

# Discussion of Rowe: Risk Management beyond VaR

## FRB Atlanta Financial Markets Conference

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**Til Schuermann**

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## David Rowe has written an expansive piece on how hard risk management really is – borrowing from a panoply of thinkers

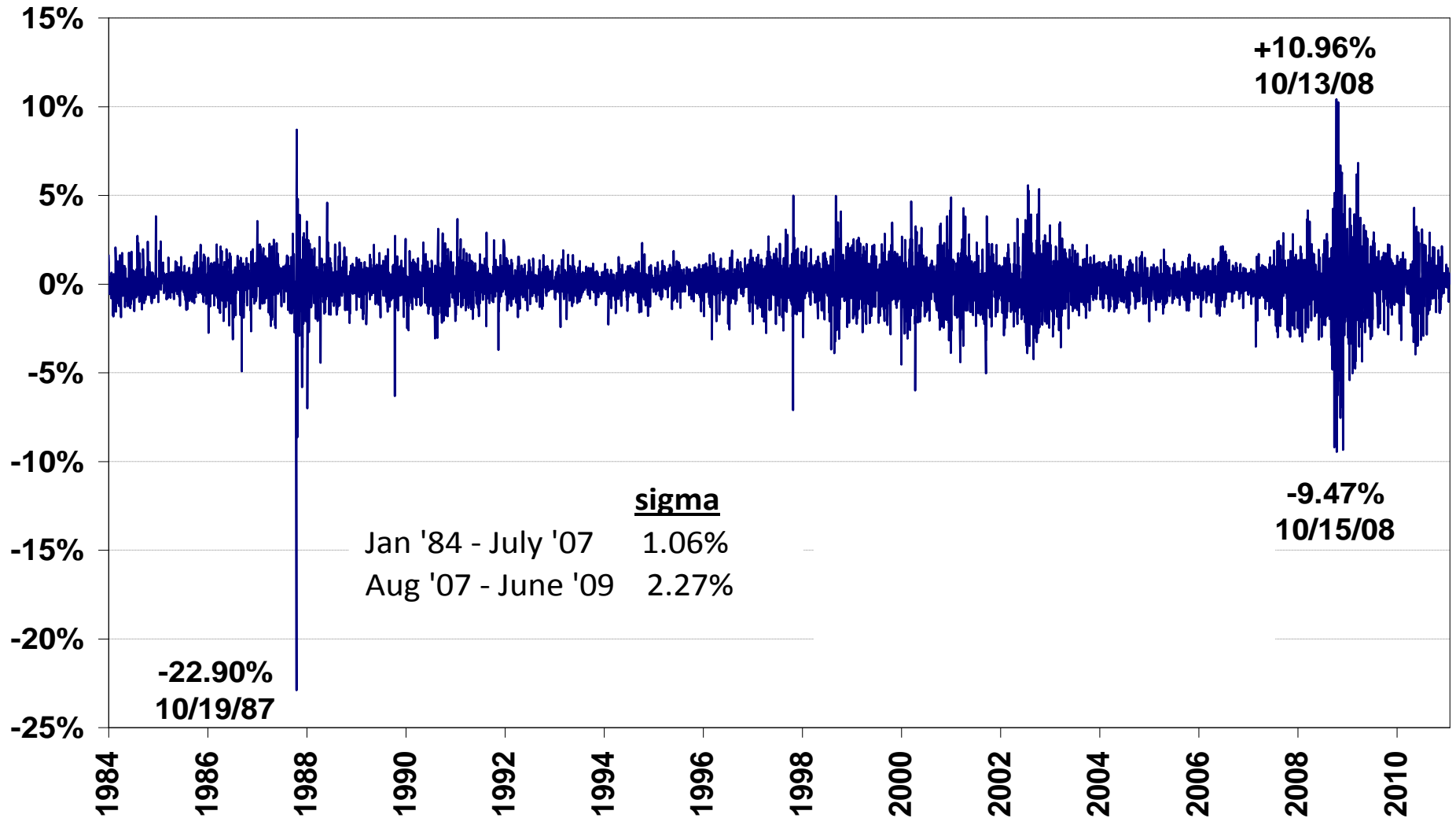
- Peter Bernstein
- Frank Knight
- Nassim Taleb
- Andy Haldane
- Charles Goodhart
- Alan Greenspan
- Herb Stein
- Myron Scholes
- Michael Lewis
- Nicholas Sarkozy
- Gabriel Garcia Marquez
- Albert Camus
- Rudyard Kipling
- William Shakespeare
- Mark Twain
- Yogi Berra
- Sisyphus
- Norwegian proverb

# Why is risk management so hard?

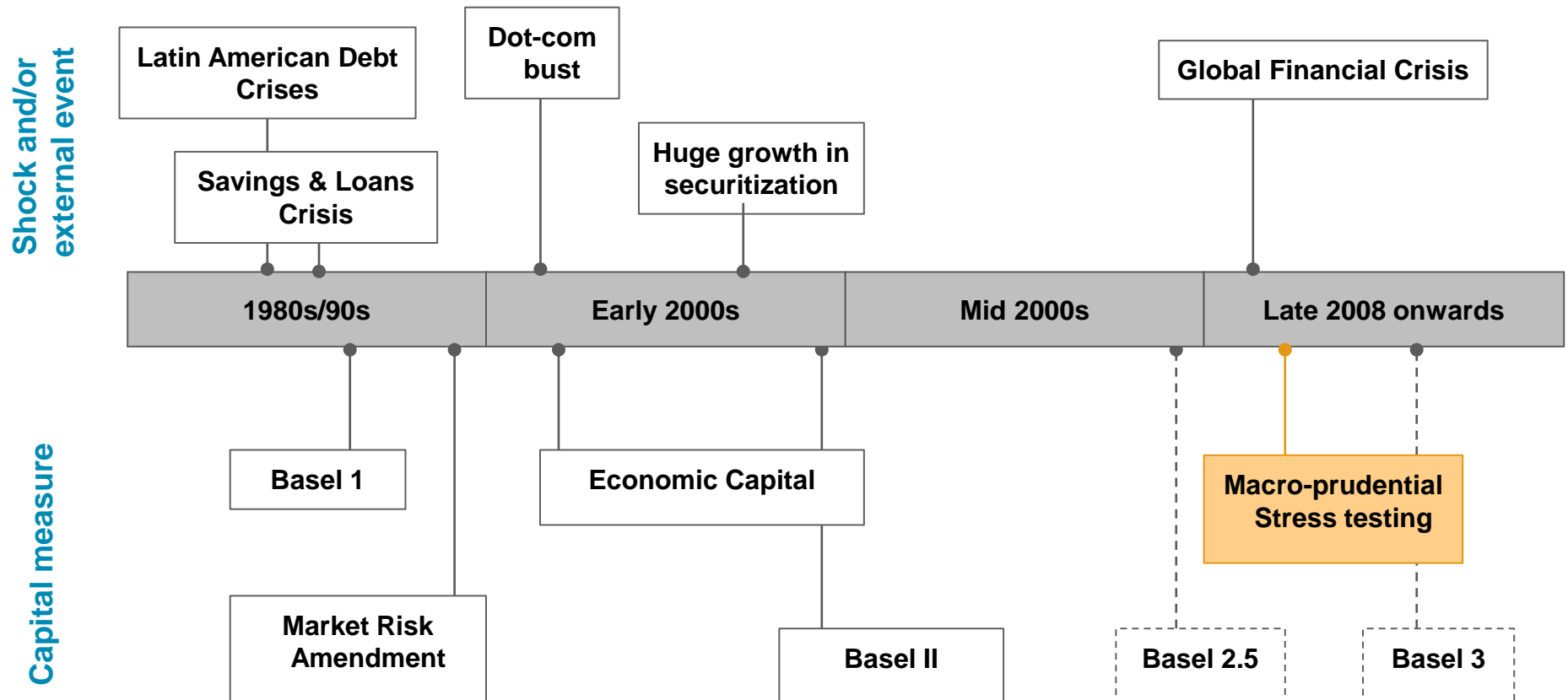
- We don't observe enough events to characterize the distribution of outcomes
  - Operational risk
  - Corporate & structured credit risk
- We thought things were homogeneous (similar, same), but they're not
  - AAA corporate and AAA structured credit
- Things change
  - Correlations
- OK, so things change – but they change predictably
  - Volatilities
- I am exogenous to the market
  - Ahhhh..... No.
- Everything all at once
  - Wrong parameters, wrong distribution, deteriorating relationships, negative feedback loops
  - The loss of the risk-free asset

It's not all hopeless: volatilities ARE predictable

## S&P500, Daily Returns 3 Jan. 1984 - 27 Jan. 2011



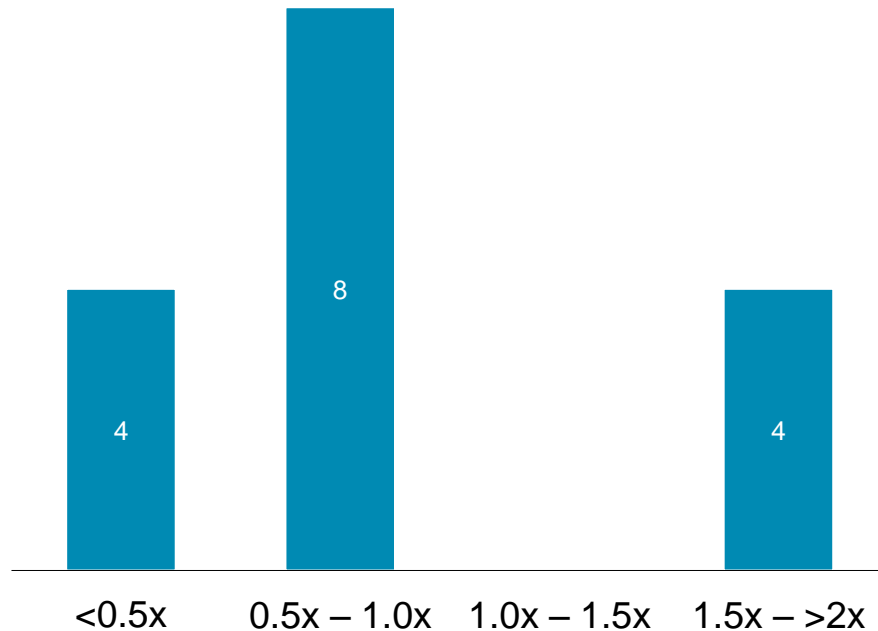
# Arms race of capital metrics – capital is once again the scarce resource



# ECAP failed to predict capital needed to cover crisis losses across the banking industry

## Ratio of crisis losses to ECAP for 16 institutions with publicly stated ECAP

ECAP vs. crisis losses



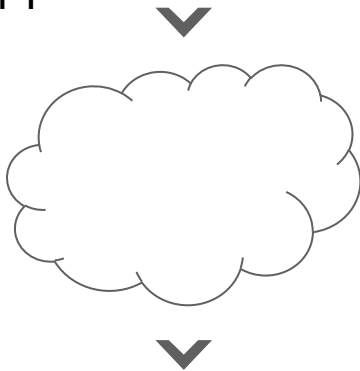
- There are several instances of spectacular failures
- Even where crisis losses were “only” 0.5x–1x ECAP, those firms were forced to take drastic action
  - ECAP is a “one-hit” framework
  - Inadequate buffers remained to avoid capital raising
- ECAP models suffered from overly optimistic calibrations (e.g. mortgages) and severely underestimated correlations
  - Reflects poor linkage of product losses to systematic risks
  - Did not adequately capture concentration risk

Source: Institution public disclosures, Oliver Wyman analysis

# Stress testing, in one form or another, involves mapping a view of the world (state space) to micro-outcomes (higher losses, lower revenues)

## Macro

- GDP
- Unemployment
- HPI



## Micro

- Business lending losses
- CRE losses
- Mortgage revenue
- Trading P&L
- ...

- CCAR-style stress testing is a great laboratory for exploring what might plausibly happen
  - It's concrete: I can grasp the scenarios
  - It's comprehensive: losses and revenues
  - It's dynamic: sort of like real life
- If stress testing is about historical relationships breaking down, how do you make sure the scenario is coherent?
  - Meaning: it comes from some plausible joint distribution
  - In a world where people react (Lucas critique)
- Linear, static, homogeneous in good times.....
  - Nonlinear in infinite ways
  - Dynamic and hard to pin down
  - But: perhaps actually not so heterogeneous due to herding (not sure this helps us.....)



## So .... What do I do? David is not a pessimist

- Beware of hubris, drunk with success, over-confidence
  - Practice humility, sobriety, skepticism
- Think expansively
- Entertain the possibility that the unthinkable might happen
  - Stress testing is a useful laboratory
  
- Is all stress testing futile? The Catch-22 of stress testing
  - By construction, the next crisis will not be one you stress tested for
- NO: one of the most important risk innovations
  - For financial institutions (supervised or not)
  - For the supervisors

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