Lecture 5

Behavior Issues in Financial Markets

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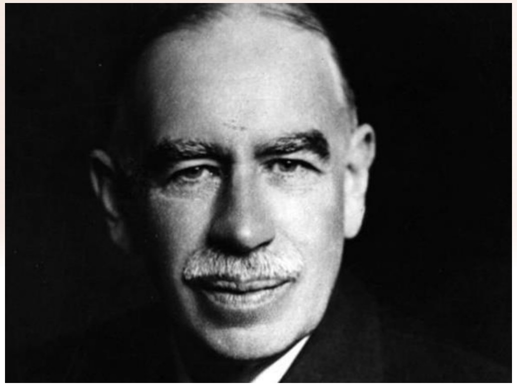
A few quotes



- *It is hard to see how any rational man can ever invest*

(John Maynard Keynes)

- *The market can stay irrational longer than you can stay solvent*

(J.M. Keynes)

- *There is nothing so dangerous as the pursuit of a rational investment policy in an irrational world*

(Still...J.M. Keynes)

Empirical Challenges

1). Irrational exuberance

– A long-term view of financial markets shows long, persistent up swings in asset prices

Bubbles

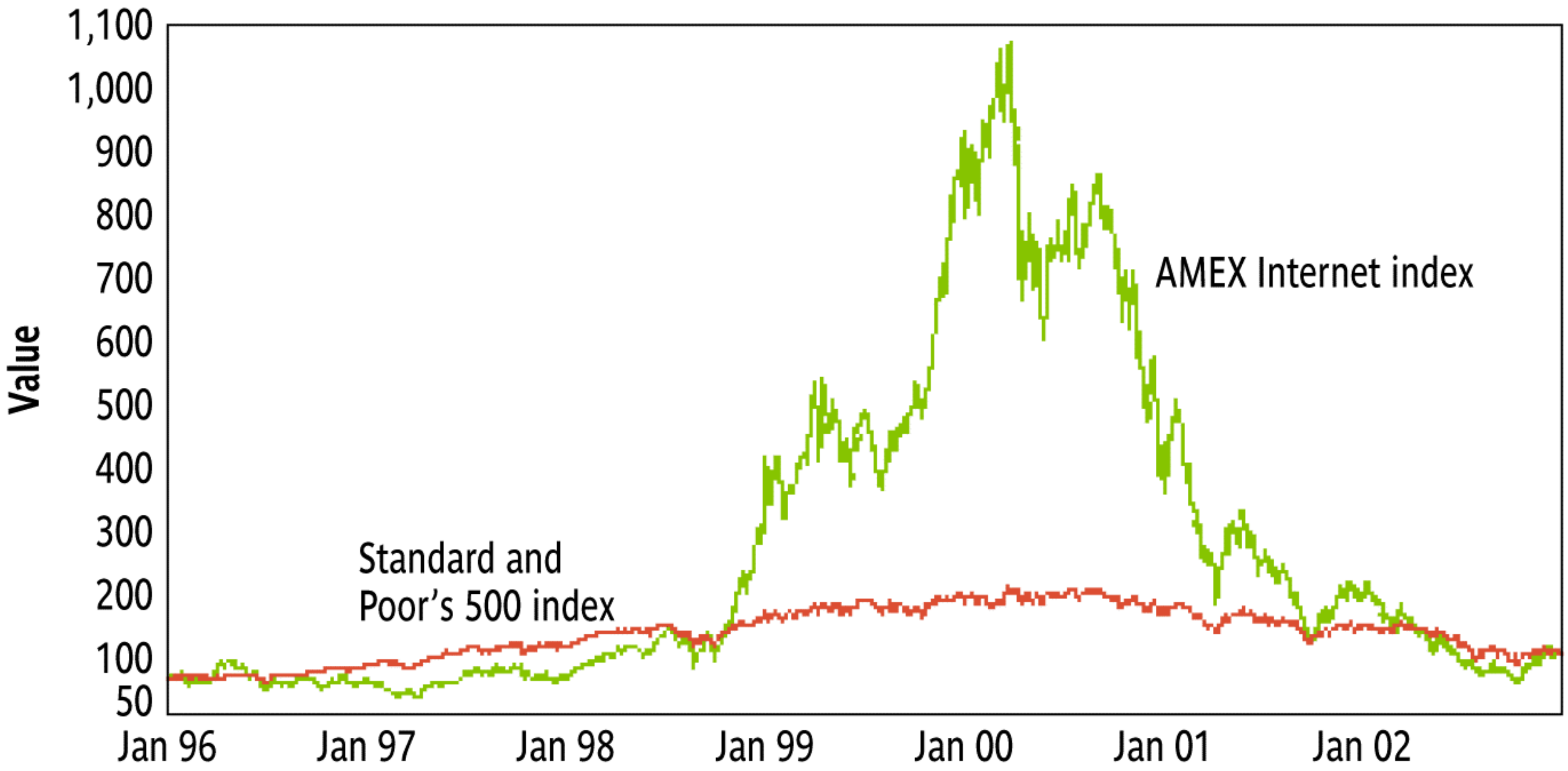
– What are economic bubbles

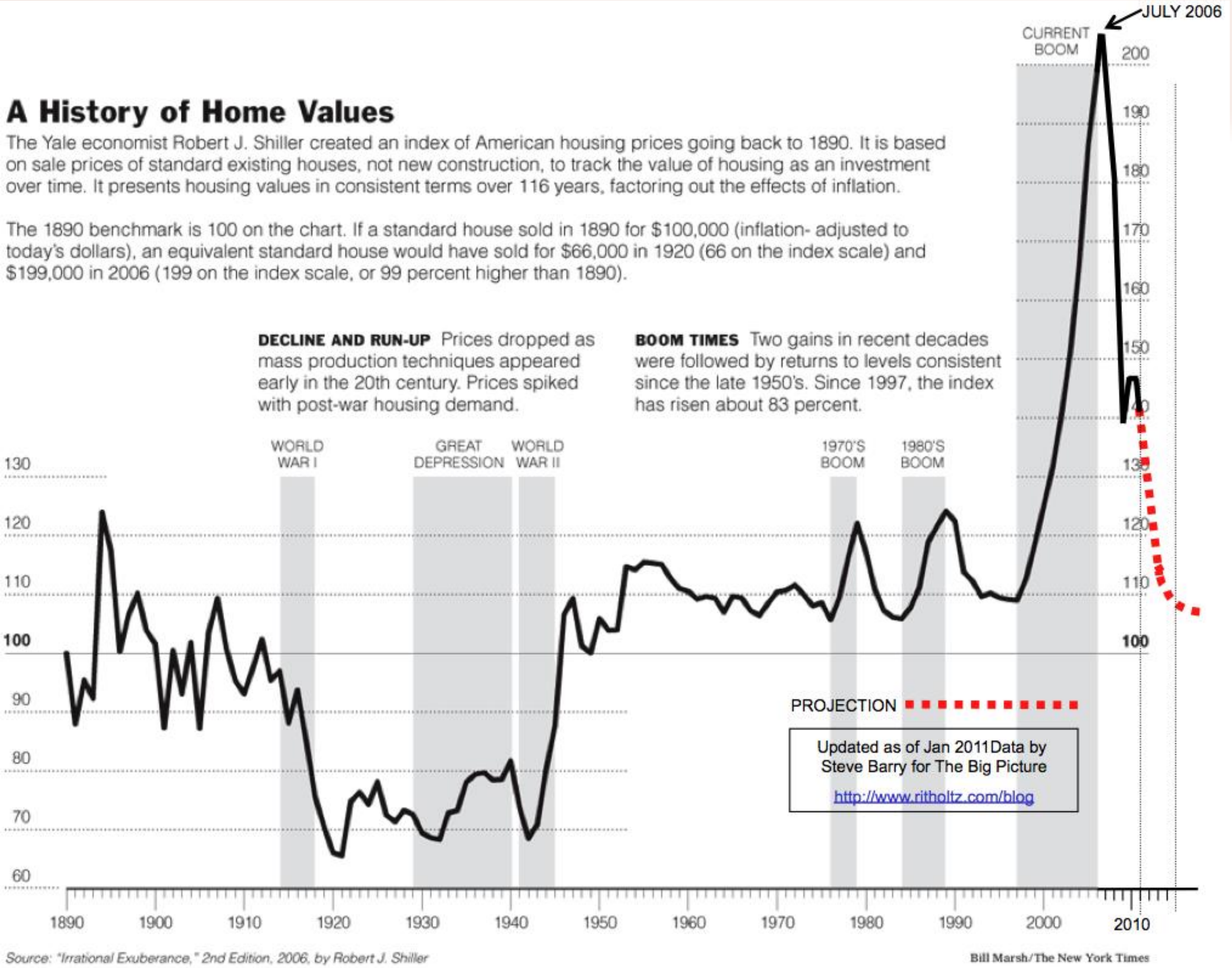
– In recent decades, think of the high-tech stock price bubble in the 1990s, so called the dotcom bubbles.

– …Or the house price bubble in the 2000s

- https://www.youtube.com/watch?v=r1j_AloLgQ8

Internet Bubbles




A History of Home Values
The Yale economist Robert J. Shiller created an index of American housing prices going back to 1890. It is based on sale prices of standard existing houses, not new construction, to track the value of housing as an investment over time. It presents housing values in consistent terms over 116 years, factoring out the effects of inflation.
The 1890 benchmark is 100 on the chart. If a standard house sold in 1890 for $100,000 (inflation- adjusted to today's dollars), an equivalent standard house would have sold for $66,000 in 1920 (66 on the index scale) and $199,000 in 2006 (199 on the index scale, or 99 percent higher than 1890).
DECLINE AND RUN-UP Prices dropped as mass production techniques appeared early in the 20th century. Prices spiked with post-war housing demand.
BOOM TIMES Two gains in recent decades were followed by returns to levels consistent since the late 1950's. Since 1997, the index has risen about 83 percent.
JULY 2006
CURRENT BOOM
WORLD WAR I
GREAT DEPRESSION
WORLD WAR II
1970'S BOOM
1980'S BOOM
PROJECTION
Updated as of Jan 2011Data by Steve Barry for The Big Picture
http://www.ritholtz.com/blog
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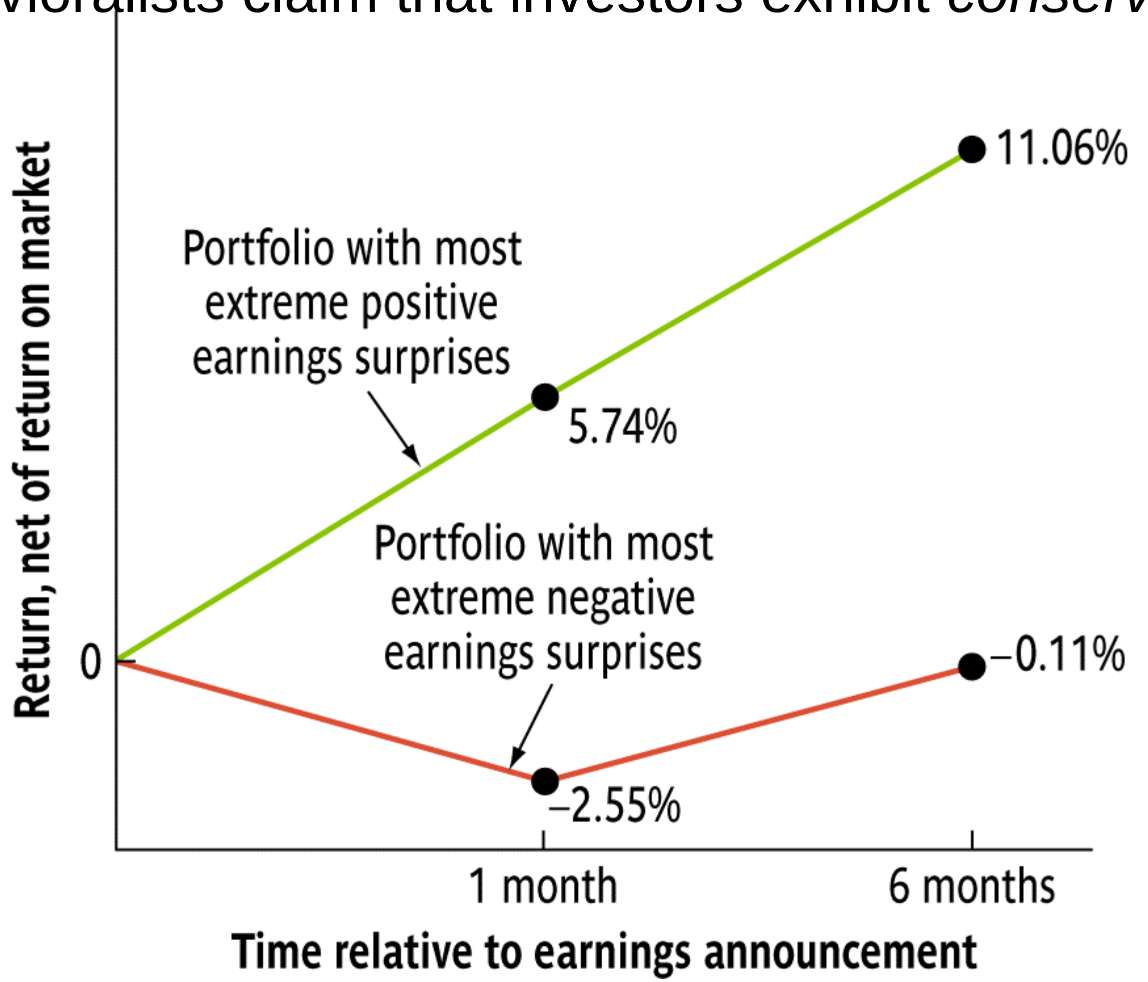
Source: "Irrational Exuberance," 2nd Edition, 2006, by Robert J. Shiller
Bill Marsh/The New York Times

Panics and Crashes

- Most bubbles ends with crashes
- Crashes are unexpected
  - On October 19, 1987, the stock market dropped between 20 and 25 percent on a Monday following a weekend during which little surprising news was released
  - A drop of this magnitude for no apparent reason is inconsistent with market efficiency

2). Earnings Surprises

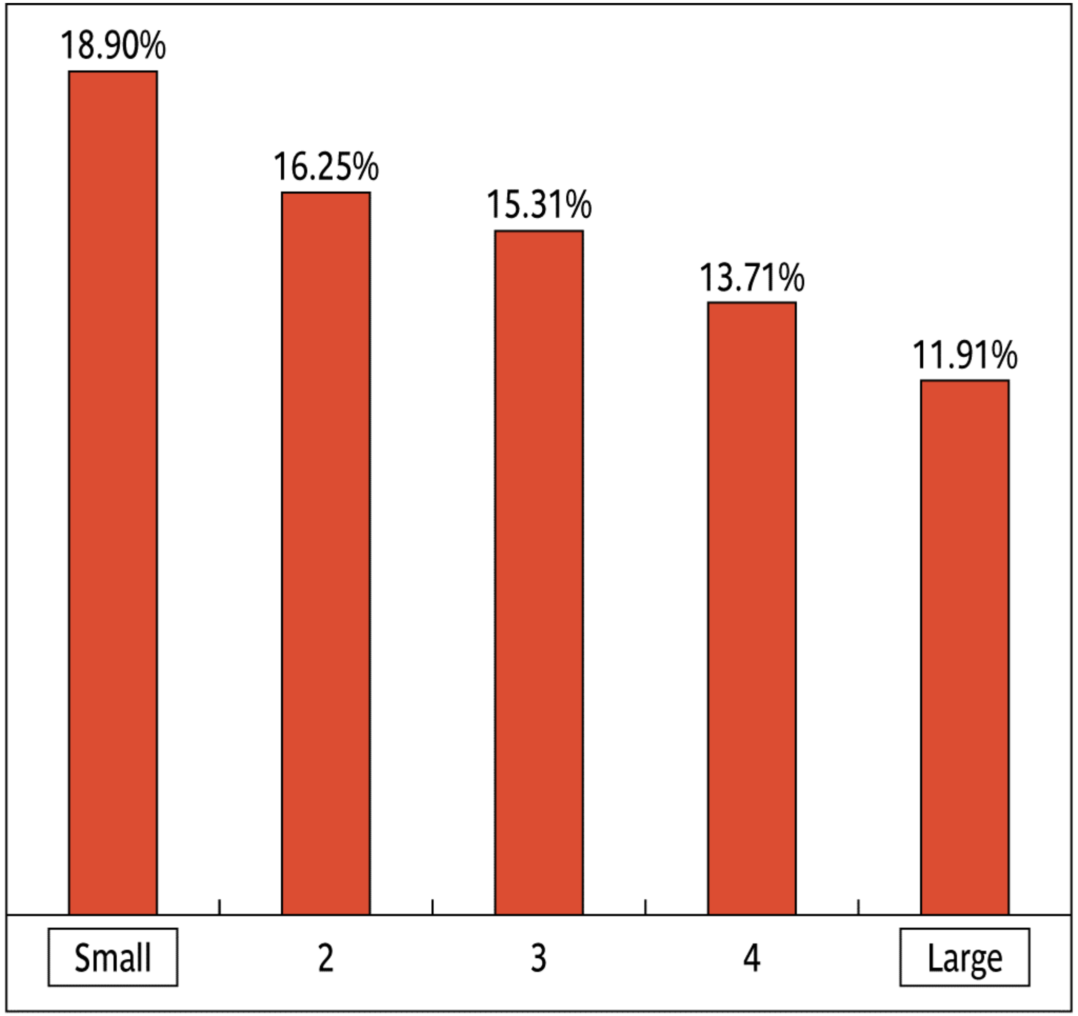
Stock prices adjust slowly to earnings announcements
Behavioralists claim that investors exhibit *conservatism*



Source: Adapted from Table 1 of A. Kolasinski and X. Li, 'Are corporate managers savvy about their stock price? Evidence from insider trading after earnings announcements', *Journal of Accounting and Public Policy* (2009).

3). Firm Size

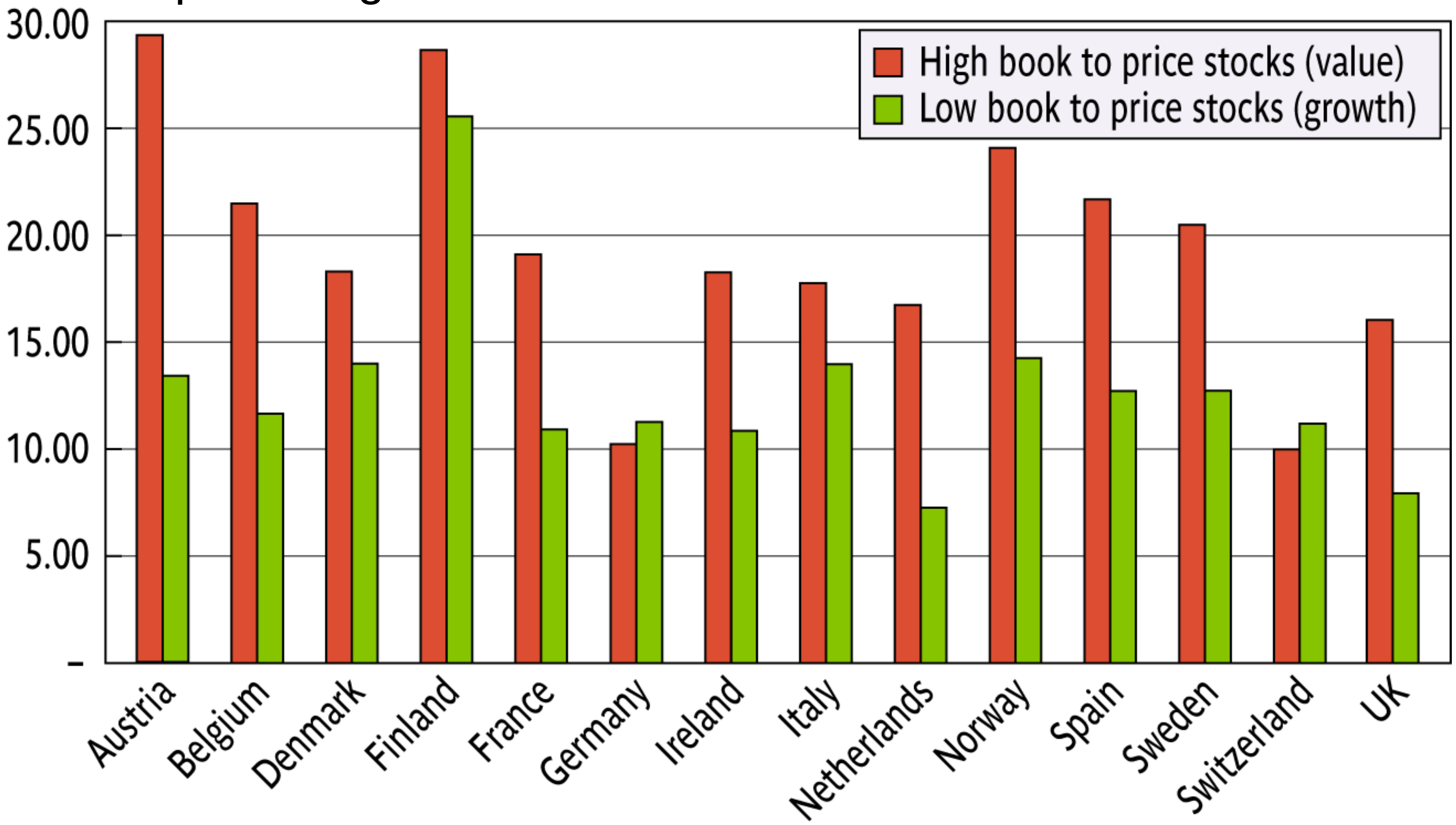
Small cap stocks seem to outperform large cap stocks



Source: T. Loughran, 'Book-to-market across firm size, exchange and seasonality', *Journal of Financial and Quantitative Analysis* 32 (1997).

4). Value vs. Growth

High book value-to-stock price stocks and/or high E/P stocks outperform growth stocks



Source: The figures are the authors' own calculations based on data taken from Kenneth French's website (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html)

5. Theoretical challenges: behaviorial finance

- The main opposition to EMH & the “rational markets” school has been, since the 1980s, the behavioral school
- Three arguments:
  - Rationality is not perfect / perfectly distributed
  - There are independent deviations from rationality
  - Arbitrage is risky and might not work

Behavioural Finance

- Assumptions of EMH
  - Investors are rational
  - Any irrational trades are random and cancel out
  - Rational arbitrageurs will eliminate the influence of irrational traders
- Proponents of EMH argue that investors often behave irrationally, and push share prices away from the fundamental value for considerable periods of time.
- Behavioural finance is a descriptive not prescriptive area of finance
  - Explains a number of unsolved puzzles under rational finance

Rationality is not perfect

- People are not always rational
  - They trade and generally act on the basis of emotions / non-rational criteria
- In particular, many investors fail to diversify, trade too much, and seem to try to maximize taxes by selling winners and holding losers
- Herd behavior!

Arbitrage

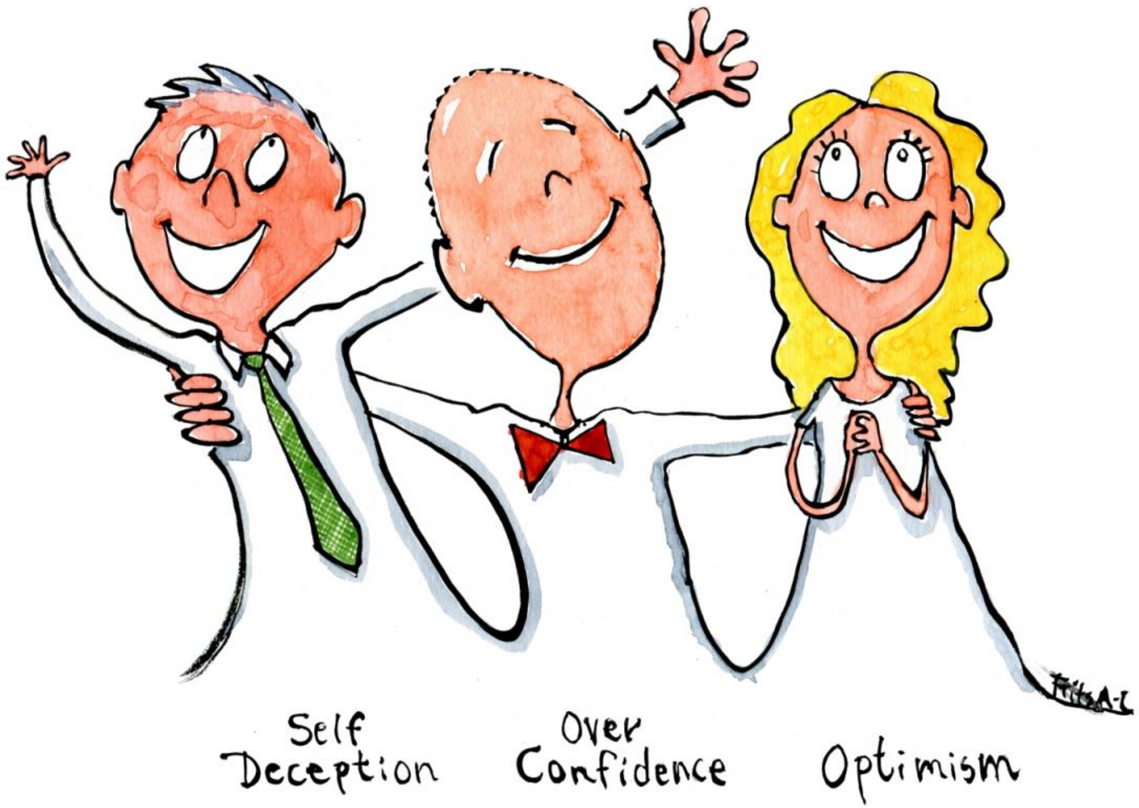
- Suppose that your superior, rational, analysis shows that company ABC is overpriced
- Arbitrage would suggest that you should short the ABC shares
- After the rest of the investors come to their senses, you make money because you were smart enough to "sell high and buy low"
- But what if the rest of the investors does not come to their senses in time for you to cover your short position?
  - This makes arbitrage risky

Deviations from rationality

- Psychologists argue that people deviate from rationality in predictable ways:
  - Over-optimism
  - Overconfidence
  - Conservatism
  - Cognitive dissonance
  - Confirmation
  - Anchoring
  - Representativeness
  - Availability bias
  - Ambiguity aversion
  - Narrow framing or mental accounting

Irrational Bias - Over-optimism

- <u>Self-deception or Over-optimism</u>
  - – Self attribution and illusion of control

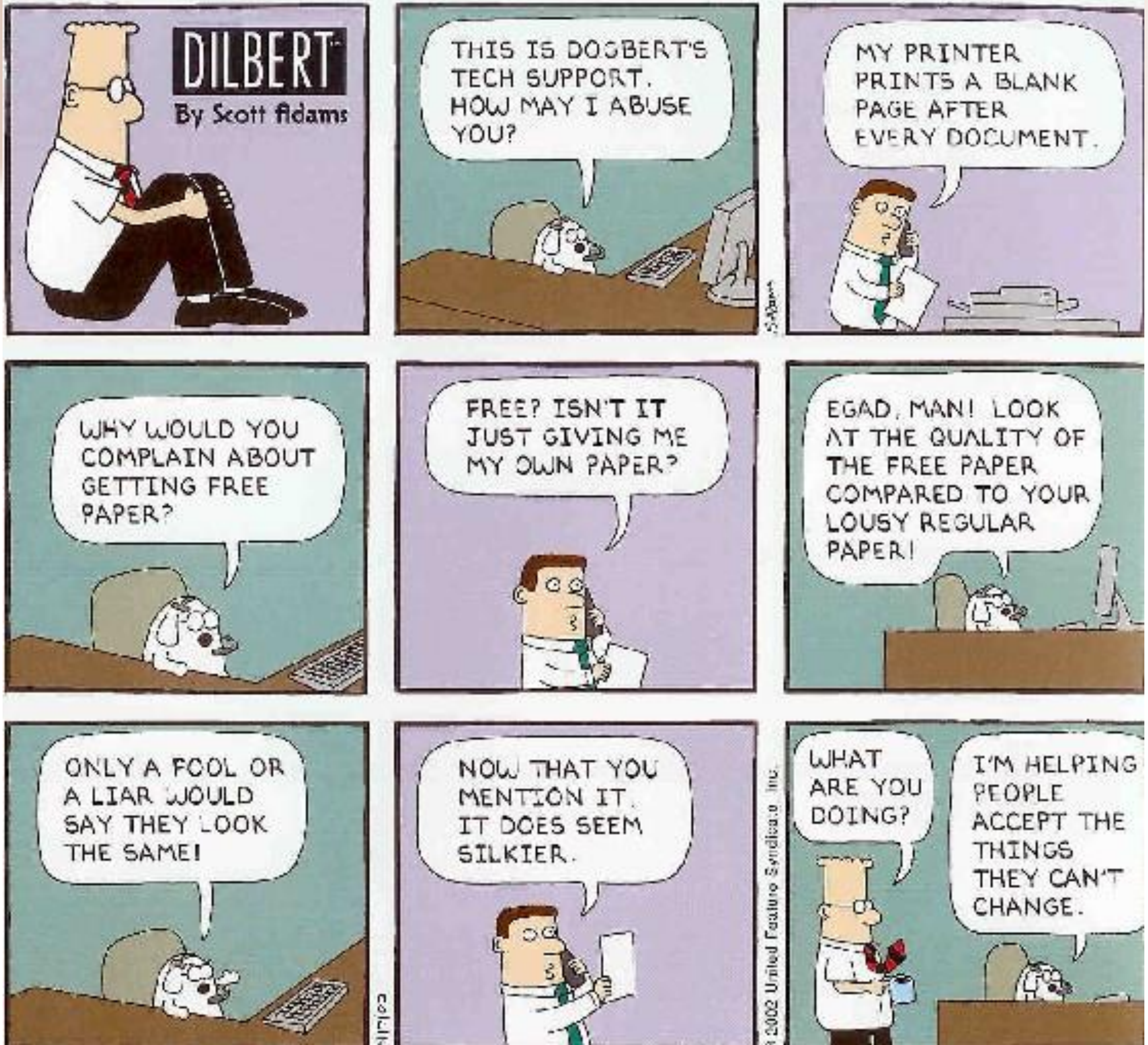


Irrational biases: Overconfidence

- Overconfidence
  – Understate risk
  – Exaggerate ability to control or overestimate knowledge level
- *Examples in Trading*
  – High frequency of trades
  – Males trade more often than females, turnover leads to underperformance
  – Joint trading accounts owned by males and females generate higher returns on average

Irrational biases

- Conservatism bias
  - Moving away from your own view
- Cognitive dissonance
  - Self-denial and conflict when evidence shows you're wrong
- *Examples in Investment appraisal*
  - Indefinitely postpone project because waiting has value
  - Abandonment and escalation of commitment



DILBERT
By Scott Adams
THIS IS DOGBERT'S TECH SUPPORT. HOW MAY I ABUSE YOU?
MY PRINTER PRINTS A BLANK PAGE AFTER EVERY DOCUMENT.
WHY WOULD YOU COMPLAIN ABOUT GETTING FREE PAPER?
FREE? ISN'T IT JUST GIVING ME MY OWN PAPER?
EGAD, MAN! LOOK AT THE QUALITY OF THE FREE PAPER COMPARED TO YOUR LOUSY REGULAR PAPER!
ONLY A FOOL OR A LIAR WOULD SAY THEY LOOK THE SAME!
NOW THAT YOU MENTION IT, IT DOES SEEM SILKIER.
WHAT ARE YOU DOING?
I'M HELPING PEOPLE ACCEPT THE THINGS THEY CAN'T CHANGE.
© 2002 United Feature Syndicate, Inc.

Irrational Bias: Confirmation Bias

- <u>Confirmation bias</u>
  - – Finding any information that supports your view and rejecting everything else

Irrational biases: Anchoring

- Anchoring
  - – Influenced by other views or suggestions when making an assessment
- Examples
  - – Asking house prices are not representative of market value, they depend on information provided by real estate agents in ads and brochures

Irrational biases: Representativeness Heuristic

- Representativeness heuristic
  - – Rule of thumb without considering probabilistic outcomes or facts
- Example:
  - – Flip a coin 6 times: which sequence occurs more often?

Irrational biases: Availability Bias

- Availability bias
  - Relying on nearby and not complete information

Examples:

  - stock selection, under diversification and home bias

Irrational biases: Ambiguity aversion

- Ambiguity aversion
  - People are exceptionally afraid of (financial) situations they don’t know
  - Not knowing distribution of events
- Example:
  - Underinvestment and economic behaviour during crises

Irrational biases: Narrow framing or mental accounting

- <u>Narrow framing or mental accounting</u>
  – Sensitivity to the context
- Example:
  – 1st Choose between:

  A) Sure gain of 2400 or B) 25% of 10000 gain and 75% of nothing

  Then 2nd choose between:

  C) Sure loss of 7400 or D) 75% of 10000 loss and 25% of nothing

- Loss avoidance more important than loss minimisation

Applying Behavioral Finance

Investors Limitations

Internal
- **Mental Accounts**
- **Heuristics**
- **Self-Deception**

External
- **Biases information**
- **Limitation of time &resources**
- **Practical restrictions**

Summary

What lessons does Behavioral Finance teach us?

Investor

1. Be aware of information biases: seek and screen information actively
2. Avoid narrow framing, anchoring, overconfidence
3. Follow rules of decision making under uncertainty

Market

1. Market and people are imperfect
2. There are systematic and recurring market inefficiencies

   Anomalies are consistent and can´t be ignored
3. Sensible implementation of irrational human behavior into asset pricing models necessary