



Bachelor of Economics
THAMMASAT UNIVERSITY

FN 211 Financial Markets

Class 10: Stock Markets

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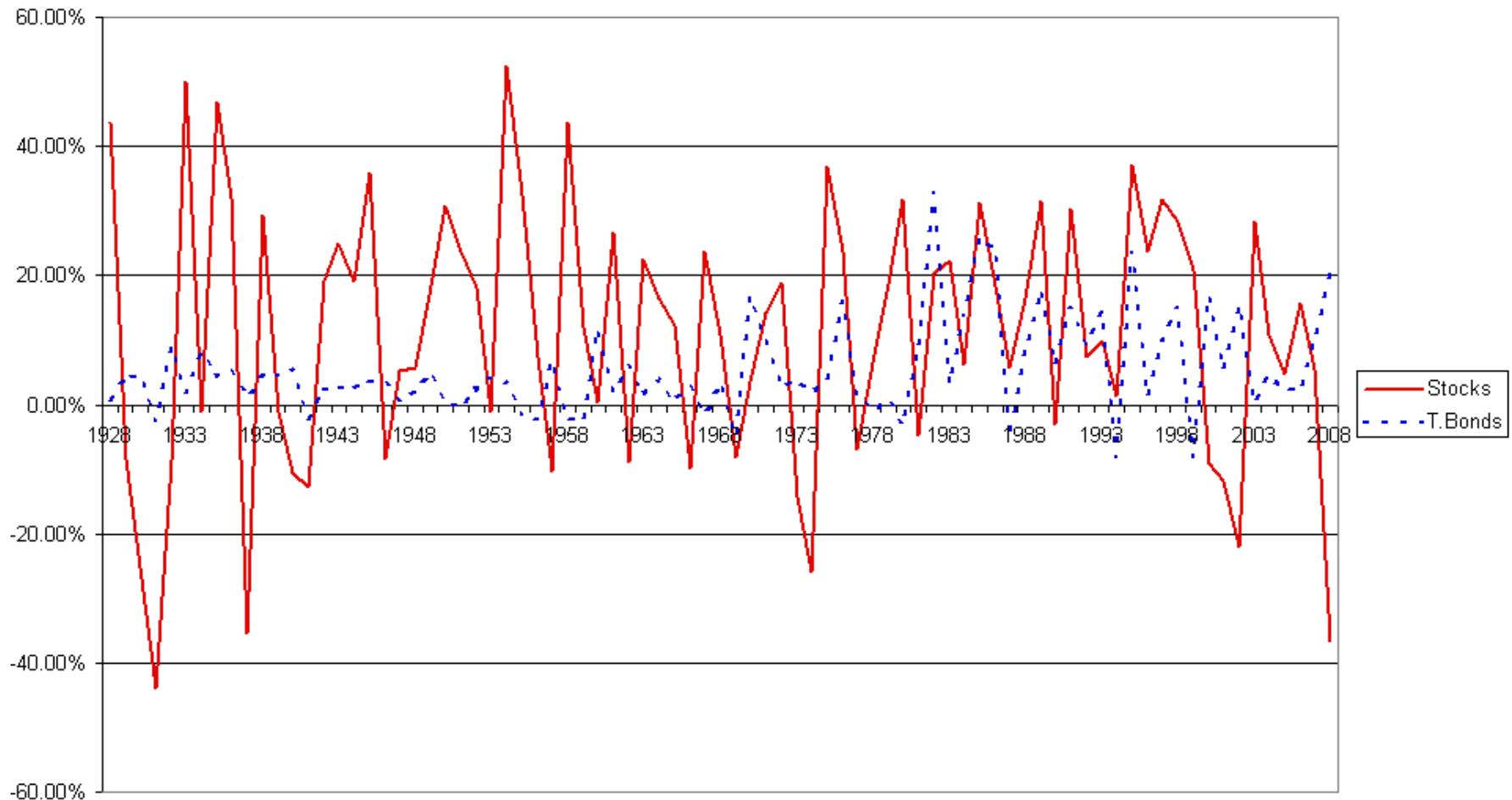
Today's Outline

- ❖ **Introduction**
- ❖ **Primary and Secondary Market**
- ❖ **Organization and Functioning of Securities Markets**
- ❖ **Efficient Capital Markets**
- ❖ **Insider Trading**
- ❖ **Stock Market Indexes**

Introduction:

Stock vs. Bond Returns and Volatility

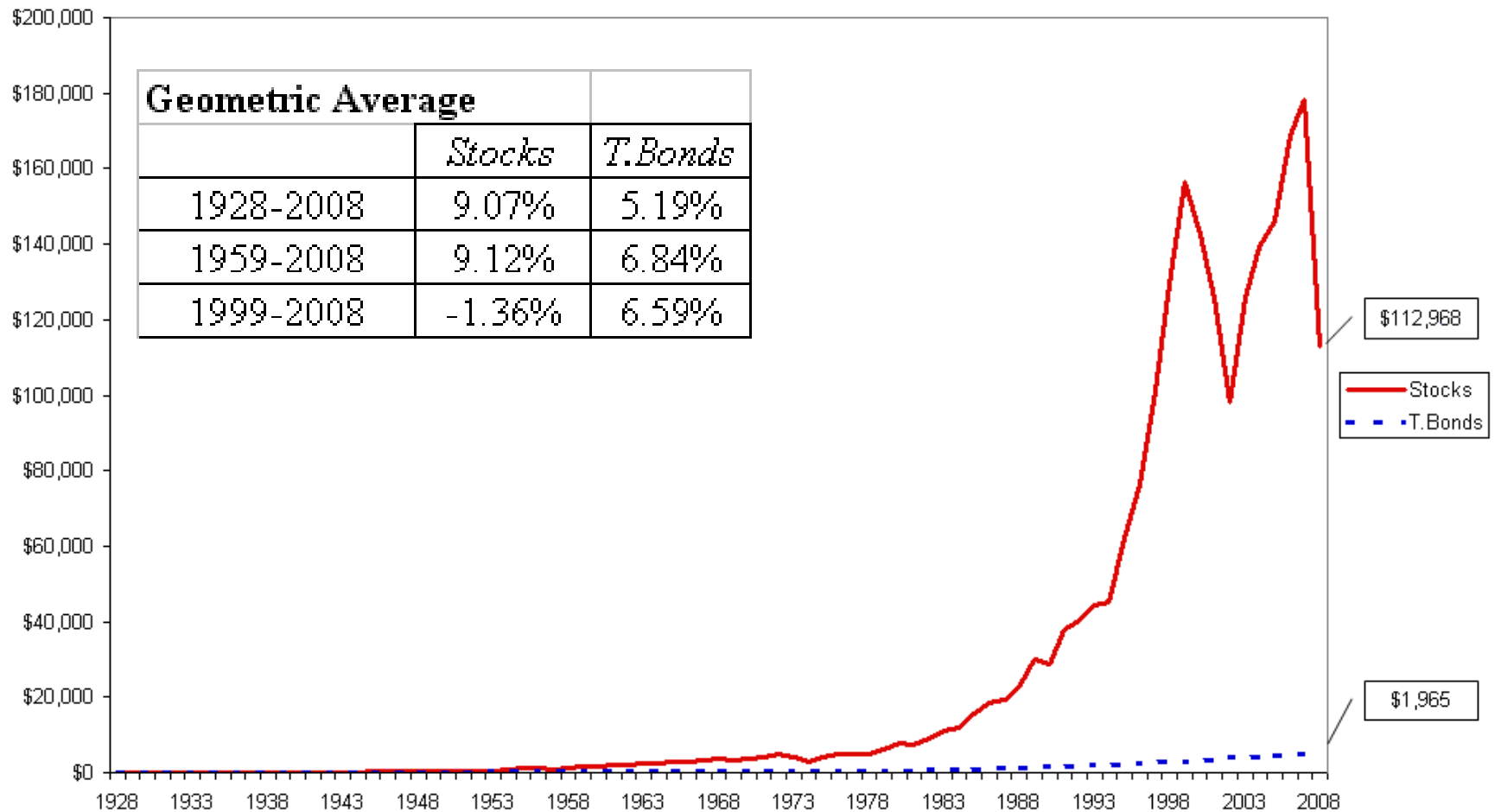
Stocks vs Bonds Returns, US Data 1928 - 2008



Introduction:

Stock vs. Bond Returns

Compounded Value of \$100



Introduction:

Common vs. Preferred Stocks

Stockholders are the legal owners of a corporation

- they have a **residual claim** to all earnings and assets after debt and tax claims are satisfied
- voting rights (e.g., to elect board of directors)
- shareholders do not exercise control regularly (they elect a board, who chooses a CEO, etc.)

Common stock - the fundamental ownership claim in a public corporation

Preferred stock - a hybrid security that has characteristics of both bonds and common stock

Introduction:

Characteristics of Common Stocks

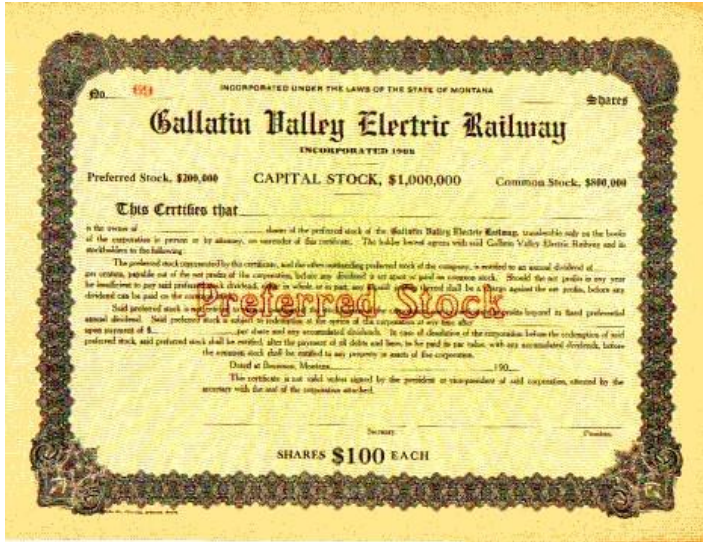
- **Dividends** - payment and size of dividends is determined by the board of directors of the issuing firm
- **Residual Claim** - in the event of liquidation, common stockholders have the lowest priority in terms of any cash distribution.
 - *If a company is liquidated, assets are used first to pay debts; second, preferred stockholders receive their contractual share; and lastly, common stockholders receive only a pro rata basis of any residual funds.*
- **Limited Liability** - common stockholders losses are limited to the amount of their original investment in the firm
- **Voting Rights** – typically, common stock shareholders receive **one vote per share** to elect the company's board of directors

Introduction:

Characteristics of Common Stocks

Common Stock	Corporate Bond
represents an ownership interest in the corporation, conferring on the holder a number of rights (voting) as well as risks	represents IOUs of the corporation
dividends are not obligatory, and are not a tax-deductible expense	interest payments and principal repayments are legally required, and interest payments are tax-deductible
represents a residual claim on the corporation	represents a prior claim on the corporation
yield comes from dividends and capital gains (or losses)	yield comes from interest payments (and price difference if not held for the full term), yield is fixed if held to maturity
generally, has potential for giving higher returns, but is more risky	generally, does not have potential for giving much higher returns, but is less risky
has no stated maturity	has a stated maturity

Introduction: Characteristics of Preferred Stocks



- Similar to common stock in that it represents an ownership interest but, like bonds, pays a fixed (amount or percent) periodic dividend
- Senior to common stock but junior to bonds
- Generally do not have voting rights



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Primary vs. Secondary Market

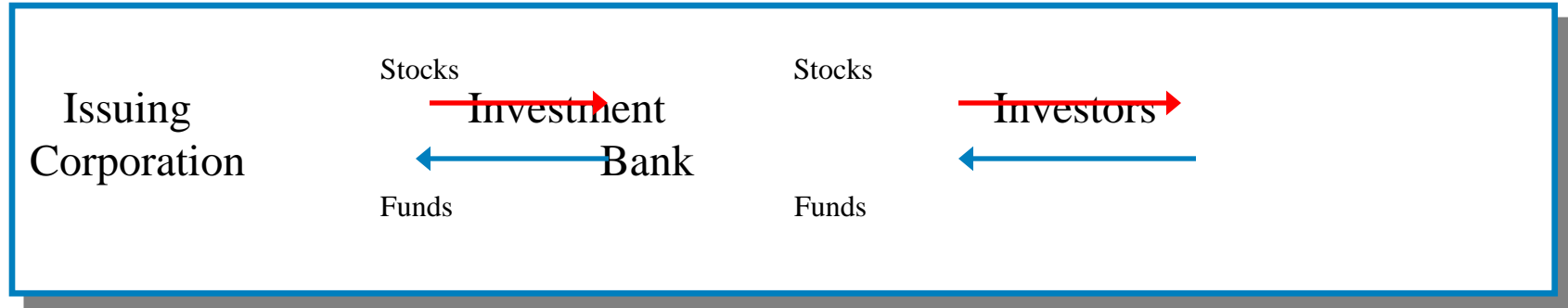
Primary Market

- firms can raise equity capital in its initial public offering (IPO)
- firms can raise equity capital in a subsequent seasoned equity offering

Secondary Market

- trading of shares among investors

The Primary Market: Introduction



Investment bank conducts primary market sale of stock using

- **firm commitment underwriting** - guarantees corporation a fixed price for newly issued securities or
- **best efforts underwriting** - no guarantee to issuer and acts more as a placing or distribution agent

The Primary Market: The Case of AAV

Issuer: **Asia Aviation Public Company Limited**

Sector: Services/Transportation & Logistics

Symbol: AAV

Registered: 4,850 million shares

Par Value: 0.10 Baht

Paid-up Cap: 485 million Baht

Offered: 750 million shares

IPO Price: 3.70 Baht

First Day Trading: 31 May 2012

Lead Underwriter: Thanachart Securities and CIMB Securities

Current Price: 4.58 Baht (as of 25 Oct 2012)



The Secondary Market: The Case of AAV

Asia Aviation PCL [+ Add to Portfolio](#)

AAV:TB 4.58 THB ▼ 0.02 0.43% [Share](#)

As of 05:36:36 ET on 10/25/2012.

More on AAV

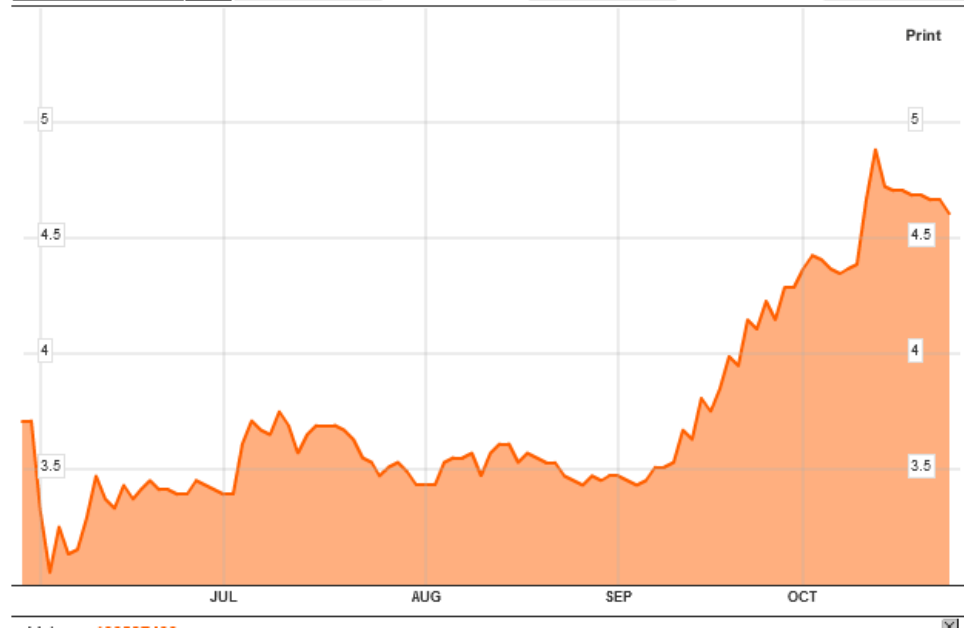
Snapshot

News & Press
Releases

Stock Chart

Interactive Stock Chart for Asia Aviation PCL (AAV)

OVERLAY	INDICATORS	ANNOTATIONS	SETTINGS	1D	1W	1M	3M	6M	1Y	3Y	5Y	YTD
[?] Add a Comparison	Add	AAV:TB	Open 4.68	High 4.78	Low 4.60	Close 4.68						



The Secondary Market:

Introduction

- Secondary markets **provide liquidity** to investors who purchased the securities initially sold in the primary markets.
 - Thus, secondary markets allow investors to sell the securities quickly.
 - Without an active secondary market: Investors will be reluctant to buy securities in the primary market.
- Secondary markets **determine the prevailing market price** of securities.
 - New issues in the primary market are based on the prices in the secondary market.

The Secondary Market: Trading System

Trading System at the Stock Exchange of Thailand

Trading Units - Each trading unit, a so-called "Board Lot", contains 100 units of each security

Floor & Ceiling Limits - the current limits allow prices of a stock to fluctuate within a range of 30 per cent of the previous closing price on the main board;

Circuit Breaker can be implemented to ease any unusual volatility in the market that may cause investor panic.

- *First stage: If the SET index falls by 10% from the previous day's close, all trading in listed securities will be halted for 30 minutes.*
- *Second stage: If the SET index falls by 20% from the previous day's close (i.e., another 10%), trading in all listed securities will be halted for one hour.*

The Secondary Market: Trading System

Automatic Order Matching (AOM) Trading - after brokerage houses electronically send buy or sell orders from their offices to the SET mainframe computer, the system implements an order queuing process and arranges the orders according to a *price-then-time priority*

Call Market Matching is utilized in calculating the opening and closing prices of a security at the opening and closing of the trading hours. This method allows brokers to enter their orders to be queued for matching at a specified time at a single price that generates the greatest trading volumes for that particular stock.

Continuous Order Matching procedures operate during the regular trading sessions. The system continuously matches the first buy and sell orders in the queue, and at the same time, confirms each executed transaction via the member's (broker's) terminal.

The Secondary Market: Trading System

THE STOCK EXCHANGE OF THAILAND (SET)

trading sessions



09:30 am	T1	T1	12:30 pm	02:00 pm	T2	T2	04:30 pm	04:30 pm	T3	T3	05:00 pm
Pre-Opening		Continuous TRADING		Pre-Opening		Continuous TRADING		Pre-Opening		TRADING at Last	

T1 is the random opening time between 9:55 - 10:00 for calculating the opening price for the morning trading session.

T2 is the random opening time between 2:25 - 2:30 for calculating the opening price for the afternoon trading session. The trading system stops matching all orders at 4:30; however orders may still be sent for queuing until the market closes (T3).

T3 is the random closing time between 4:35 - 4:40 for calculating the closing price of each day. The trading system allows only Put Through (PT) transactions to be recorded.

The Secondary Market: Trading System

Symbol	Vol_ex	Trade	Change	%Chg	%Buy	%Sell	Time
PTT9	10	= 343.00B	0.00	0.00			10:08
Vol	Bid	Offer	Vol	Open	343.00	Avg.	342.92
804	342.00	343.00	798	High	343.00	Volume	3156
1433	341.00	344.00	2038	Low	342.00	Avg5D	42434
2328	340.00	345.00	2593	Prev	343.00	Value	108227

Symbol	Vol_ex	Trade	Change	%Chg	%Buy	%Sell	Time
IVL9	50	52.50B	0.00	0.00			10:08
Vol	Bid	Offer	Vol	Open	52.75	Avg.	52.65
5987	52.50	52.75	7874	High	53.00	Volume	35076
4122	52.25	53.00	8403	Low	52.25	Avg5D	306081
4738	52.00	53.25	6973	Prev	52.50	Value	184691

Symbol	Vol_ex	Trade	Change	%Chg	%Buy	%Sell	Time
BBL9	2	163.50B	2.50	1.55			10:08
Vol	Bid	Offer	Vol	Open	162.50	Avg.	162.78
1559	163.00	163.50	478	High	163.50	Volume	14875
2168	162.50	164.00	5692	Low	162.00	Avg5D	55394
1344	162.00	164.50	1636	Prev	161.00	Value	242139

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Organization and Functioning of Securities Markets: Characteristics of a Well-functioning Market

- **Timely and accurate information** on the volume and price of past transactions and current outstanding bids and offers.
- **Liquidity** covers three aspects:
 - **Marketability**: The ability to buy or sell an asset quickly.
 - **Price continuity**: Prices do not change much between transactions, assuming no new information is available.
 - **Depth**: Numerous buyers and sellers are willing to trade at prices above or below the current price.
- **Internal efficiency**: minimal transaction cost
- **Informational (or external) efficiency**: Prices rapidly adjust to new information so that the prevailing market price reflects all available information about the asset.

Organization and Functioning of Securities Markets: Call vs. Continuous Markets

- In **call markets**, stocks are traded at specific times. All bids and asks for the stock are gathered together, and then a single price is set to clear most of the orders. This method is used in:
 - Small exchanges with only a few stocks and a few traders.
Examples: Fiji
 - Large exchanges to set the opening price when there is an overnight buildup of buy and sell orders.
- In **continuous markets**, stocks are traded at any time the market is open.
 - Many stock markets including *NYSE, Tokyo, and SET*, are continuous markets.

Organization and Functioning of Securities Markets: Call vs. Continuous Markets



*Example of **Call Market** is the **South Pacific Stock Exchange (SPSE)** in Fiji where trading is paper-based, conducted by a "call market" on a physical trading floor at 10:30am each weekday.*

Each listed company name is called out and orders are submitted by brokers and dealers.

The market caller then matches orders on a price and time priority basis.

Unmatched orders at the end of the session are carried forward to the next day.

Organization and Functioning of Securities Markets: OTC Markets

- **Over-the-counter (OTC) market** is where investors trade stocks not listed in any exchanges.
 - Unlike securities exchanges, the OTC market is not a formal organization with membership requirements or stock listing requirements.
 - Example is *NASDAQ* which is referred to an automatic electronic quotation system for the US OTC market.
- **Third Market** refers to shares listed on an exchange which are traded on the OTC market.
- **Fourth Market** refers to the direct trading of securities between two institutional investors without involvement of a broker intermediary. The main purpose is to avoid transaction fees charged by brokers.

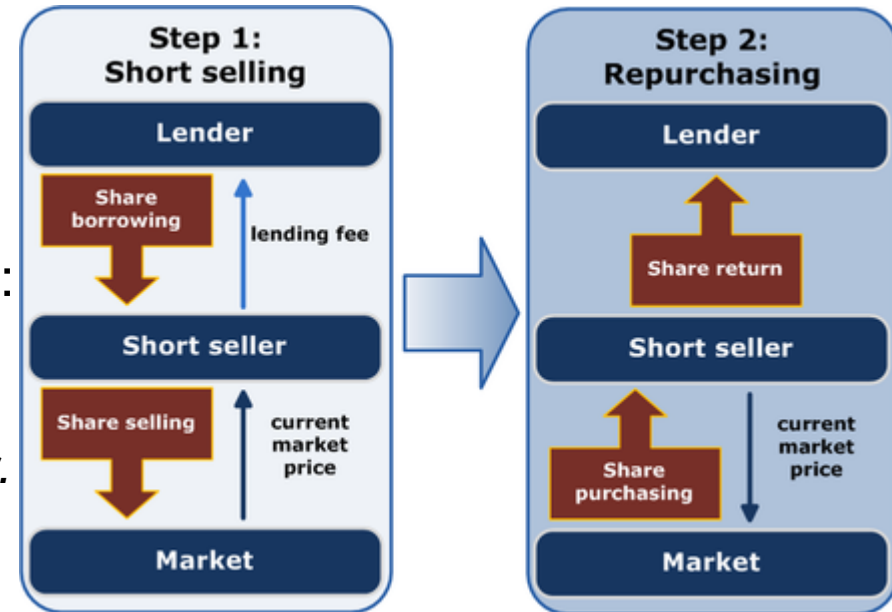
Organization and Functioning of Securities Markets:

Types of Order

- **Market orders:** buy or sell a stock at the current price.
- **Limit orders:** buy or sell a stock at the specified price.
 - A limit buy order is placed below the current price.
 - A limit sell order is placed above the current price
 - The outstanding period of a limit order must be specified.
- **Stop orders:**
 - A stop loss order specifies the price at which the stock must be sold if the price drops to this level.

Organization and Functioning of Securities Markets: Short Sale

- If an investor believes that a stock is overpriced and expect to profit from a decline in price, he can sell the stock short.
- The process of short sale is as follows:
 - *The seller borrows the stock from another investor through a broker*
 - *The seller posts margin with the broker.*
 - *He then sells the stock in the market.*
 - *Purchases the stock back, at a lower price and books a profit.*
 - *The seller then returns the stock to the lender.*



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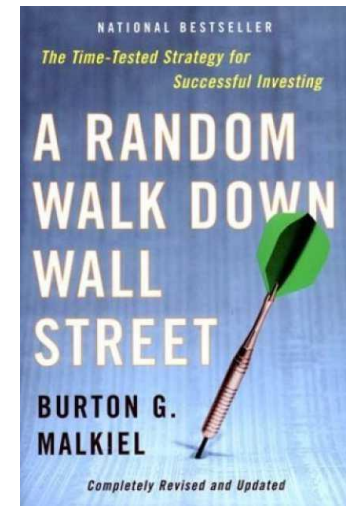
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Efficient Capital Markets: The Random Walk Theory

- 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.

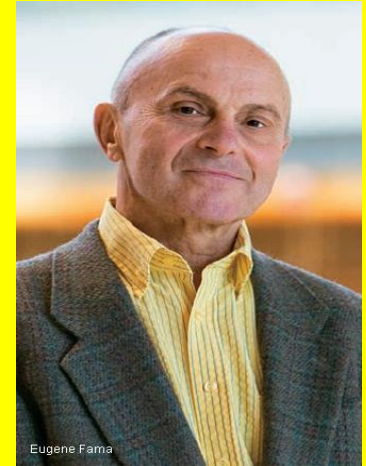
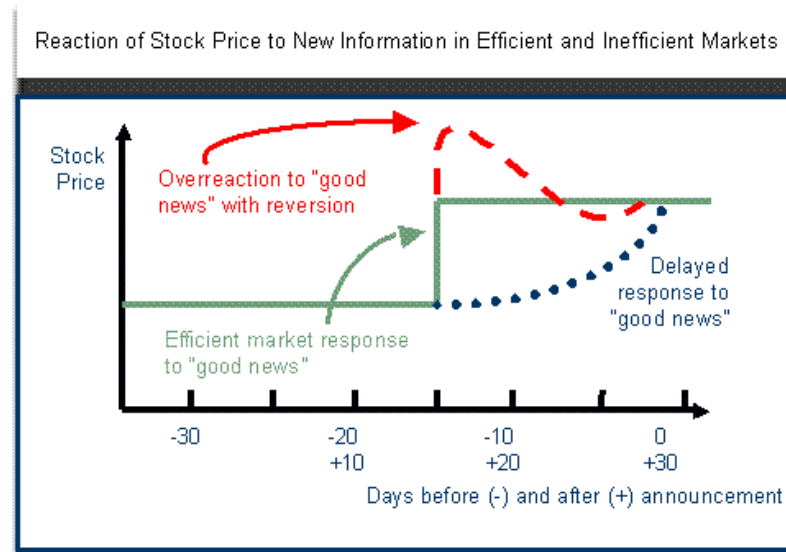
Efficient Capital Markets: The Random Walk Theory

- **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

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 from one day to the next is virtually zero.

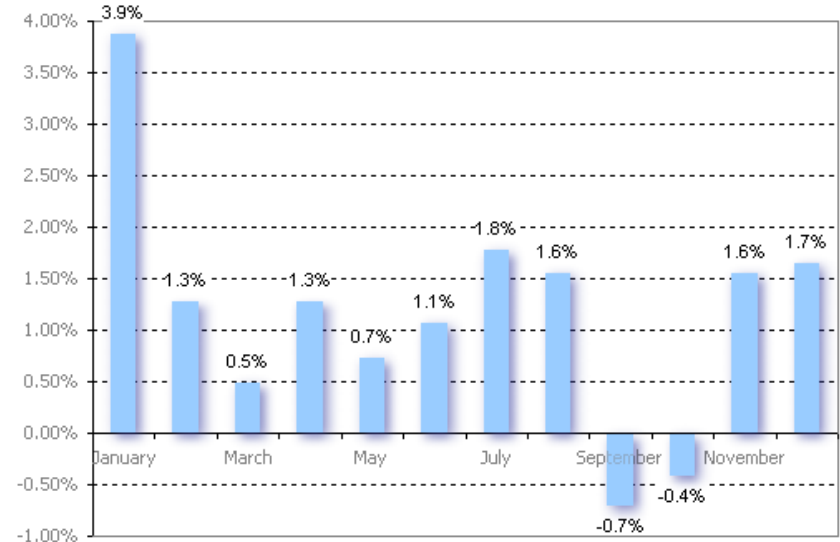
Efficient Capital Markets: The Semistrong Form

- **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.
 - Studies found that investors *do* make abnormal returns from earnings surprises, January Effect, P/E ratios, and small, neglected firms – against semistrong EMH
 - Studies found that investors *don't* make returns from economic and political news, corporate events such as M&A – support semistrong EMH

Efficient Capital Markets: The Semistrong Form

- *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.*

Returns by Month of the year - 1927 - 2001



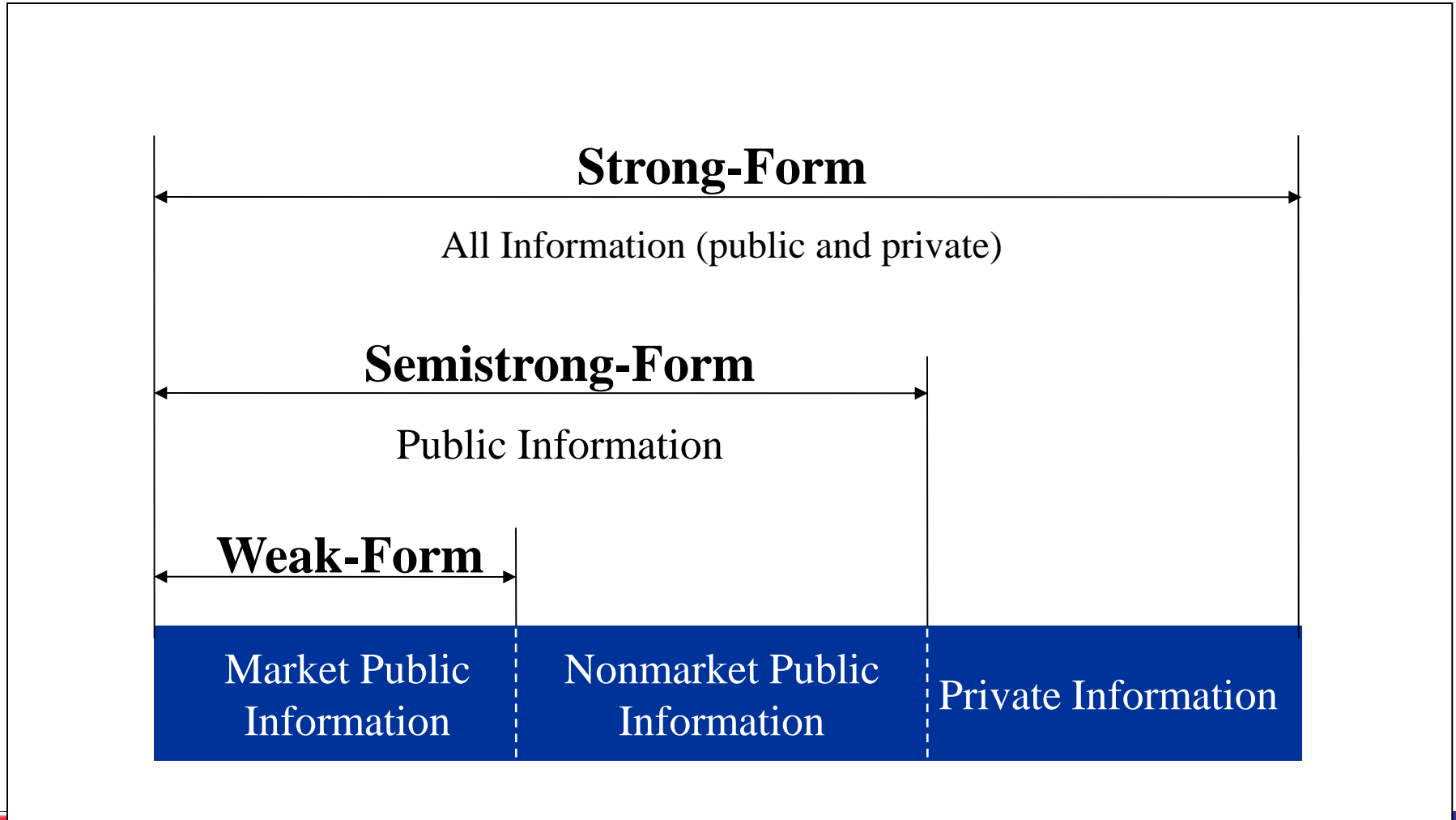
Source: Haugen, R. and J. Lakonishok, *The Incredible January Effect*



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



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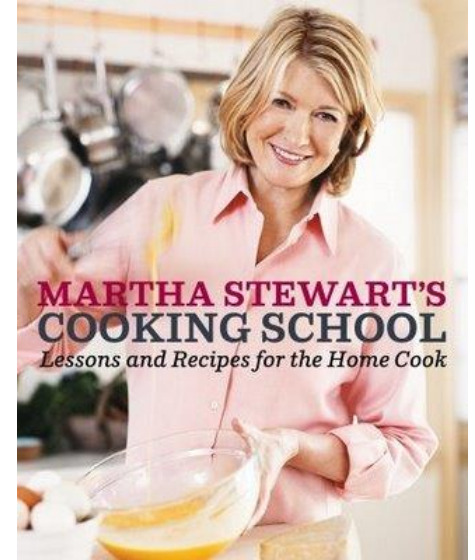
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Insider Trading

- 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.

Insider Trading: A Thai Case Study



- *The Securities and Exchange Commission on December 23, 2010, fined Sinsathien Aimpoolsub and Somphit Phuphiewngern for **use of inside information** for the trading on Professional Waste Technology (1999) Co Ltd.*
- *The SEC said Sinsathien, managing director and CEO of the company, bought PRO's shares through Somphit's account during January 11 - 31, 2007 while the company was under a joint venture negotiation with EnviroHub Holding. Sinsathien represented PRO in the negotiation, which was then not yet disclosed to the public.*
- *The watchdog viewed that Sinsathien violated the Securities and Exchange Act's Article 241, while Somphit was fined as an accomplice. Both agreed to the penalty: Bt500,000 imposed on Sinsathien and Bt333,333 on Somphit.*

Insider Trading: A Thai Case Study



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Stock Market Indexes:

Introduction

- **Security Market Indices** – are intended to measure the values of different target markets (security markets, market segments, or asset classes)
 - *DJIA measures values of 30 US blue-chip stocks*
- **Purposes of Indices**
 - Gauges of market sentiment
 - Proxies for measuring and modeling returns, beta, and risk-adjusted performance.
 - Proxies for asset classes in asset allocation models
 - Benchmark for actively managed portfolios
 - Model portfolios for investment products such as index funds and ETFs
- **Return Calculations**
 - **Price Return** – reflects only the prices
 - **Total Return** – reflects prices + reinvestment income

Stock Market Indexes: Index Calculations

- **Price Weighting** : the weight on each constituent security is determined by dividing its price by the sum of all the prices.
 - *DJIA*
- **Value (or Market Cap) Weighting** : the weight on each constituent security is determined by dividing its market capitalization by the total market capitalization of all the securities in the index.
 - *S&P 500, SET Index*
- **Equal Weighting** : assign an equal weight to each constituent security at inception.
 - *Russell 2000 Equal Weight*
- **Fundamental Weighting** – weighted by other measures (book value, earnings, etc.) that are independent of security price.
 - *Russell Fundamental Global Index*
- **Float-adjusted** – exclude shares held by controlling shareholders.

Stock Market Indexes: Index Calculations

- Information about three stocks is as follows:

Stock	30/12/2009 (The Base Period)			30/12/2010		
	Price (\$) (1)	# of Shares (2)	Market Value (3) = (1)×(2)	Price (\$) (1)	# of Shares (2)	Market Value (3) = (1)×(2)
A	10	10,000	100,000	20	10,000	200,000
B	100	100	10,000	1	100	100
C	2	20,000	40,000	30	20,000	600,000
Total	112	30,100	150,000	51	30,100	800,100

Stock Market Indexes: Price-weighted Index

- Price-weighted index:

$$\text{Price-weighted}_{09} = \frac{10 + 100 + 2}{3} = 37.33$$

$$\text{Price-weighted}_{10} = \frac{20 + 1 + 30}{3} = 17$$

$$\text{Index}_{09} = 100$$

$$\text{Index}_{10} = \frac{100}{37.33} \times 17 = 45.54$$

$$\text{Index Return} = \frac{45.54 - 100}{100} \times 100 = -54.46\%$$

Stock Market Indexes: Value-weighted Index

- **Value-weighted index**, assuming the base value is 100:
 - **As of 30/12/2009:**
 - Market Value = 150,000
 - **As of 30/12/2010:**
 - Market Value = 800,100

$$Index_{09} = 100$$

$$Index_{10} = \frac{100}{150,000} \times 800,100 = 533.4$$

$$\text{Index Return} = \frac{533.4 - 100}{100} \times 100 = 433.4\%$$

Stock Market Indexes: Equal-weighted Index

- **Equal-weighted index**, assuming the base value is 100:
 - Assuming on 30/12/2009 an equal amounts of \$100 were invested in each of the stocks A, B and C.
 - Thus, the information about the investment is as follows:

Stock	30/12/2009 (The Base Period)			30/12/2010			Holding Period Return (7) = (4)/(1) -1
	Price (\$) (1)	# of Shares (2)	Market Value (3) = (1)×(2)	Price (\$) (4)	# of Shares (5)	Market Value (6) = (4)×(5)	
A	10	10	100	20	10	200	100%
B	100	1	100	1	1	1	-99%
C	2	50	100	30	50	1,500	1400%

Stock Market Indexes: Equal-weighted Index

Equal - weighted index, using **Arithmetic Mean**:

- **As of 30/12/2009:**

- Market Value = 300

- **As of 30/12/2010:**

- Market Value = 1,701

$$Index_{09} = 100$$

$$Index_{10} = \frac{100}{300} \times 1,701 = 567$$

$$Index\ Return = \frac{567 - 100}{100} \times 100 = 467\%$$

$$= \frac{100\% + (-99\%) + 1,400\%}{3} = 467\%$$

Stock Market Indexes: Summary

- The rate of returns measured by the three predominant weighting schemes are summarized below:

	Priced-weighted	Value-weighted	Equal-weighted
Return	-54.46%	+433.4%	+467%

Stock Market Indexes: The Case of Stock Split

- Suppose Stock C has **2-for-1 split** in 2010

Stock	30/12/2009 (The Base Period)			30/12/2010		
	Price (\$) (1)	# of Shares (2)	Market Value (3) = (1)×(2)	Price (\$) (1)	# of Shares (2)	Market Value (3) = (1)×(2)
A	10	10,000	100,000	20	10,000	200,000
B	100	100	10,000	1	100	100
C	2	20,000	40,000	15	40,000	600,000
Total	112	30,100	150,000	51	30,100	800,100

Stock Market Indexes: The Case of Stock Split

- Price-weighted index:

$$\text{Price-weighted}_{09} = \frac{10+100+2}{3} = 37.33$$

$$\text{Price-weighted}_{10} = \frac{20+1+30}{3} = 17$$

$$\text{Price-weighted}_{\text{split}} = \frac{20+1+15}{x} = 17$$

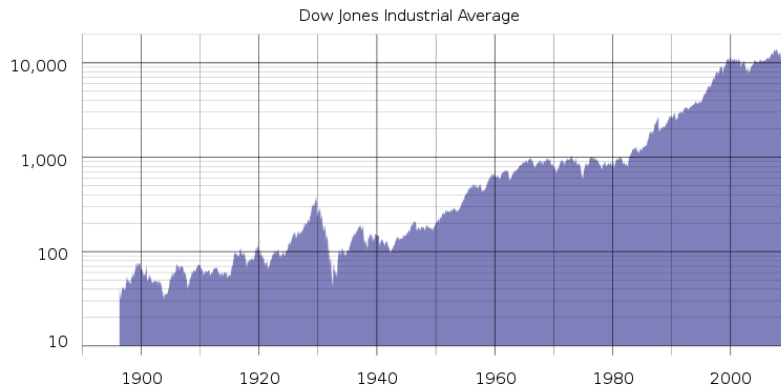
$$x = 2.18$$

The divisor must be adjusted after a stock split

$$\text{Index}_{09} = 100$$

$$\text{Index}_{10} = \frac{100}{37.33} \times 17 = 45.54$$

Stock Market Indexes: Dow Jones Industrial Average



- The Dow Jones Industrial Average was founded by Charles Dow in 1896, and represented the dollar average of 12 stocks from leading American industries. The components were increased to 30 stocks in 1928.
- Today, DJIA is a **price-weighted index** that is calculated by dividing the sum of the prices of the 30 component by a number called the DJIA Divisor. The index divisor is updated periodically and adjusted to offset the effect of stock splits. The current value of the **Dow Divisor** is **0.132129493**.

Stock Market Indexes: Summary

- **Price Weighting**

- **Pro:** simple calculation
- **Con:** high-priced stocks have greater impact
- **Con:** the divisor must be adjusted when a stock splits.

- **Value Weighting**

- **Pro:** securities are held in proportion to their value.
- **Con:** securities whose prices have risen have a greater weight in the index, and also greater impact

- **Equal Weighting**

- **Pro:** simple calculation
- **Con:** large securities are underrepresented and small securities are overrepresented
- **Con:** need frequent rebalancing to maintain equal weights