



# PART I

## FINANCIAL MARKET STRUCTURE AND INSTRUMENTS

These slides have been created by R. M. Gaspar, and edited, adjusted and complemented by M Hinnerich

Revised on  
slides 60 (kr replaced by EUR)  
Slides 75-77 (PSI instead of PSI20)



# 1

## MARKET ORGANIZATION AND STRUCTURE



1.1 FUNCTIONS OF THE FINANCIAL SYSTEM

1.2 MARKET CLASSIFICATION

1.3 FINANCIAL INSTRUMENTS

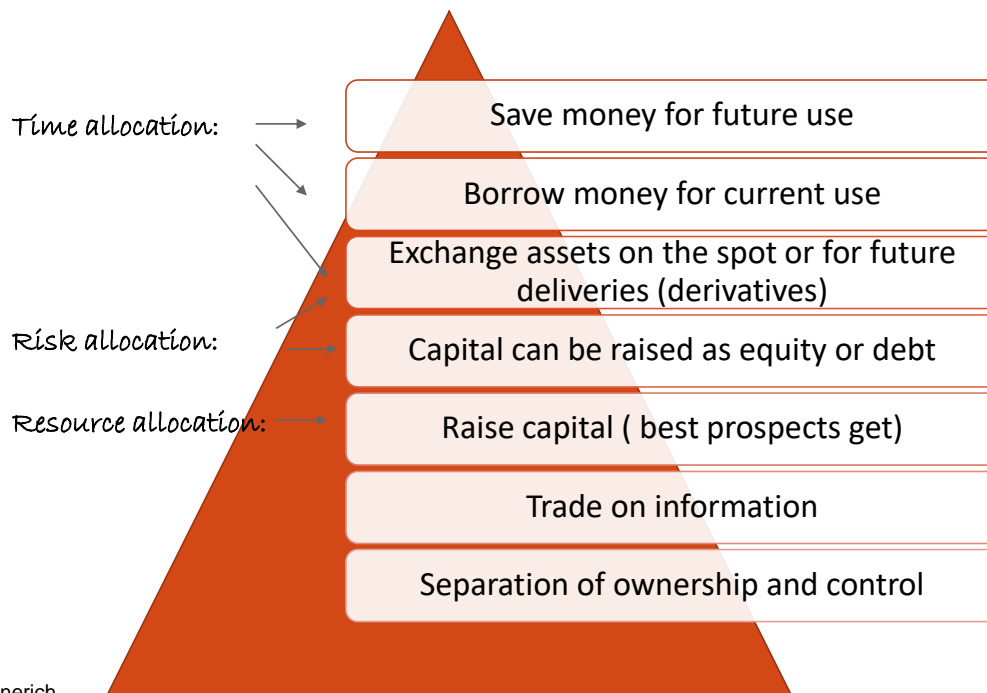
1.4 TRADING IN FINANCIAL MARKETS

1.5 SECURITY MARKETS INDICES



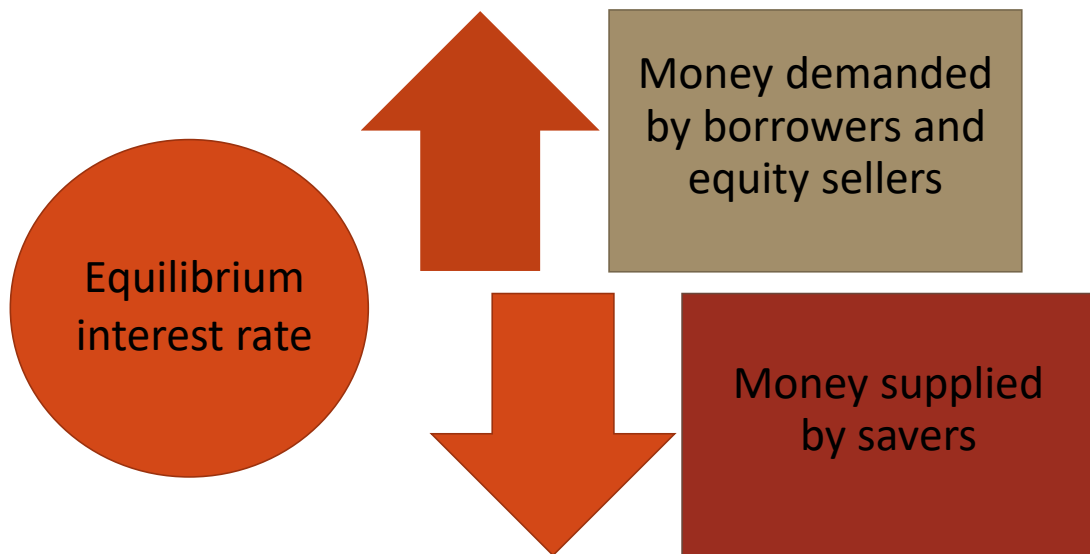
# 1.1 FUNCTIONS OF THE FINANCIAL SYSTEM

## WHAT ARE THE MAIN FUNCTIONS OF THE FINANCIAL SYSTEM?



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## HOW ARE RATES OF RETURN DETERMINED?





## 1.2 MARKET CLASSIFICATION

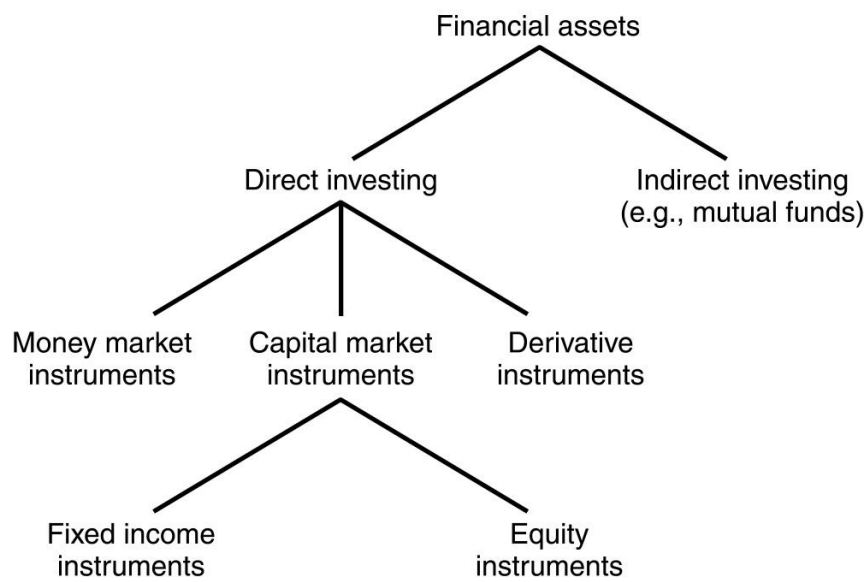
## HOW ARE MARKETS CLASSIFIED?





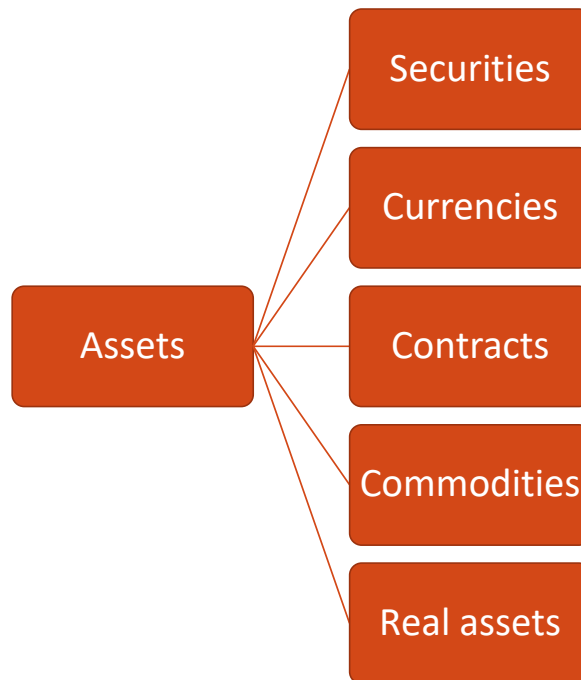


# 1.3 FINANCIAL INSTRUMENTS

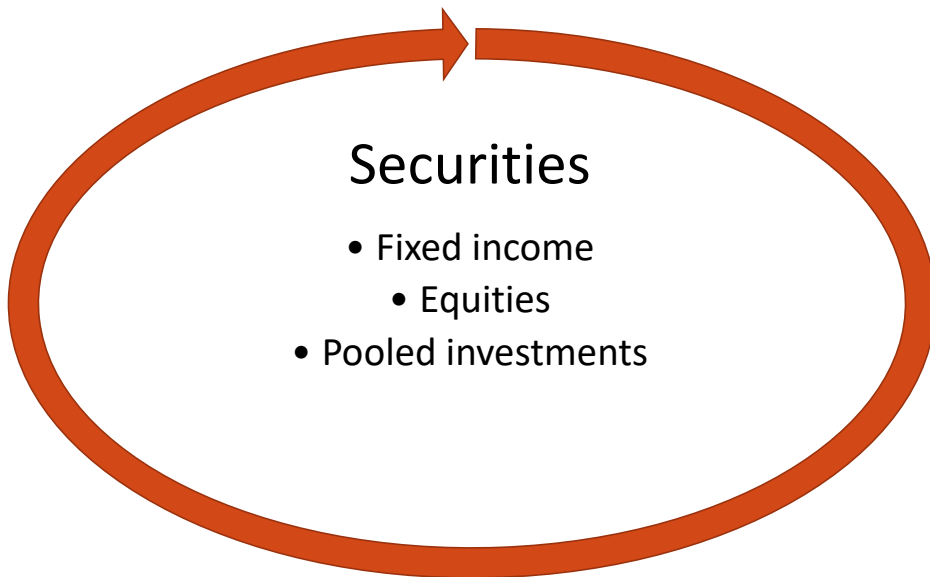


- ✓ For the investors, they represent alternatives forms of investment.

## HOW ARE ASSETS CLASSIFIED?



## 1.3.1 SECURITIES



## Examples of Securities

- Stocks
- Bonds
- Fund units
- Warrants
- Detached Rights
- Convertibles
- ...

## STOCKS (SHARES)

**Stocks** are financial securities that represent a partial ownership position (called equity) in a corporation.

### Rights

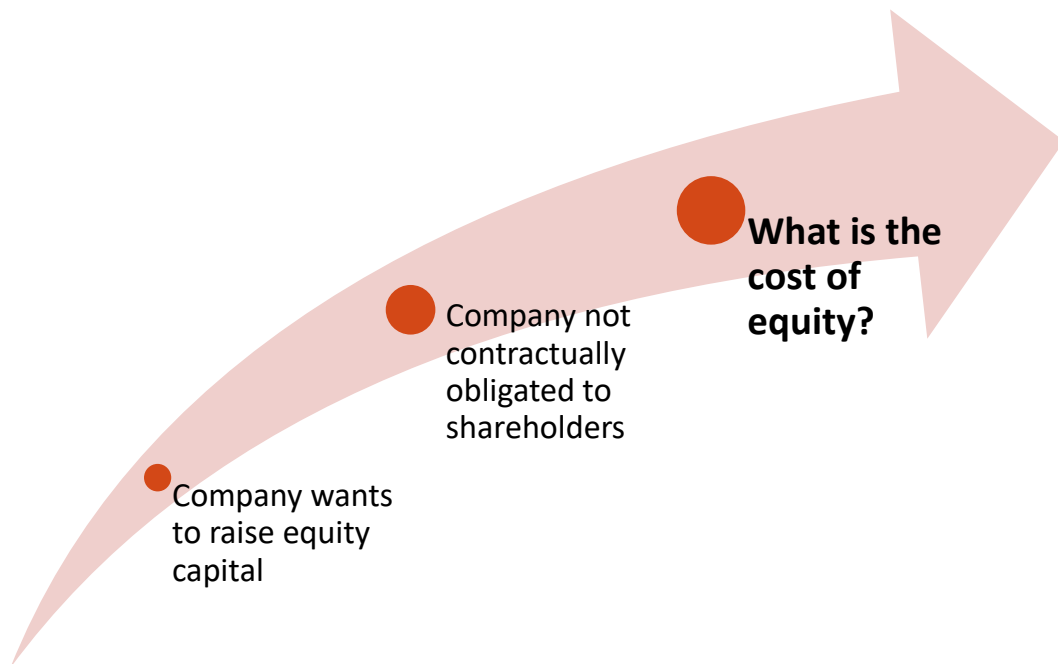
Stocks give investors, in particular, the right:

- To be present at general shareholders' meetings and to **vote**;
- To be **informed** about the business of the company, under certain conditions;
- To participate in **profits** and receive **dividends** in proportion to the shares held;
- If the company stops to exist, to receive a **liquidation share** value for the its assets after all creditors are paid, (if it exists).
- In the company's statutes there may also be other rights and obligations of investors, as well as limitations to the exercise of the right to vote.

## Valuing Stocks

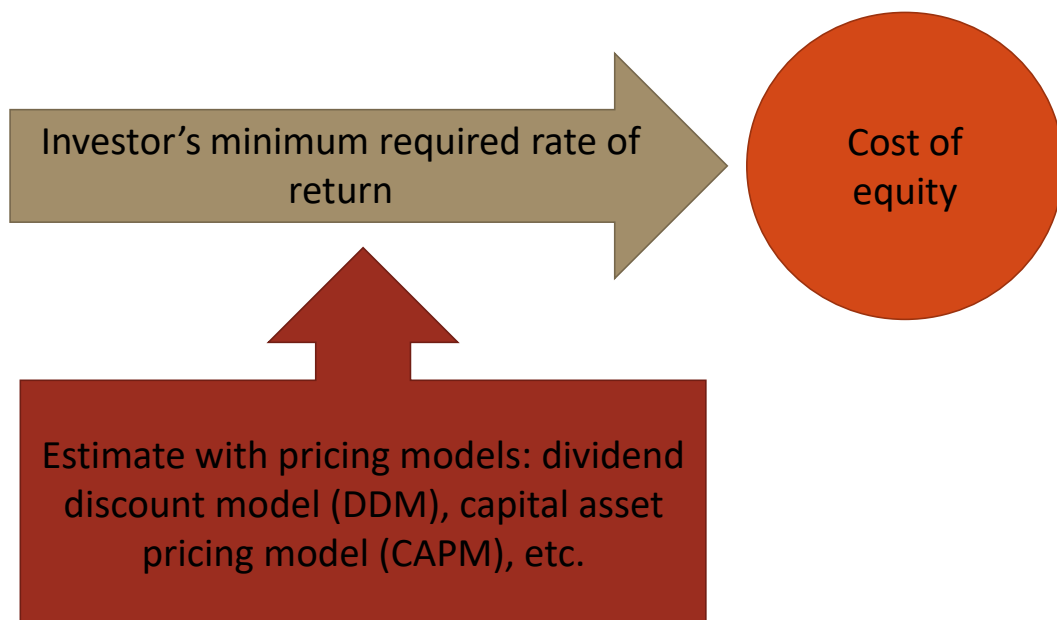
- Valuing a stock is to determine its “**fair price**”, which should reflect the value of the company.
- The price of shares in a stock market tends to approach the actual value of the company, to the extent that the price incorporates all existing information.
- As any financial asset one should think in terms of **discounting future cash-flows**. In this respect, valuing stocks is a complex task for two reasons:
  - ❖ It is hard to predict the main **sources of future returns** of stocks traded in financial markets (dividends and capital gain/loses)
  - ❖ The risk differ from stock to stock and depends on a large amount of factors (e.g. interest rate evolution, how other companies perform in the market, etc.), so it is hard to **figure out discount factors**.

## THE COST OF EQUITY



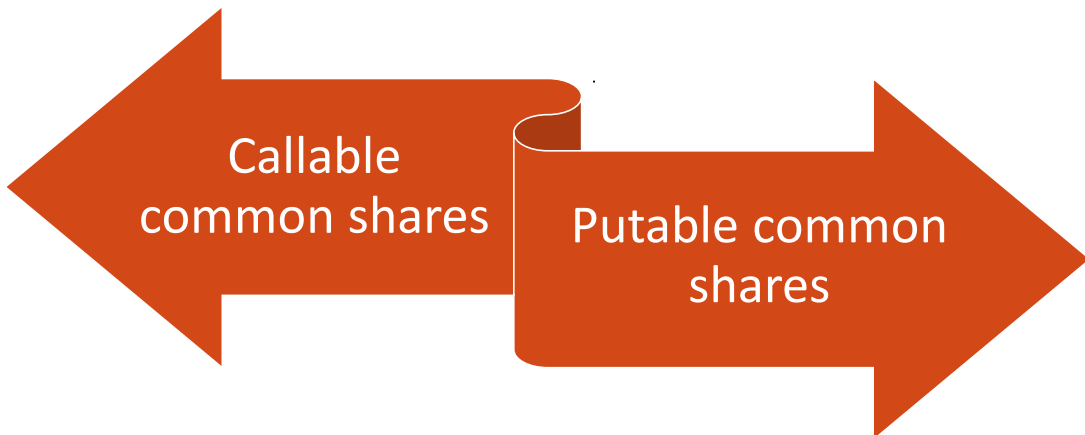


## INVESTOR'S REQUIRED RATE OF RETURN

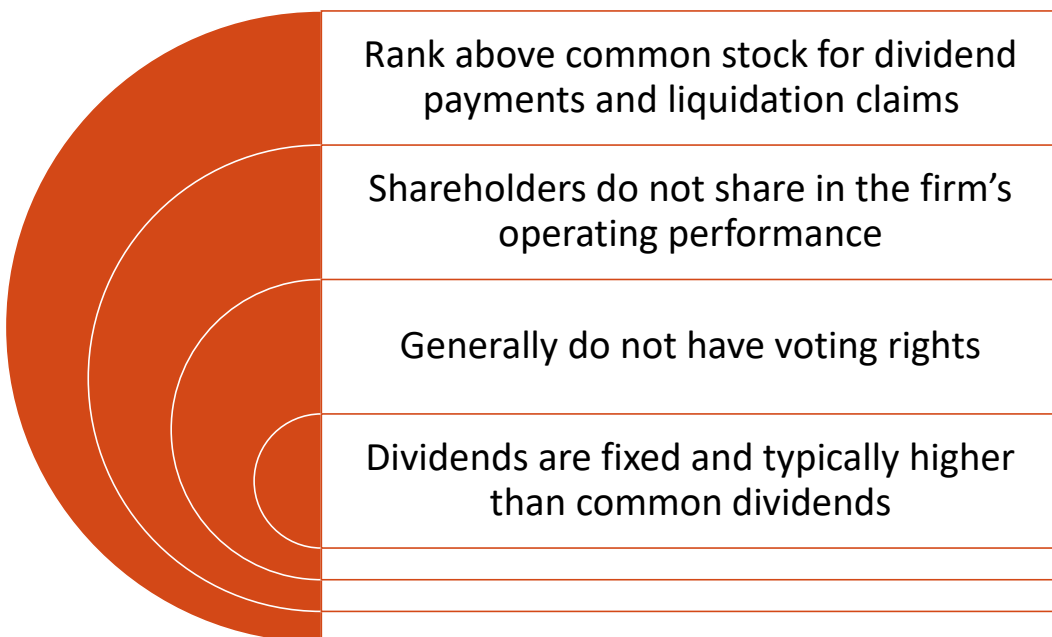




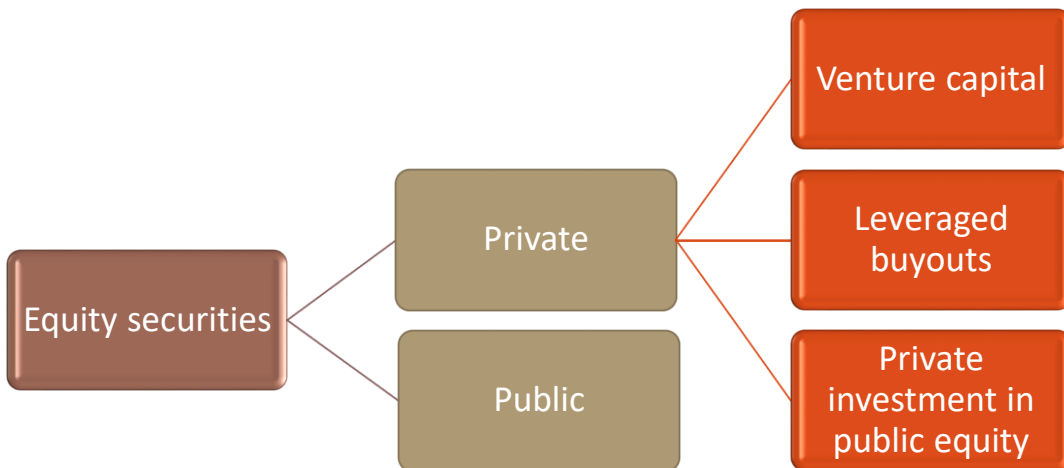
## EMBEDDED OPTIONS



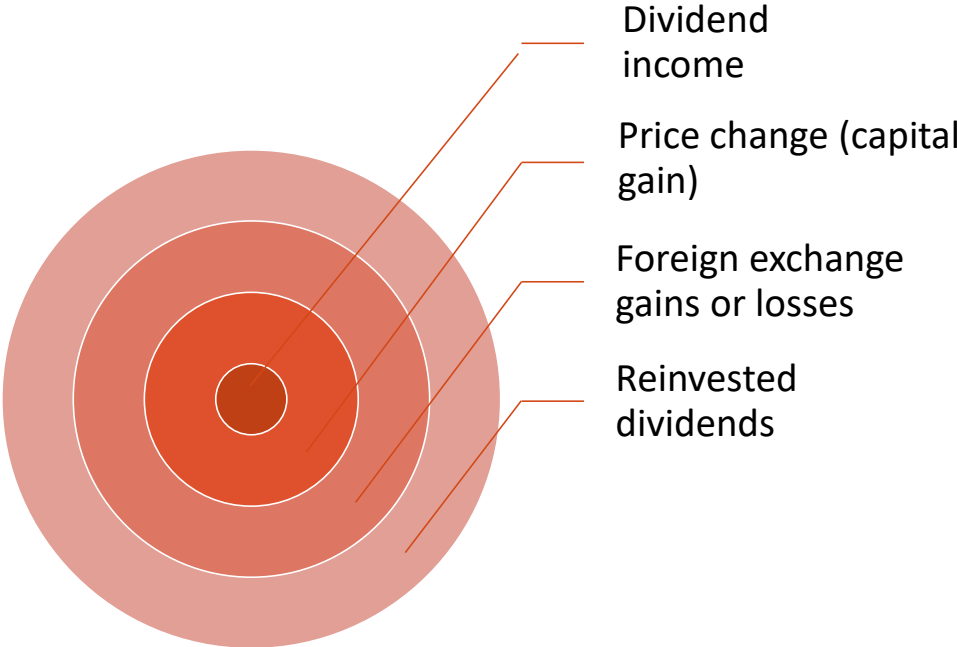
## PREFERENCE SHARES (PREFERRED STOCK)



## PRIVATE EQUITY SECURITIES



# RETURN CHARACTERISTICS OF EQUITY SECURITIES



# BONDS

Do you remember what a coupon bond is?

## Example

3 year bond coupon 5% face value 1000  
Q What is the cashflow?

Bond

1000		
50	50	50

## BONDS

**Bonds** are securities limited time frame, issued by companies or other entities, representing money that the investors give to the issuer.

- To hold bonds , thus, means that investors are creditors of the issuer (who has a claim on the issuer).
- At the end of the bond's lifespan (called maturity), the investor has the right to receive a redemption value based upon the nominal (face) value, in the meanwhile she receives periodic interest (called coupons).

### Types of Bonds

Bonds differ from one another:

- ❖ In the length and nominal value of the loan
- ❖ In the way redemption value is computed (in most cases it is equal do the nominal value, but there is a huge variety of alternatives)
- ❖ In the way coupons are defined (periodicity, type of interest – variable or fixed, conventions, etc.)
- ❖ In more exotic features that may be embedded. (e.g. convertible bonds, etc)
- ❖ Who issued the bond



# WHO ISSUES BONDS?



## MORE ON BONDS

### Credits Risk

The investor should be aware that investment in bonds implies taking credit risk, i.e., there is the possibility that the investor does not receive the redemption value and/or coupons, if the issuer face financial difficulties.

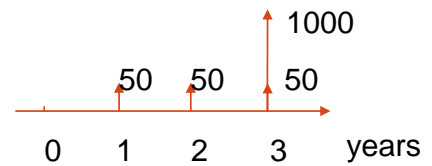
Q: Are there riskfree bonds?

### Rights

Bond investors' have the following rights:

- ❖ To receive the periodic coupons at the pre-established dates.
- ❖ To receive the redemption value at maturity;
- ❖ To be aware of the decisions of the shareholders and participate in general meetings through the appointment of a common representative of bondholders;
- ❖ To be informed about the progress of the business via the common representative of bondholders.

## VALUATION OF BONDS

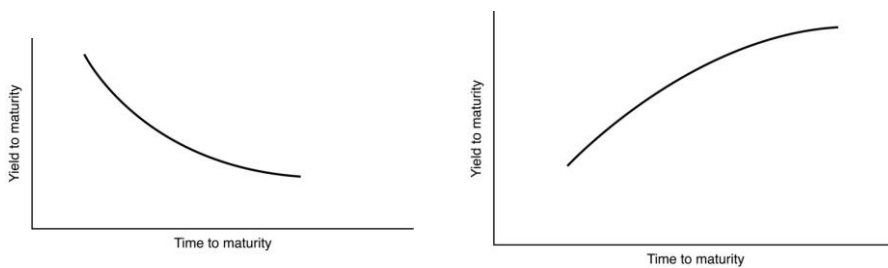


To find out the fair value of a bond today, one should properly **discount its future cash-flows** (both periodic interest and redemption value). This value usually does not coincide with its nominal value.

The discount factor should be based upon:

- ✓ the market **interest rates**, →

### Examples of **interest rate term structures**



- ✓ but also the **credit spread(s)** of each issuer (to take into account credit risk)

## FUND UNITS

- ✓ The fund consists of **pooled** resources. The capital of the fund results from savings of various investors. This capital is then invested in a variety of assets.
- ✓ **Fund units** are securities that represent parcels of a collective investment fund. Each unit represent a share of the overall fund.
- ✓ The value of the underlying assets (allowing for any charges and any accumulated income) is reflected in the fund value and, consequently, on the price of the units, **net asset value (NAV)**
- ✓ The maturity of fund units is the same as the maturity of the fund.

OBS: There is a big variety of fund types (we come back to this issue later)

## WARRANTS

- ✓ Warrants, are securities, with a limited lifespan, that concede investors a right over other assets (called the underlying assets).
- ✓ The underlying assets may be other securities (stocks, bonds, etc.), but also, financial indices, interest rates or exchange rates.
- ✓ A buy warrant on a company give the holder the right to buy stock in the company at a fixed price at or before a given point in time. (similar to a call option)
- ✓ The investor has always the possibility of not exercising the rights by letting the warrant expire.
- ✓ The **issuing entity** of a warrants takes on the position of guaranteeing those rights, if and when exercised. (Unlike options)
- ✓ Only rights (no obligations) change hands when investors resell their positions to other investors.

## Rights

The most common rights warrants give investors are:

- ✓ The right to **buy** the underlying asset (*call warrants*)
- ✓ The right to **sell** the underlying asset (*put warrants*)
- ✓ The right to **receive a difference between two prices**

## Types of Warrants

Warrants may differ according to the timeframe investors are allowed to exercise their rights:

- ✓ Some warrants can only be exercised at the maturity (*European type warrants*)
- ✓ Other warrants can be exercised at any moment since the moment investors buy it until maturity (*American type warrants*)
- ✓ But other exercise schemes also exist as exercise allowed a several pre-established dates (*Bermudan type warrants*)
- ✓ ...

## DETACHED RIGHTS

Some securities (stocks, bonds, etc.) include rights that may be detached and traded separately.

These **Rights** that may be **detached** and become tradable by themselves are also securities per se.

- ✓ Their main characteristic is their typical short lifespan.

Examples from stocks:

- ❖ Subscription rights

Examples from Bonds:

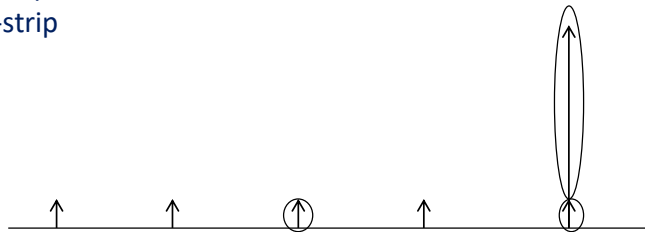
- ❖ STRIPS of Bond

## Subscription Rights

- ✓ When companies decide to increase their shared capital by issuing new shares, investors who already hold shares will have, as a general rule, the right of preference in the purchase of the new shares to be issued.
- ✓ It is common to detach these subscription rights, from the previously existing shares.  
Subscription rights are then traded separately from the shares themselves, for a short period time.  
Investors who buy these rights can subscribe the new shares under the same conditions of previous shareholders.
- ✓ After the period during which rights can be traded or exercised, the subscription rights expire and stop existing.

## STRIPS of Bonds

- ✓ STRIP – Separate Trading of Registered Interest and Principal
- ✓ Both the coupon and principal amounts of (treasury) Bonds may be “stripped” (i.e. considered as independent assets with a single payment).
- ✓ Strips can, thus, be understood as ZCB and be independently traded
  - ❖ Coupon-Strips
  - ❖ Principal-strip





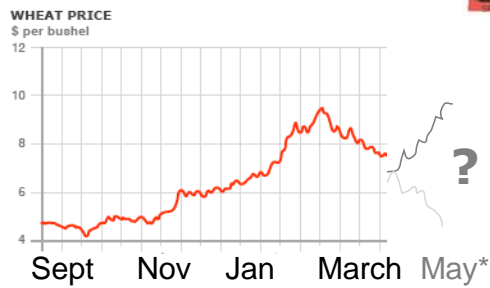
## 1.3.2 CONTRACTS / DERIVATIVES



## HEDGING WITH FORWARD CONTRACTS



Farmer  
**Revenue**  
depend on  
wheat prices



Miller  
**Costs**  
depend on  
wheat prices

Problem: Profit uncertainty due to highly volatile crop price!

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## HEDGING WITH FORWARD CONTRACTS

**Farmer needs to sell wheat to the miller at a future date.**

- Risk: the price of wheat decreases.
- The farmer is currently long wheat in the spot market (needs to sell it in the future).
- The farmer hedges the spot market position by selling wheat forward.

**Miller needs to buy wheat from the farmer at a future date to sell to bakers.**

- Risk: the price of wheat increases.
- The miller is currently short wheat in the spot market (needs to buy it in the future).
- The miller hedges the spot market position by buying wheat forward.

## FORWARD

A forward contract is an **obligation** to buy (long) or sell (short) the underlying asset at a predetermined time , (maturity date) for a predetermined price (forward price  $K$ ).

The value at maturity (payoff) is:

- To the holder of a long position  $S_T - K$
- To the holder of a short position  $K - S_T$

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Q: GIVE EXAMPLES OF UNDERLYING ASSET  
FOR A FUTURES CONTRACT

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## FUTURES VERSUS FORWARD CONTRACTS

### Futures contracts

Standardized

Clearinghouse  
guarantees performance

Strong secondary  
markets

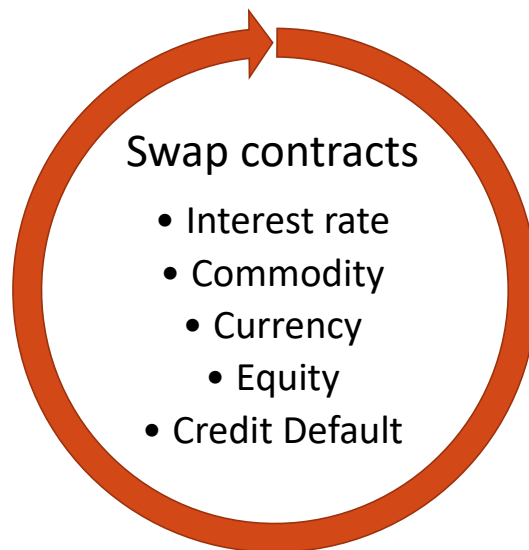
### Forward contracts

Customized

Counterparty risk

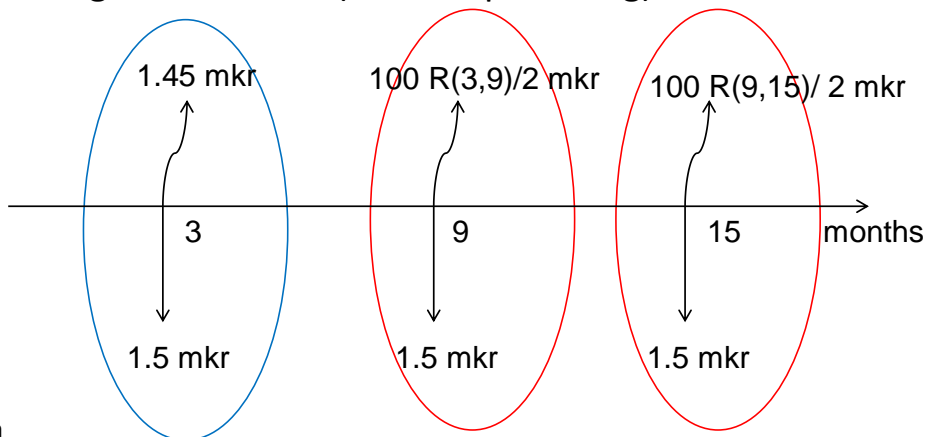
Typically held to  
maturity

## SWAP CONTRACTS



## SWAP CONTRACT

- Receive six-month Floating interest, pay 3% (s.a. compounding) on a principal of 100 million kr
- Remaining life 1.25 years
- The floating rate to be paid in 3 months was determined 3 months ago and is 2.9% (s.a. compounding).



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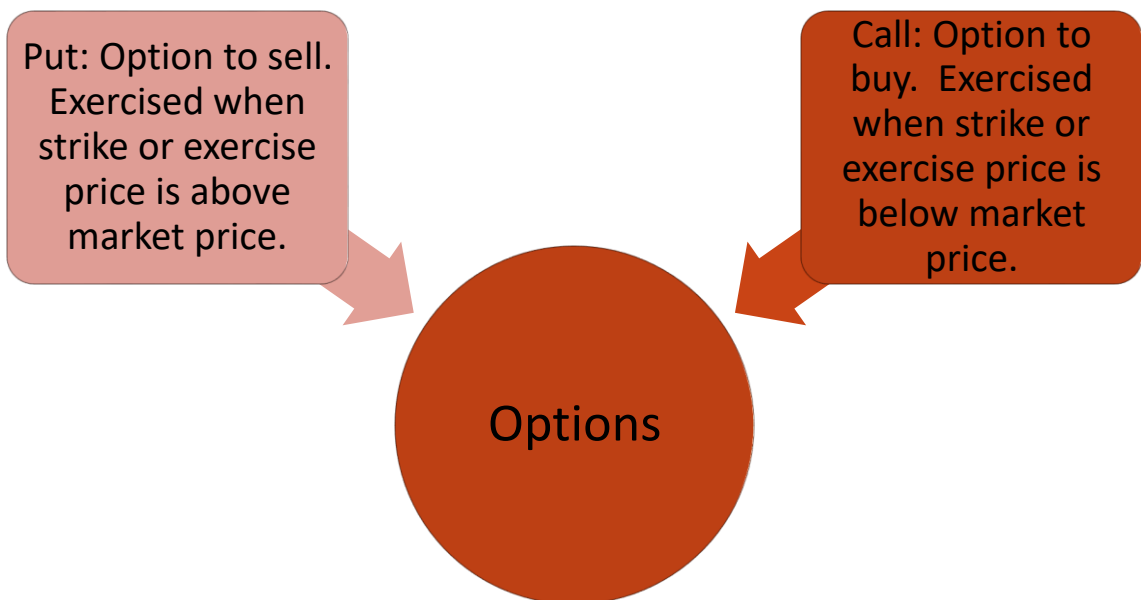
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## OPTIONS



## OPTIONS

the holder of an option contract has a **choice** to buy (if a call option) / to sell (if a put option) the underlying asset at a predetermined time , (maturity date) for a predetermined price (forward price K).

The value at maturity (payoff) is:

- To the holder of a call position  $S_T - K$  if  $S_T > K$

- To the holder of a short position  $K - S_T$  if  $S_T < K$

Q: What is the payoff if you wrote the call option?

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## WHY SO MANY DIFFERENT FINANCIAL ASSETS?

### Different risk – return profiles

- The **return** of a financial security is the rate computed based upon what the investment generates during an interval of time. It usually includes two parcels: price evolution (capital gains/losses) and the cash-flows it may generate (e.g. dividends in the case of stocks, coupons in the case of bonds, etc.).
- Expected/potential return should be distinguished from realized return. “Past returns are no guarantee for future returns”.
- The **risk** represents the uncertainty concerning future returns variability. This uncertainty may be connected, for instance, with unpredictable price movements.

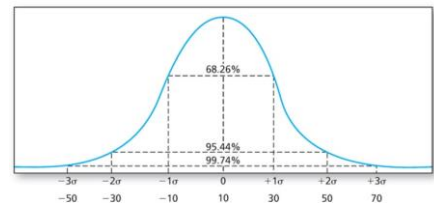
# METHODS FOR ESTIMATING RISK AND RETURN



## Historical data (Parameter)

- Average rate of return
- Standard deviation

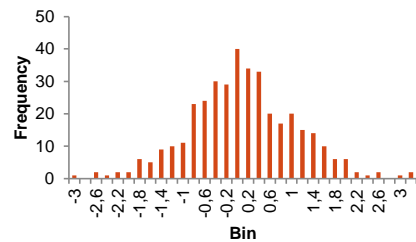
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## Probability distribution of possible returns (Model)

- Expected return
- Standard deviation

## Histogram



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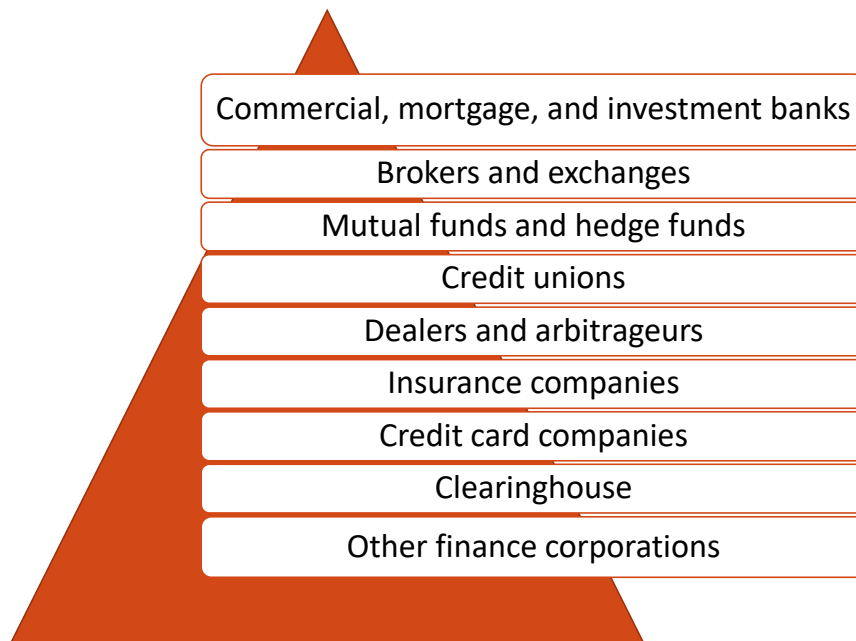
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## 1.4 TRADING IN FINANCIAL MARKETS

## WHAT ARE THE MAJOR TYPES OF FINANCIAL INTERMEDIARIES?



## EXCHANGES VERSUS ALTERNATE TRADING SYSTEMS (ATS)

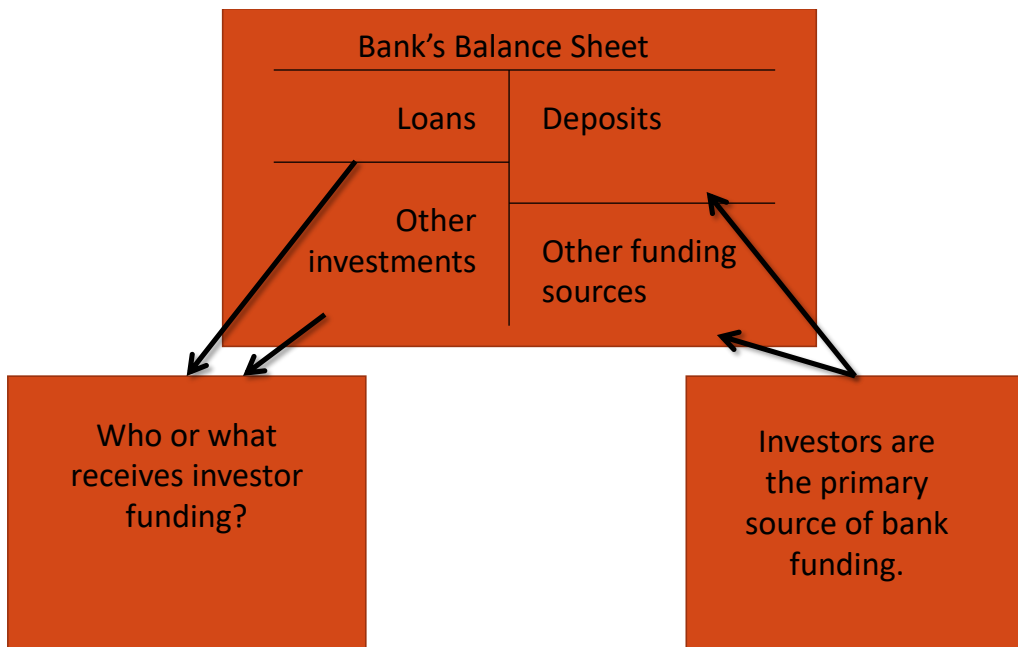
### Exchanges

- Marketplace (physical location) for trading.
- Increasingly arrange trades submitted via electronic order matching systems.
- Regulatory authority derived from governments or through voluntary agreements.

### ATS

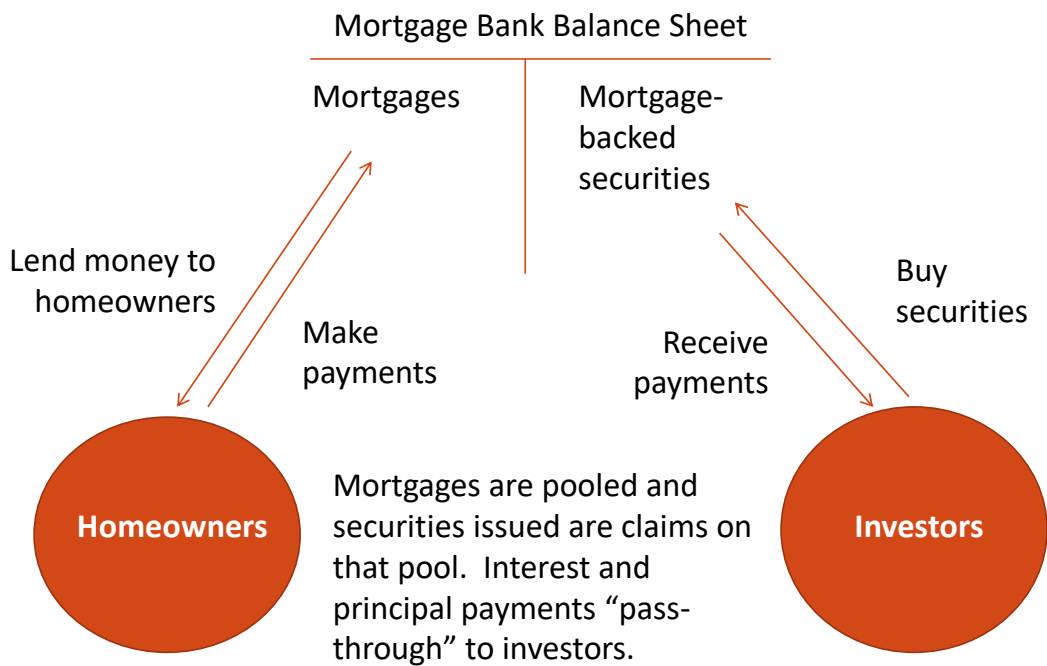
- Also called electronic communication networks (ECNs) or multi-lateral trading facilities (MTFs).
- Some offer services similar to exchanges, others offer innovative systems that suggest trades to clients.
- Do not exercise regulatory authority except with respect to trading.
- *Dark pools*—do not display orders.

## HOW DO INVESTORS INFLUENCE A BANK'S INVESTMENT DECISIONS?





## EXAMPLE OF SECURITIZATION



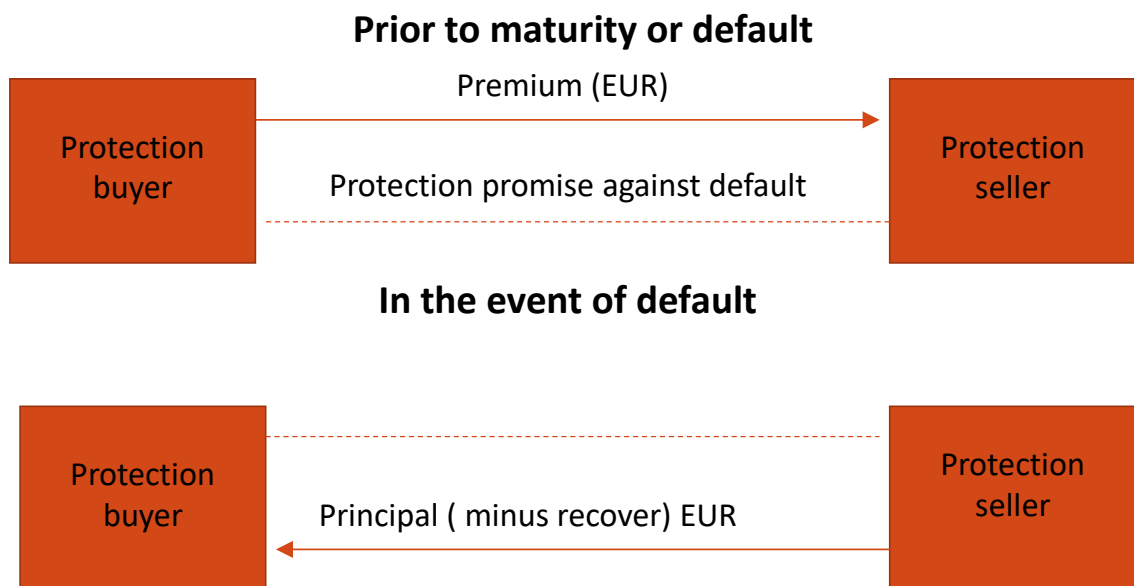


## INSURANCE COMPANIES

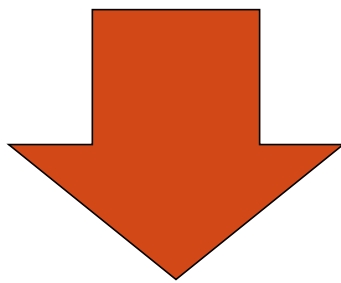


## INTERMEDIATION

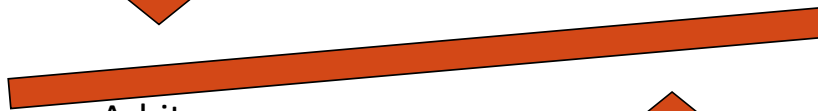
## CREDIT DEFAULT SWAPS (CDS)



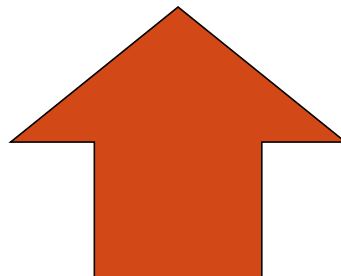
## DEALERS VERSUS ARBITRAGEURS



Dealers provide liquidity to buyers and sellers who arrive at the same market at different times.



Arbitrageurs provide liquidity to buyers and sellers who arrive at different markets at the same time.



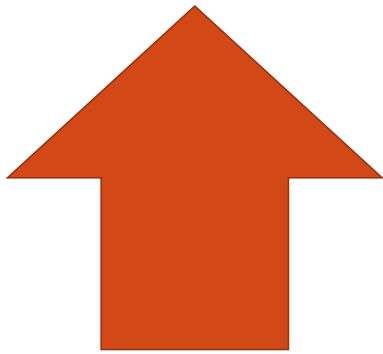
## ARBITRAGE

Question1: How can you benefit if an apple costs 3 EUR at market E and 1 EUR at market C?



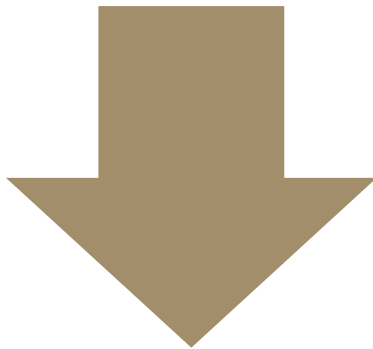
Question2: What will happen to apple prices at market E and at market C in competitive markets?

## WHAT POSITIONS CAN I TAKE IN AN ASSET?



### Long positions

- Assets or contracts are owned
- Position benefits from price appreciation



### Short positions

- Assets not owned are sold or contracts are sold
- Position benefits from a decrease in price

## SHORT POSITIONS

- Q: How do you sell an asset that you do not own?

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## OPTION POSITIONS AND THEIR UNDERLYING RISK EXPOSURES

<u>Strategy</u>	<u>Option position</u>	<u>Exposure to underlying risk</u>
Buy call	Long	Long
Sell call	Short	Short
Buy put	Long	Short
Sell put	Short	Long

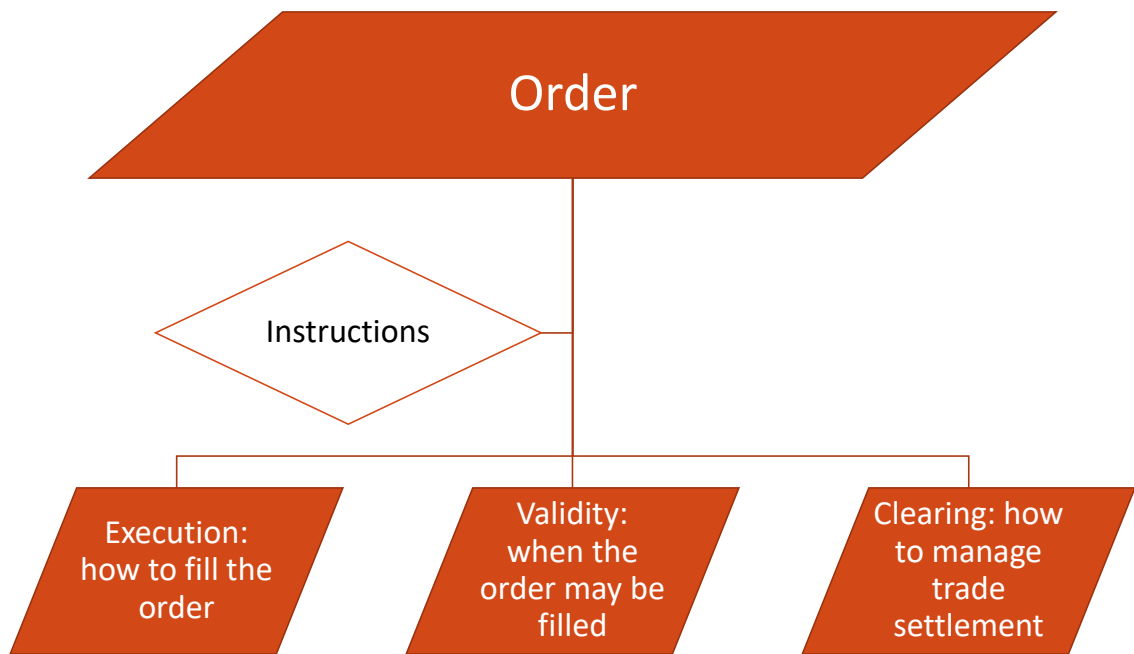


## TERMINOLOGY FOR LEVERED POSITIONS



Buying on margin
Margin loan
Call money rate
Initial margin requirement
Maintenance margin requirement
Margin call
Leverage ratio

## COMPARE AND CONTRAST EXECUTION, VALIDITY, AND CLEARING INSTRUCTIONS



## COMPARE AND CONTRAST MARKET ORDERS WITH LIMIT ORDERS

### Market order

- Executes immediately
- Receives best available price
- May be expensive to execute

### Limit order

- Executes at limit price or better
- Receives best available price
- May not execute

## EXAMPLES

- **Limit order (Fixed or better)**

- Buy order [Example 1: price is at 110 EUR. Want to buy at 100 EUR.](#)
  - Buy at 100 EUR or less:



LUNCH!

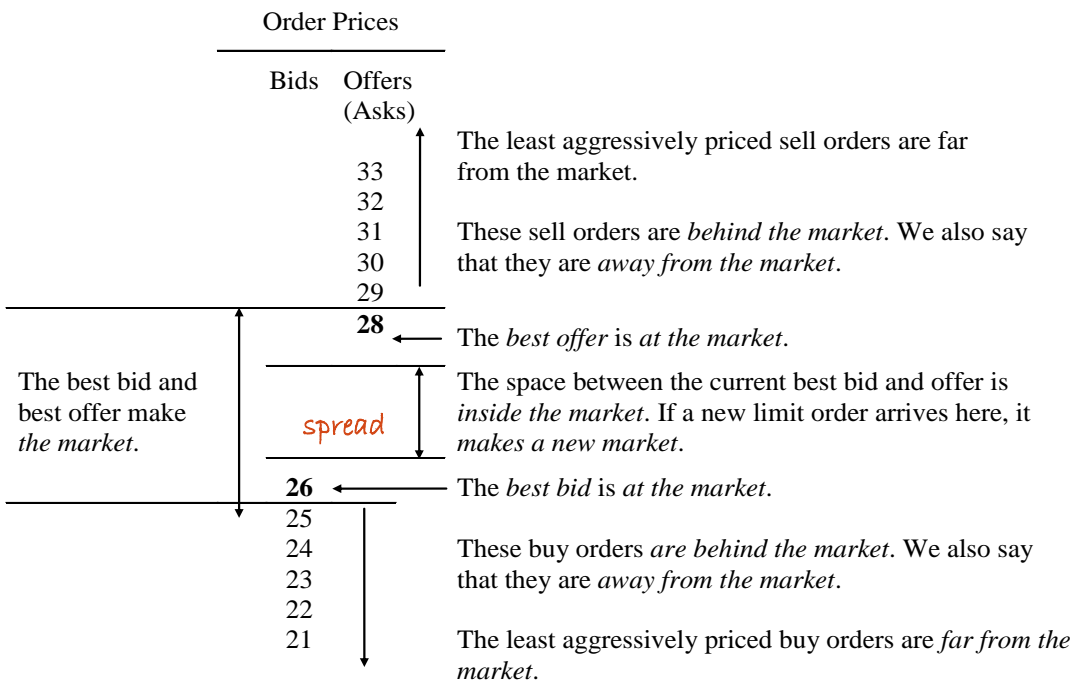
- Sell order [Example 2 bought at 100 EUR. 120 EUR s target price.](#)
  - Sell at 120 EUR or higher



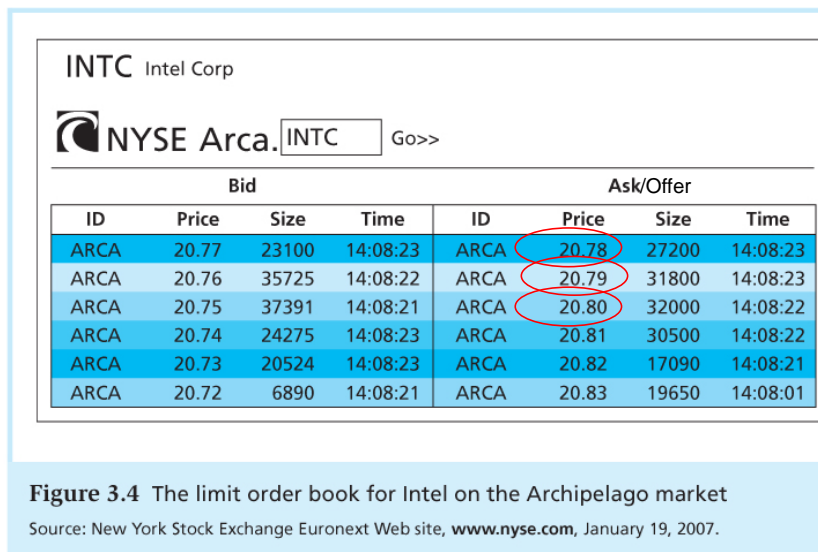
AFTERNOON  
TEA!

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## LIMIT ORDER BOOK: “26 BID, OFFERED AT 28”



## EATING THE LOB



Only a volume of 27200 is offered at \$20.78.

If you want to buy larger quantities, you will not get the best quoted

Want buy 89000 stocks

Question: What is the average price you will be (likely to) pay placing a market order?

**Answer:**

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## VALIDITY INSTRUCTIONS

Day order

Good-till-cancelled order (GTC)

Immediate-or-cancel order (IOC)

Good-on-close order

Good-on-open order

## STOP ORDERS (STOP-LOSS ORDERS)

*If threshold, then market order*



**STOP  
ORDER:  
Sell at \$30**

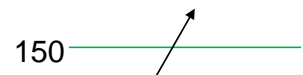


## EXAMPLES

- **Stop order (if threshold, then market order)**

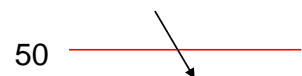
- **Buy order** (Stop-buy)

- You sold an asset worry price will increase
- Buy at market price if 150 EUR is reached (from below)
- Realize loss on a short position



- **Sell order** (Stop-loss)

- You own an asset and worry price will drop too much
- Sell at market price if 50 EUR is reached (from above)
- Realize losses on long positions



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## PRIMARY AND SECONDARY MARKETS



Primary  
market

The diagram shows a large orange downward-pointing arrow shape. Inside the arrow, the text 'Primary market' is written in white. To the right of this arrow is a light orange rounded rectangular box containing a bulleted list of market types.

- Public offering: Initial public offering (IPO)
  - Public offering: Seasoned offering
  - Private placement
  - Shelf registration

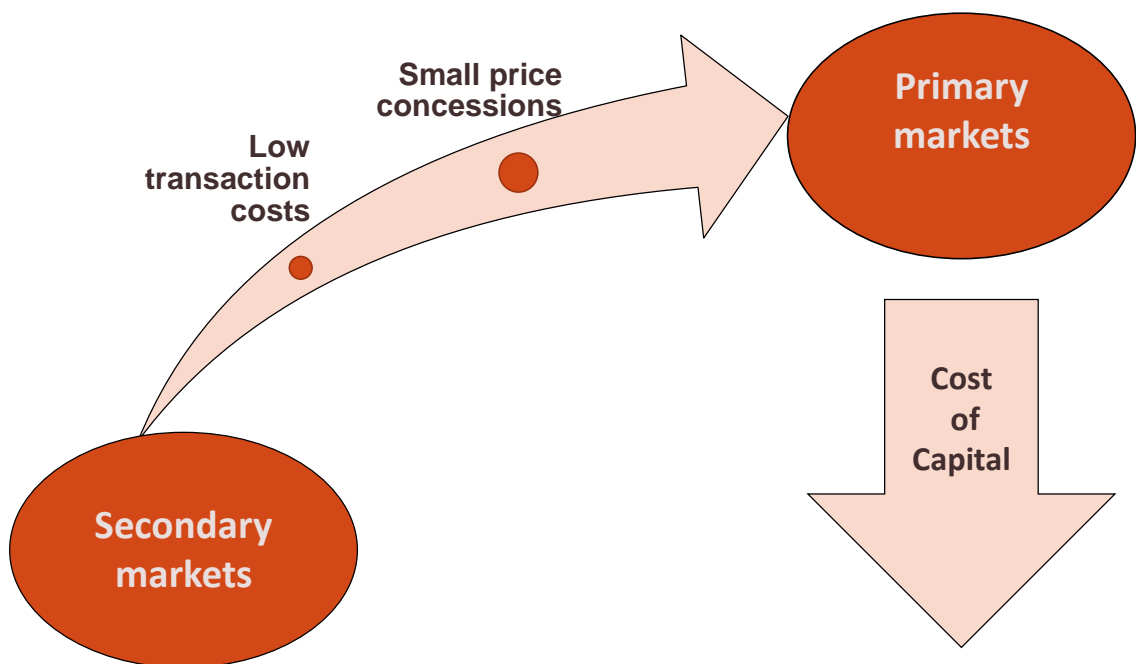


Secondary  
market

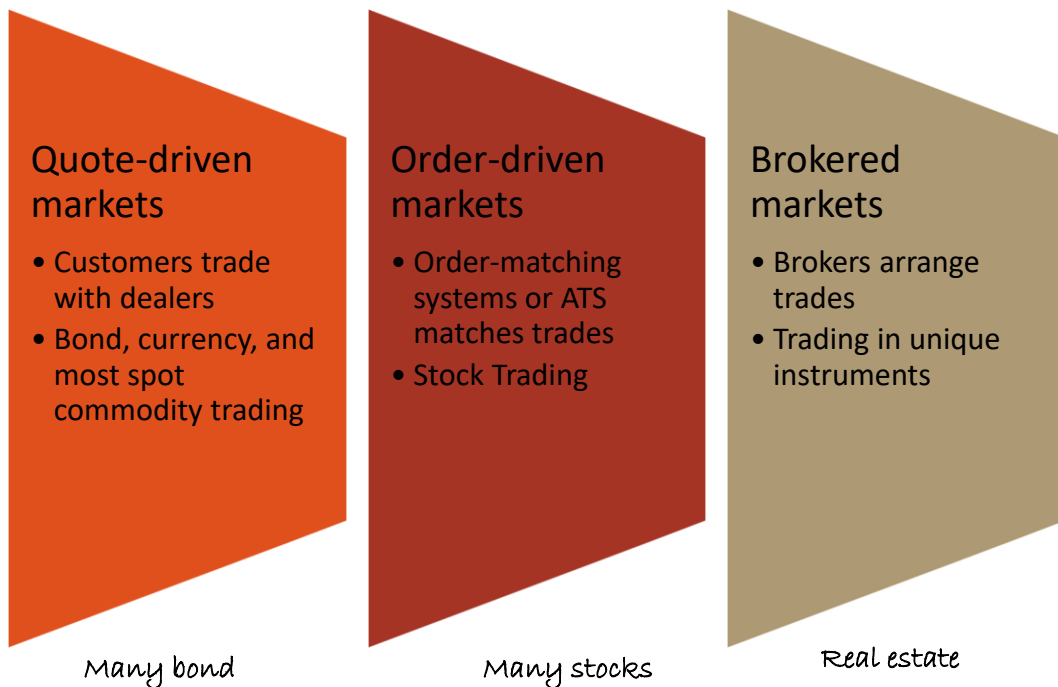
The diagram shows a large orange downward-pointing arrow shape. Inside the arrow, the text 'Secondary market' is written in white. To the right of this arrow is a light orange rounded rectangular box containing a bulleted list of market types.

- Call markets
- Continuous markets

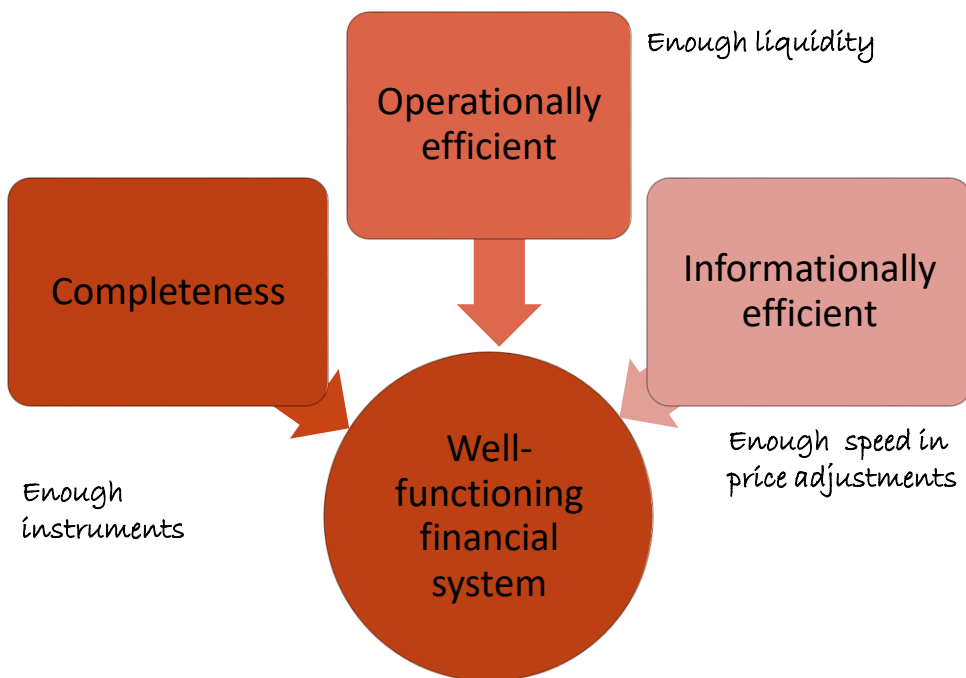
## HOW DO SECONDARY MARKETS SUPPORT PRIMARY MARKETS?



## EXECUTION MECHANISMS



## WHAT ARE THE CHARACTERISTICS OF WELL-FUNCTIONING FINANCIAL SYSTEM?



## WHAT ARE THE OBJECTIVES OF MARKET REGULATION?

Control fraud

Control agency problems

Promote fairness

Set mutually beneficial standards

Prevent exploitation

Ensure liabilities are funded

## SUMMARY

- Main functions of the financial system
- Classifications of assets and markets
- Financial intermediaries
- Long and short positions
- Leveraged positions
- Execution, validity, and clearing instructions
- Market and limit orders
- Primary and secondary markets
- Quote-driven, order-driven, and brokered markets
- Characteristics of a well-functioning market
- Objectives of market regulation



# 1.5 SECURITY MARKETS INDICES



## THE ROLE OF INFORMATION

Information is critical to operate in financial markets. Prices constantly respond to the arrival of **new information**.

There are two broad classifications:

**Public information:** newspapers, companies' announcements of results, experts forecasts, etc. Via the Internet, market's information circulates fast, requiring investors continuous attention to what is happening in the economy and businesses.

**Private information:** not publicly available and hard to pin down, but sometimes revealed by trading activity via indirect "signals" (substantial buy or sell orders).

OBS: Trading based upon inside information is illegal.

## Information and investors

The information that the investor needs to make the decision to invest or to follow the evolution of investment must be provided by:

- ❖ **Financial intermediaries** (that are also obliged to assess the risk profile and level of financial knowledge of investors and make sure they are taking an informed investment decision)
- ❖ **Issuers of securities** (on what concerns their specific securities, via periodic reports, business announcements, etc.)
- ❖ **Supervision authorities** (posting on their websites relevant news about any issuer of securities)



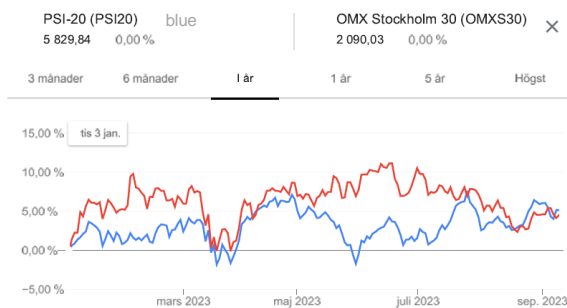
## Indices

Indices are numbers or percentages that illustrate the evolution of a given market or of a particular market segment.

- Fictive portfolio of assets
- Quick measure to read off the market development
- Used by mutual funds as a benchmark to evaluate investments against
- Used as an underlying portfolio for derivatives
- Can be traded by making use of derivatives or Exchange Traded Funds (ETF)

Examples of stock indices:

- ❖ Euronext 50
- ❖ CAC
- ❖ FTSE
- ❖ S&P500
- ❖ IBEX 35
- ❖ PSI
- ❖ OMXS30
- ❖ ...



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## PSI CONSTITUENTS

Question:

Which companies make up the Portuguese PSI- index?

Question:

How many Portuguese companies are included in EURONEXT50?

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Raquel M. Gaspar

Investments and Portfolio Management

ISEG – ULisboa

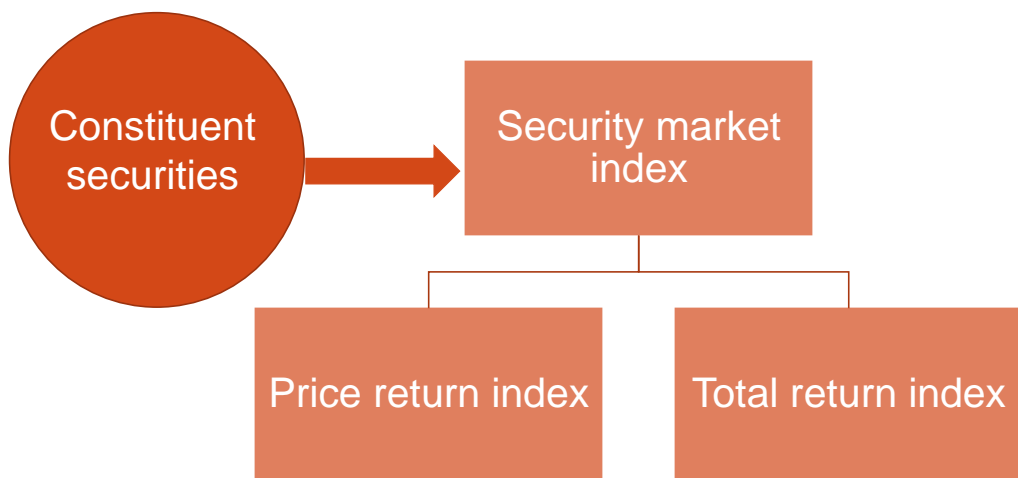
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## PSI CONSTITUENTS

<a href="#">Altri</a>	Basic Resources
<a href="#">Banco Comercial Português</a>	Banks
<a href="#">Corticeira Amorim</a>	Industrial Goods & Services
<a href="#">CTT Correios de Portugal</a>	Industrial Goods & Services
<a href="#">EDP Renováveis</a>	Utilities
<a href="#">Energias de Portugal</a>	Utilities
<a href="#">Galp Energia</a>	Energy
<a href="#">Ibersol</a>	Travel & Leisure
<a href="#">Jerónimo Martins</a>	Personal Care, Drug & Grocery Stores
<a href="#">Mota-Engil</a>	Construction & Materials
<a href="#">NOS</a>	Telecommunications
<a href="#">Novabase</a>	Technology
<a href="#">Pharol</a>	Telecommunications
<a href="#">Redes Energéticas Nacionais</a>	Utilities
<a href="#">Semapa</a>	Basic Resources
<a href="#">Sonae</a>	Personal Care, Drug & Grocery Stores
<a href="#">Sonae Capital</a>	Financial Services
<a href="#">The Navigator Company</a>	Basic Resources

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## DESCRIPTION OF A SECURITY MARKET INDEX



## CHOICES IN INDEX CONSTRUCTION AND MANAGEMENT

Which target market should the index represent?

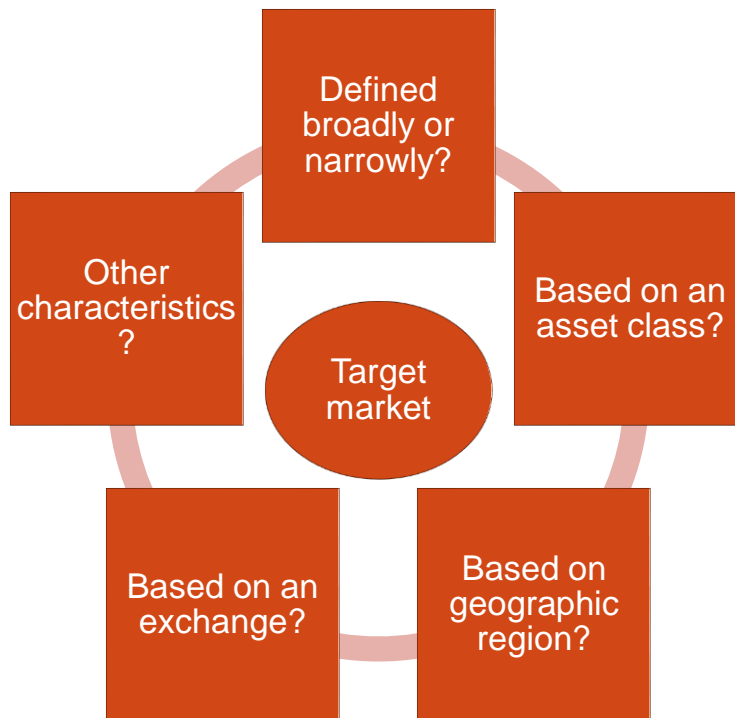
Which securities should be selected from that target market?

How much weight should be allocated to each security in the index?

When should the index be rebalanced?

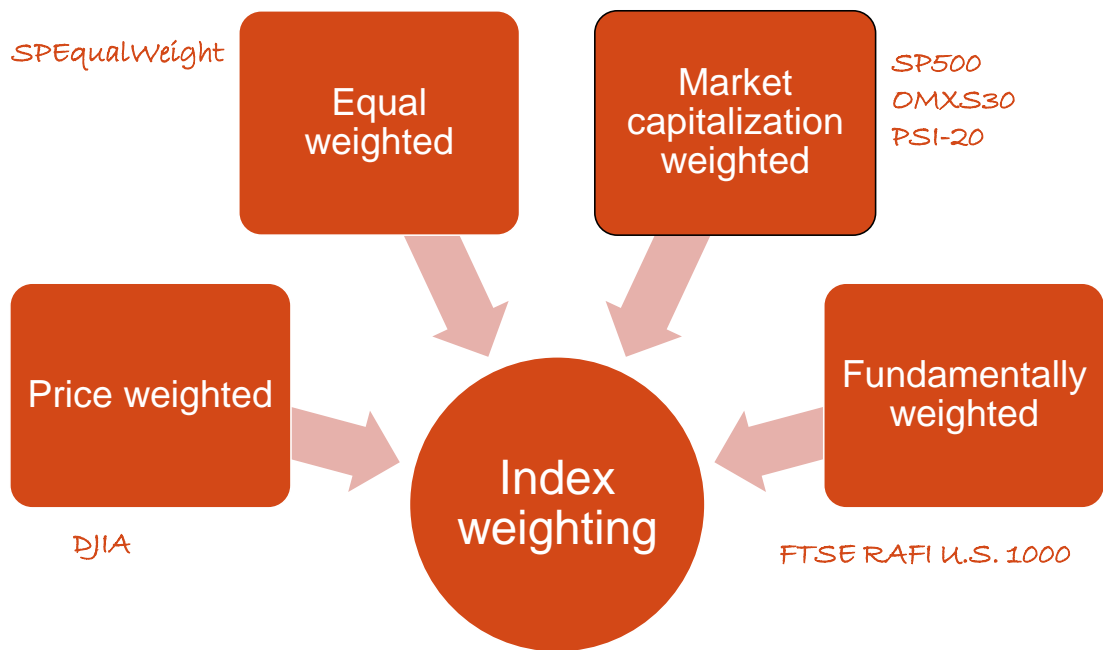
When should the security selection and weighting decision be re-examined?

## TARGET MARKET SELECTION



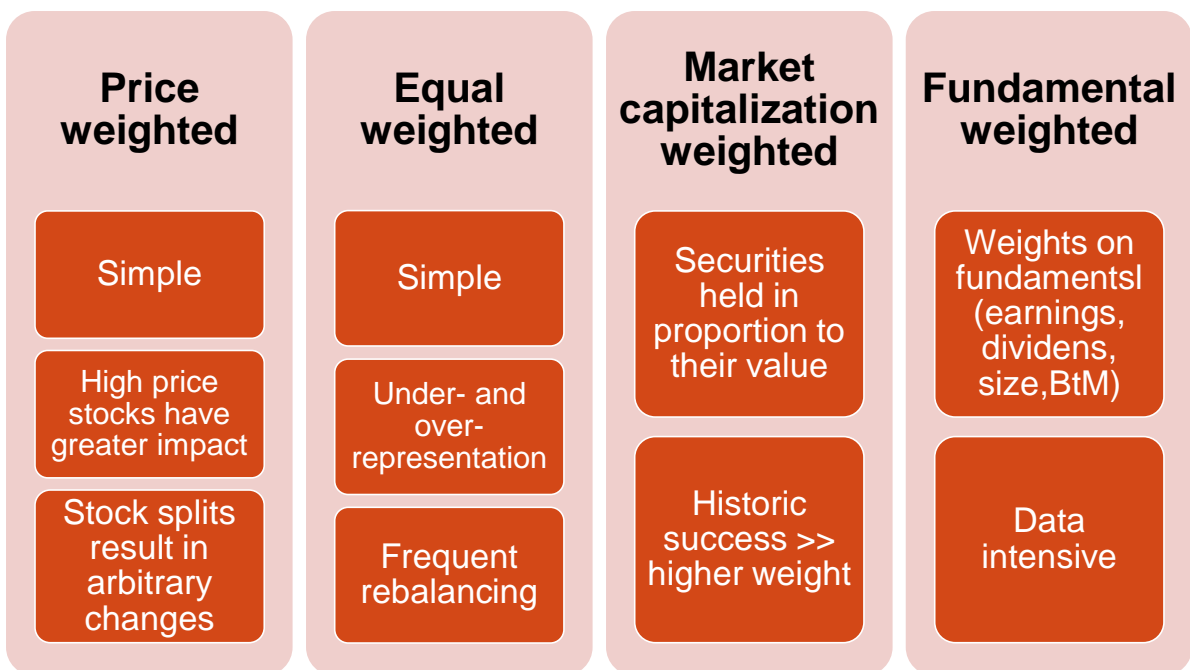


## DIFFERENT WEIGHTING METHODS USED IN INDEX CONSTRUCTION



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## ADVANTAGES AND DISADVANTAGES



## MARKET VALUE WEIGHTED INDEX

	Market Value	Price
Coca-Cola	\$ 168.37 Billion	\$ 37.40
Apple Inc.	\$ 623.60 Billion	\$ 665.24
Catepillar Inc.	\$ 55.74 Billion	\$ 85.33
Total	\$ 847.71 Billion	

Constructing a **value weighted** index with divisor 1:

$$(168.37+623.60+55.74)/1=847.71$$

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## PRICE WEIGHTED INDEX

	Market Value	Price
Coca-Cola	\$ 168.37 Billion	\$ 37.40
Apple Inc.	\$ 623.60 Billion	\$ 665.24
Catepillar Inc.	\$ 55.74 Billion	\$ 85.33
Total		\$ 787.97

Constructing the average **price weighted** index:

$$(37.40+665.24+85.33)/3=787.97/3=262.65$$

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## CLOSE UP ON THE WEIGHTS

	Market Value	Price
Coca-Cola	\$ 168.37 Billion	\$ 37.40
Apple Inc.	\$ 623.60 Billion	\$ 665.24
Catepillar Inc.	\$ 55.74 Billion	\$ 85.33
Total	\$ 847.71 Billion	\$ 787.97

### Index return Weights

	Market-Value-Weighted		
Coca-Cola	$168.37/847.71=19.86\%$		
Apple	$623.60/847.71=73.56\%$		
Catepillar	$55.74/847.71=6.83\%$		

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## CLOSE UP ON THE WEIGHTS

	Market Value	Price
Coca-Cola	\$ 168.37 Billion	\$ 37.40
Apple Inc.	\$ 623.60 Billion	\$ 665.24
Catepillar Inc.	\$ 55.74 Billion	\$ 85.33
Total	\$ 847.71 Billion	\$ 787.97

### Index return Weights

	Market-Value-Weighted	Price-Weighted	
Coca-Cola	19.86 %	$37.40/787.97=4.75\%$	
Apple	73.56 %	$665.24/787.97=84.2\%$	
Catepillar	6.83 %	$85.33/787.97=10.83\%$	

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## CLOSE UP ON THE WEIGHTS

	Market Value	Price
Coca-Cola	\$ 168.37 Billion	\$ 37.40
Apple Inc.	\$ 623.60 Billion	\$ 665.24
Catepillar Inc.	\$ 55.74 Billion	\$ 85.33
Total	\$ 847.71 Billion	\$ 787.97

### Index return Weights

	Market-Value-Weighted	Price-Weighted	Equally Weighted
Coca-Cola	19.86 % = $168.37/847.71$	4.75%	
Apple	73.56 %	84.2%	
Catepillar	6.83 %	10.83%	

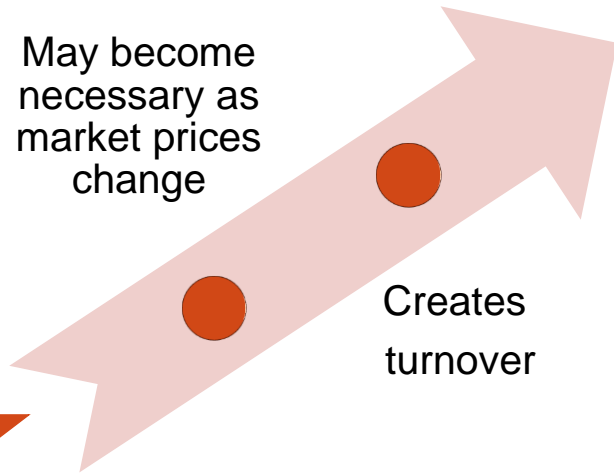
Question: What is the equally weighted?

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## REBALANCING

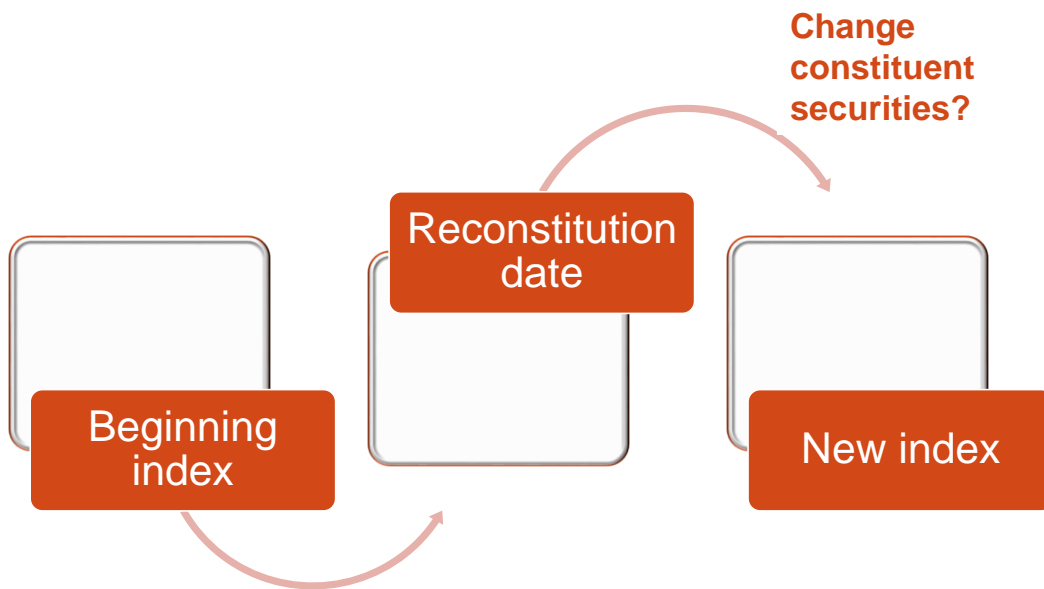
May become  
necessary as  
market prices  
change

Creates  
turnover





## RECONSTITUTION



## SWEDISH EXAMPLE

- ❖ **The Swedish steel company SSAB, founded 1978, left OMXS30 in 2020**
- ❖ **Instead the internet casino company Evolution Gaming entered the index.**
- ❖ **In measures of turnover SSAB is a giant compared to Evolution Gaming. A turnover of 4 billion kr under Q3 2020 compared with SSAB turnover of 14,5 billion kr Q4 2020 and SSAB has approx twice as many employees.**
- ❖ **But the casino company increased about 200 percent in value over 2020 and is one of the 30 most traded stocks at the Swedish exchange and this is why it was included into OMXS30.**

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## USES OF MARKET INDICES

**Measures of market sentiment (big picture)**

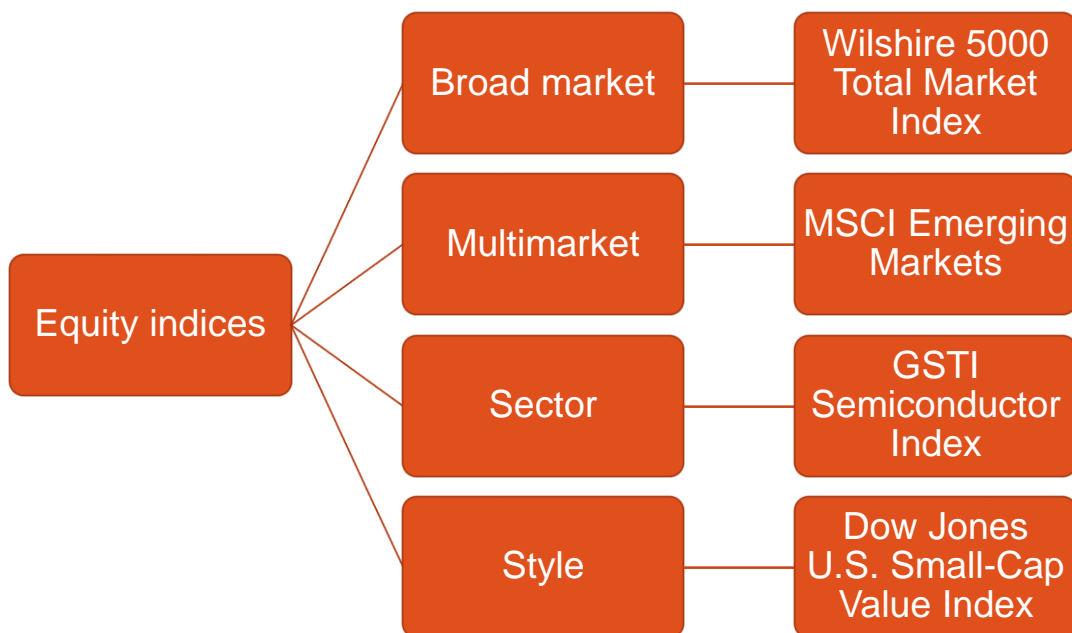
**Proxies for measuring and modeling returns, systematic risk, and risk-adjusted performance**

**Proxies for asset classes in asset allocation models**

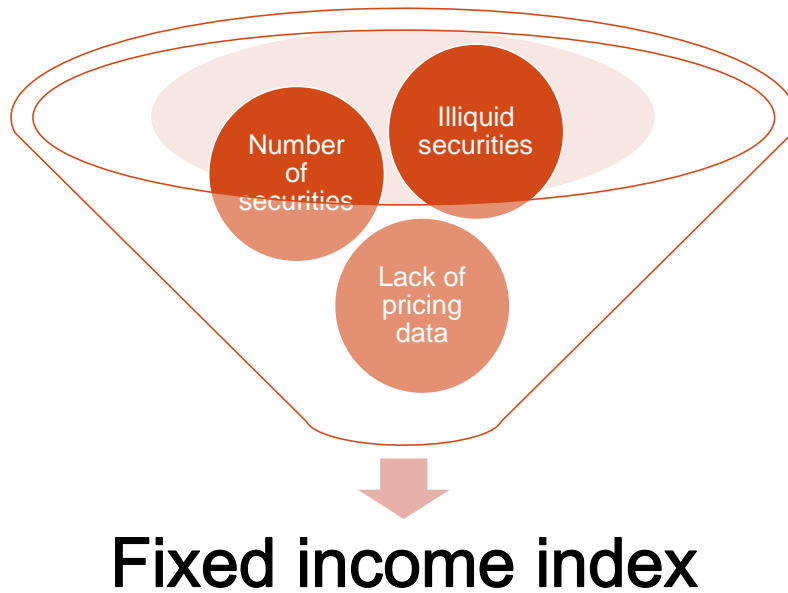
**Benchmarks for actively managed portfolios**

**Tradable via index funds, index derivatives and exchange-traded funds (ETFs)**

## EQUITY INDICES



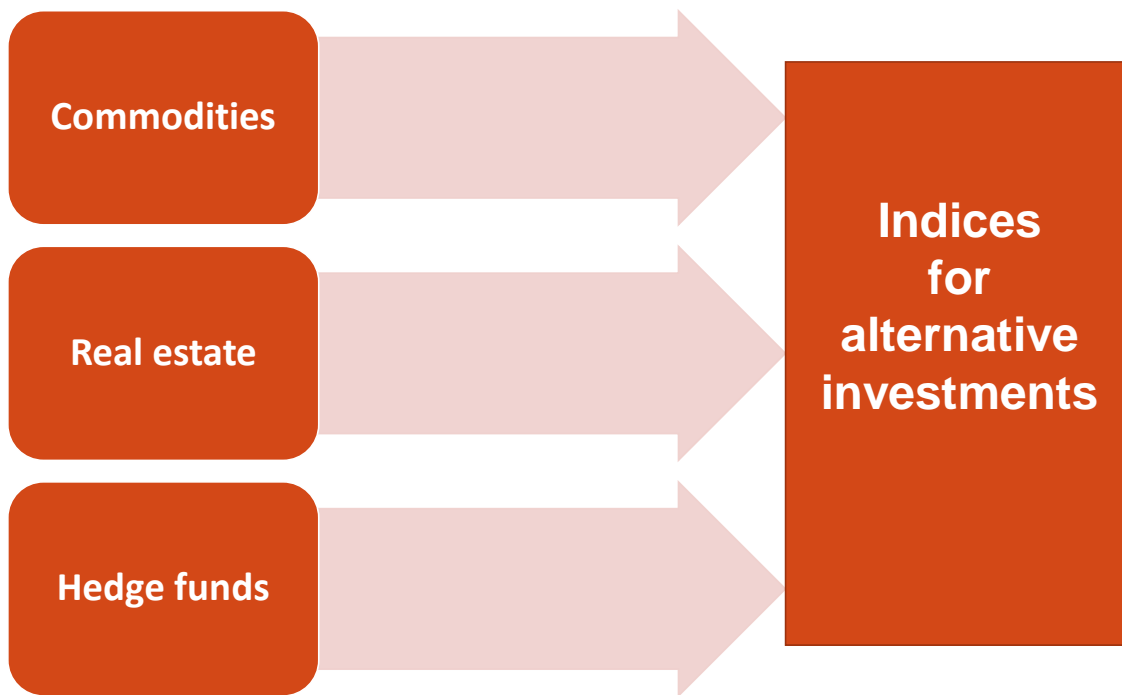
## CHALLENGES FACING FIXED INCOME INDEX CONSTRUCTION



## DIMENSIONS OF FIXED-INCOME INDICES

Market	Global			
	Regional			
	Country or currency zone			
Type	Corporate	Collateralized Securitized Mortgage- backed	Government agency	Government
Maturity	For example, 1–3, 3–5, 5–7, 7–10, 10+ years; short-term, medium-term, or long-term			
Credit quality	For example, AAA, AA, A, BBB, etc.; Aaa, Aa, A, Baa, etc.; investment grade, high yield			

## INDICES FOR ALTERNATIVE INVESTMENTS



## SUMMARY

- Price return index
- Total return index
- Choices in index construction and management
- Advantages and disadvantages of different weighting schemes
- Rebalancing and reconstitution
- Uses of market indices
- Equity, fixed income, and alternative investment indices