Bachelor of Economics
THAMMASAT UNIVERSITY

FN 211 Financial Markets

Class 6: Efficiency of Financial Markets

Today's Outline

- Efficient Capital Markets
- **Insider Trading**

Efficient Capital Market

In an **efficient capital market**:

- *Security prices adjust rapidly to new information*, and thus current security prices fully reflect all the information available.
- *Consistent, superior, risk-adjusted returns (net of all expenses) are not achievable*. Investors are better off pursuing passive management (buy and hold a broad market portfolio), than active management.
- Prices should be expected to react only to *unexpected* information

- **Market Value** – price at which as asset can currently be traded.
- **Intrinsic Value** – value what would be placed on it by investors if they and a complete understanding of the asset's investment characteristics.
  - *If investors believe a market is highly efficient, they will usually accept market prices as accurately reflecting intrinsic value.*

Efficient Capital Market

Factors Contributing to a Market's Efficiency

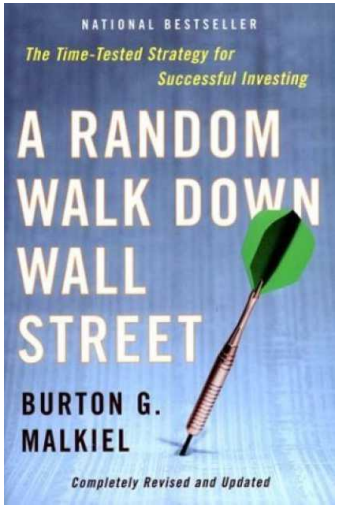
1. **Large number of market participants**
   - Many investors, analysts = > Liquid trading
2. **Information availability and financial disclosure**
   - Trading information of large exchanges is readily available
   - Trading information of OTC markets can vary in quality and quantity
3. **No limits to trading**
   - ***Arbitrage*** helps reduce pricing discrepancies
   - ***Short selling*** promotes more efficient pricing
4. **Minimum transaction costs and information-acquisition costs**

Efficient Capital Markets: The Random Walk Theory

- One popular modern theory regarding the valuation of stocks is the *random walk* theory.
- According to the theory, successive changes in the price of a stock are random fluctuations around that stock's intrinsic value, and these changes are independent of the sequence of price changes that occurred in the past.
- But of course, many analysts still subscribe to *technical analysis*, believing that past price movement can help predict future stock price.

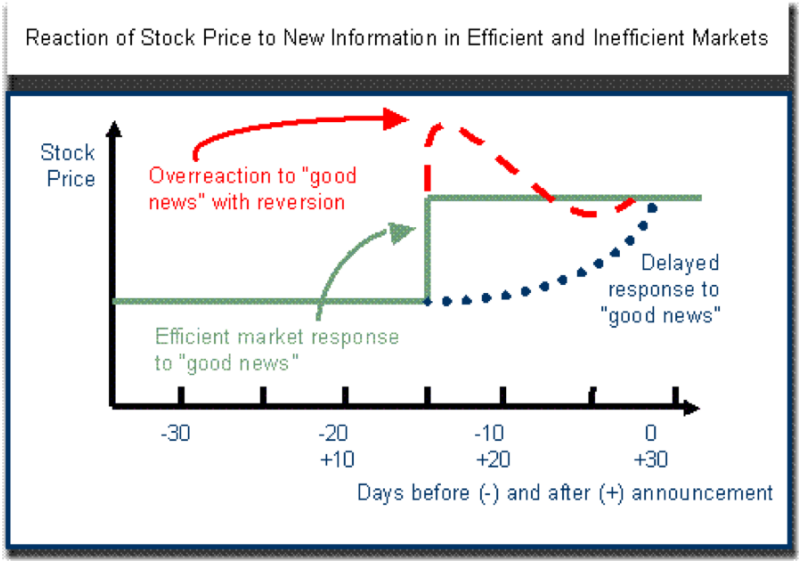
Efficient Capital Markets:
The Random Walk Theory

- **Burton Malkiel**, professor of economics at Princeton, is a leading proponent of the efficient market hypothesis.
- He contends that prices of publicly traded assets reflect all publicly available information.
  - *In other words, a "blindfolded monkey" would have as much luck selecting a portfolio as a pro.*
- Since stock prices cannot be predicted in the short term, investors are better off buying and holding onto index funds than meddling with securities or actively managing mutual funds.



Efficient Capital Markets:
The Random Walk Theory

- The random walk notion is supplemented by the broader *efficient markets hypothesis*.
- In a perfectly efficient market, existing stock prices fully reflect the latest information available on the profitability and risk of business firms.
- Most researchers agree that financial markets are efficient, though they may disagree on the *degree* of efficiency.



Eugene Fama *is currently a Professor of Finance at the University of Chicago. He is most often thought of as* ***the father of efficient market hypothesis****, beginning with his Ph.D. thesis*

Random Walk and Efficient Markets

The set of assumptions that imply an Efficient Market Hypothesis includes:

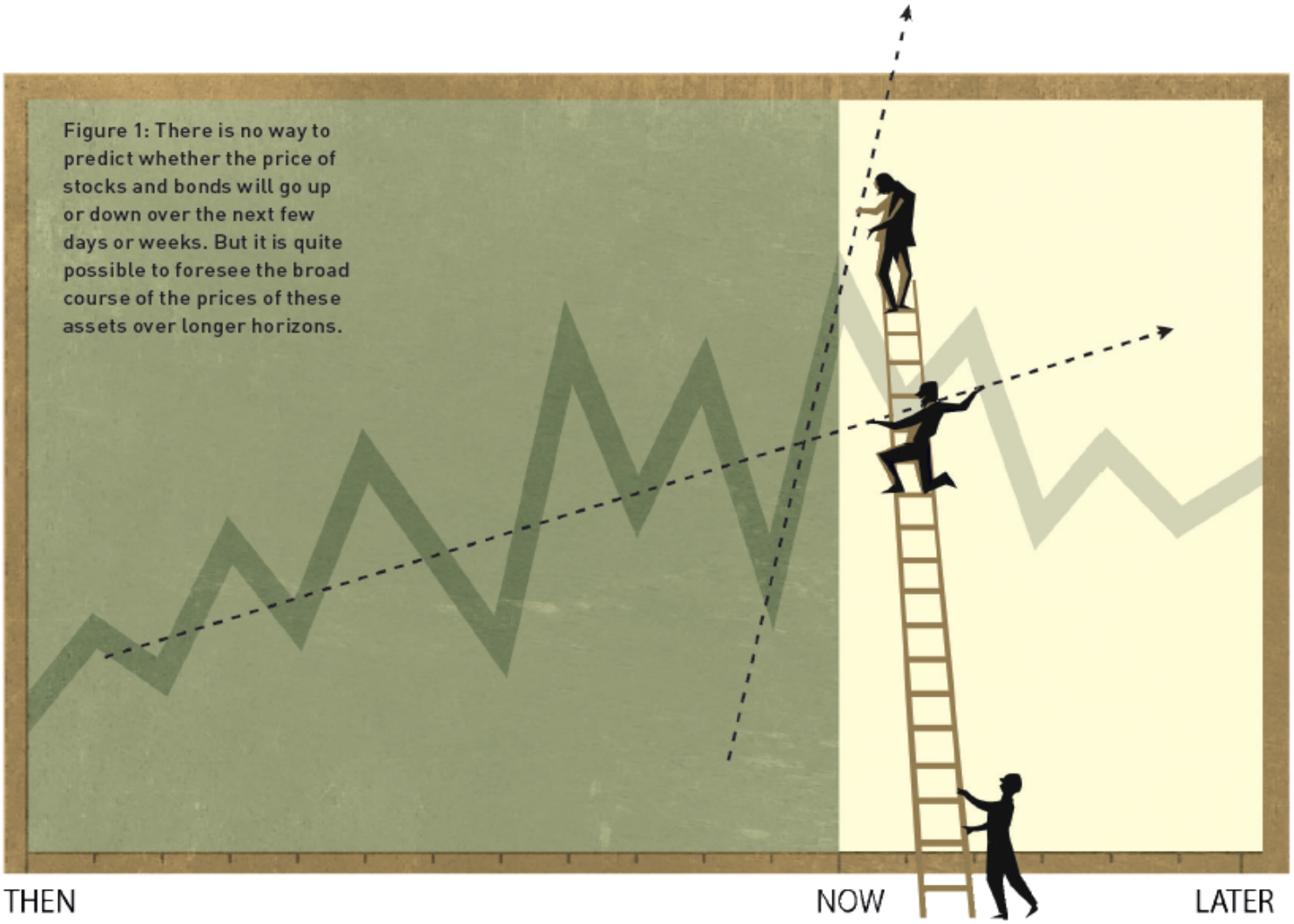
- There exists a large number of profit-maximizing market participants.
- New information occurs randomly.
- Market participants adjust their price expectations rapidly (but not necessarily correctly).
- Return expectations implicitly include risk.

In 2013, ***Eugene Fama*** *was awarded the Nobel Memorial Prize in Economic Sciences jointly with Robert Shiller and Lars Peter Hansen.*

Efficient Capital Markets: The Weak Form

- Meaning: current stock prices reflect all available security market information, including historical prices, returns and trading volume.
- Implication: Investors cannot make abnormal returns consistently by using past market data or trends to predict future stock prices. Technical analysis has no value
- Empirical research generally confirms that markets are ***weak form efficient***; successive price changes are generally random and that the correlation between stock prices form one day to the next is virtually zero.

Efficient Capital Markets:
The Weak Form



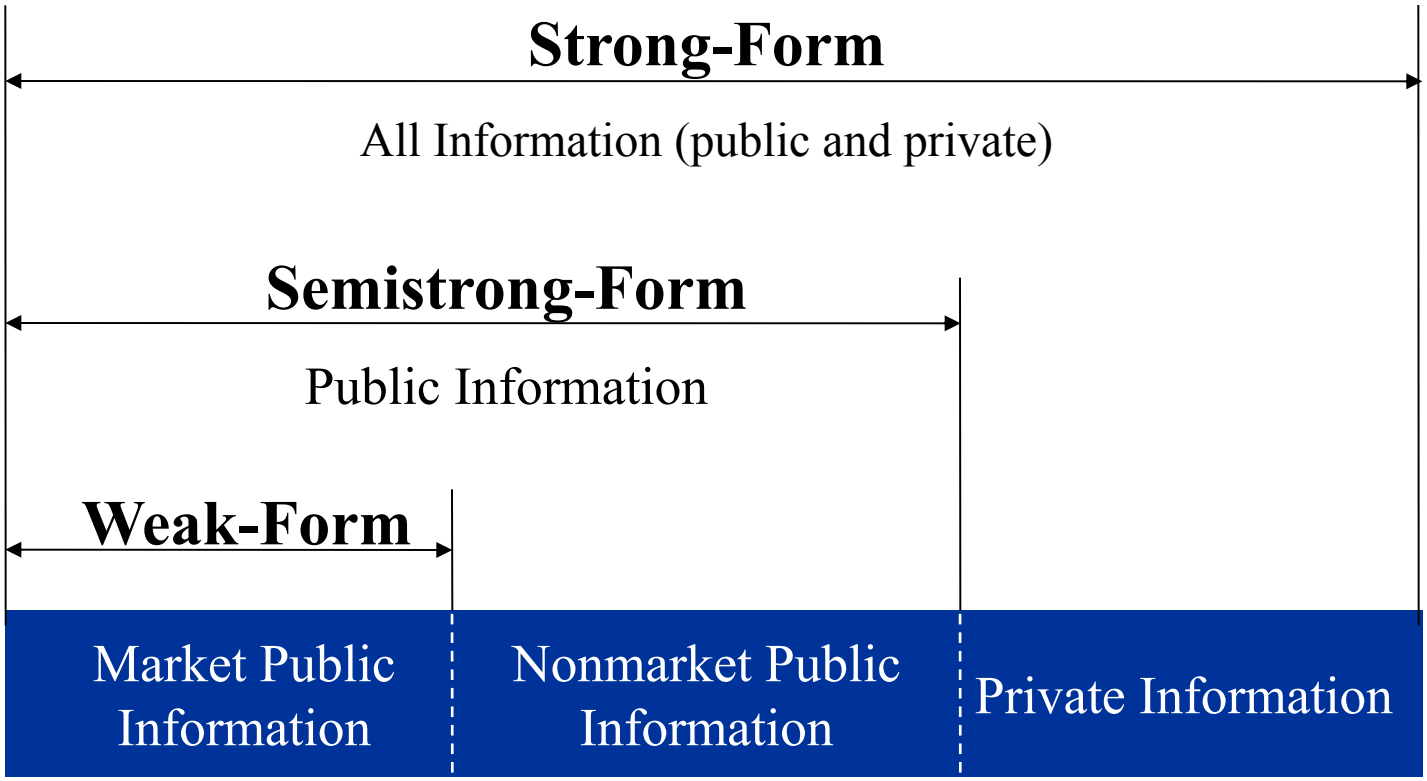
Efficient Capital Markets:
The Semistrong Form

- Meaning: stock prices fully reflect all public information, including earnings and dividend news, P/E ratios, economic and political news, etc.
- Implications: Investors who base their decisions on public information should not earn abnormal return consistently because the security prices already reflects all such new public information. So, fundamental analysis has no value.
- Empirical research: evidence is mixed.
  - Many studies found that investors don't make returns from *economic and political news, corporate events such as M&A, investment in developed countries* – support semistrong EMH
  - Some studies found that investors do make abnormal returns from *investments in developing countries* – against semistrong EMH

Efficient Capital Markets: The Strong Form

- Meaning: Current stock prices fully reflect all information about the firm, both public and private.
- Implication: Investors cannot make abnormal returns consistently by trading on inside information.
- Empirical research:
  - Studies found that insiders (directors, officers, etc.) *do* earn abnormal returns from trading – against strong EMH
  - Studies found that fund managers *don't* make abnormal returns consistently. They cannot outperform a buy-and-hold strategy - support strong EMH.

Efficient Capital Markets:
Summary



Technical vs. Fundamental

- **Technical Analysis** – attempt to profit by looking at patterns of prices and trading volume.
- **Fundamental Analysis** – the examination of publicly available information and the formulation of forecasts to estimate the intrinsic value of assets.

Implications of EMH

- **Markets are weak-form efficient**
  - Investors cannot earn abnormal returns by using past price information.
  - *Technical Analysis and Active Trading is useless*.
- **Markets are semistrong-form efficient**
  - Analysts and fund managers cannot earn abnormal returns by using public information that is already reflected in security prices.
  - *Fundamental Analysis may not earn abnormal return but still useful.*
- **Markets are NOT strong-form efficient**
  - Many studies found that insiders (directors, officers, etc.) do earn abnormal returns from trading .
- **Portfolio Management**
  - *Active Trading* based on past or public information cannot beat *Passive (buy-and-hold) strategy*
  - **Index Funds** are preferred and less costly (than actively managed funds) since markets are efficient in general.

Market Pricing Anomalies

Market Anomaly occurs if a change in price of an asset or security cannot directly be linked to relevant information in the market

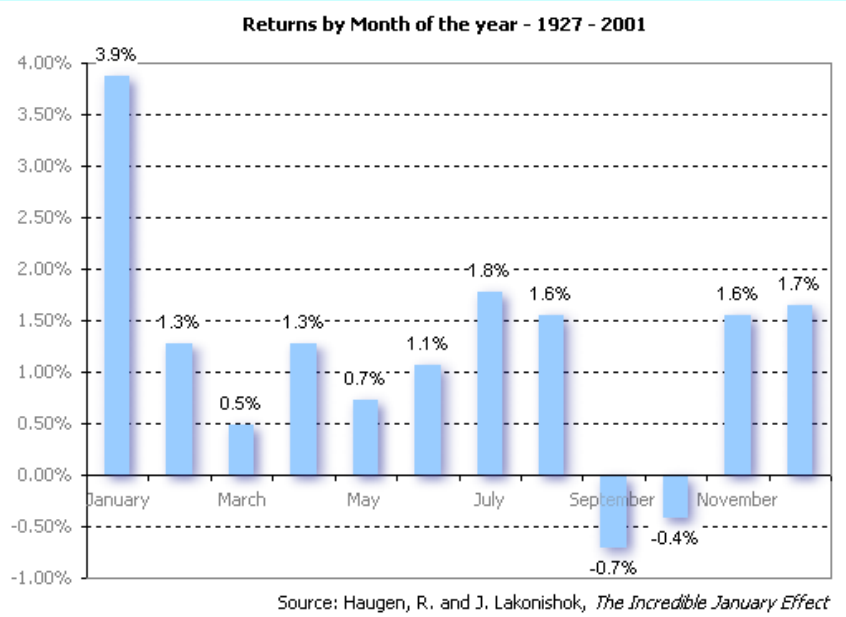
- *There is evidence of mispricing although the markets are efficient.*
- *It's argued that most of anomalies are the result of statistical methodologies. Once they are corrected, anomalies disappear.*
  - *For example, some anomalies occur for a certain period only – **Data Mining**.*

- **Time-Series Anomalies**
  - **January Effect** – stock market returns in January were significantly higher than rest of the year. Evidence suggests that it is not persistent.
  - **Momentum**– short-term price patterns - still exists in some markets
- **Cross-Sectional Anomalies**
  - **Size Effect**: small-cap outperform large-cap. This effect disappeared recently.
  - **Value Effect**: value stocks (low P/E, etc.) outperform growth stocks.
- **Other Anomalies**
  - Closed-End Investment Fund Discounts, Earnings Surprise, IPOs,

Market Pricing Anomalies

- ***The January effect*** *is a calendar effect wherein stocks, especially small-cap stocks, have historically tended to rise markedly in price during the period starting on the last day of December and ending on the fifth trading day of January.*

- *This effect is owed to year-end selling to create tax losses, recognize capital gains, effect portfolio window dressing, or raise holiday cash.*



Source: Haugen, R. and J. Lakonishok, *The Incredible January Effect*

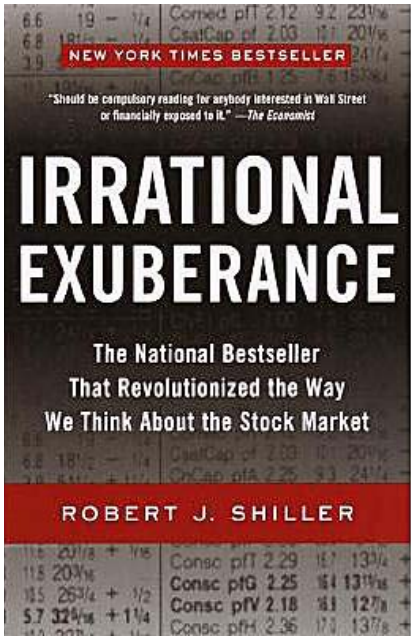
Behavioral Finance

Behavioral Finance considers psychological biases of investors that creates systematic mispricing and may explain why anomalies still exist.

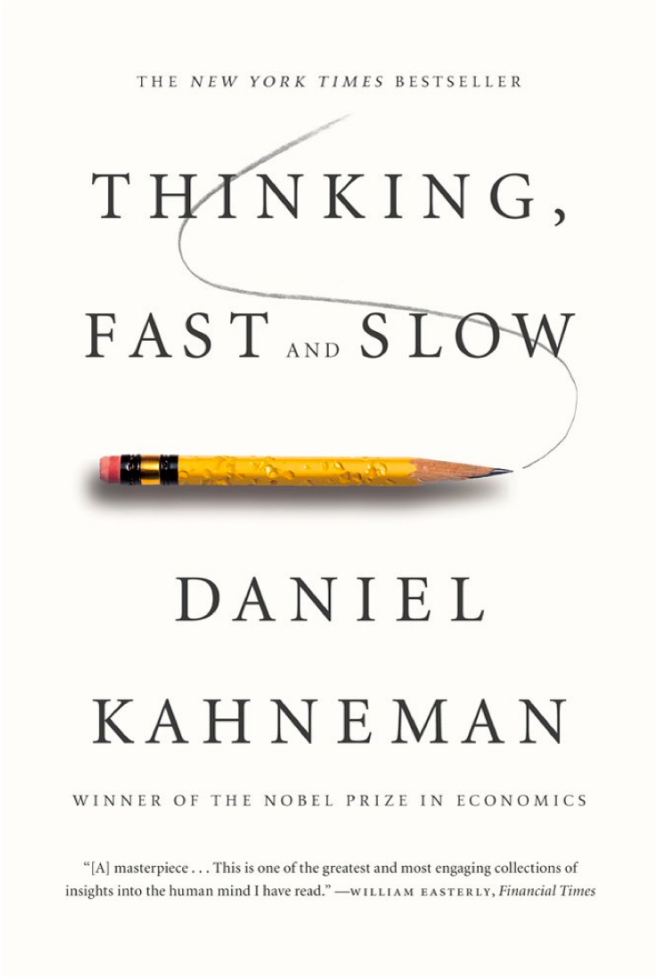
1. Loss Aversion – dislike losses more than they like comparable gains.
2. Overconfidence Bias – trust oneself, ignore bad news
3. Information Cascade – follow/imitate the first movers.
4. Representativeness – assess new information based on similarity to current state or familiar classification
5. Mental Accounting – keep tracks of gain & loss of different investments in separate mental accounts.
6. Disposition Effect - sell winners too soon and hold losers too long

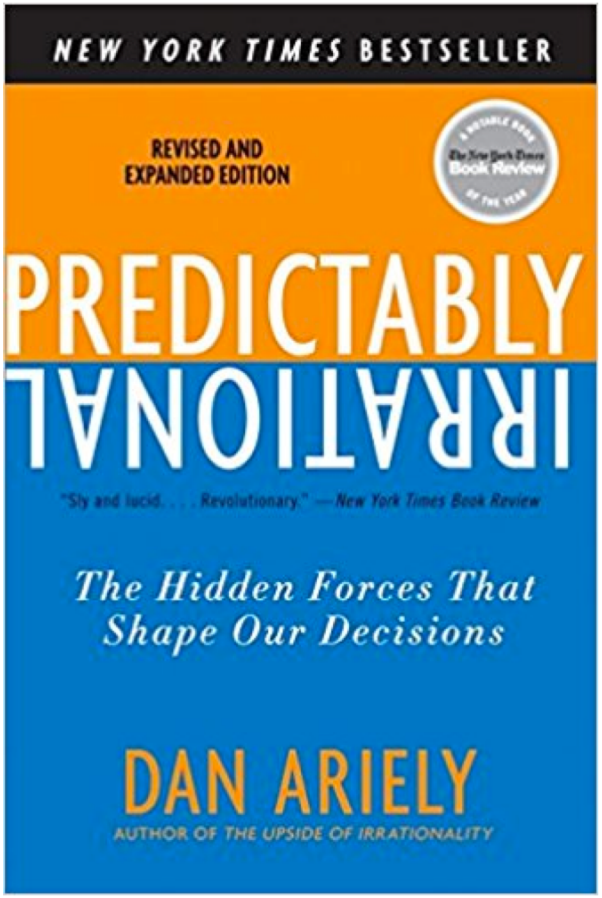
Recommended Reading

- **Irrational Exuberance** is written by **Yale University professor Robert Shiller**, named after Alan Greenspan's "irrational exuberance" quote.
- Published at the height of the dot-com boom, it put forth several arguments demonstrating how the stock markets were overvalued at the time.
- Shiller was soon proven right when the Nasdaq peaked on the very month of the book's publication, and the stock markets collapsed right after.
- On 14 October 2013, Robert Shiller, together with Eugene Fama and Lars Peter Hansen, receive the Nobel Prize in Economics, “for their empirical analysis of asset prices”.



Recommended Reading





Today's Outline

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- **Insider Trading**

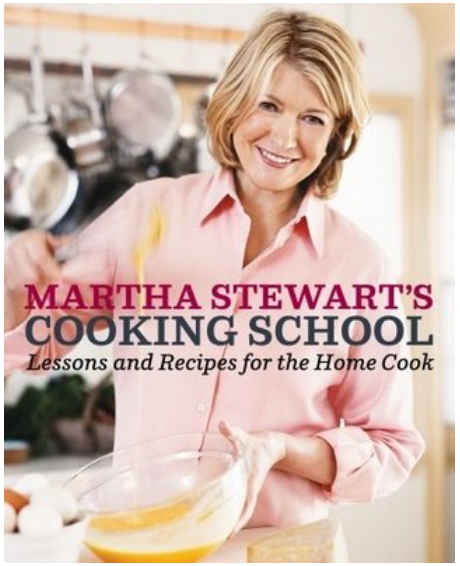
Insider Trading

Inside Information is defined as information about a company that is both material and nonpublic.

- Material means the information has a substantial impact on the prices of securities.
  - Examples: *takeovers, forthcoming press coverage, earnings surprises, issuance or denial of patents, substantial mineral finds, approvals of a product*
- Nonpublic means it has not been generally disclosed to the marketplace.

Insider Trading: Famous Cases

- Style guru and media magnate **Martha Stewart** was convicted of selling ImClone stock after finding out regulators had rejected an application for the company's new cancer drug , Erbitux.
- She was sentenced to 10 months, split between prison and home confinement, and fined $30,000. Her stock broker, Peter Bacanovic, was also convicted.



- **Steven A. Cohen,** founder of SAC Capital, is one of the most successful hedge fund manager. He has an estimated net worth of $8.8b, ranked by Forbes as the 106th richest man in the world.
- In 2012, he began to be implicated in a large criminal insider trading scandal; bought shares of two drug companies involved in the clinical trial, and then bet on the companies' shares to fall when learned of negative news. The hedge funds reaped $276 million in profits and losses avoided based on that information.

Insider Trading: A Case Study

- On a Saturday afternoon, Bruce Winslow, a fund manager of Kramer Asset Management, is walking back home when he comes across a briefcase on the sidewalk.
- The street is deserted. He picks up the briefcase, takes it home with him, opens it, and finds that the owner is Tom Harcourt, his former classmate and rival at business school.
- Tom is now a senior analyst at Lamont, a major investment banking firm.

Insider Trading: A Case Study

- Bruce also finds flash drive. He connects it with his home computer and starts looking through files.
- He finds spreadsheets of various financial statements and scenarios for a takeover of VitaLife by Paramex Medical. He copies all these files into his computer.
- On Monday morning, Bruce returns Harcourt's briefcase, wrapped in plain brown paper, without any indication of where the parcel has come from.

Insider Trading: A Case Study

- Bruce then puts in orders to buy shares of VitaLife for the accounts of his wife and his mother-in-law.
- A week later, Paramex announces a takeover of VitaLife, and the share price of VitaLife increases by 30% in one day.

Solutions:

- This is clearly a use of inside information because it is both material and nonpublic.
- Bruce used it with the intention of self-gain. That is not only unethical, but can also be illegal in most countries.

Stock Pitch example

https://youtu.be/8Q4xtgUdPxw

https://youtu.be/L8-pNcSV5W8