Credit Crisis of 2007/8

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Balance Sheet Size and Leverage: Households

Figure 1:
Non-Financial, Non-Farm Corporations

Figure 2: [scatter plot showing the relationship between leverage growth and total assets growth]
Security Dealers and Brokers

Figure 3:
Figure 4:

Total Assets and Leverage

Lehman Brothers

Merrill Lynch

Morgan Stanley

Bear Sterns

Goldman Sachs

Citigroup Markets 98-04
Figure 5: Leverage and Total Assets Growth
Asset weighted, 1992Q3-2007Q4, Source: SEC
Explaining Leverage

Capital $K$ is set to total value at risk (VaR)

$$K = V \times A$$

Hence, leverage $L$ satisfies:

$$L = \frac{A}{K} = \frac{1}{V}$$

Procyclical leverage arise from *counter*-cyclical nature of value at risk. *Measured* risk is low during booms and high during busts.
Assets and VaR/Assets

Log VaR/Assets vs. Log Assets

Bear Sterns  Goldman Sachs
Lehman Brothers  Merrill Lynch
Morgan Stanley  Fitted values
Figure 6:

VaR/Equity and Leverage

![Graph showing log VaR/Equity and Log Leverage for Bear Sterns, Goldman Sachs, Lehman Brothers, Merrill Lynch, and Morgan Stanley from 2001-3 to 2007-3.]