do better
  - It's good to be first in line and have more than just a contract to back up the credit
- Recoveries are systematically lower in recessions
- Industry seems to matter
  - Some industries (utilities) yield higher recoveries than others (small retailers) ... and then there is telecom ...
- Size of exposure seems to have no strong effect on losses

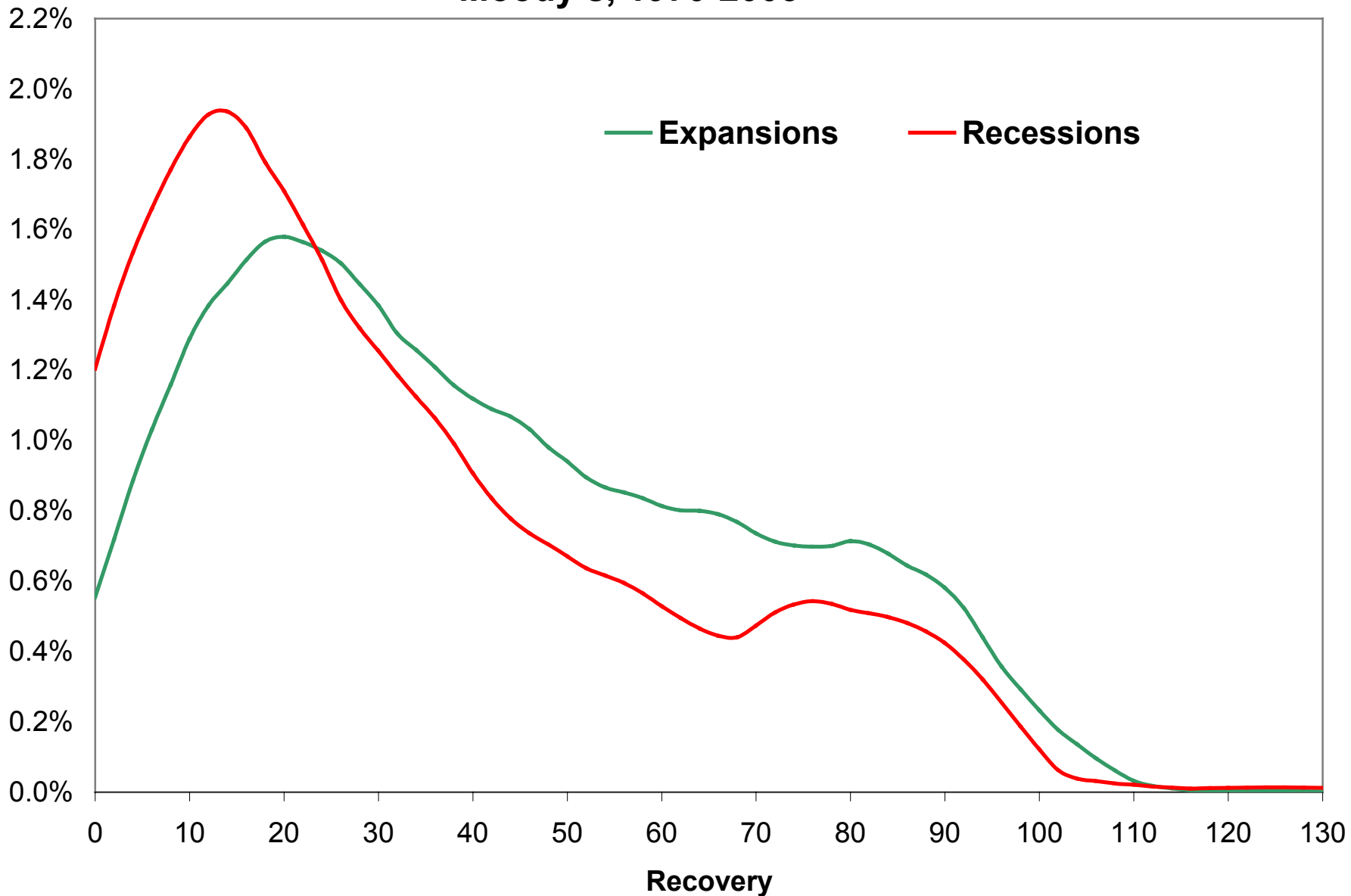
# Recovery by Seniority

Moody's, 1970-2003



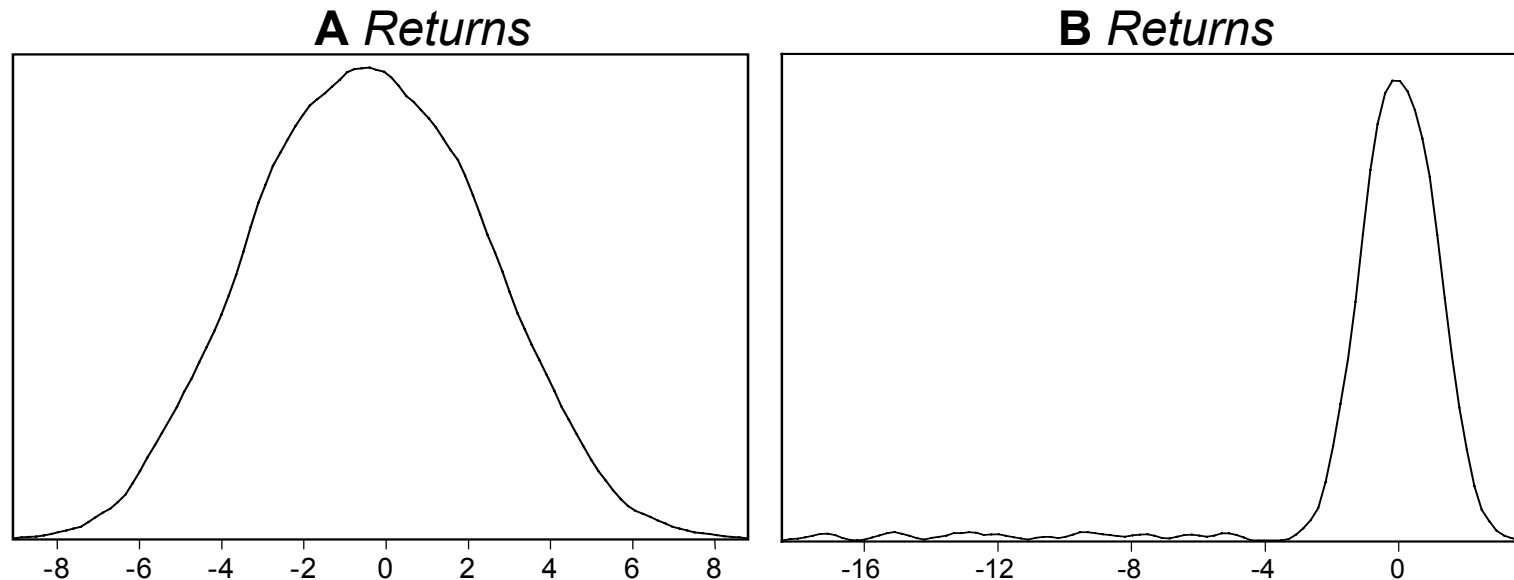
# Recovery across the Business Cycle

Moody's, 1970-2003



## 2) Risk Analytics: Coherent Risk Measures

- Which distribution would you rather face?



- 95% VaR for both is the same: -5%
- Need to go out further into the tails to detect a difference in VaR (e.g. 99%)
- How to avoid this: tail-VaR, or mean of beyond-VaR tail
  - Why just mean? Not all tails are the same.....
  - Wouldn't you rather look at the whole loss dist<sup>n</sup>?

### 3) Pillars 2 and 3

- Leave Pillar 2 (Supervision) aside
- Pillar 3: disclosure and market discipline
  - Idea is that banks tell market the relevant and important risk measures
  - Banks notoriously opaque (Morgan (2002))
- What's relevant and important?
  - E.g. VaR not coherent; maybe tail-VaR better
  - Research on mkt risk disclosure (the “easiest to measure” risk) suggests simple info like % trading revenue no worse than VaR (Jorion (2002), Hirtle (2003))
  - Basic leverage ratio no worse at predicting bank default than RBC (Estrella, Park & Peristiani (2000))

**Thank You!**

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