Puzzling Observation

- Number of AAA firms (S&P): now 4, down from 34 in 1985!
- Number of AAA and AA rated firms have decreased, while the total number of firms with a rating has increased.

Question:
Why have so many high rated firms disappeared?

Scores of big companies have lost their AAA status in recent years as it became seen in board rooms as more of a straitjacket than a path to riches.

Eric Dash, New York Times, August 2, 2011

My conjecture:

Ratings have value as a signal, but this value has diminished as information proliferation has increased.

Story

- Then: CRA ratings were the primary source of firm information, few had access to SEC filings, firm prospectus,. . .
- Now: Bloomberg, WSJ Online, etc. all provide market data and firm analysis; firm info is readily available
- Rating and third-party market analysis both act as signals of firm's well-being or quality
- Cost required to achieve high ratings

Investors now have direct information on firm quality –
high quality firms no longer willing to incur cost of high ratings

Environment

- Firms are of **type** $\theta \epsilon \{g, b\}$, unobserved by all
  - determines probability the firm's project is successful
- Economy receives a **signal**, $\nu \epsilon \{h, l\}$, about firm's type
  - probability signal is 'accurate' is ω
  - assume $\omega > 0.5$
- The firm chooses resources to devote to the rating process, economy then observes **rating**, $\kappa \epsilon \{A, B, C\}$
  - accuracy of rating depends on investment

Timing

1. Ex ante:
   - known: public signal (κ or l)
   - unknown: type (g or b)
2. Interim:
   - firm chooses i
   - rating is formed and observed (A, B or C)
   - debt contracts are issued, interest rates conditioned on κ and ν
3. Ex post:
   - outcome of project is realized (0 or y)
   - debt is paid if project pays off

Model

- Firms:
  - endowed with a project that might earn y if investment is received
  - project requires investment $d = 1$, fixed
  - $\mathbb{1}(\kappa, \nu) = 1$ if investment is received, 0 otherwise

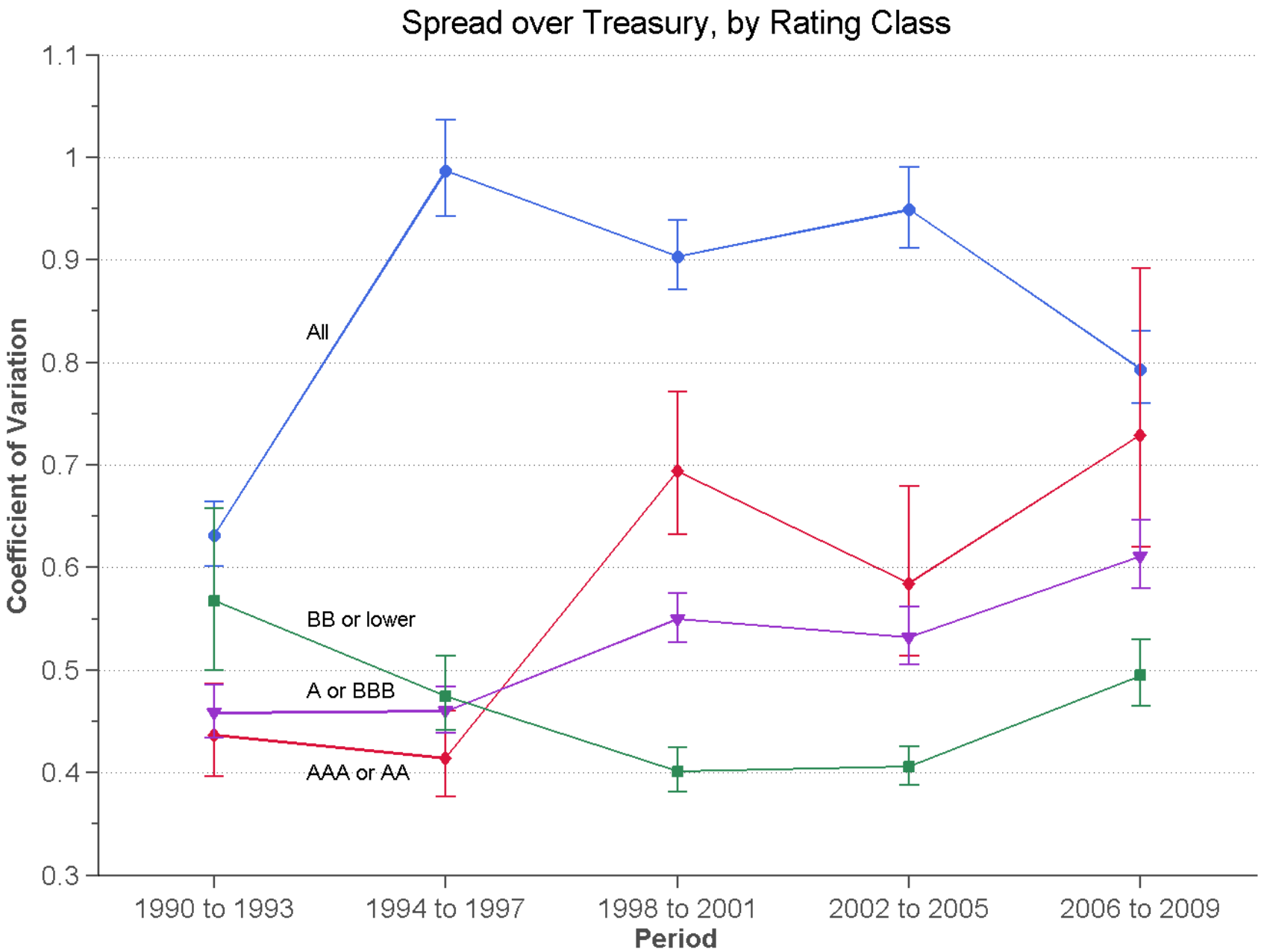
$$V(\nu) = \max_{i} \; -c(i) + \mathsf{E}_{\theta,\kappa}\left[\mathbb{1}(\kappa,\nu)\left(y - R(\kappa,\nu)\right)|\nu\right] \tag{1}$$

- Investors:
  - investors observe ν and κ
  - have access to risk free outside option which pays r
  - expected return is then:

$$\mathsf{E}_{\theta}\left[R(\kappa,\nu)|\kappa,\nu\right] \tag{2}$$

Price Dispersion

- As information proliferates bond prices are affected
  - Investors condition on ratings *and* public information
- Standard deviation of bond prices increasing for each rating class...
  - but so is the mean...
  - so use coeffecient of variation (CV) instead
- Can test for statistical significance


Spread over Treasury, by Rating Class
Coefficient of Variation
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
All
BB or lower
A or BBB
AAA or AA
1990 to 1993
1994 to 1997
1998 to 2001
2002 to 2005
2006 to 2009
Period