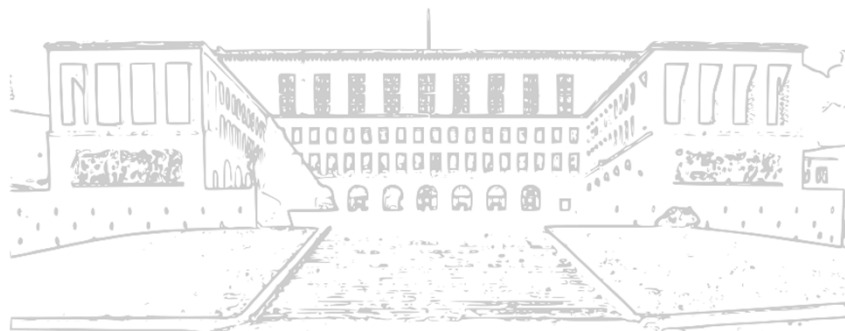


FINANCIAL MARKETS AND INSTITUTIONS

STOCK MARKETS

A.Y. 2017/2018
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AGENDA

- Purpose and main features
- Trading
- Evaluation of stocks

PURPOSE AND FEATURES

- Stocks represent an **ownership** share in a company
- Usually, **no maturity date**
- Usually, provide **voting rights**
- Lowest priority in case of default (**residual claim**)
- Returns are based on:
 - **Dividends**: periodical uncertain payments over company's net profit
 - Capital gains/losses: changes in **prices**+
- So, **secondary markets** are important

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PURPOSE AND FEATURES

- Main categories:
 - **Common** stock:
 - typical form, with several variations
 - dividends, voting rights and subordination to creditors
 - **Preferred** stock:
 - fixed predetermined dividend
 - very limited voting rights
 - priority over common stock
 - **Tracking** stock: performing as a division/project rather than a whole firm

Several features strongly depend on country-specific regulation

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PURPOSE AND FEATURES

- Stock “styles”:
 - **Income stocks:**
 - More frequent and steady dividend payment
 - Focus on flows, rather than on capital gains
 - **Value stocks:**
 - “underpriced” stocks compared to peers
 - Focus on future opportunities, management, ... rather than financials
 - **Growth stocks:**
 - Rapidly increasing profits reinvested rather than distributed
 - Focus on (future potential) capital gains
- Also, **volumes** (large, mid, small cap stocks)

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PURPOSE AND FEATURES

Markets:

- **Exchanges:**
 - traditional **auctions** plus **continuous trading**
 - usually intermediated by authorised **brokers**
 - external+internal **regulation** (f.i. Borsa Italiana SpA)
 - often organised in **submarkets/segments** (f.i. S/M/L cap.)
 - **multiple listing** is allowed
 - frequently **privately owned and for-profit**
- **OTC:**
 - trading mostly electronic through **dealers** that provide their own inventory of stocks and bid/ask prices (f.i. NASDAQ)
 - IT allowed increasing competition

(cont.)

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PURPOSE AND FEATURES

Markets (cont.):

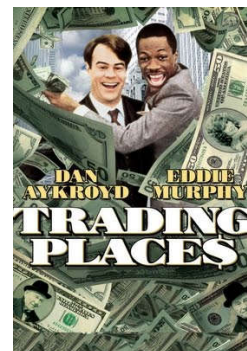
- Multilateral trading facilities (**MTF**) and electronic communication networks (**ECN**)
 - **direct link** between brokers/traders
 - transparent, less expensive, faster and **24/7**
 - mostly **for more liquid stocks**
- Recently, diffusion of Exchange traded funds (**ETFs**):
 - **Portfolio** of specified securities
 - ETF's shares are **listed and traded** as stocks: price discovery
 - **Passive** management: lower costs and closer replication of benchmark
 - **Limited entry minimums**: allow easier diversification
 - **Brokerage fees** render ETFs more expensive than mutual funds

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PURPOSE AND FEATURES

Trading through *auctions*:

- **Control** over participating operators and transparency
- **Price set by buyers below its maximum potential**: the winning buyer should be the one taking the best advantage of the asset, otherwise would not offer the highest price (or strongly believing it)
- Information has the role to increase assets' values or reducing their risk (uncertainty)



<https://www.youtube.com/watch?v=UoUnvVRYzzA>

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PURPOSE AND FEATURES

Continuous trading reduces valuation errors (that explain part of short-term volatility):

- Firm and environment **change**, affecting **growth rates** (small changes, through perpetuity, lead to wide price variations)
- Competition renders difficult to keep growing at high rates
- Consensus on discount (risk) factors is unlikely
- Estimating dividends is hard, as well as expressing unanimous future expectations



Open	Max	Min	+/-	No	Prezzo	Vol	Ora
4.1040	4.1040	3.8720	-0.1880	-4.61	3.8920	1613	11:52:14
1	3974	3.8900	3.8940	700	1	3.8920	1504
5	19440	3.8880	3.8960	17646	8	3.8920	1616
7	110276	3.8860	3.8980	13935	10	3.8940	390
5	13103	3.8840	3.9000	160085	18	3.8940	421
10	47361	3.8820	3.9020	14906	4	3.8940	1000

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PURPOSE AND FEATURES

Information provided by markets:

- Not only **prices**, but **volumes** and **trends** with real-time **contract data**
- company **financials**, analysts' **forecasts**
- market averages (**open/close**)
- **books**
- Indexes of **submarkets** (f.i. MTA), of specific **industries** (f.i. financials), of geographical **areas** (f.i. Latin America),
- News and rumors on markets, companies, regulation, politics, ...
- Statistics and market reviews
- ...



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EVALUATION

Dividend discount model:

- Again, present value of future cash flows
- CF in one period are one dividend payment and the final selling price:

$$P_0 = \frac{D_1}{1+k_e} + \frac{P_1}{1+k_e}$$
- Generalising:

$$P_0 = \frac{D_1}{1+k_e} + \dots + \frac{D_n}{(1+k_e)^n} + \frac{P_n}{(1+k_e)^n}$$
- If n is long-term, effects on P_0 are nil; hence:

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+k_e)^t}$$
- Since ∞ is quite a long time, simply assume constant dividend growth (**Gordon growth model**):

$$P_0 = \frac{D_1}{k_e - g}$$

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EVALUATION

Price/earnings valuation method (P/E):

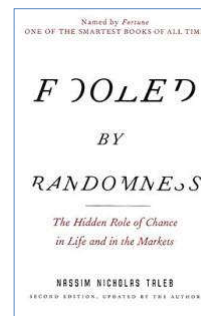
- Difficult application of the dividend model led to simpler approaches based on “**multiples**”, or company measures that allow direct comparisons across sectors/countries and bear market expectations
- P/E compares stock's price with company's earnings:
 - greater values mean that market expects a rise in **earnings**
 - or a lower level of **uncertainty**
- P/BV compares stock's price with accounting equity (total or tangible):
 - Relationship between historic and forward-looking measures
 - Strongly dependent on the accounting framework (GAAP, IFRS, ...)
- Firms in the same industry should have similar long-run ratios, therefore a stock is valued as the average industry's value times its earnings per share or book values

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EVALUATION

Technical analysis:

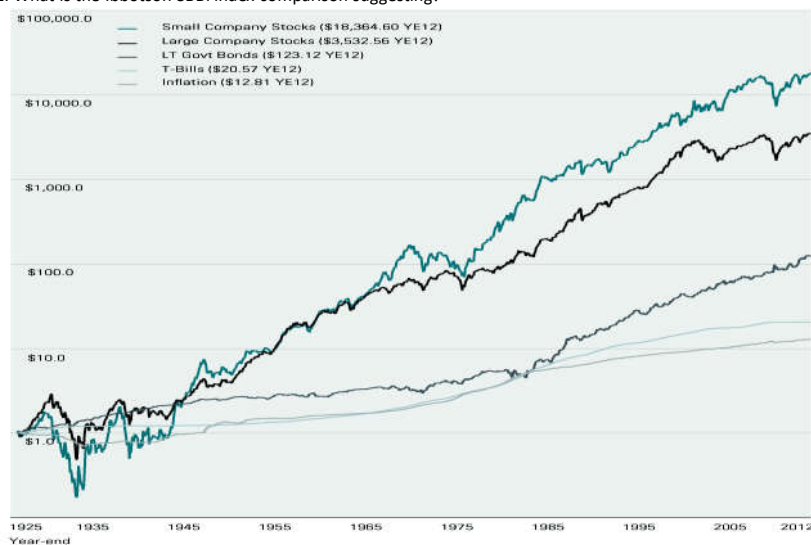
- Unlike «fundamental» analysis, assumes that all information is incorporated in prices and tries to predict «non-random» trends from investors' expected behaviour
- Apparently «witchery», has two advantages:
 - Grounded on perceived discrepancy between supply and demand, aiming at finding markets' «sentiment»
 - Does not need access to a number of different information sources («everything» is in the graph)
- Disadvantages:
 - Short-termed ("fundamentals" seem to emerge in the long run)
 - Outperformance still to be proved beyond randomness



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EXAMPLES

1. What is the Ibbotson SBBI index comparison suggesting?



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EXAMPLES

2. The following is a list of Italian stocks, showing current prices, annual dividends and expected prices in one year. Which stock bears more risks given this data?

Stock	Price	Dividend	1y exp. price
ENI	17.66	0.55	21.00
Finmeccanica	5.67	0.41	6.50
Generali	16.88	0.20	18.00
Luxottica	38.43	0.58	46.00
Unicredit	5.635	0.00	6.50

Compute the required return through the usual formula:

$$P_0 = \frac{D_1}{1+k_e} + \frac{P_1}{1+k_e} \rightarrow k_e = \frac{D_1 + P_1}{P_0} - 1$$

Stock	k_e
ENI	0.2203
Finmeccanica	0.2187
Luxottica	0.2121
Unicredit	0.1535
Generali	0.0782

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EXAMPLES

3. The following is a list of Italian stocks, showing current prices, the expected future dividend and an estimated expected return. What can be said on the expected growth through the Gordon model?

Stock	Price	Dividend	k_e
MPS	0.2428	0.0245	5%
Campari	6.445	0.07	7%
ENEL	3.232	0.15	25%
Fondiarria-SAI	1.916	0.40	15%
Sal. Ferragamo	25.19	0.33	10%

Compute the required return through the usual formula:

$$P_0 = \frac{D_1}{k_e - g} \rightarrow g = k_e - \frac{D_1}{P_0}$$

Stock	g
ENEL	18.812%
Sal. Ferragamo	8.412%
Campari	6.224%
MPS	0.881%
Fondiarria-SAI	-0.658%

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EXAMPLES

4. Considering (selected) sectors in the US (using NYU-Damodaran 1/13) , which of the following do you expect:

- To have the highest and lowest P/E
- To have the highest and lowest growth ratio
- To have the highest and lowest payout ratio

	P/E	g	Payout
Bank	19.74	9.28%	31.35%
Financial services	22.63	12.97%	25.33%
Life insurance	23.72	12.48%	24.23%
Non-life insurance	48.98	10.32%	45.77%
Investment Companies	25.04	NA	NA
Public/Private Equity	7.88	17.10%	21.00%
Reinsurance	45.24	11.82%	NA
Securities Brokerage	15.1	10.48%	21.76%
Thrift	43.27	10.34%	20.45%

How would you expect the same ratios for, say, funeral services and internet companies? Why?

	P/E	g	Payout
Funeral Services	18.77	10.90%	49.83%
Internet	150.13	23.17%	1.36%