

# Forecasting for Accountants:

Should We Use Judgment or Rules-based Systems?

Kenneth A. Posner CPA FRM

Center for Accounting Research and Education 2010  
Conference: Forecasting and Industry Fundamentals

4/10/2010

Why would *accountants* want to  
*forecast*?

STALKING  
— *the* —  
BLACK  
SWAN



RESEARCH AND DECISION MAKING IN  
A WORLD OF EXTREME VOLATILITY

Kenneth A. Posner

 Columbia Business School  
Publishing

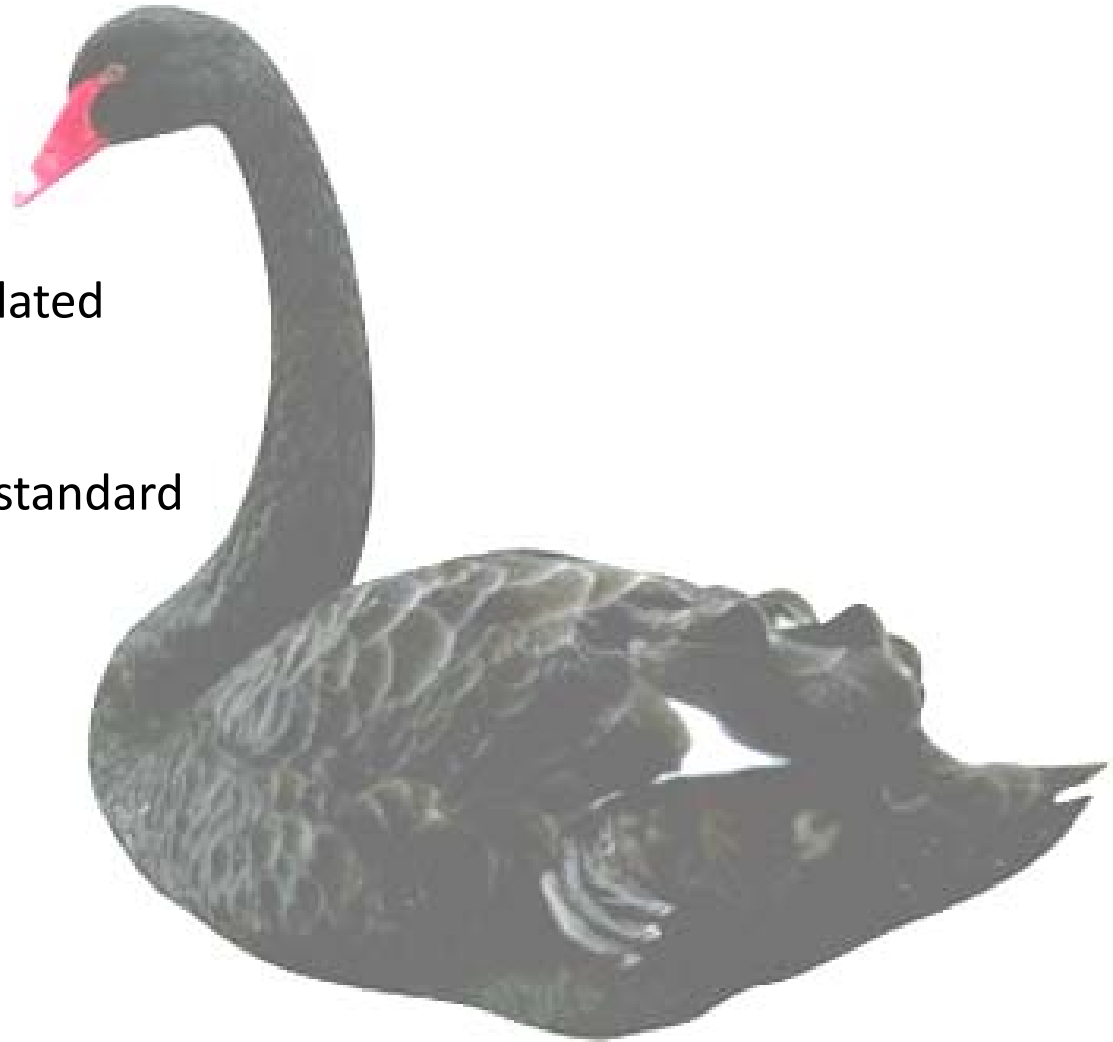
## *Our agenda*

- **Introduction to Black Swans and their Causes**
- **The Subprime Crash as a Failure in Forecasting**
- **The Role of Judgment**



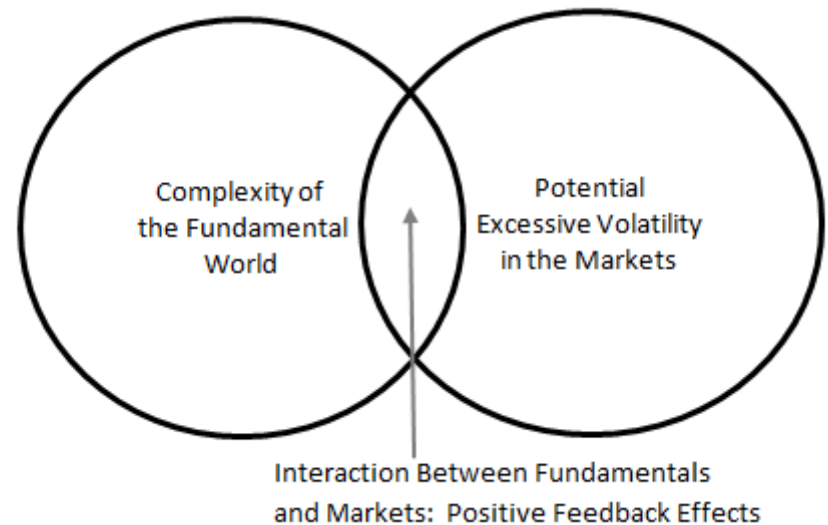
## What is a “Black Swan”?

- Surprise
- Impactful
- Could not have been extrapolated from past data
- Security price change  $> \sim 3\text{-}4$  standard deviations



# Where do Black Swans come from?

- Butterfly effects (weather)
- Self-organized criticality (earthquake)
- Interactions between market and fundamentals
- Positive feedback effects
- Lurking causative variables



# Forecasting: A Task for Humans or Computers?

High-powered  
Computer Analytics



Human Intuition

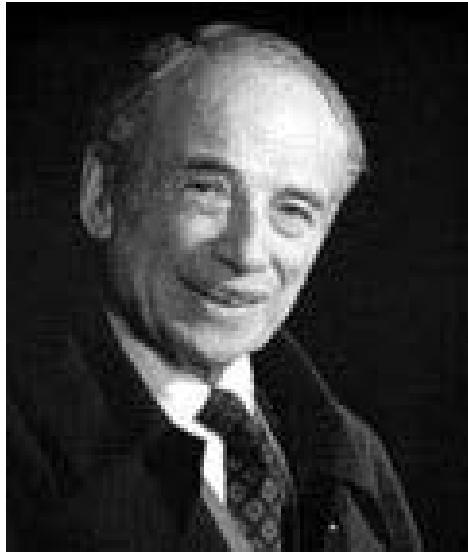


An enormous and almost unequivocal research literature implies expert judgments are rarely impressively accurate and virtually never better than a mechanical judgment rule....The implications for practice seem clear: Whenever possible, human judges should be replaced by simple linear models.

-- Reid Hastie, Robyn Dawes, 2001



# Forecasting stock prices: Is it even possible?



Benjamin Graham  
Dean of Fundamental Research



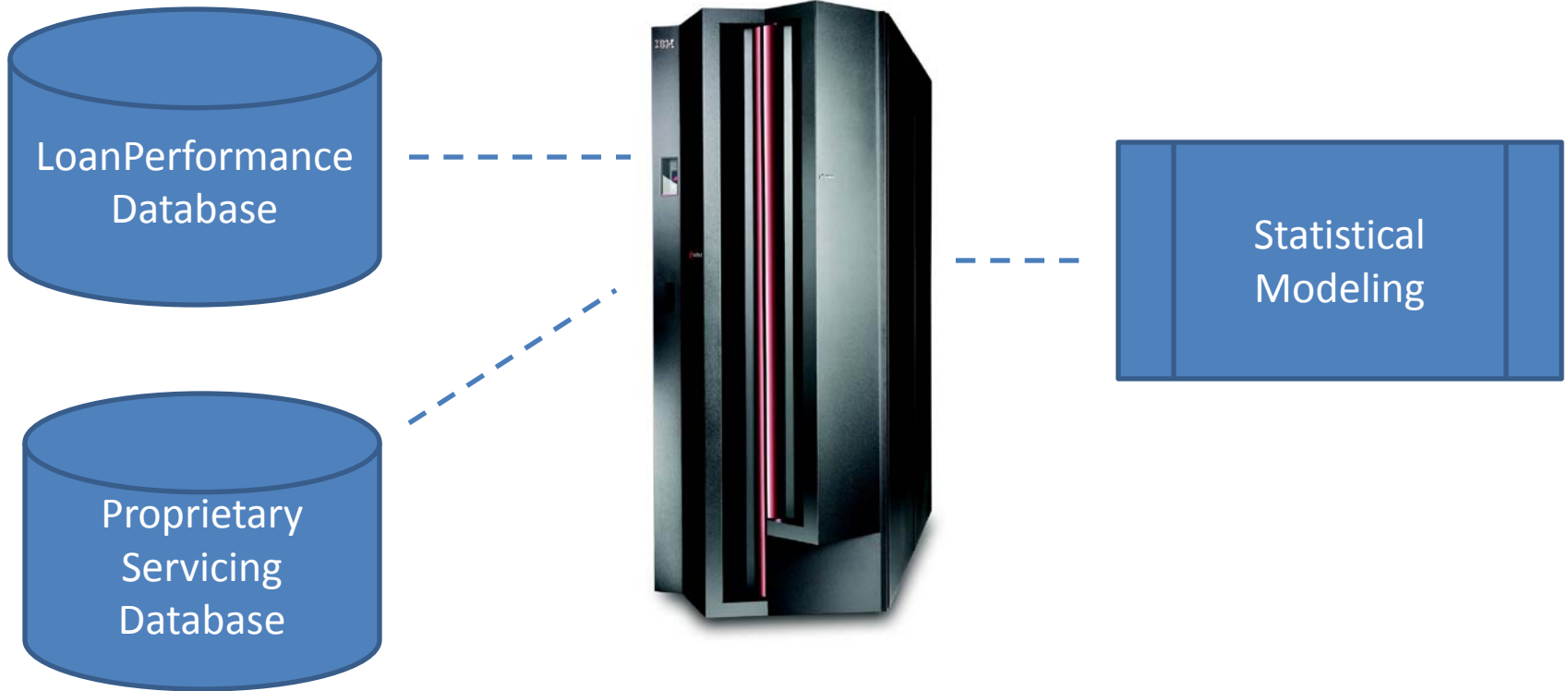
Gene Fama  
Dean of Efficient Market Theory

- Under the Efficient Market Theory, fundamental research cannot help analysts forecast stock prices
  - the market has already discounted all available information

# **Understanding the Subprime Mortgage Crash of 2007-2010 as a Failure in Forecasting**



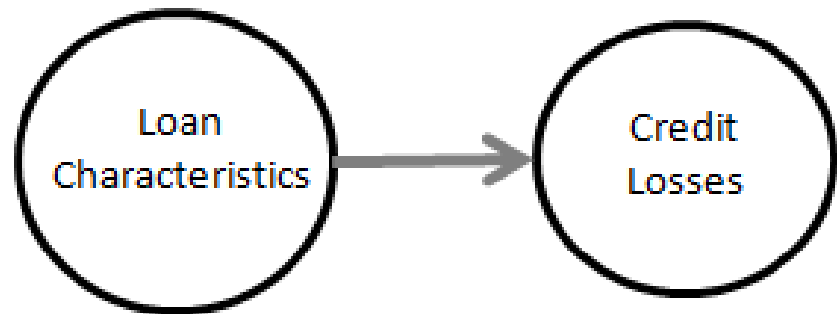
# Subprime Loss Forecasting



# First Generation Subprime Mortgage Loss Models

## Loan Characteristics

- FICO score
- Loan-to-value ratio
- Debt/income ratio
- Property type
- Loan type (floating/fixed)
- Purpose (purchase/refi)



# Second Generation Subprime Mortgage Loss Models

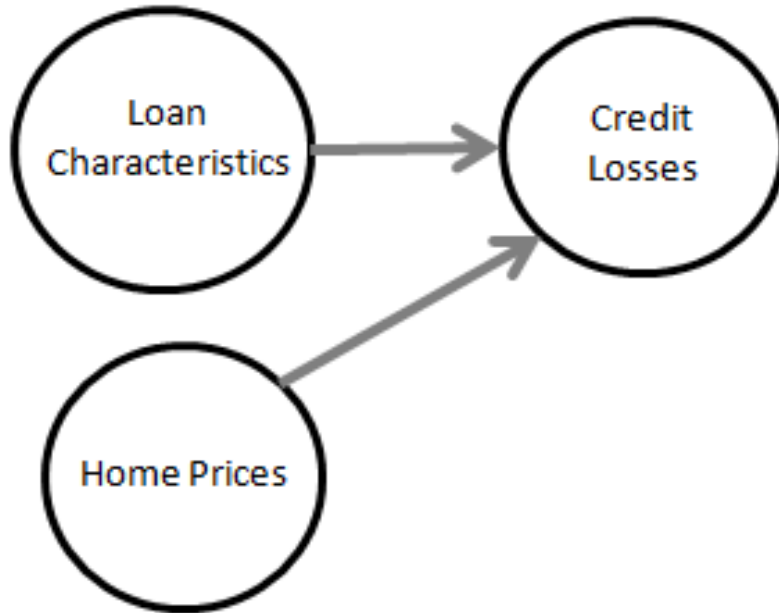
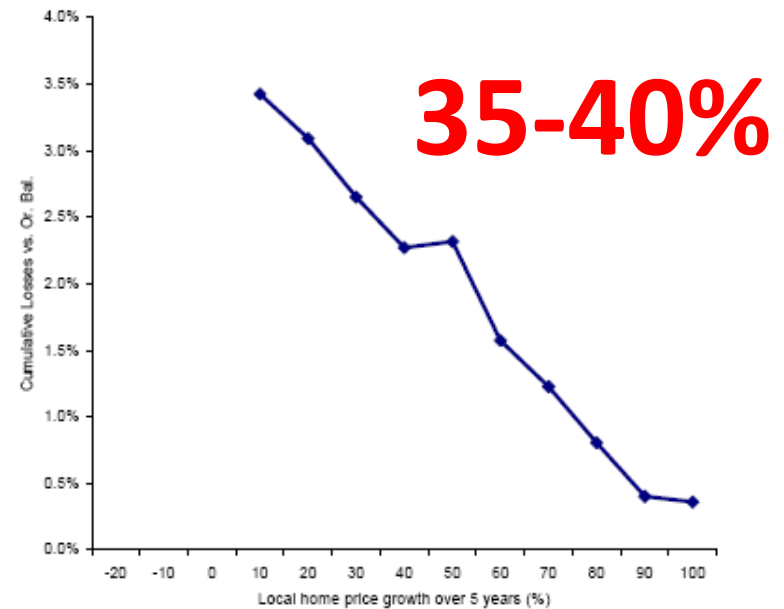


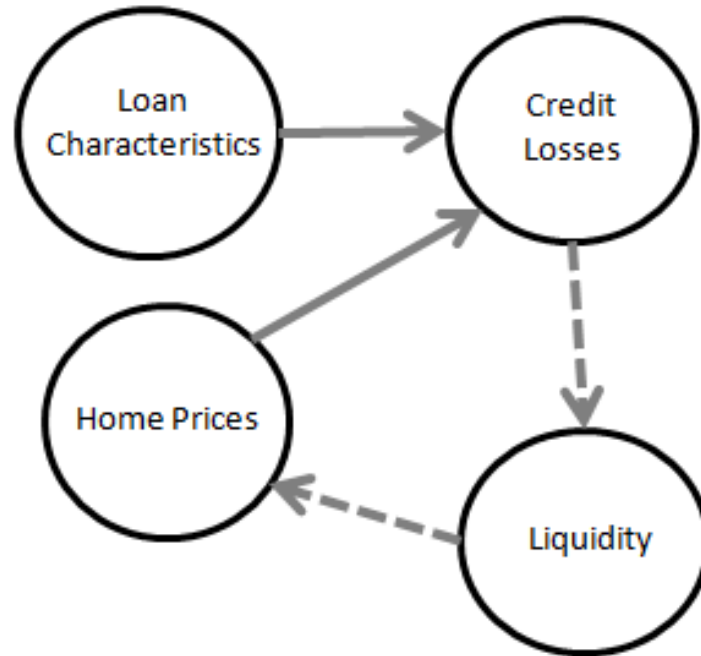
Exhibit 4-3

## Subprime Losses Have Been Sensitive to Home Price Trends



Source: Morgan Stanley ABS Research, LoanPerformance. Based on data 2000-2005.

## The 22-standard deviation surprise...



*...resulted from positive feedback effects associated with the inflation and bursting of a global liquidity bubble*

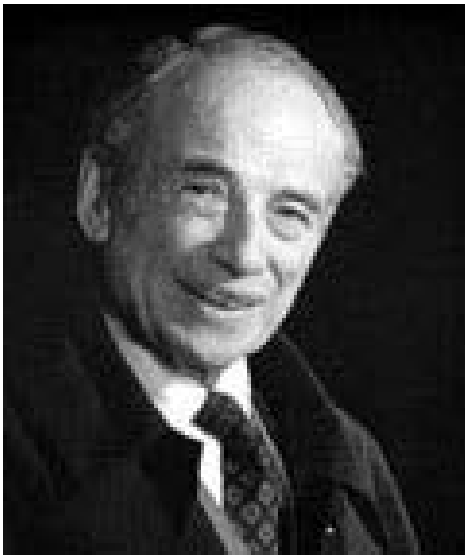


# Other Casualties of the Subprime Crash

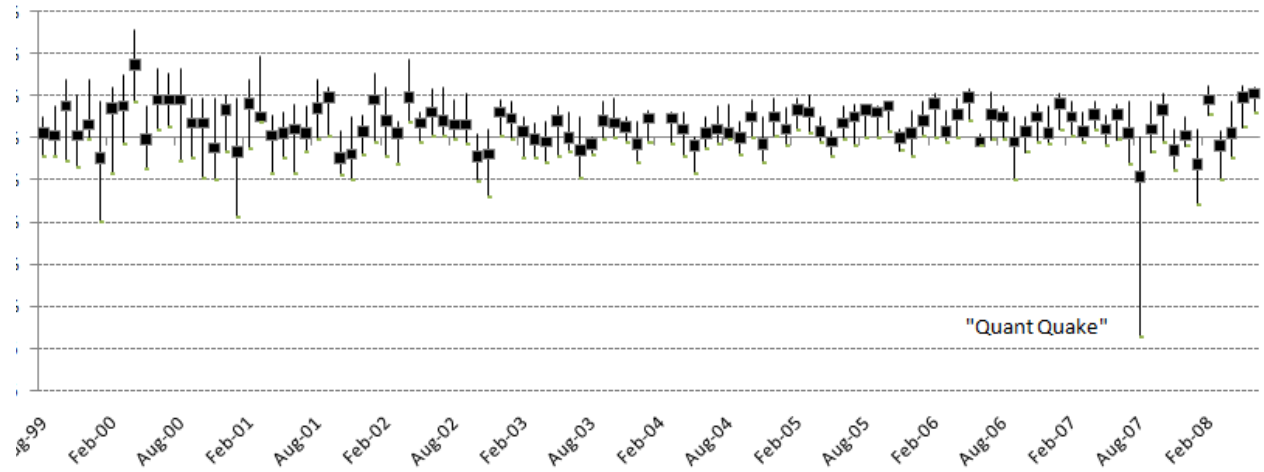




# Value Investors Buying Financial Stocks

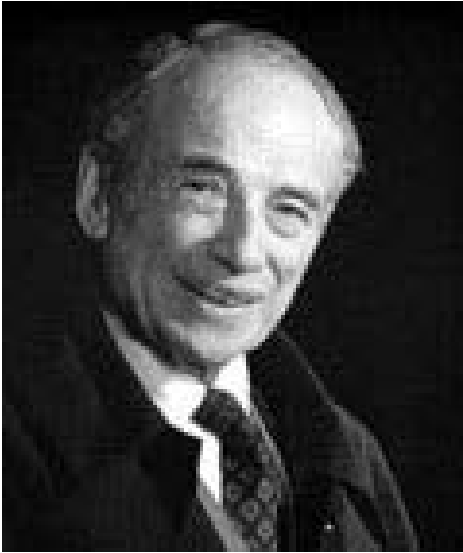


# The Quant Quake of August 2007



*By and large, [quant models] understated the risks as they were not calibrated for quant managers/models becoming our own asset class, creating our own contagion.*

## Limits of Formula



[The decline in efficacy of this system] demonstrates an inherent characteristic of forecasting and trading formulas in the fields of business and finance. Those formulas that gain adherents and importance do so because they have worked well over a period, or sometimes merely because they have been plausibly adapted to the statistical record of the past. But as their acceptance increases, their reliability tends to diminish. This happens for two reasons: First, the passage of time brings new conditions which the old formula no longer fits. Second, in stock-market affairs the popularity of a trading theory has itself an influence on the market's behavior which detracts in the long run from its profit-making possibilities....The advent of popularity marked almost the exact moment when the system ceased to work well.

Benjamin Graham, *The Intelligent Investor*

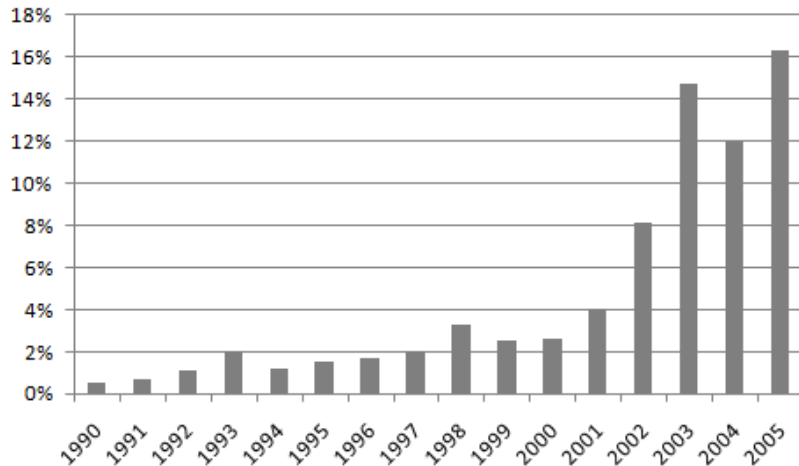
# Countrywide vs. the Hedge Funds



# The Rise of Countrywide...

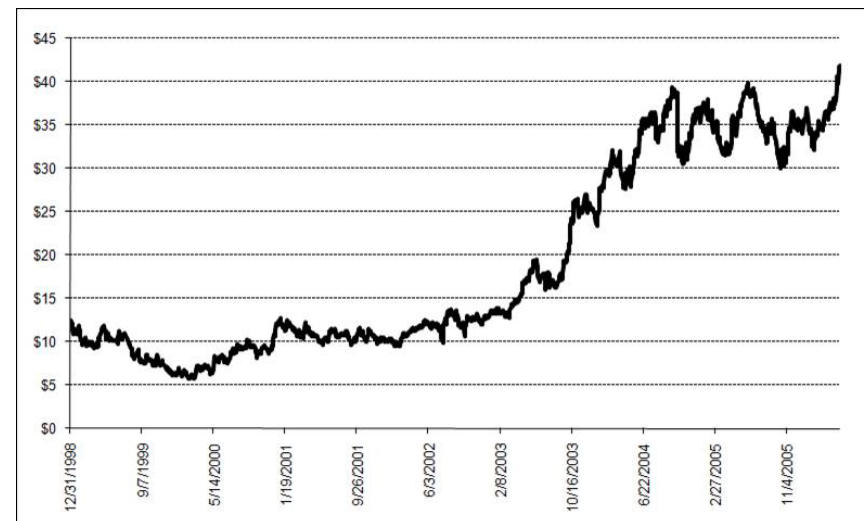
In the early 2000's, Countrywide emerged as the market's leading mortgage lender

Countrywide market share



Its stock price soared

Countrywide stock price

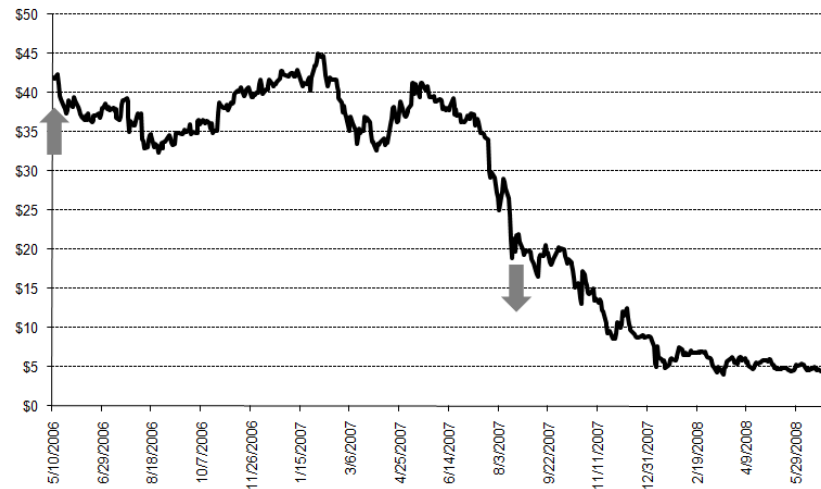


# The Fall of Countrywide

**ABX BBB Tranche Prices**



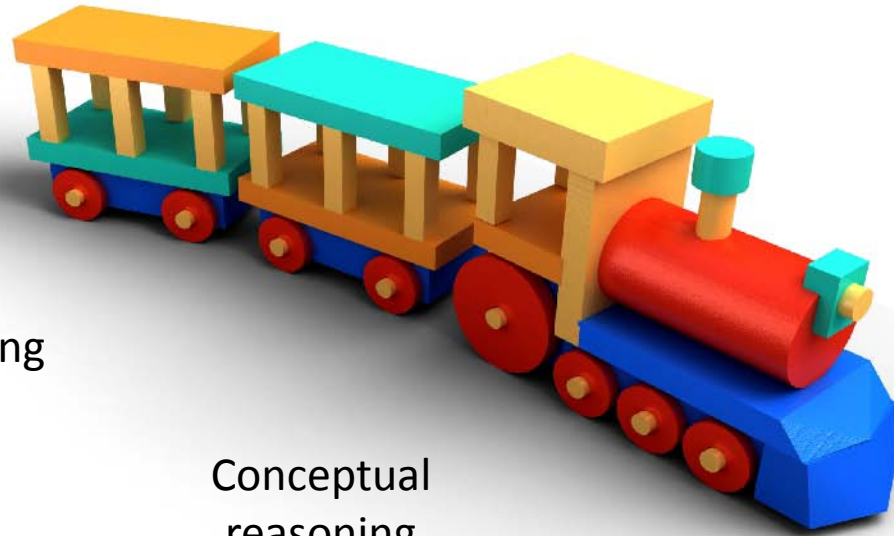
**Countrywide stock price**



- As securitization markets faltered in mid-2007, Countrywide refused to pull back on risky loans
  - 5-year strategic plan called for defending market share
  - Opted to hold new loans on balance sheet instead of selling
  - Lashed out at short-sellers as stock price falls
- \$10 bn in unsaleable loans became a fatal cash drain

# Subprime Meltdown Winners Made The Opposite Bet

- At the same time Countrywide was originating its last risky mortgages, a small number of hedge fund and other investors were drawing different conclusions
  - Saw parallel to credit cycles in emerging markets
  - Skeptical about sustainability of housing trends and subprime finance
- Intuitive reaction to new data, zeroed on critical causal variables
- Involvement of senior management



Modeling

Conceptual  
reasoning

Intuition



# Forecasting for Accountants



# The Role of Judgment

- Rules-based systems are necessary, but not sufficient
  - Faster speed, greater precision through automation
  - But doesn't recognize new variables or react to change
- Accurate forecasting requires *judgment*
  - Analyzing the analysis
  - Ongoing search for causal variables (fundamental research)
  - Understanding Black Swan drivers
  - Monitoring competition
  - Intuitive reaction to new data
  - Continual re-adjustment and learning