2008 Financial Crisis Example

Melissa Spencer, in a 2012 MIT Master's thesis, demonstrated how CAST could be used to understand the collapse and rapid acquisition of the investment bank Bear Stearns in March 2008. Only a small part of the CAST analysis is included here. See Appendix A for a link to the complete thesis.

<u>Loss Event</u>: Bank Insolvency

Definition: Solvency is defined as satisfying the basic equation Assets = Liabilities + Equity. Insolvency occurs when this equation does not hold.

<u>Hazards</u>:

H1: Bank cannot pay debts (illiquid assets)
- Safety Constraint: Bank must be able to pay debts as they come due
- Safety Constraint: Bank must have adequate short-term assets and/or capital to cover short-term liabilities.

H2: Bank has greater liabilities than assets less equity
- Safety Constraint: Bank must always have a solvent balance sheet
- Safety Constraint: Bank must not acquire liabilities that exceed its assets and capital

H3: Market is unable to determine value of a financial instrument
- Safety Constraint: Market Participants must be able to determine value of market instruments
- Safety Constraint: All financial instruments traded in the market must have adequate information available to determine their inherent relative value.

H4: Market is unable to determine creditworthiness of institution
- Safety Constraint: Market Participants must be able to determine creditworthiness of bank
- Safety Constraint: There must be a clear and unbiased source of information about Bank's health available to the market

The primary components involved in the loss were:

- Asset Contributors
  - Traders at firm (buy and sell assets on the market)
  - Creditors to the firm (lend money or assets to firm)
  - Clients of the firm (provide fees and assets)
- Liability Controllers:
  - Management of Bear Stearns (responsible for protecting shareholders and managing risk
  - Traders at Bear Stearns (responsible for day to day balance sheet)
- Equity Contributors: Shareholders
- Federal Reserve Bank:
  - Overseas markets, sets interest rates, serves as lender of last resort to commercial banks
- Securities and Exchange Commission
  - Monitors balance sheets and health of investment banks
  - Monitors details of securities on the market
- U.S. Department of Treasury

Control Structure: