



# The Firm and the Financial Markets

---



- Learning goals:
  - To know the definitions of a firm
  - To understand the role played by managers
  - To understand the basic concepts about Instruments (assets) and markets.
  - To understand the functioning of financial markets and its role
  - To understand the basic concepts about bonds including pros and cons
  - Learn share concept and different characteristics of these assets
  - Learn how firms issue shares and some basics about price statistics

# Mikel Tapia



# Mikel Tapia



- I am Professor of Finance (UC3M)
- My research is devoted to Asset Pricing and Financial Markets
- My teaching focus on asset pricing, firm valuation and financial markets
- I taught at different national and international Universities, BS and companies.
- Professional activity
  - Consultancy on firm valuation and stock exchange design.
  - Independent Director of the Board and Chair of Audit Committee at BMEClearing
  - Member of the Technical Advisory Committee of IBEX-35©
  - Co-director of Master in Management (joint program ESCP Europe-UC3M)
- Web page: [http://www.uc3m.es/portal/page/portal/dpto\\_economia\\_empresa/home/faculty/mikeltapia](http://www.uc3m.es/portal/page/portal/dpto_economia_empresa/home/faculty/mikeltapia)



- Overview
  - Introduction
  - Bonds
  - Equity
  - Present Value and The Opportunity Cost of Capital
  - Inditex: a real case.



- Bibliography.
- 4 good and basic books about finance.
  - Principles of Corporate Finance. Brealey, Myers and Allen
  - Corporate Finance. Berk and DeMarzo.
  - Financial Markets & Corporate Strategy. Grinblatt and Titman.
  - Analysis for Financial Management. Higgins.



# What Is A Corporation?

- A corporation is legal entity that has legal rights and liabilities that are distinct from their employees (managers) and shareholders and may conduct business as either a profit-seeking business or not-for-profit business.

Stora Kopparberg share (1347)



# Corporate Structure

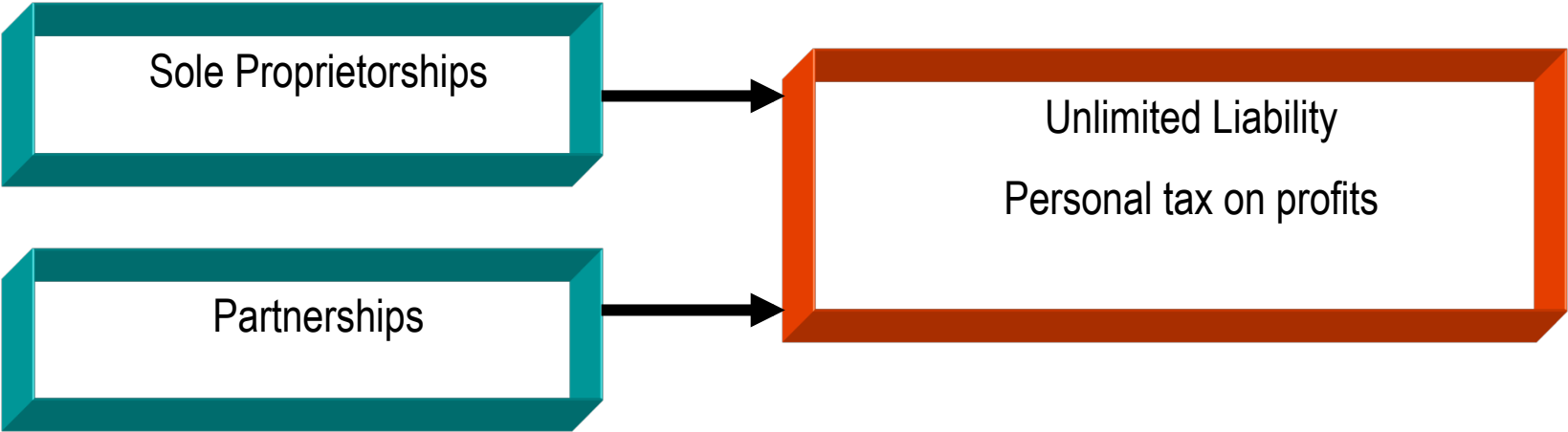


Sole Proprietorships

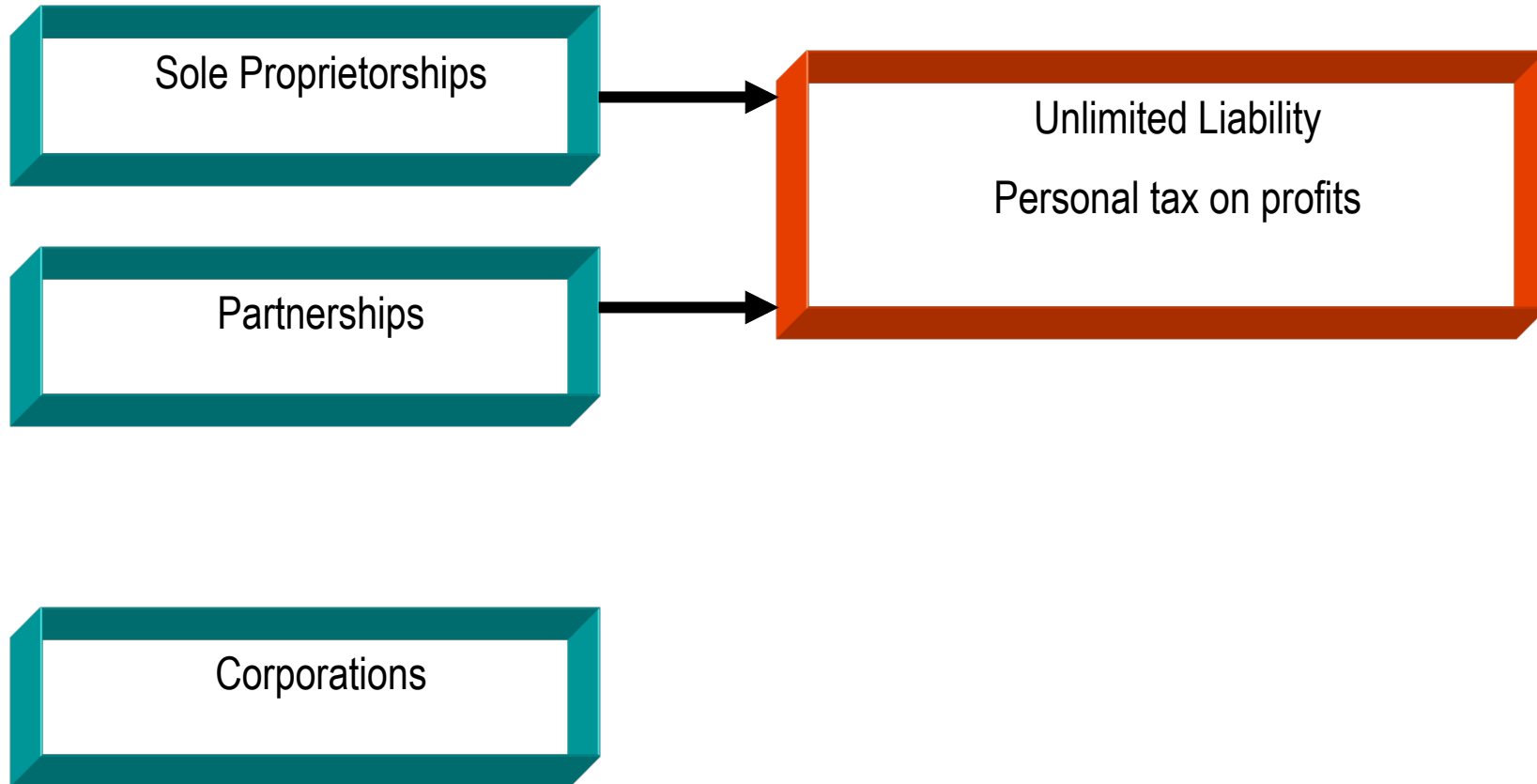
Partnerships



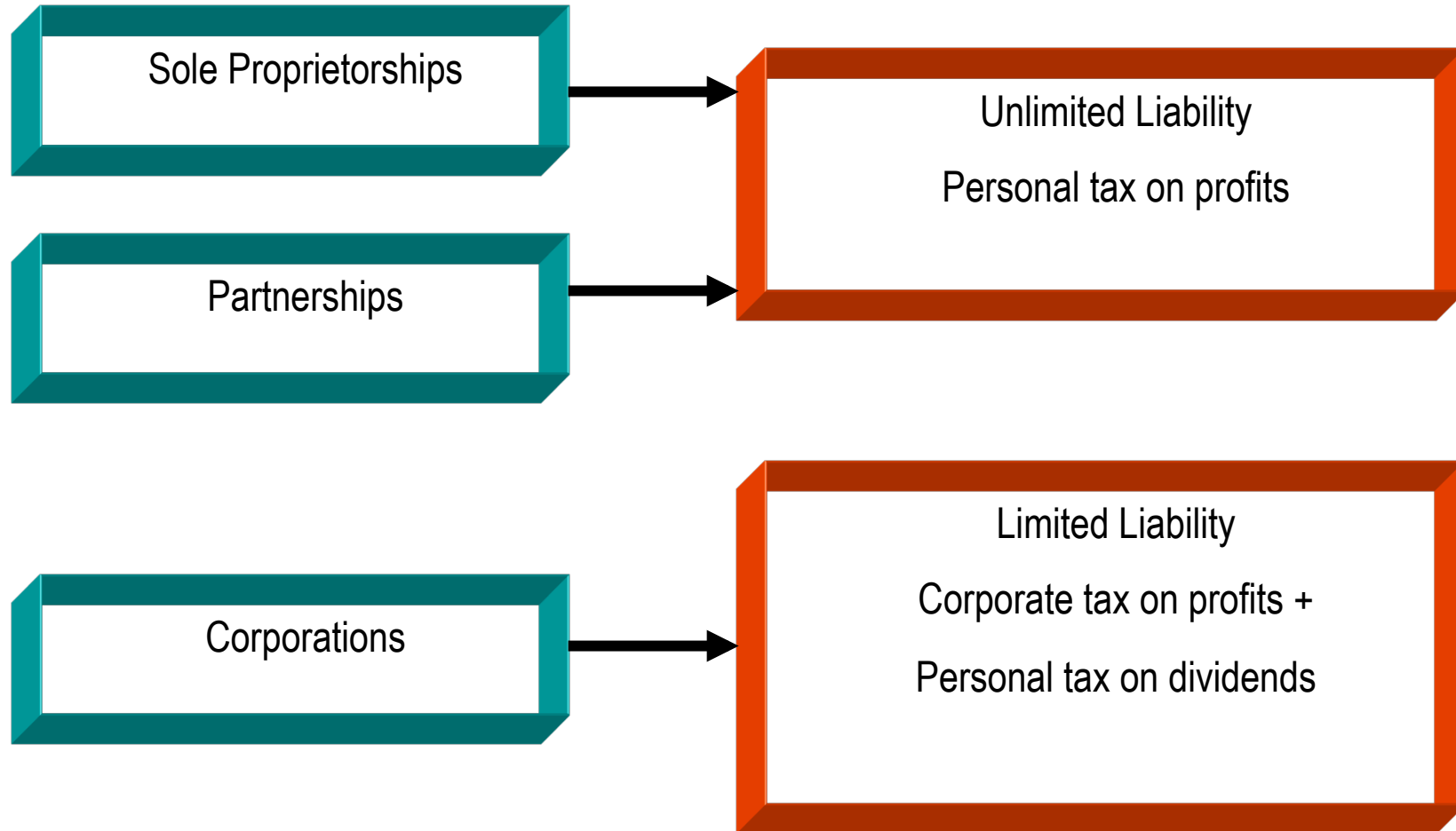
# Corporate Structure



# Corporate Structure



# Corporate Structure



# Ownership vs. Management



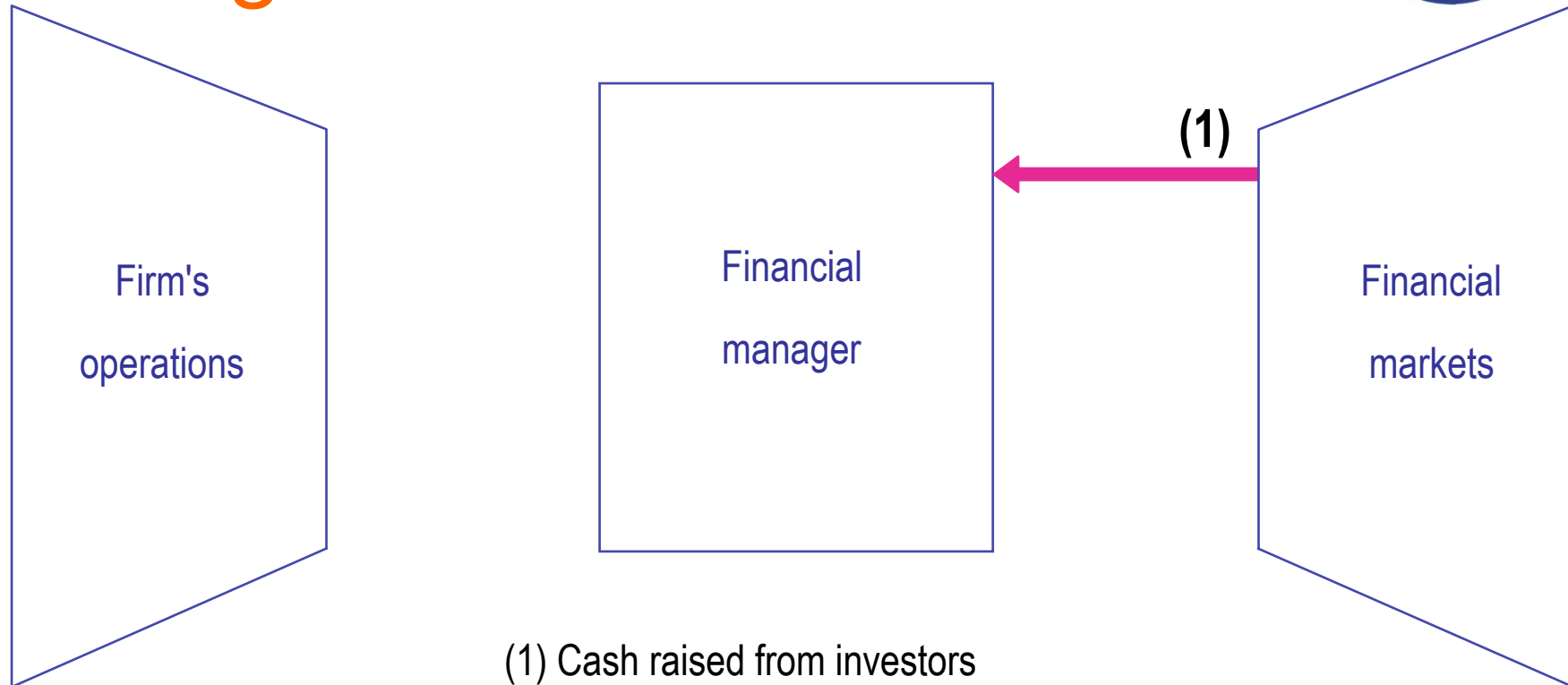
## Difference in Information

- Stock prices and returns
- Issues of shares and other securities
- Dividends
- Financing

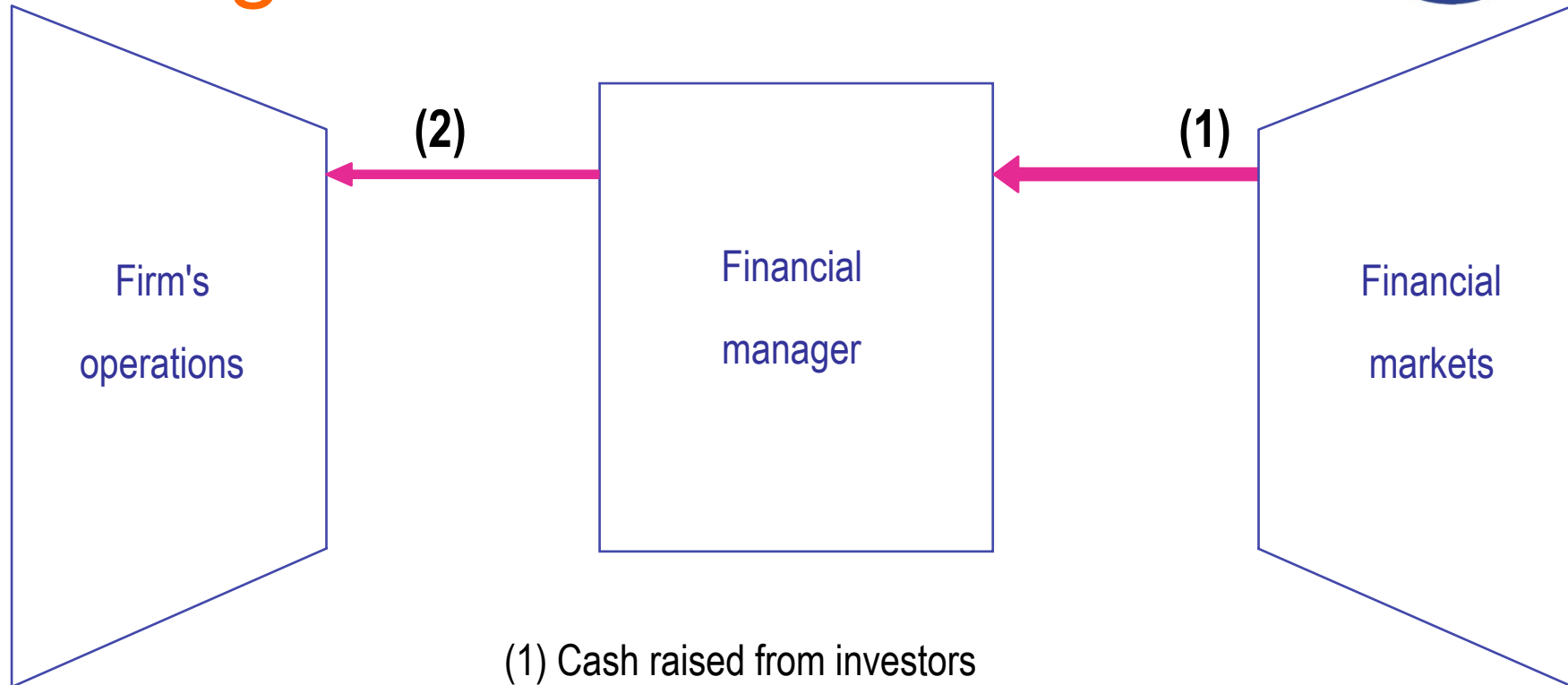
## Different Objectives

- Managers vs. stockholders
- Top mgmt vs. operating mgmt
- Stockholders vs. banks and lenders

# Role of The Financial Manager

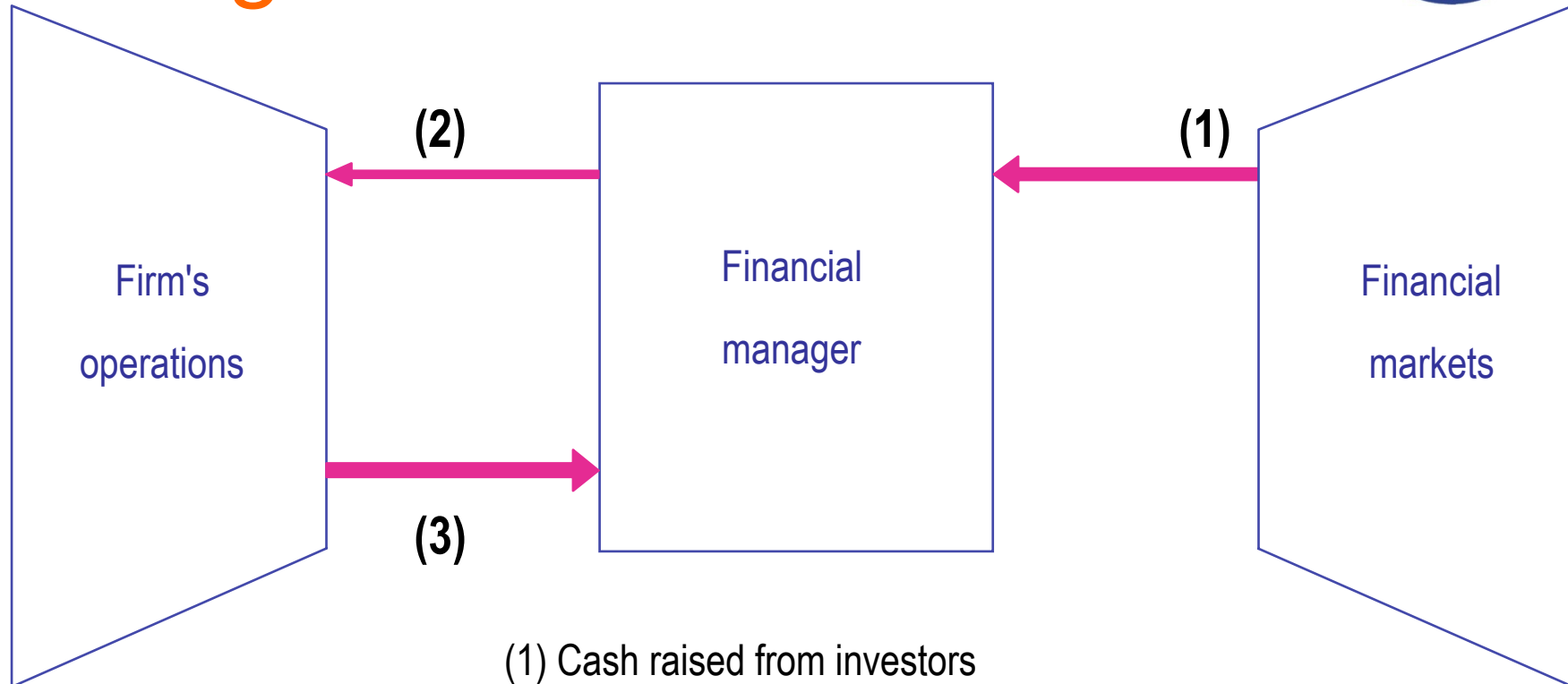


# Role of The Financial Manager



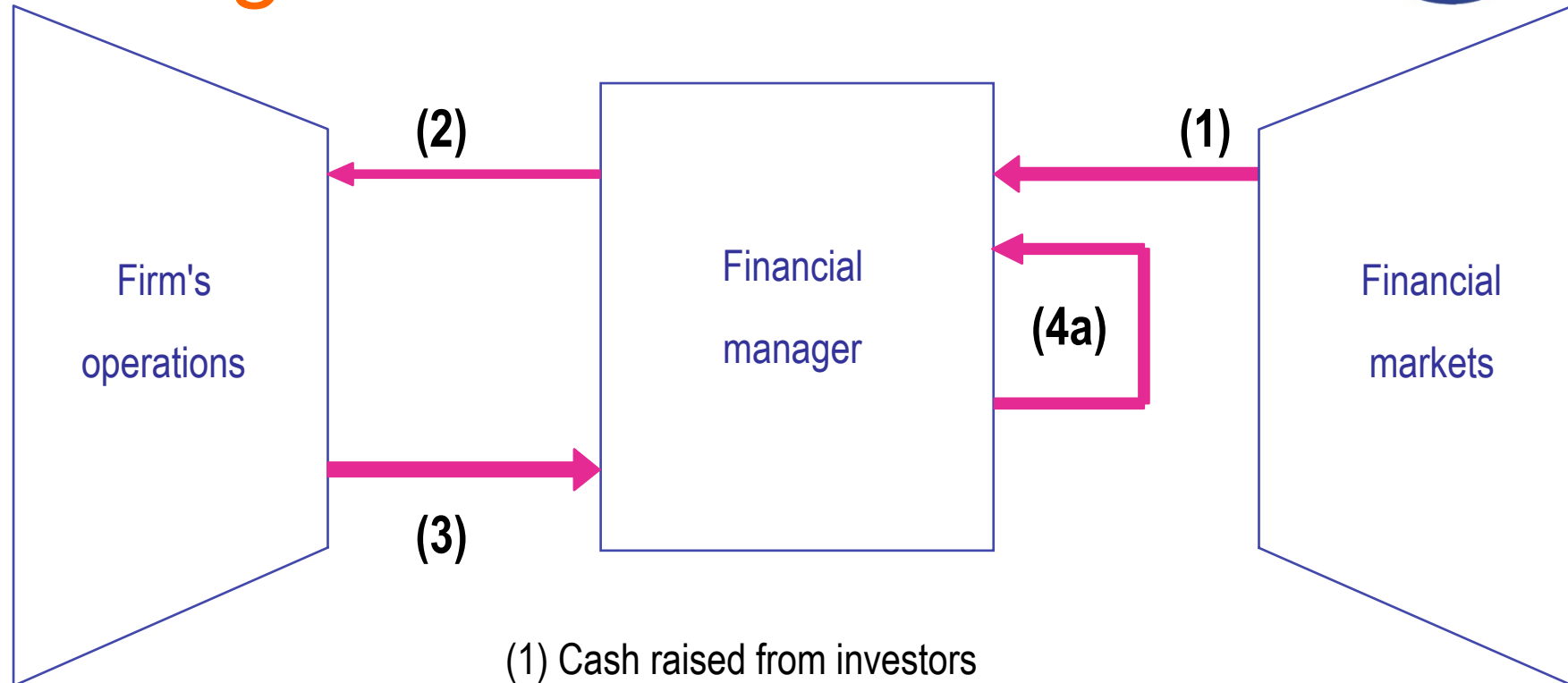
- (1) Cash raised from investors
- (2) Cash invested in firm

# Role of The Financial Manager



- (1) Cash raised from investors
- (2) Cash invested in firm
- (3) Cash generated by operations

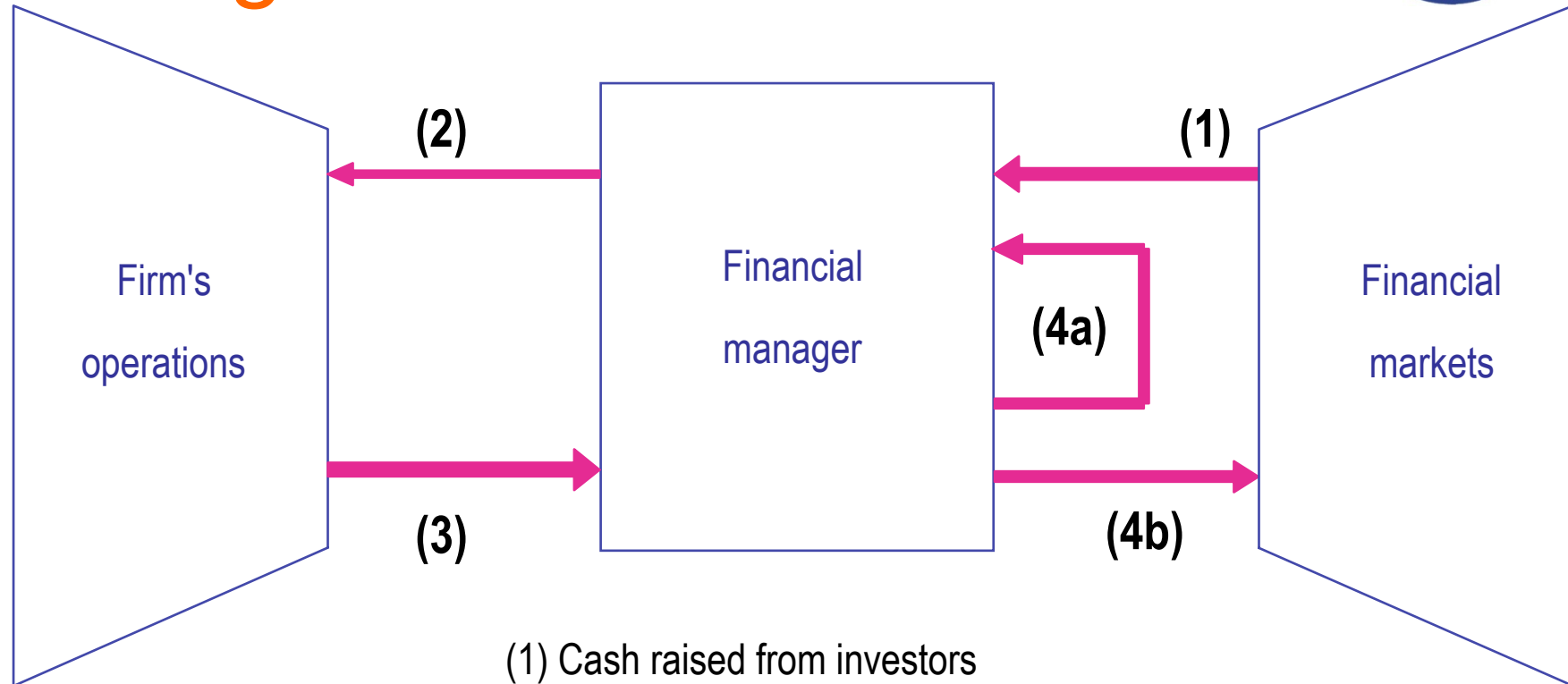
# Role of The Financial Manager



- (1) Cash raised from investors
- (2) Cash invested in firm
- (3) Cash generated by operations
- (4a) Cash reinvested



# Role of The Financial Manager



- (1) Cash raised from investors
- (2) Cash invested in firm
- (3) Cash generated by operations
- (4a) Cash reinvested
- (4b) Cash returned to investors



- Two important questions:
  - Where does the money come from?
    - Instruments:
      - Loans
      - Bonds
      - Shares: common and preferred
    - Financial Markets:
      - Primary
      - Secondary
  - Where do we invest the money?
    - Project Valuation



# Instruments



# Instruments

- What?
  - They are liabilities or investments
    - that transfer **funds** between economic agents. They generate a liability = a payment obligation. The buyers are other economic units to obtain a return
    - that transfer **risk**. The issuer transfers a part of the risk in their activity to the buyers.



# Instruments

- What?
- Why do we need financial instruments?
  - Financial Instruments allow for temporary transfer of funds.
  - Nonetheless, transferring funds is problematic, due to:
    - Search costs
    - Different time horizons
    - Risk
    - Asymmetric information



# Instruments

- What?
- Why do we need financial instruments?
- Main features?
  - Profitability: related to the instrument's capacity for producing returns (interest, dividends, tax benefits, etc.). This is the compensation for temporarily renouncing purchasing power and the temporary risk the buyer assumes. The profitability demanded for an instrument is higher the lower its liquidity and the greater the risk.
  - Liquidity: The liquidity of an instrument is measured in terms of the ease and cost of trading it for cash.
  - Risk: The risk inherent in an instrument depends on the probability of the issuer complying with the payment clauses when it reaches maturity (fixed income) or on the variations between actual and expected dividends (variable income).



# Instruments

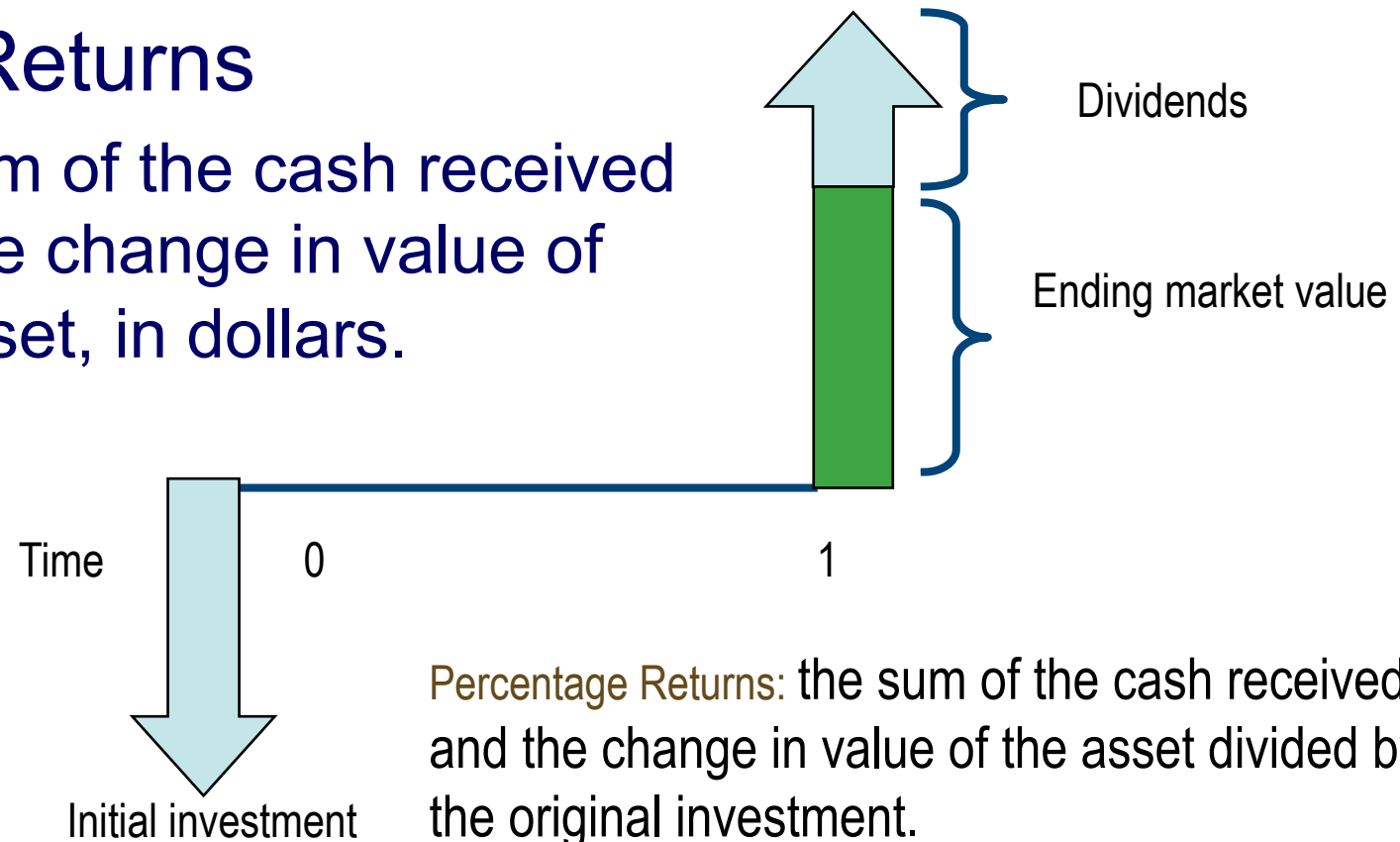
- What?
- Why do we need financial instruments?
- Main features?
- Type of instruments?
  - We can classify depending on different criteria:
    - Whether or not they are issued by financial intermediaries.
    - Their relative liquidity. (Money is the completely liquid instrument)
    - The nature of the issuer: public or private.
    - The market where the transfer takes place.
  - Basic types: bonds, shares, derivatives (Options, Futures, Swaps, Credit Default Swap (CDS),...)



# Returns definition

## ■ Dollar Returns

- the sum of the cash received and the change in value of the asset, in dollars.







# Returns

Dollar Return = Dividend + Change in Market Value

$$\text{percentage return} = \frac{\text{dollar return}}{\text{beginning market value}}$$

$$= \frac{\text{dividend} + \text{change in market value}}{\text{beginning market value}}$$

$$= \text{dividend yield} + \text{capital gains yield}$$



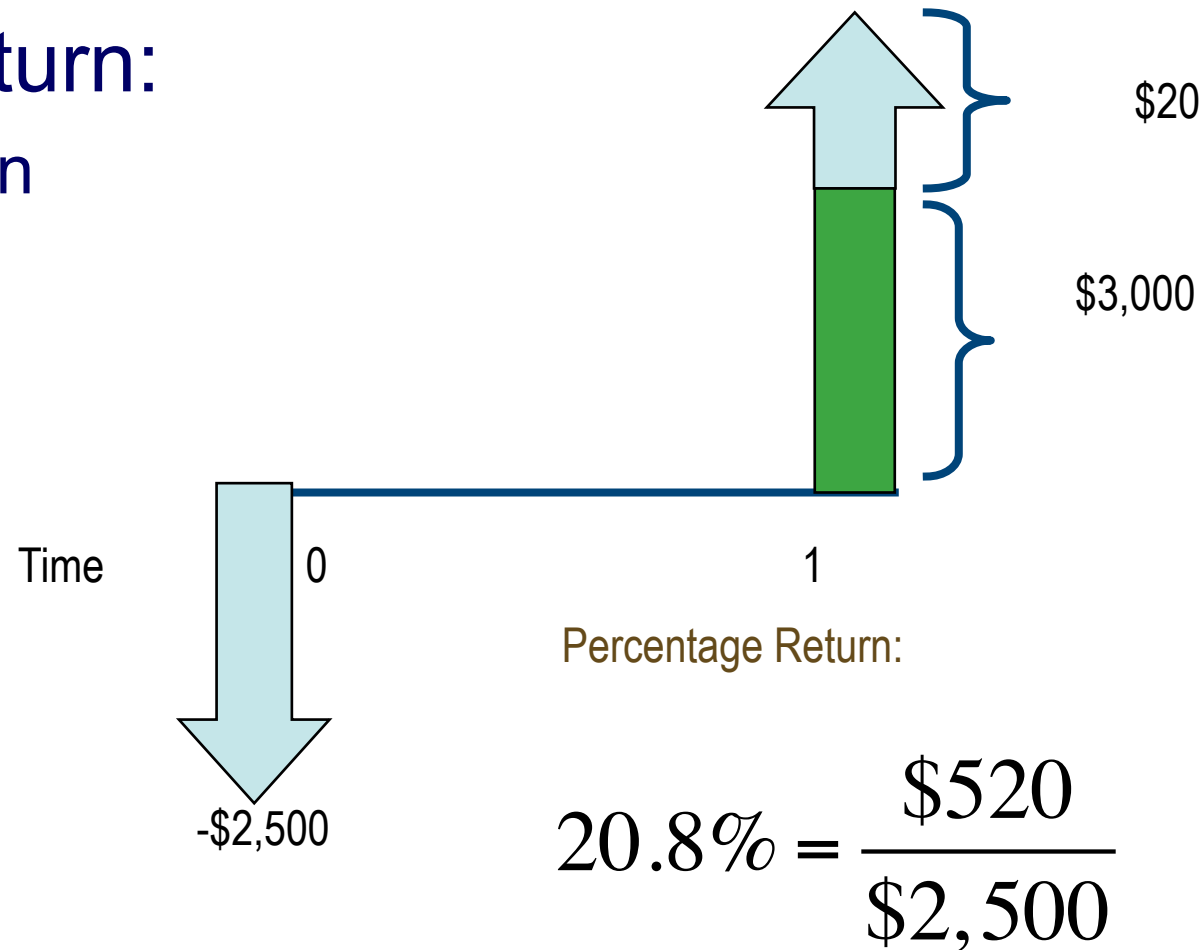
# Returns: Example

- Suppose you bought 100 shares of Wal-Mart (WMT) one year ago today at \$25. Over the last year, you received \$20 in dividends (= 20 cents per share  $\times$  100 shares). At the end of the year, the stock sells for \$30. How did you do?
- Quite well. You invested  $\$25 \times 100 = \$2,500$ . At the end of the year, you have stock worth \$3,000 and cash dividends of \$20. Your dollar gain was  $\$520 = \$20 + (\$3,000 - \$2,500)$ .
- Your percentage gain for the year is  $20.8\% = \frac{\$520}{\$2,500}$



# Returns: Example

Dollar Return:  
\$520 gain



# Instruments:indices.xls





# Financial markets



# Introduction

## ■ Definition

- A financial market may be a physical location or otherwise (electronic) where instruments are exchanged. Today the vast majority of markets are electronic.
- Reasons
  - Price efficiency: Definition?
  - Ease and equality of access: the fact that the markets are electronic facilitates connection by all operators.
  - Volume: this aspect is perhaps the most important. The volume that financial markets handle nowadays would be difficult to contemplate without help from the computer networks that take orders to the markets and the computer systems that carry out transactions.



# Financial markets

- Functions of Financial Markets
  - To put agents in contact with one another;
  - To act as an appropriate mechanism for determining prices;
  - To provide liquidity for instruments (ease of converting instruments into money without loss);
  - Reduce term and brokerage costs



# Financial markets

- Definition
- Functions of Financial Markets
- Features
  - A market is more **efficient** if it complies with the following characteristics:
    - Breadth: number of instruments
    - Transparency: information about transactions and orders.
    - Freedom of Access: No interference from the authorities,...
    - Depth: number of assets (shares, bonds willing to buy or sell)
    - Flexibility: Allowing agents to react quickly and easily to the arrival of news.





# Financial markets

- Definition
- Functions of Financial Markets
- Features
- Classification of Markets: most important
  - By the characteristics of the instruments traded
    - Money markets: Trading short-term instruments with high liquidity and low risk. The vast majority of the instruments have maturity within a year. Bond markets.
    - Capital markets: Trading long-term instruments with higher risk. (Long-term debt market and Stock market: Fixed Income and Variable Income)
  - According to the trading phase
    - Primary: Offering newly-created instruments (auction of bills, IPO, etc.)
    - Secondary: Trading instruments that are already created (Stock Exchange)



- **Overview**
  - Introduction
    - What Is A Corporation?
    - Instruments
    - Markets
  - **Bonds**



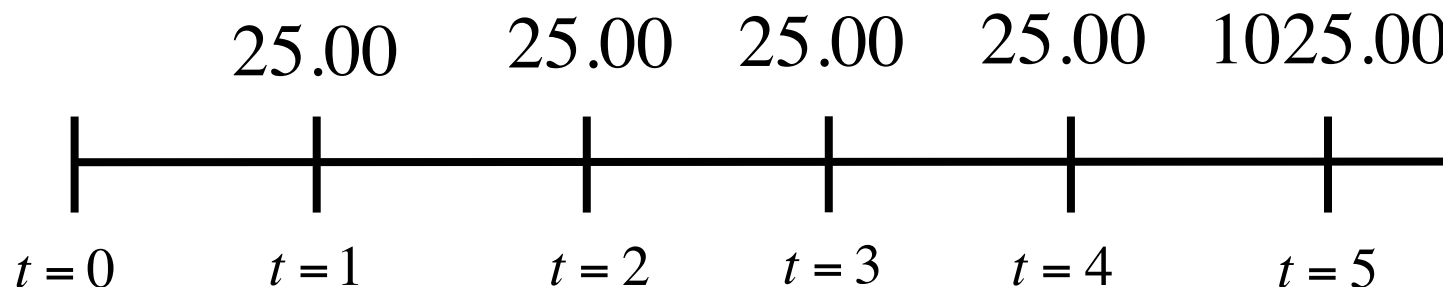
# Bonds: definition

- A bond is a legally binding agreement between a borrower and a lender:
  - Specifies the principal amount of the loan.
  - Specifies the size and timing of the cash flows.



# An Example of a Bond

- Consider a Spanish government bond (5y maturity) bond listed as 2.5%.
  - The Par Value (face value or nominal) of the bond is \$1,000.
  - Coupon payments are made annually
  - Since the coupon rate is 2.5% the payment is 25.00
  - The size and timing of cash flows are:





# Bonds: definition

## Bond Types

- Depending on the issuer: public (government) or private (firm) issuer.
- Depending on term
  - T-bills:
    - mature in one year or less (4-to 52 weeks)
    - zero-coupon bonds, they do not pay interest prior to maturity;
    - they are sold at a discount of the par value to create a positive yield to maturity.
    - In Spain Letras del Tesoro
  - T notes:
    - maturity dates from two to ten years (2, 3, 5, 7 or 10 years).
    - They have a coupon payment every six months,
    - In Spain Obligaciones



# Bonds: definition

## Bond Types

### – Depending on term: US

- T-bonds:

- maturity from twenty to thirty years (common 30y)
- They have a coupon payment every six months
- Secondary market is highly liquid,
- In Spain Bonos.

- TIPS: Treasury Inflation-Protected Securities (or TIPS)

- These bonds protect against inflation.  $\text{Coupon} = \text{Rate} + \text{Inflation}$ .
- TIPS are currently offered in 5-year, 10-year 20-year and 30-years maturities.

# Bonds: definition, primary market



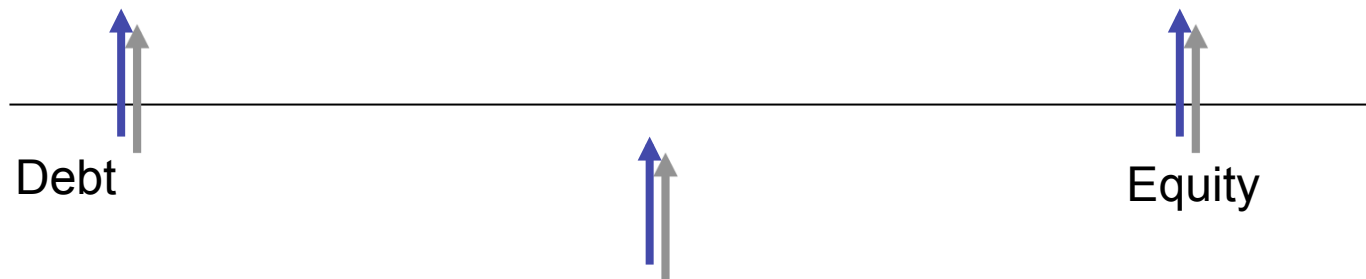
- Governments issue bonds through auctions
  - [www.treasurydirect.gov/](http://www.treasurydirect.gov/)
  - [Tesoro](#)
  - Investor present competitive and noncompetitive bids
  - These bids form the demand
  - The government fix the supply and the price.
- Firms:
  - The firms use a similar procedure if the number of investors is big enough.
  - If not they can sell the complete offer to a bank or a group of banks that can assure the issue.

# Bonds



When the firm needs money, it should answer questions like

- How much money do we need?
  - What instrument to use?
  - How to raise the capital needed over time?
- |                                                                                                                                                                                       |                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Fixed Claim</li><li>• High Priority on cash flows</li><li>• Tax Deductible</li><li>• Fixed Maturity</li><li>• No Management Control</li></ul> | <ul style="list-style-type: none"><li>• Residual Claim</li><li>• Lowest Priority on cash flows</li><li>• Not Tax Deductible</li><li>• Infinite life</li><li>• Management Control</li></ul> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



Hybrid: combinations between D and E  
Preferred Stocks





# Costs and Benefits of Debt

## ■ Benefits of Debt

### – Tax Benefits

- Debt is deductible shares not

### – Adds discipline to management

- If you are managers of a firm with no debt, and you generate high income and cash flows each year, you tend to become complacent and as a consequence inefficient



# Costs and Benefits of Debt

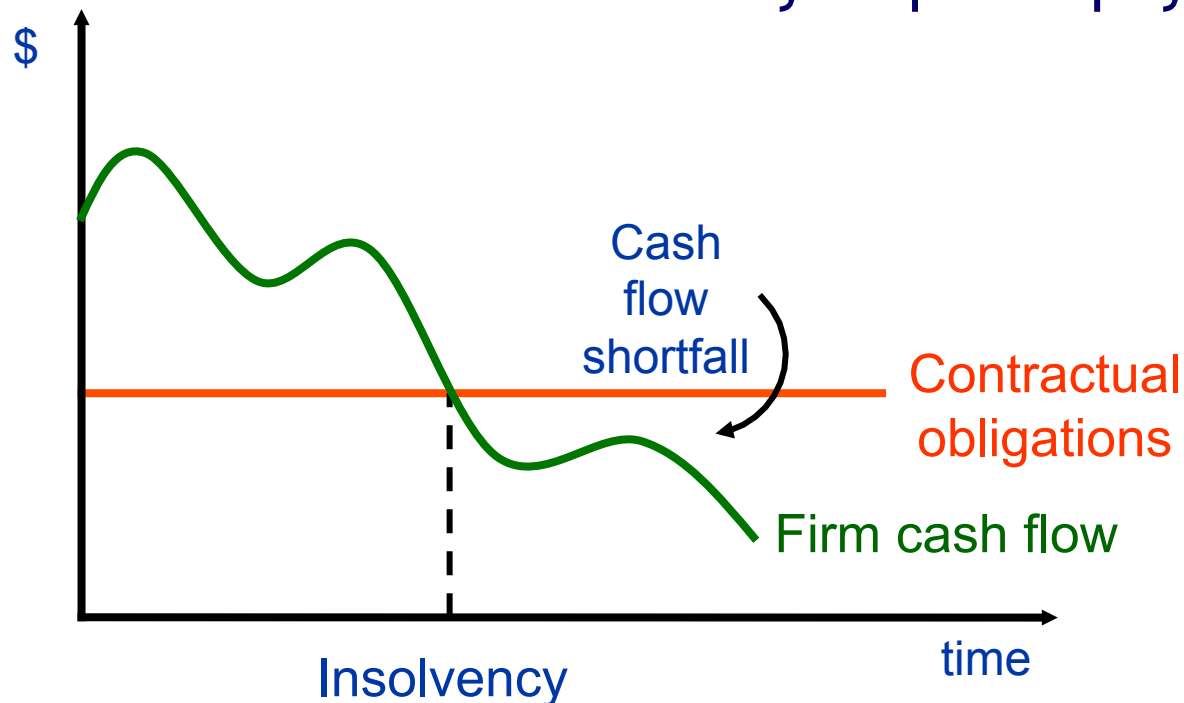
- Costs of Debt
  - Bankruptcy Costs or Financial Distress
  - Agency Costs
  - Loss of Future Flexibility



# Costs and Benefits of Debt

## ■ Costs of Debt

- Bankruptcy Costs or Financial Distress: Flow-based insolvency occurs when the firm's cash flows are insufficient to cover contractually required payments.





# Costs and Benefits of Debt

- Costs of Debt
  - Bankruptcy Costs or Financial Distress. The cost of going bankrupt can be splitted in
    - direct costs: lawyers, auditors, liquidation cost and other type of Costs
    - indirect costs: Costs arising because people perceive you to be in financial trouble
    - As you borrow more, you increase the probability of bankruptcy and hence the expected bankruptcy cost. The possibility of bankruptcy has a negative effect on the value of the firm.
  - Financial distress does not usually result in the firm's death. Firms deal with distress by
    - Selling major assets.
    - Merging with another firm.
    - Reducing capital spending and research and development.
    - Issuing new securities.
    - Negotiating with banks and other creditors.
    - Exchanging debt for equity.
    - ...



# Costs and Benefits of Debt

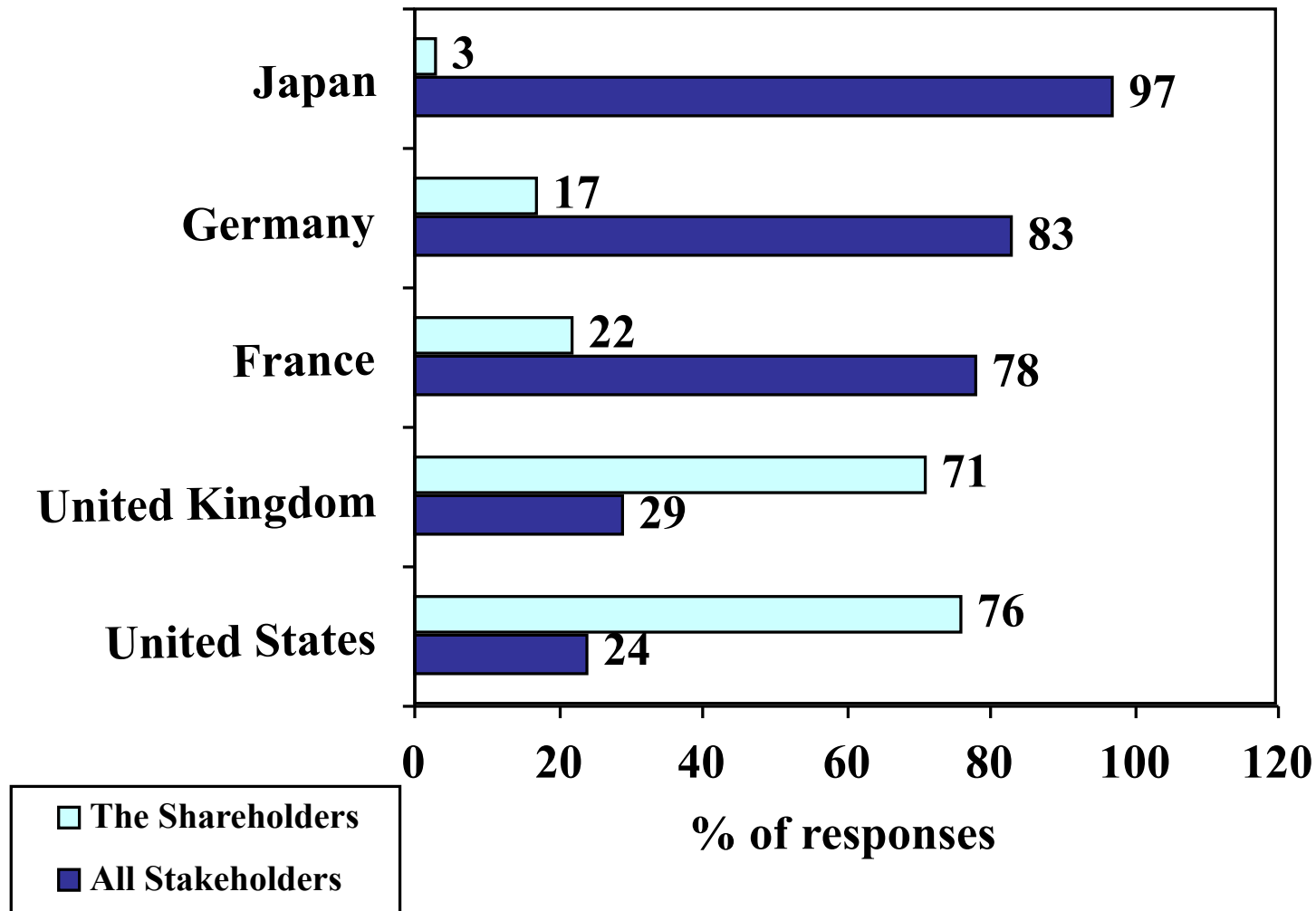
## Costs of Debt

- Bankruptcy Costs or Financial Distress.
- Agency Costs
  - Economic concept that relates to the cost incurred by an organization because of divergent management-shareholder objectives and information asymmetry.
  - Agency costs arise because of core problems such as conflicts of interest between shareholders and management.
  - Shareholders wish for management to run the company in a way that increases shareholder value.
  - But management may wish to grow the company in ways that maximize their personal power and wealth that may not be in the best interests of shareholders.
- Loss of Future Flexibility

# Whose Company Is It?



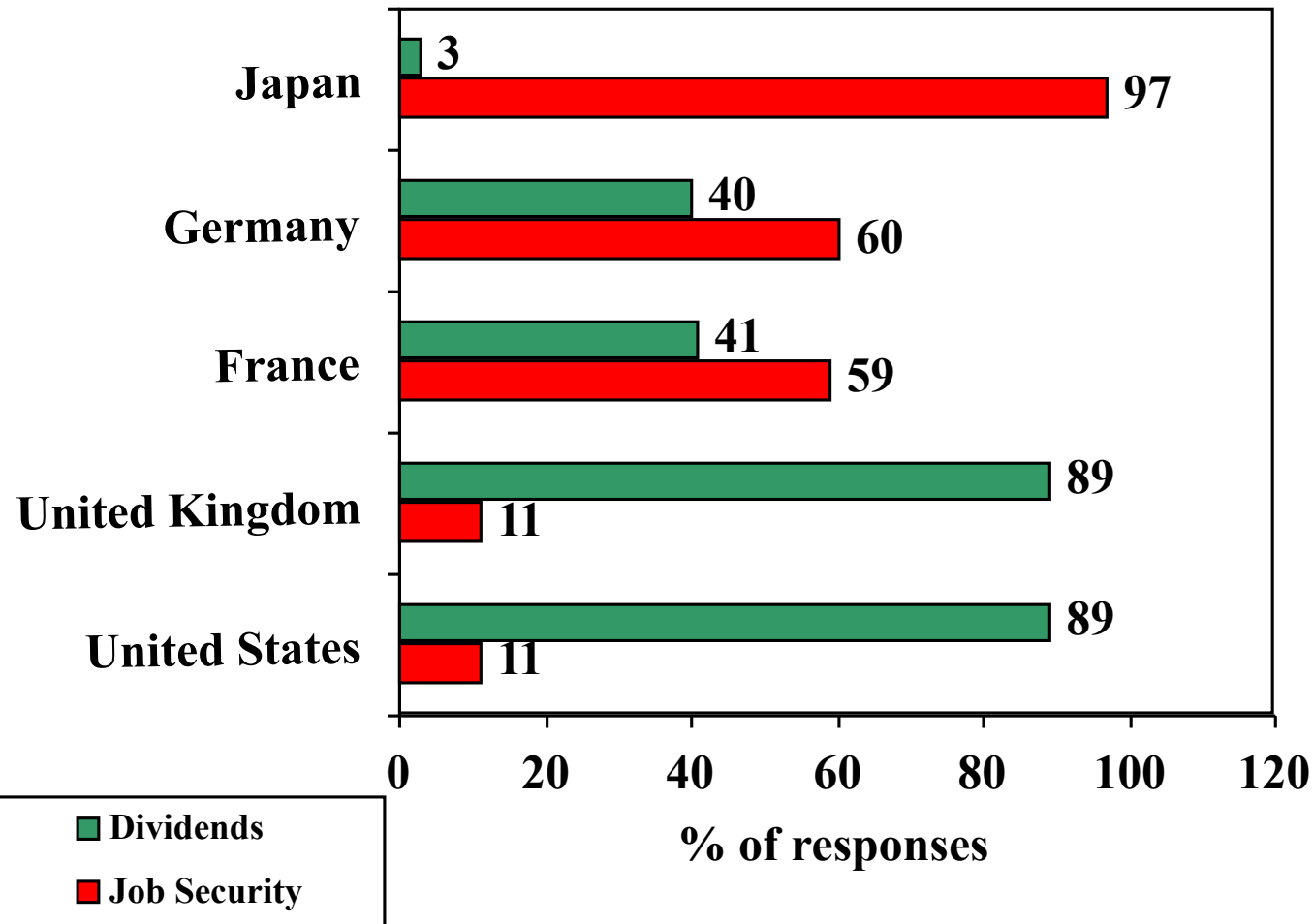
\*\* Survey of 378 managers from 5 countries



# Dividends vs. Jobs



\*\* Survey of 399 managers from 5 countries. Which is more important...jobs or paying dividends?





# Costs and Benefits of Debt

## Costs of Debt

- Bankruptcy Costs or Financial Distress.
- Agency Costs
- Loss of Future Flexibility
  - When a firm borrows up to its capacity, it loses the flexibility of financing future projects with debt.
  - A survey of CFO of large U.S. companies provided the following ranking (from most important to least important) for the factors that they considered important in the financing decisions

### Factor Ranking (0-5)

1. Maintain financial flexibility	4.55
2. Ensure long-term survival	4.55
3. Maintain Predictable Source of Funds	4.05
4. Maximize Stock Price	3.99
5. Maintain financial independence	3.88
6. Maintain high debt rating	3.56
7. Maintain comparability with equal group	2.47





# Bonds

## ■ Definitions

- Debt: here we include the financial debt: bonds and loans but not debt coming from suppliers.
- Equity: shares common and preferred

$$\text{Assets} = \text{Shareholder Equity} + \text{Liabilities}$$

- $\text{Capital} = \text{Equity} + \text{Debt}$

- $\text{Times interest earned} = \text{ICR} = \frac{\text{EBIT}}{\text{Interest expense}} \uparrow$

- $\text{Debt to Equity} = \frac{D}{E}$

- $\text{Debt to Capital} = \frac{D}{E + D}$

# Average Nonfinancial Debt Ratios, 1999-2004



	1999	2000	2001	2002	2003	2004
<b>Nonfinancial Companies in Standard &amp; Poor's 500</b>						
Debt to total assets* (%)	32	31	32	33	31	30
Times interest earned	5	4.8	3.9	4.3	4.9	5.9

## Industry Debt Ratios 2004

	Debt to total assets (%)	Times interest earned
Biotechnology (3)	15	31.5
Broadcasting, cable tv (3)	24	2.3
Computer hardware (7)	14	42.2
Electrical components (4)	23	10.1
Electric utilities (20)	37	2.6
Homebuilding (3)	50	5.1
Industrial machinery (8)	16	12.7
Movies and entertainment (4)	19	4.9
Pharmaceuticals (13)	18	26.1
Telecommunications equipment (13)	14	13.3

\*All interest-bearing debt; all quantities measured at book value.

numbers in parentheses are the number of companies in the industry sample

# Median Values of Key Ratios by S&P Rating Category



	<b>AAA</b>	<b>AA</b>	<b>A</b>	<b>BBB</b>	<b>BB</b>	<b>B</b>	<b>CCC</b>
Times interest earned (X)	23.8	13.6	6.9	4.2	2.3	0.9	0.4
EBITDA interest coverage (X)	25.3	17.1	9.4	5.9	3.1	1.6	0.9
Funds from operations/total debt (%)	167.8	77.5	43.2	34.6	20.0	10.1	2.9
Pretax return on capital (%)	35.1	26.9	16.8	13.4	10.3	6.7	2.3
Total debt/capital (%)	6.2	34.8	39.8	45.6	57.2	74.2	101.2
Number of companies	6	18	124	207	274	250	43

Industrial long-term debt, three-year figures, 2001-2003

Note: These figures are not meant to be industry standards. Company data are adjusted to eliminate nonrecurring gains and losses and to include an amount for operating lease debt equivalent.

# Damodaran Data dic-2013



- Damodaran provide data of firms
- <http://pages.stern.nyu.edu/~adamodar/>
- We look at european firms and agregate by country and industry

# Damodaran Data dic-2013



## ■ Country analysis

Country	Cost of equity in US\$	Cost of capital in US\$	Market Cap (in US \$)	Total Debt	Firms
France	9,90%	7,54%	3906,48	6515,89	510
Germany	21,19%	7,51%	2940,36	4076,51	590
Greece	26,17%	14,15%	340,73	353,23	190
Ireland	9,20%	7,92%	6751,00	2340,15	72
Italy	12,90%	8,37%	2737,74	5933,45	218
Portugal	20,11%	10,04%	1935,17	3591,69	40
Spain	14,38%	8,68%	6316,25	10584,52	122
United Kingdom	36,30%	7,53%	3409,48	3612,52	1030

# Damodaran Data dic-2013



## ■ Country analysis

Country	Market Debt to capital ratio	Market Debt to Equity ratio	ICR	Effective Tax Rate	Firms
France	29%	102%	89,76	22,77%	510
Germany	24%	382%	74,98	16,58%	590
Greece	56%	542%	265,50	9,70%	190
Ireland	18%	53%	99,47	12,56%	72
Italy	44%	225%	66,70	19,40%	218
Portugal	64%	417%	3,83	18,81%	40
Spain	42%	210%	27,43	12,56%	122
United Kingdom	19%	771%	216,91	12,84%	1030

# Damodaran Data dic-2013



## ■ Industry

Industry Group	Cost of equity in US\$	Cost of capital in US\$	Market Cap (in US \$)	Total Debt	Firms
Construction	9,09%	7,86%	2286,2	1536,4	50
Investment Co.	6,90%	6,30%	577,8	237,9	98
Machinery	10,26%	8,67%	1640,3	282,6	195
Utility (General)	8,16%	6,82%	11618,7	11891,2	20

Industry Group	Market Debt to capital ratio	Market Debt to Equity ratio	Interest coverage ratio	Effective Tax Rate	Firms
Construction	31,46%	90,04%	5,20	18,87%	50
Investment Co.	12,82%	34,65%	161,26	8,34%	98
Machinery	22,28%	47,82%	44,45	17,62%	195
Utility (General)	42,42%	103,25%	22,72	27,22%	20



# Equity





# Shares: definition

- Share definition: Certificate representing one unit of ownership in a corporation.
- Basic Share types
  - Ordinary shares are standard shares with no special rights or restrictions. Ordinary shareholders are the last to be paid if the company is wound up.
  - Preference shares typically carry a right that gives the holder preferential (ahead) treatment when annual dividends are distributed to shareholders.
  - Redeemable shares come with an agreement that the company can buy them back at a future date - this can be at a fixed date or at the choice of the business.



# Shares: definition

- Which is the value of a firm (share)?
- If the firm is listed in an stock exchange then

$$Value = P \times Shares = MktCap$$

- The price is the market value.
- The price is representing the consensus (equilibrium between demand and supply) of million of investors about the value (future=expectations) of a company.

$$P = \sum_{t=1}^{\infty} \frac{CF_t}{(1+r)^t}$$



# Initial Public Offering

# Shares: IPO



- Why do private firms decide to go public?
  - Private firms that have experienced growth and need money to continue growing then consider making the transition to a public firm through an IPO
  - Often times, the decision is forced by a lack of other financing choices or pressure from venture capitalists who desire to liquidate their investments
  - Too much debt, so firm optimizes capital structure
- Any firm must weight the benefits and costs of going public before deciding to proceed with an IPO



# Shares: IPO

- The IPO process.
- Depending on the country could be slightly different but...
  1. Owners decide to go public and they fulfill with minimum requirements on size, performance, etc.
  2. Firm selects an underwriter (investment bank) who also acts as the advisor about the process
  3. Firm and underwriter agree on the offering method: selling method, partners, etc..
  4. Valuing the offer: Underwriter performs its due-diligence and provides a value of the firm
  5. SEC filing: The underwriter files a registration statement with the SEC that gives specific information on the offering, firm history, financials and future plans.

# Shares: IPO



- The IPO process.
- Depending on the country could be slightly different but...
  6. Syndication: The underwriter arranges a syndicate to help with the distribution
  7. Road show: Begins a few weeks prior to the IPO, the firm and the underwriter explain the offer and the company to possible investors.
  8. Offer: Underwriter sells the issue. Depending on demand for shares, the underwriter may have to ration shares to investors. Shares are sold to investors prior to trading in secondary markets
  9. An exchange begins trading the issue in a secondary market. New investors who didn't get an allocation of the primary shares can now buy shares in the open market



# Shares: IPO

- Advantages of going public
  - Firm has access to a larger supply of capital
  - Firm's owners can obtain a market value for their share of ownership
  - Firm's owners can share risks with other investors
  - Diversification among public investors may also result in lower cost of capital for the firm
  - Some firms may decide to raise equity in order to reduce their amount of debt



# Shares: IPO

- Some Disadvantages
  - Direct costs.
    - Marketing consultants, lawyers, and auditors. Pay commissions to the financial authorities and to the underwriter.
  - Information disclosure requirements.
  - Underpricing.





# Shares: IPO

- Disadvantages
  - Direct costs.
  - Information disclosure requirements.
    - Listed companies must inform the market about all decisions that may alter the value of the firm.
  - Underpricing.



# Shares: IPO

## ■ Disadvantages

- Direct costs.
- Information disclosure requirements.
- Underpricing.
  - The issuer in the IPO is faced with a tradeoff
  - If the offering price is too high, investors may not purchase the offer and the IPO will not be successful
  - If the offering price is too low, the firm's existing owners will incur a loss given that they sell their shares at a price below their true value
  - Evidence shows that on the first day of trading of new stocks, the stock's price rises significantly above the issue price
  - This implies that there is considerable underpricing in IPOs
  - How do we calculate the underpricing?

$$R = \frac{P_1 - P_{IPO}}{P_{IPO}} > 0 \text{ Underpricing}$$



# IPOs Underpricing Evidence

# Cost of Underpricing: Money “left on the table”



Underpricing of U.S. firms by year

YEAR	NUMBER OF IPOs	AVERAGE FIRST-DAY RETURN	AGGREGATE AMOUNT LEFT ON THE TABLE
1990	89	9.46%	\$0.30 billion
1991	250	11.37%	\$1.39 billion
1992	338	9.87%	\$1.65 billion
1993	437	11.64%	\$3.12 billion
1994	319	8.56%	\$1.37 billion
1995	366	20.38%	\$4.16 billion
1996	572	15.99%	\$6.45 billion
1997	391	13.80%	\$4.22 billion
1998	267	21.76%	\$4.95 billion
1999	446	70.89%	\$35.20 billion
2000	333	57.29%	\$26.69 billion
2001	78	14.15%	\$2.97 billion
2002	67	8.90%	\$1.13 billion
2003	62	12.10%	\$1.01 billion

↑  
Dot.com  
boom years  
↓

Source: Jay Ritter IPO webpage <http://bear.cba.ufl.edu/ritter/ipodata.htm>



<b>Years</b>	<b>IPOs</b>	<b>Mean First-day Return Equal weighted</b>	<b>Aggregate Amount Left on the Table (billion)</b>
2003	62	12.10%	\$1.00
2004	174	12.30%	\$3.87
2005	160	10.20%	\$2.64
2006	157	12.10%	\$3.95
2007	160	13.90%	\$4.95
2008	21	6.40%	\$5.65
2009	41	9.80%	\$1.46
2010	92	9.20%	\$1.83
2011	81	13.30%	\$3.23
2012	94	17.70%	\$2.78

<b>Years</b>	<b>IPOs</b>	<b>Mean First-day Return Equal weighted</b>	<b>Aggregate Amount Left on the Table (billion)</b>
1980-1989	2,052	7.20%	\$3.28
1990-1998	3,608	14.80%	\$29.64
1999-2000	857	64.50%	\$66.63
2001-2012	1,187	12.20%	\$35.45

Source: Jay Ritter IPO webpage <http://bear.cba.ufl.edu/ritter/ipodata.htm>

## EVIDENCE OF UNDERPRICING IN IPOs



Country	Number of IPOs	Period	Under pricing
Germany	172	1978-92	11,1
Belgium	28	1984-90	10,2
Brazil	62	1979-90	78,5
Chile	19	1982-90	16,3
USA	10626	1960-92	15,3
Spain	71	1985-90	35
France	187	1983-92	4,2
Italy	75	1985-91	27,1
Japan	472	1970-91	32,5
Mexico	37	1987-90	33
Netherlands	72	1982-91	7,2
Portugal	62	1986-87	54,4
United Kingdom	2133	1959-90	12
Sweden	213	1970-91	39

Loughran, Ritter & Rydqvist (1994) and Ibbotson & Ritter (1995).

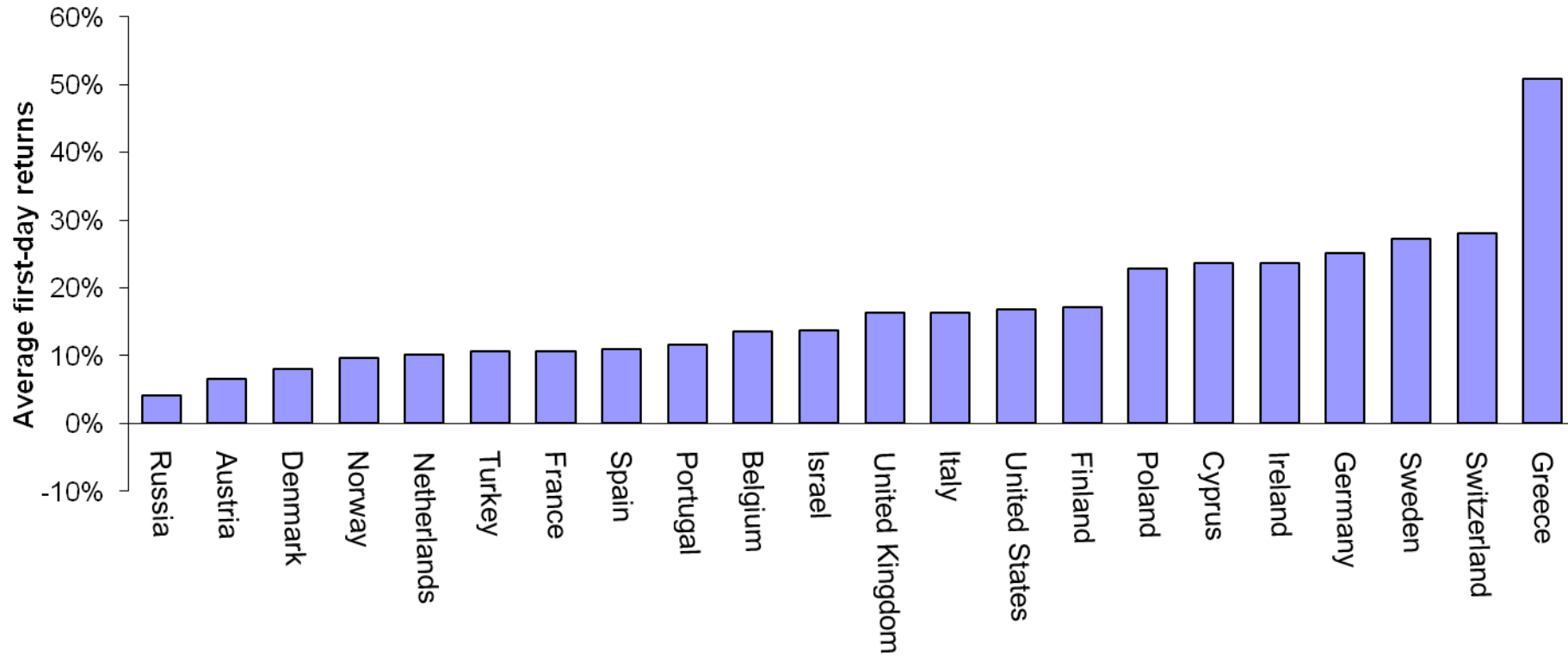
- This table presents country-level descriptive statistics for the entire sample of 7,306 IPOs. N is the number of sample IPOs listing in the country over the 2000-2006 sample period.
- Boulton, Smart and Zutter (2009), Earnings Quality and International IPO Underpricing

#### Country-level Descriptive Statistics

Country	N	Average Underpricing
Australia	711	19.96%
Austria	25	14.31%
Belgium	24	8.11%
Brazil	28	8.96%
Canada	21	37.03%
Denmark	15	23.18%
Finland	21	18.94%
France	282	12.63%
Germany	223	29.96%
Greece	49	28.02%
Hong Kong	521	16.10%
India	97	38.73%
Indonesia	53	38.89%
Italy	99	9.62%
Japan	1,092	57.29%
Malaysia	331	35.04%
Mexico	5	2.53%
Netherlands	12	13.49%
New Zealand	35	15.03%
Norway	60	4.18%
Philippines	23	14.08%
Poland	23	50.97%
Portugal	8	10.65%
Singapore	360	20.37%
South Africa	5	16.85%
South Korea	327	49.08%
Spain	20	7.95%
Sweden	42	6.22%
Switzerland	43	14.86%
Taiwan	431	17.90%
Thailand	153	18.35%
Turkey	5	19.51%
United Kingdom	1,034	17.70%
United States	1,128	24.60%
Full Sample	7,306	27.53%



## Average first-day returns on (mostly) European IPOs

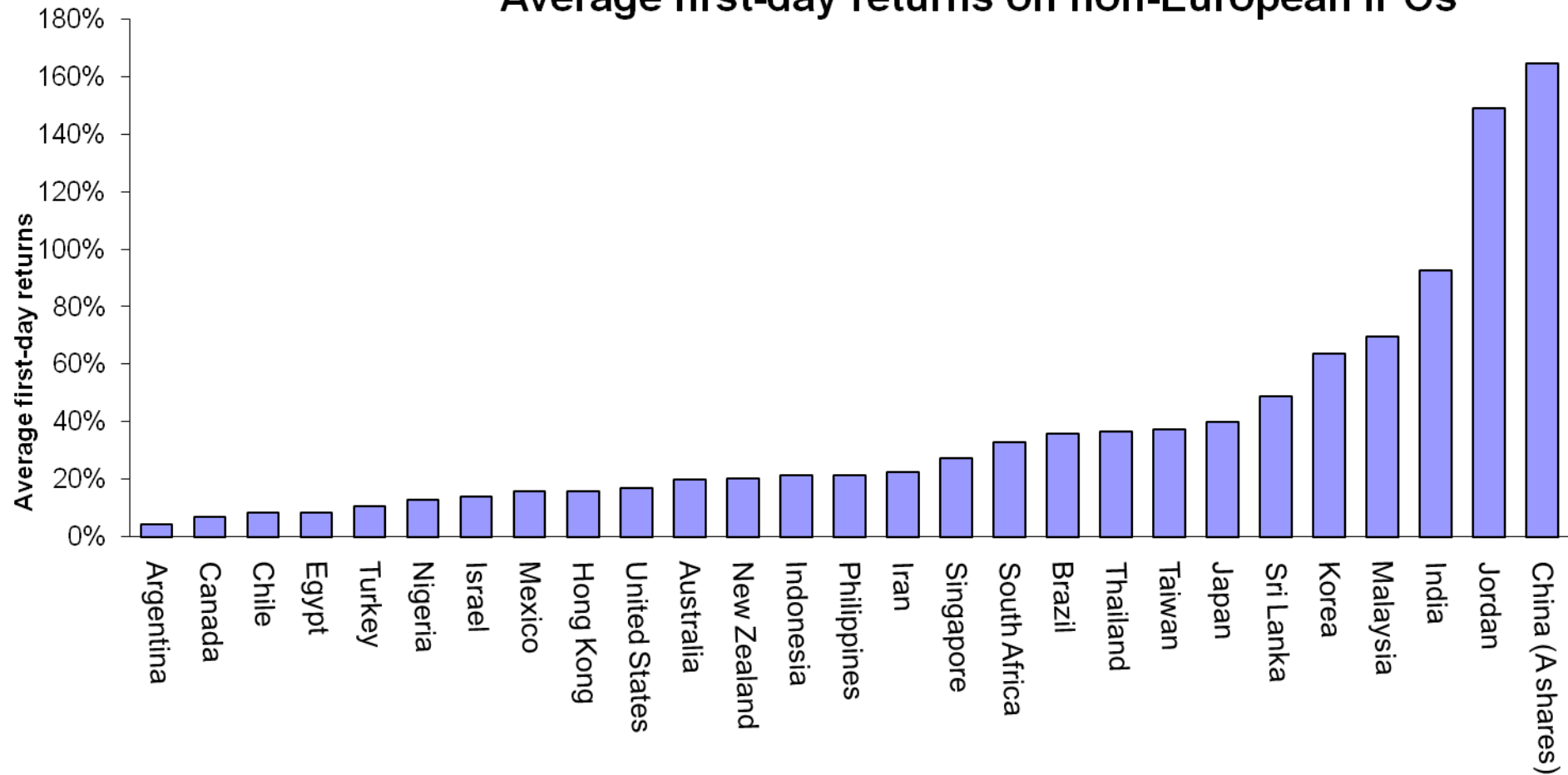


Source: Prof. Jay Ritter, University of Florida, September 2010





## Average first-day returns on non-European IPOs



Source: Prof. Jay Ritter, University of Florida, September 2010



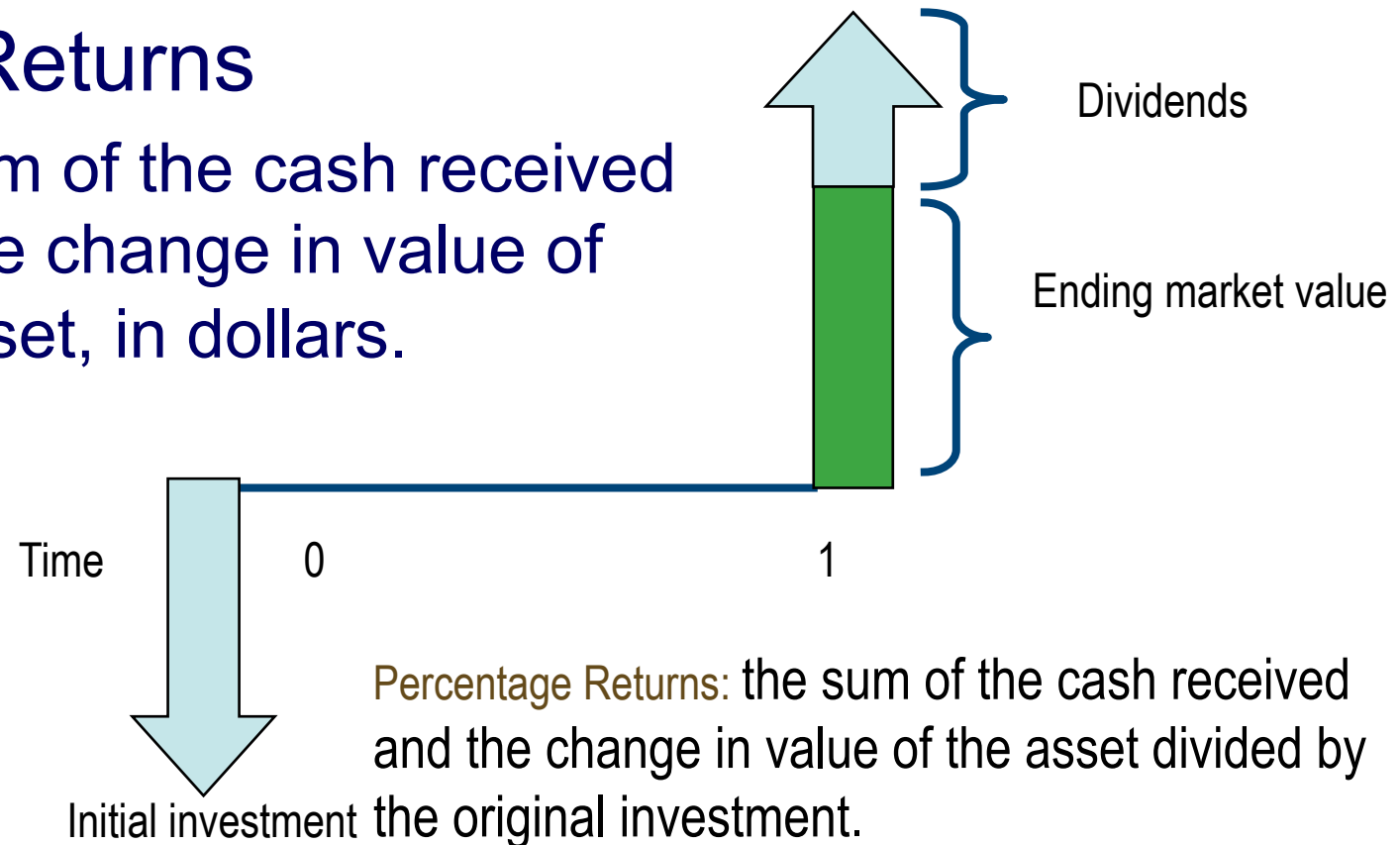
## Share price statistics

# Returns



## ■ Dollar Returns

- the sum of the cash received and the change in value of the asset, in dollars.



# Returns



Dollar Return = Dividend + Change in Market Value

$$\text{percentage return} = \frac{\text{dollar return}}{\text{beginning market value}}$$

$$= \frac{\text{dividend} + \text{change in market value}}{\text{beginning market value}}$$

$$= \text{dividend yield} + \text{capital gains yield}$$



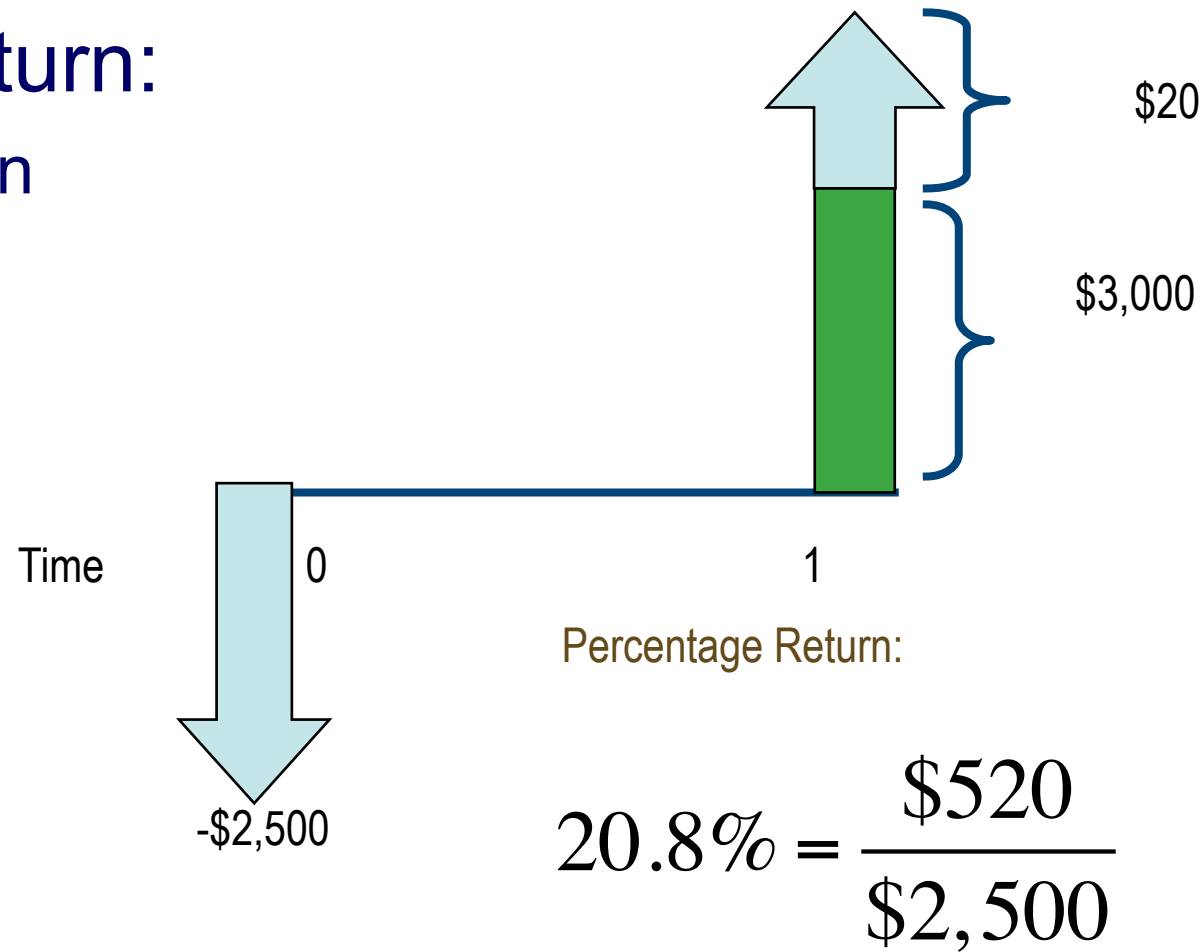
# Returns: Example

- Suppose you bought 100 shares of Wal-Mart (WMT) one year ago today at \$25. Over the last year, you received \$20 in dividends (= 20 cents per share  $\times$  100 shares). At the end of the year, the stock sells for \$30. How did you do?
- Quite well. You invested  $\$25 \times 100 = \$2,500$ . At the end of the year, you have stock worth \$3,000 and cash dividends of \$20. Your dollar gain was  $\$520 = \$20 + (\$3,000 - \$2,500)$ .
- Your percentage gain for the year is  $20.8\% = \frac{\$520}{\$2,500}$



# Returns: Example

Dollar Return:  
\$520 gain





# Holding-Period Returns

- The holding period return is the return that an investor would get when holding an investment over a period of  $n$  years, when the return during year  $i$  is given as

$r_i$ :

$$\begin{aligned} \text{holding period return} &= \\ &= (1 + r_1) \times (1 + r_2) \times \cdots \times (1 + r_n) - 1 \end{aligned}$$



# Holding Period Return: Example

- Suppose your investment provides the following returns over a four-year period:

<i>Year</i>	<i>Return</i>
1	10%
2	-5%
3	20%
4	15%

Your holding period return =

$$\begin{aligned} &= (1 + r_1) \times (1 + r_2) \times (1 + r_3) \times (1 + r_4) - 1 \\ &= (1.10) \times (.95) \times (1.20) \times (1.15) - 1 \\ &= .4421 = 44.21\% \end{aligned}$$





# Holding Period Return: Example

- An investor who held this investment would have actually realized an annual return of 9.58%:

<i>Year</i>	<i>Return</i>
1	10%
2	-5%
3	20%
4	15%

Geometric average return =

$$(1 + r_g)^4 = (1 + r_1) \times (1 + r_2) \times (1 + r_3) \times (1 + r_4)$$

$$r_g = \sqrt[4]{(1.10) \times (.95) \times (1.20) \times (1.15)} - 1$$
$$= .095844 = 9.58\%$$

So, our investor made 9.58% on his money for four years, realizing a holding period return of 44.21%

$$1.4421 = (1.095844)^4$$



# Holding Period Return: Example

- Note that the geometric average is not the same thing as the arithmetic average:

<i>Year</i>	<i>Return</i>
1	10%
2	-5%
3	20%
4	15%

$$\begin{aligned}\text{Arithmetic average return} &= \frac{r_1 + r_2 + r_3 + r_4}{4} \\ &= \frac{10\% - 5\% + 20\% + 15\%}{4} = 10\%\end{aligned}$$



# Return Statistics

- The history of capital market returns can be summarized by describing the
  - average return

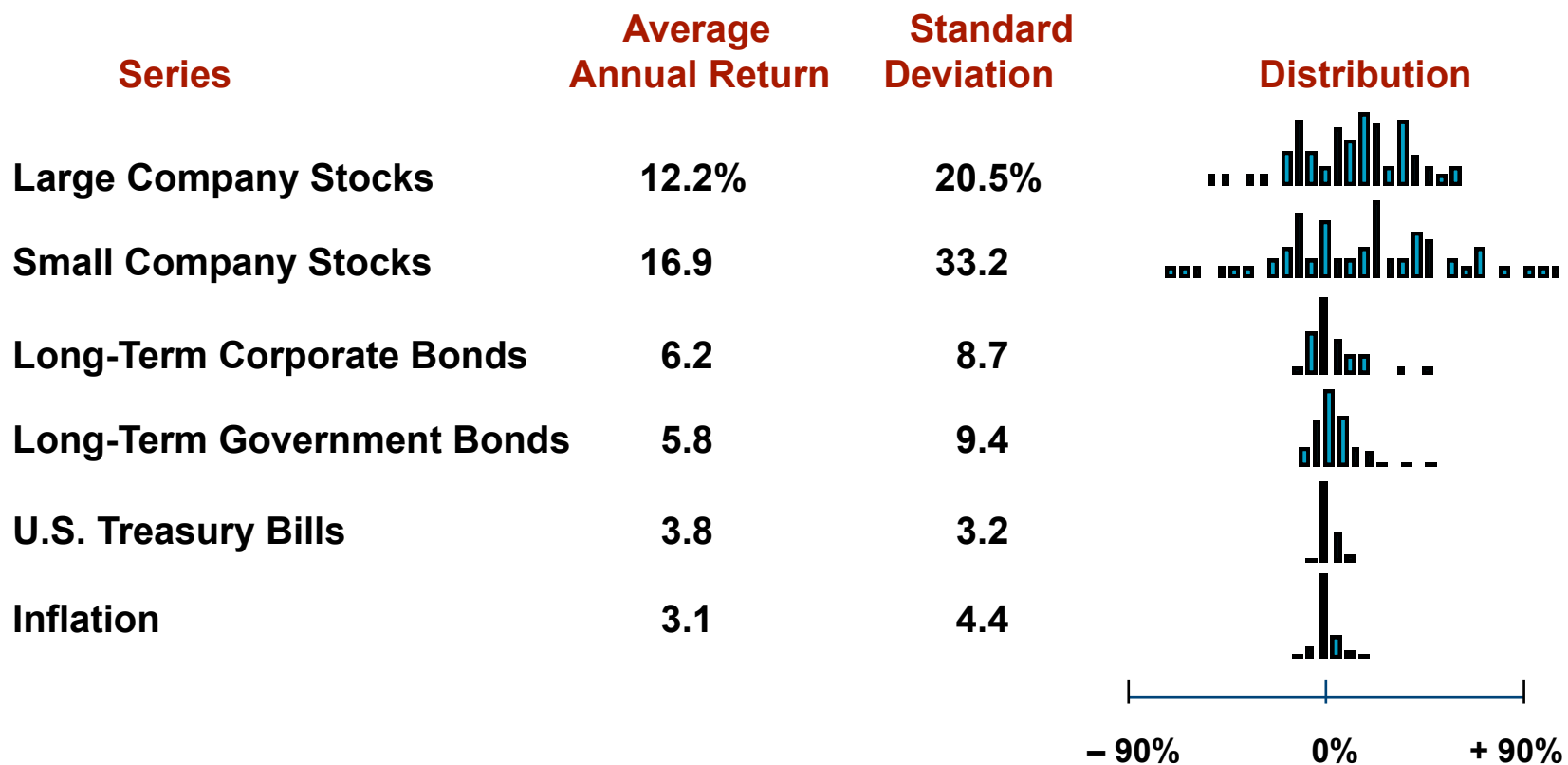
$$\bar{R} = \frac{(R_1 + \dots + R_T)}{T}$$

- the standard deviation of those returns

$$SD = \sqrt{VAR} = \sqrt{\frac{(R_1 - \bar{R})^2 + (R_2 - \bar{R})^2 + \dots + (R_T - \bar{R})^2}{T - 1}}$$

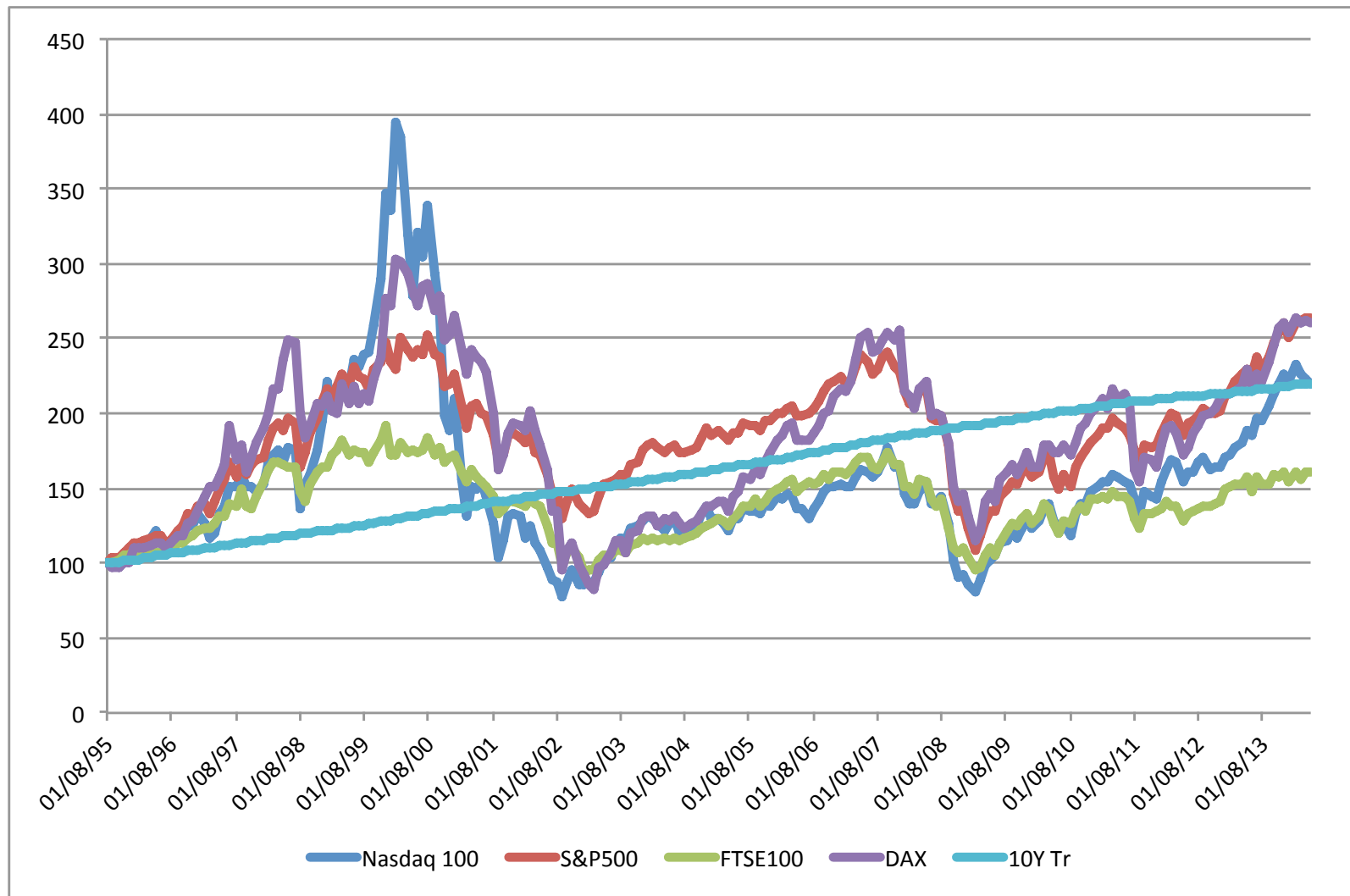
- the frequency distribution of the returns.

# Historical Returns, 1926-2002



Source: © *Stocks, Bonds, Bills, and Inflation 2003 Yearbook*™, Ibbotson Associates, Inc., Chicago (annually updates work by Roger G. Ibbotson and Rex A. Sinquefeld). All rights reserved.

# Instruments:indices.xls

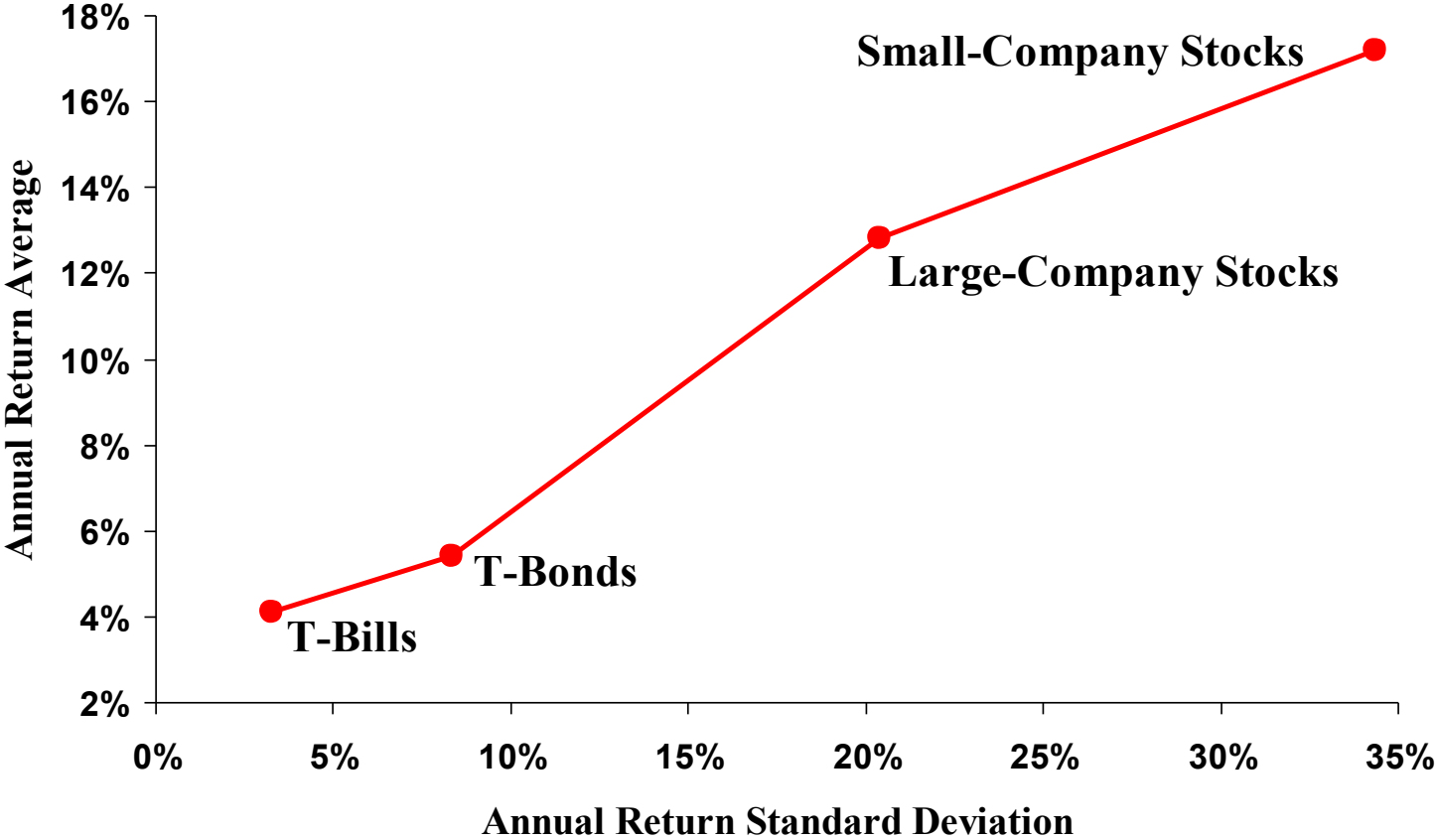




# Average Stock Returns and Risk-Free Returns

- The *Risk Premium* is the additional return (over and above the risk-free rate) resulting from bearing risk.
- One of the most significant observations of stock market data is this long-run excess of stock return over the risk-free return.
  - The average excess return from large company common stocks for the period 1926 through 1999 was  $8.4\% = 12.2\% - 3.8\%$
  - The average excess return from small company common stocks for the period 1926 through 1999 was  $13.2\% = 16.9\% - 3.8\%$
  - The average excess return from long-term corporate bonds for the period 1926 through 1999 was  $2.4\% = 6.2\% - 3.8\%$
  - **The average excess return from Market Portfolio for the period 1926 through 2012 was  $8.0\% = 11.6\% - 3.6\%$**

# The Risk-Return Tradeoff





# Risk Statistics

- There is no universally agreed-upon definition of risk.
- The measures of risk that we discuss are variance and standard deviation.
  - The standard deviation is the standard statistical measure of the spread of a sample, and it will be the measure we use most of this time.





# Present Value and The Opportunity Cost of Capital

# Present and Future Value



## Future Value

Amount to which an investment will grow after earning interest

## Present Value

Value today of a future cash flow.

# Discount Factors and Rates



## Discount Rate

Interest rate used to compute present values of future cash flows.

## Discount Factor

Present value of a \$1 future payment.

# Future Values



Future Value of \$100 = FV

$$FV = \$100 \times (1 + r)^t$$



# Future Values

$$FV = \$100 \times (1 + r)^t$$

## Example - FV

*What is the future value of \$400,000 if interest is compounded annually at a rate of 5% for one year?*

$$FV = \$400,000 \times (1 + .05)^1 = \$420,000$$

# Present Value



Present Value = PV

$$PV = \text{discount factor} \times C_1$$

# Present Value



Discount Factor = DF = PV of \$1

$$DF = \frac{1}{(1+r)^t}$$

Discount Factors can be used to compute the present value of any cash flow.







# One period investment

- Suppose an investment that promises to pay \$10,000 in one year is offered for sale for \$9,500. Your interest rate is 5%. Should you buy?

$$NPV = -\$9,500 + \frac{\$10,000}{1.05}$$

$$NPV = -\$9,500 + \$9,523.81$$

$$NPV = \$23.81$$

Yes!



## Two period investment

- Suppose the same investment but promises to pay \$10,000 in the second year is offered for sale for \$9,500. Your interest rate is 5%. Should you buy?

$$NPV = -\$9500 + \frac{\$0}{(1.05)^1} + \frac{\$10,000}{(1.05)^2}$$

$$NPV = -\$9500 + 0 + 9070.29$$

$$NPV = \$ - 429.71$$

No!



# Simple vs Compound Interes

- Future Value 2 years simple (without reinvestment)
  - $FV = 1000 \cdot (1 + 2 \cdot 0.10)$
- Future Value 2 years Compounded (with reinvestment)
  - $FV = 1000 \cdot (1 + 0.10) \cdot (1 + 0.10)$

r=10%	Simple	Compounded	Marginal
Today	1000	1000	
1 year	1100	1100	100
2 years	1200	1210	110
3 years	1300	1331	121
4 years	1400	1464.10	133.10
5 years	1500	1610.51	146.41
10 years	2000	2593.74	983.23

# Multiperiod Case: Future Value



- Suppose that Mr. K invested in the initial public offering of the Tapia company. Tapia pays a current dividend of \$1.10, which is expected to grow at 40-percent per year for the next five years.
- What will the dividend be in five years?

$$FV = C_0 \times (1 + r)^T$$

$$\$5.92 = \$1.10 \times (1.40)^5$$

# Future Value and Compounding

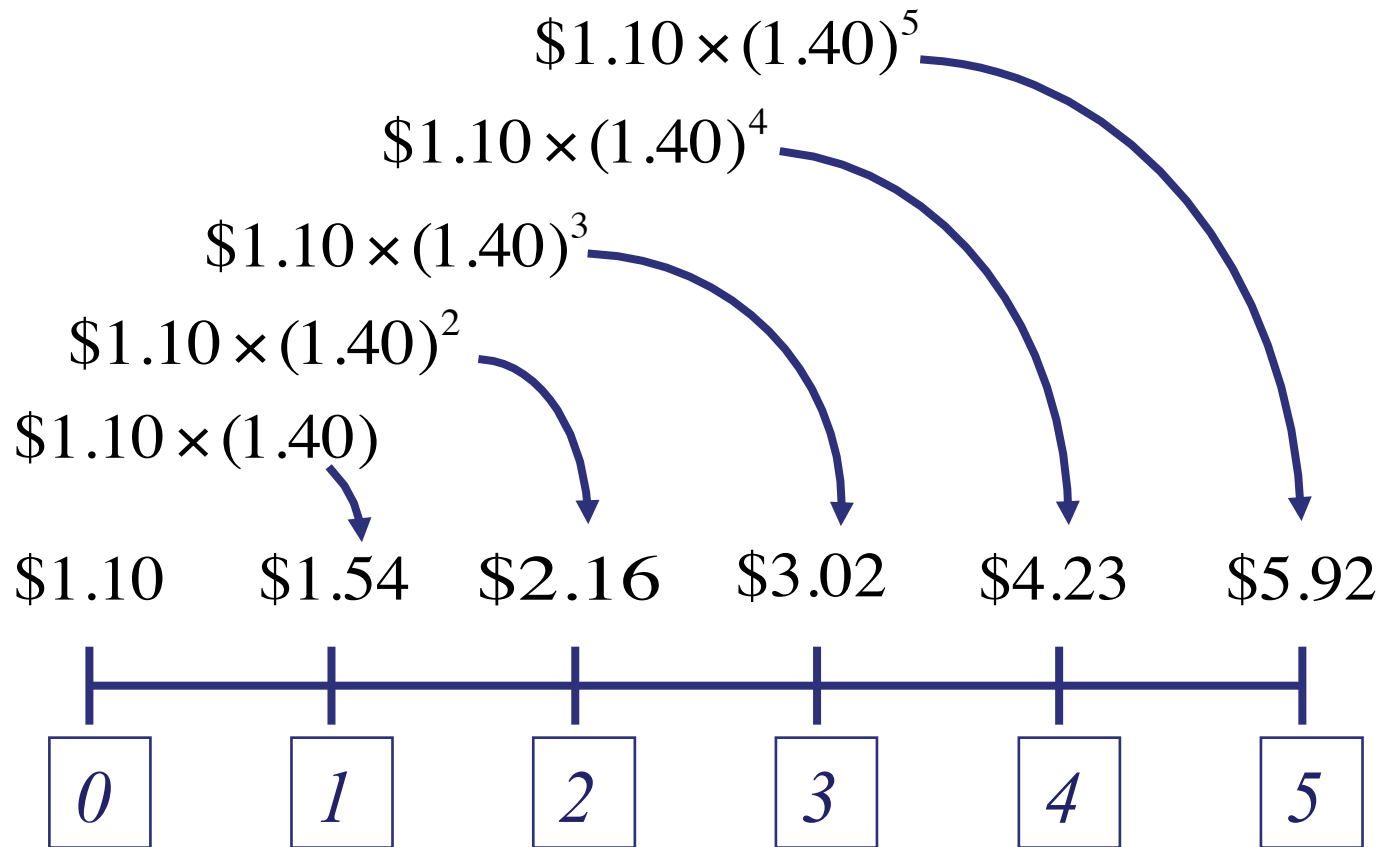


- Notice that the dividend in year five, \$5.92, is considerably higher than the sum of the original dividend plus five increases of 40-percent on the original \$1.10 dividend:

$$\$5.92 > \$1.10 + 5 \times [\$1.10 \times .40] = \$3.30$$

This is due to *compounding*.

# Future Value and Compounding





# Risk and Present Value

- Higher risk projects require a higher rate of return
- Higher required rates of return cause lower PVs
- Assume an investment which  $C_1$  is 420
- If the  $r=5\%$

PV of  $C_1 = \$420$  at 5%

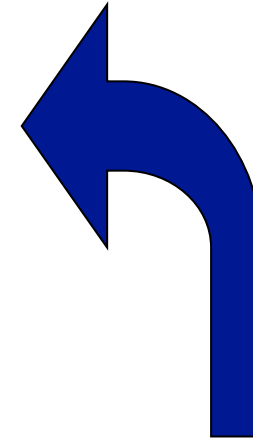
$$PV = \frac{420}{1 + .05} = 400$$



# Risk and Present Value

PV of  $C_1 = \$420$  at 12%

$$PV = \frac{420}{1 + .12} = 375$$



PV of  $C_1 = \$420$  at 5%

$$PV = \frac{420}{1 + .05} = 400$$





# Rate of Return Rule

- Accept investments that offer rates of return in excess of their opportunity cost of capital

## Example

*In the project listed below, the foregone investment opportunity is 12%. Should we do the project?*

$$\text{Return} = \frac{\text{profit}}{\text{investment}} = \frac{420,000 - 370,000}{370,000} = .135 \text{ or } 13.5\%$$



# Net Present Value Rule

- Accept investments that have positive net present value

## Example

*Suppose we can invest \$50 today and receive \$60 in one year. Should we accept the project given a 10% expected return?*

$$\text{NPV} = -50 + \frac{60}{1.10} = \$4.55$$



- We need additional info but it is interesting to see how we value a company.



# Inditex: a real case



Welcome to Inditex World

# Inditex



- Inditex was founded in 1963 (design and produce to other local stores)
- In 1975 began its transformation with the opening of the first Zara retail store
- The 90' s are the beginning of Brand diversification and Internationalization
  - 1991: acquires Massimo Dutti and Pull & bear.
  - 1998: acquires Bershka.
  - 1999: acquires Stradivarius.
  - 2001 Launch of lingerie retailer Oysho.
  - 2006 mainland China join the Inditex global store map.
  - 2008 Launch of Uterqüe and Inditex reaches the 4,000-store milestone with an opening in Tokyo
  - 2010 open stores in India. Stradivarius, Bershka and Pull & Bear open its first stores in China.
  - 2011 open the first Zara in Australia. Thus, the Inditex group was present for the first time in 5 continents, and in 86 countries.

# Inditex



- Today, the group, founded en 1975, is made of: Zara, Massimo Dutti, Bershka, Pull & Bear, Stradivarius, Oysho, Zara Home and Utherqüe- dedicated to specific consumer groups.
- Today Inditex is the biggest fashion group in the world.
- Inditex includes more than 100 companies related to design, production and textile distribution.



# Inditex

- It is important?
- Yes







# Business Model

- Its distinctive features are:
  - Creativity
  - Innovation
  - Flexibility
  - Quick response to market demand
    - Inditex won the 2006 Wharton Infosys Business Transformation Award for their innovative and successful implementation of information technology to drastically decrease the time it takes to get new merchandise from the design stage to the in-store stage.
  - Also
    - Choice of locations: Group stores enjoy prime location. The group policy is to devote more money to the purchase of prime location stores than to advertising campaigns as its competitors do. Always central, visible and easily accessible. Recovery of remarkable buildings (CSR?)
    - High number of own stores (89% group figures)



# Business Model

- Compelling mix of latest fashions and quality at affordable price
- Unique product strategy
  - 30,000 new designs per year
  - delivery to stores 2-6 times per week
- Customer interaction
  - daily in-store feedback allows constant modification of collections
- Attractive stores in prime locations



# Business Model

- Business model avoids the main fixed costs associated with international expansion
  - No distribution centers per country
  - No advertisement when entering a new market
  - Main head office per country servicing all formats

# Brand sales and placement distribution (FY 2013)



	Metros Cuadrados				Ventas Millones de Euros			
	31/01/14	31/01/13	Var%	% Total	31/01/142	31/01/133	Var%	% Total
Zara	2,150,517	2,009,717	7%	62.48%	10,804	10,541	2%	64.60%
Pull&Bear	284,429	254,413	12%	8.26%	1,191	1,086	10%	7.12%
Massimo Dutti	193,614	172,095	13%	5.63%	1,293	1,134	14%	7.73%
Bershka	384,911	338,450	14%	11.18%	1,556	1,485	5%	9.30%
Stradivarius	232,034	206,584	12%	6.74%	1,006	961	5%	6.02%
Oysho	78,742	74,669	5%	2.29%	353	314	12%	2.11%
ZaraHome	107,263	93,166	15%	3.12%	451	350	29%	2.70%
Uterqüe	10,459	12,354	-15%	0.30%	71	74	-4%	0.42%
Total	3,441,969	3,161,448	9%	100.00%	16,724	15,946	5%	100.00%

- Zara is the principal brand of the Inditex group given that it constitutes around 65% of total group sales (10y ago 75%), even if it represents only 33% of stores.





# Inditex Secrets

- Zara secrets:
  - the fight against time
  - the fight against cost
- Key to success:
  - Vertical integration of design, production, logistic and sales. Very different from its competitors



# Inditex Forecastings

- We would like to obtain Income Statement
  - Net sales
  - Total Cost (Variable and Fixed or)
  - Cost of goods sold Total Cost
  - General, selling and administrative expenses
  - Net interest expense
  - Taxes
- So we can obtain easily
  - Gross profit
  - Earnings before tax
  - Earnings after tax

# Inditex Forecastings



- Figures are Million.

## ITX

	2007	2008	2009	2010	2011	2012	2013
Net Sale	9435	10407	11804	12527	13793	15946	16724
COGS	-4086	-4493	-4756	-5105	-5612	-6417	-6802
<b>Gross Profit</b>	5349	5914	6328	7422	8181	9529	9923
Operating Expenses	-3226	-3708	-3953	-4452	-4919	-5605	-5998
Other net Operating Income	27	-19	-1	-4	-4	-12	1
<b>EBITDA</b>	2149	2187	2374	2966	3258	3912	3926
Amortisation and depreciation	-497	-578	-646	-676	-735	-796	-855
<b>EBIT</b>	1652	1609	1728	2290	2523	3116	3071
Financial Results	1	-22	4	31	37	14	-18
<b>EBT</b>	1646	1587	1732	2322	2560	3130	3053
Taxes	-388	-325	-410	-580	-614	-764	-671
<b>Net Income</b>	1258	1262	1322	1741	1946	2366	2382





# Inditex Forecastings

- Now we obtain relative numbers and see how they look like.

	2007	2008	2009	2010	2011	2012	2013
%Sales		10.30%	13.42%	6.13%	10.11%	15.61%	4.88%
Cogs/Sales	43.31%	43.17%	40.29%	40.75%	40.69%	40.24%	40.67%
Oper Exp/Sales	34.19%	35.63%	33.49%	35.54%	35.66%	35.15%	35.86%
A&D/Sales	5.27%	5.55%	5.47%	5.40%	5.33%	4.99%	5.11%
Taxes/EBT	23.57%	20.48%	23.67%	24.98%	23.98%	24.41%	21.98%
Taxes/Sales	4.11%	3.12%	3.47%	4.63%	4.45%	4.79%	4.01%

- Some key numbers

	Mean	Median	Max	Min
%Sales	11.11%	10.30%	15.61%	6.13%
Cogs/Sales	41.03%	40.69%	43.17%	40.24%
Oper Exp/Sales	35.09%	35.54%	35.66%	33.49%
A&D/Sales	5.35%	5.40%	5.55%	4.99%
Taxes/EBT	23.50%	23.98%	24.98%	20.48%
Taxes/Sales	4.09%	4.45%	4.79%	3.12%



- Main characteristics:
  - Stability of all the figures less sales (crisis)
  - Relative to sales not important financial cost.
- It seems that if we forecast correctly Sales the rest is so stable.
- Can we forecast Sales?
- Yes we can do it. Time series of Sales



- Now we can generate forecast of sales and earnings. Base Case

<b>ITX</b>					
			1	2	3
		<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Net Sale	10%	16724	18446.92	20347.33	22443.53
COGS	41%	-6802	-7505.55	-8278.78	-9131.67
<b>Gross Profit</b>		9923	10941.36	12068.55	13311.86
Operating Expenses	36%	-5998	-6555.89	-7231.29	-7976.26
Other net Operating Income	0%	1	0.00	0.00	0.00
<b>EBITDA</b>		3926	4385.47	4837.26	5335.60
Amortisation and depreciation	5.40%	-855	-995.46	-1098.01	-1211.13
<b>EBIT</b>		3071	3390.01	3739.25	4124.47
Financial Results	0%	-18	0.00	0.00	0.00
<b>EBT</b>		3053	3390.01	3739.25	4124.47
Taxes	24%	-671	-813.07	-896.84	-989.23
<b>Net Income</b>		2382	2576.94	2842.42	3135.24



- Now we have to worry about Sensitivity Analysis.
- Sensitivity Analysis or “what if” Analysis is related with non expected variations in forecast.
- Previous analysis was Base Case now we construct alternative cases (Good or Bad)



- Base case

<b>ITX</b>					
			1	2	3
		<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Net Sale	10%	16724	18446.92	20347.33	22443.53
COGS	41%	-6802	-7505.55	-8278.78	-9131.67
<b>Gross Profit</b>		9923	10941.36	12068.55	13311.86
Operating Expenses	36%	-5998	-6555.89	-7231.29	-7976.26
Other net Operating Income	0%	1	0.00	0.00	0.00
<b>EBITDA</b>		3926	4385.47	4837.26	5335.60
Amortisation and depreciation	5.40%	-855	-995.46	-1098.01	-1211.13
<b>EBIT</b>		3071	3390.01	3739.25	4124.47
Financial Results	0%	-18	0.00	0.00	0.00
<b>EBT</b>		3053	3390.01	3739.25	4124.47
Taxes	24%	-671	-813.07	-896.84	-989.23
<b>Net Income</b>		2382	2576.94	2842.42	3135.24



- Good case

<b>ITX</b>					
			1	2	3
		<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Net Sale</b>	15%	16724	19232.60	22117.49	25435.11
<b>COGS</b>	41%	-6802	-7825.23	-8999.01	-10348.86
<b>Gross Profit</b>		9923	11407.37	13118.48	15086.25
Operating Expenses	36%	-5998	-6835.12	-7860.39	-9039.44
Other net Operating Income	0%	1	0.00	0.00	0.00
<b>EBITDA</b>		3926	4572.25	5258.09	6046.81
Amortisation and depreciation	5.40%	-855	-1037.86	-1193.54	-1372.57
<b>EBIT</b>		3071	3534.40	4064.56	4674.24
Financial Results	0%	-18	0.00	0.00	0.00
<b>EBT</b>		3053	3534.40	4064.56	4674.24
Taxes	24%	-671	-847.70	-974.86	-1121.09
<b>Net Income</b>		2382	2686.69	3089.70	3553.15



## ■ Bad Case

<b>ITX</b>					
			1	2	3
		<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>Net Sale</b>	5%	16724	17560.20	18438.21	19360.12
COGS	41%	-6802	-7144.77	-7502.01	-7877.11
<b>Gross Profit</b>		9923	10415.43	10936.20	11483.01
Operating Expenses	36%	-5998	-6240.76	-6552.80	-6880.44
Other net Operating Income	0%	1	0.00	0.00	0.00
<b>EBITDA</b>		3926	4174.67	4383.40	4602.57
Amortisation and depreciation	5.40%	-855	-947.61	-994.99	-1044.74
<b>EBIT</b>		3071	3227.06	3388.41	3557.83
Financial Results	0%	-18	0.00	0.00	0.00
<b>EBT</b>		3053	3227.06	3388.41	3557.83
Taxes	24%	-671	-773.99	-812.69	-853.32
<b>Net Income</b>		2382	2453.07	2575.72	2704.51



- Four points left:
  - We have to calculate R
  - We need to calculate CF not Net Income
  - We need to calculate what happens after third year.
  - We have to discount everything





- Four points left:
  - We have to calculate R
  - Companies Included among others
    - H & M Hennes & Mauritz AB (publ) (OM:HM B)
    - Industria de Diseno Textil SA (CATS:ITX)
    - Sports Direct International Plc (LSE:SPD)
    - Esprit Holdings Ltd. (SEHK:330)
    - L'Occitane International S.A. (SEHK:973)
    - Dixons Retail plc (LSE:DXNS)
    - WH Smith PLC (LSE:SMWH)
    - Darty plc (LSE:DRTY)
    - Groupe Fnac Société Anonyme (ENXTPA:FNAC)
    - Laura Ashley Holdings plc (LSE:ALY)
    - Etam Developpement SA (ENXTPA:TAM)



# Inditex WACC

- Four points left:
  - We have to calculate R
  - From Damodaran European companies.

Industry Group	Number of firms	Beta	D/E Ratio	Tax rate	Unlevered beta
Retail (Special Lines)	87	1.37	12.97%	19.17%	1.2361

- Data obtained form ITX

Rf	1.80%	D	0	Tax	23.98%
Rm-Rf	6.00%	E	1	Rd	5%

- Then

Re	9.22%
WACC	9.22%



- Three points left:
  - We need to calculate CF not Net Income

From NI to CF

	2013	2014	2015	2016
<b>Net Income</b>	2382	2576.94	2842.42	3135.24
Amortisation and depreciation	-855	-995.46	-1098.01	-1211.13
Financial Results	-18	0.00	0.00	0.00
<b>CF</b>	<b>3219</b>	<b>3572.40</b>	<b>3940.43</b>	<b>4346.37</b>



- Three points left:
  - We need to calculate what happens after third year.
    - We calculate a perpetuity

$$\begin{aligned} \text{Perp} &= \frac{CF_3}{R_E - g} \\ &= \frac{4346.37}{9.22\% - 3\%} \end{aligned}$$

From NI to CF

	2013	2014	2015	2016	Rest
<b>Net Income</b>	2382	2576.94	2842.42	3135.24	
Amortisation and depreciation	-855	-995.46	-1098.01	-1211.13	
Financial Results	-18	0.00	0.00	0.00	
<b>CF</b>	<b>3219</b>	<b>3572.40</b>	<b>3940.43</b>	<b>4346.37</b>	<b>69914.48</b>



- Four points left:
  - We have to discount everything

From NI to CF

	2013	2014	2015	2016	Rest
<b>Net Income</b>	2382	2576.94	2842.42	3135.24	
Amortisation and depreciation	-855	-995.46	-1098.01	-1211.13	
Financial Results	-18	0.00	0.00	0.00	
CF	3219	3572.40	3940.43	4346.37	69914.48
DCF		3270.93	3303.43	3336.26	53666.09
<b>NPV</b>	<b>63576.71</b>				



- Four points left:
  - Compare 3 cases

## ITX

	<b>Value</b>	<b>Sales</b>	<b>g</b>
Base Case	63576.71	10%	3.00%
Good Case	83260.09	15%	4.00%
Bad Case	48863.53	5%	2.00%

Number of shares	623.33
Base Case	102.00
Good Case	133.57
Bad Case	78.39