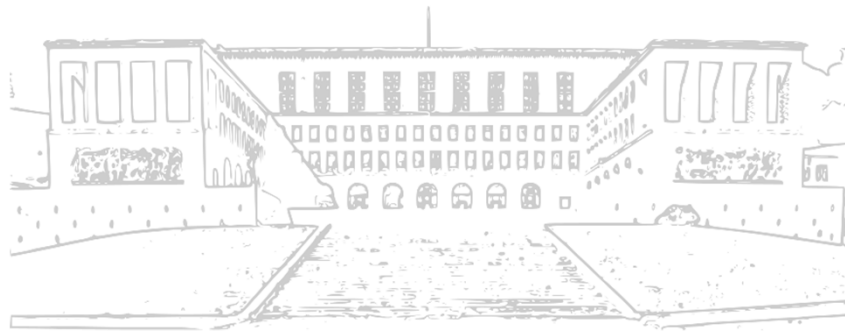


FINANCIAL MARKETS AND INSTITUTIONS

STOCK MARKETS

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AGENDA

- Purpose and main features
- Evaluation of stocks
- Stock market regulation (intro)

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

PURPOSE AND FEATURES

- Main categories:
 - Common stock:
 - typical form, with several variations involving mostly dividends, voting rights and subordination
 - Preferred stock:
 - fixed predetermined dividend
 - very limited voting rights
 - priority over common stock
- Several features strongly depend on country-specific regulation

PURPOSE AND FEATURES

Markets:

- Exchanges:
 - traditional auctions plus electronic 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.)

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
 - Passive management: lower costs and closer replication of benchmark
 - Limited entry minimums: allow easier diversification
 - Brokerage fees render ETFs more expensive than mutual funds

PURPOSE AND FEATURES

Trading through auctions (VS continuous trading):

- 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 she would not offer the highest price
- Information has the role to increase assets' values or reducing their risk (uncertainty)

PURPOSE AND FEATURES

Continuous trading:

- reduces some disadvantages of 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)
 - If competition renders difficult to keep growing at high rates and investors indiscriminately use growth models, growth firms would be disadvantaged (lower returns)
 - Consensus on discount (risk) factors is unlikely
 - Estimating dividends is hard as well

PURPOSE AND FEATURES

Information provided by markets:

- Not only prices, but volumes, trends, company information, analysts' forecasts, weighted average values (open/close/reference prices), books on individual stocks
- Indexes of submarkets (f.i. MTA), of specific industries (f.i. financials), of geographical areas (f.i. Latin America), over which other securities are built (f.i. ETFs, derivatives, ...)
- News on markets, companies, etc.
- Statistics and market reviews
- ...

EVALUATION

Dividend valuation method:

- Again, present value of future cash flows, discounted by the required return on equity investments
- 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):

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

EVALUATION

Price/earnings valuation method (P/E):

- Difficult application of 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
- Firms in the same industry should have similar long-run P/E, therefore a stock is valued as the average industry's P/E times its earnings per share

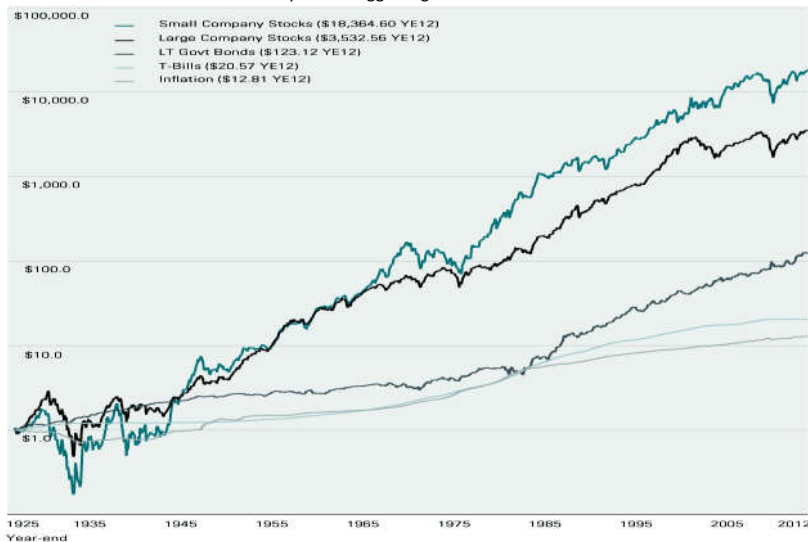
REGULATION

Most countries adopt regulation and supervision over financial markets and stock market is no exception:

- Usually, requirements involve transparency and utmost good faith of information provided by listed companies and orderly functioning of markets (fair treatment of investors, quality of intermediaries, efficiency, stability, ...)
- F.i. Italy established a supervisor long ago (CONSOB, 1970s), responsible of supervision on securities, intermediaries and markets
- Supervisors' responsibilities increased dramatically:
 - following developments inner to financial markets, f.i. innovative securities, that extended in volume and scope
 - as a consequence of increasing competition across markets and countries (MTF/ECN, ETFs, M&A across exchanges, ...)

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%
Fondiaria-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%
Fondiaria-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%

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