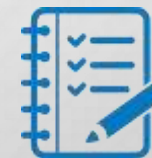


A6. STOCK MARKETS



- WHY DO STOCKS EXIST?
- WHAT KIND OF STOCKS EXIST AND WHY?
- HOW ARE STOCKS EVALUATED?

PURPOSE AND FEATURES

- Stocks represent **ownership: voting rights** (with exceptions)
- **No maturity date**
- **Residual claim** in case of default (compared to other creditors and within stockholders)
- Returns are based on:
 - **Dividends:** periodical uncertain payments over profit/reserves
 - Capital gains/losses: changes in **prices (secondary markets)**
- **Option rights** on new issues that may have a separate market



PURPOSE AND FEATURES

- Main categories:

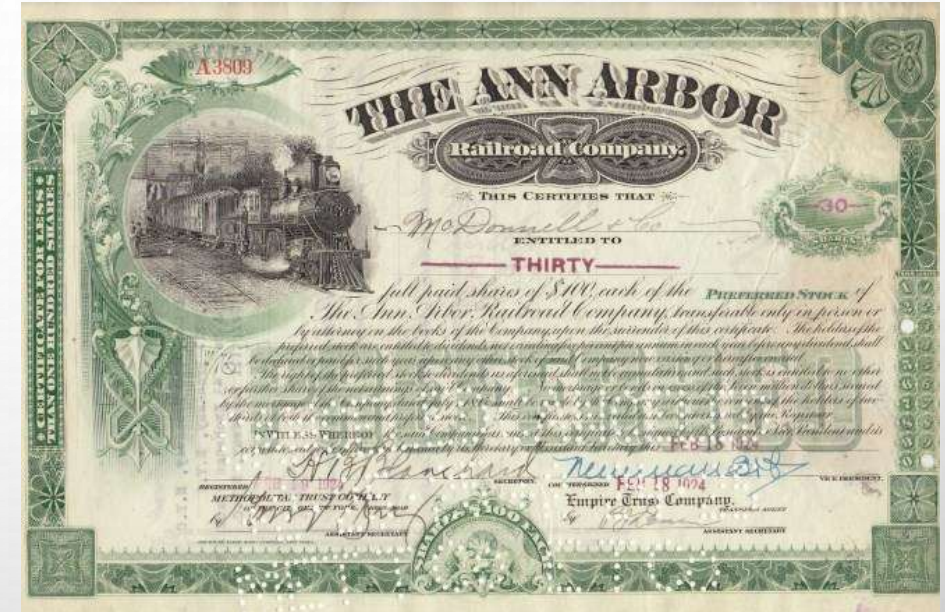
- **Common stock:**

- typical form, with several variations
 - dividends, voting rights and subordination to creditors

- **Preferred stock:**

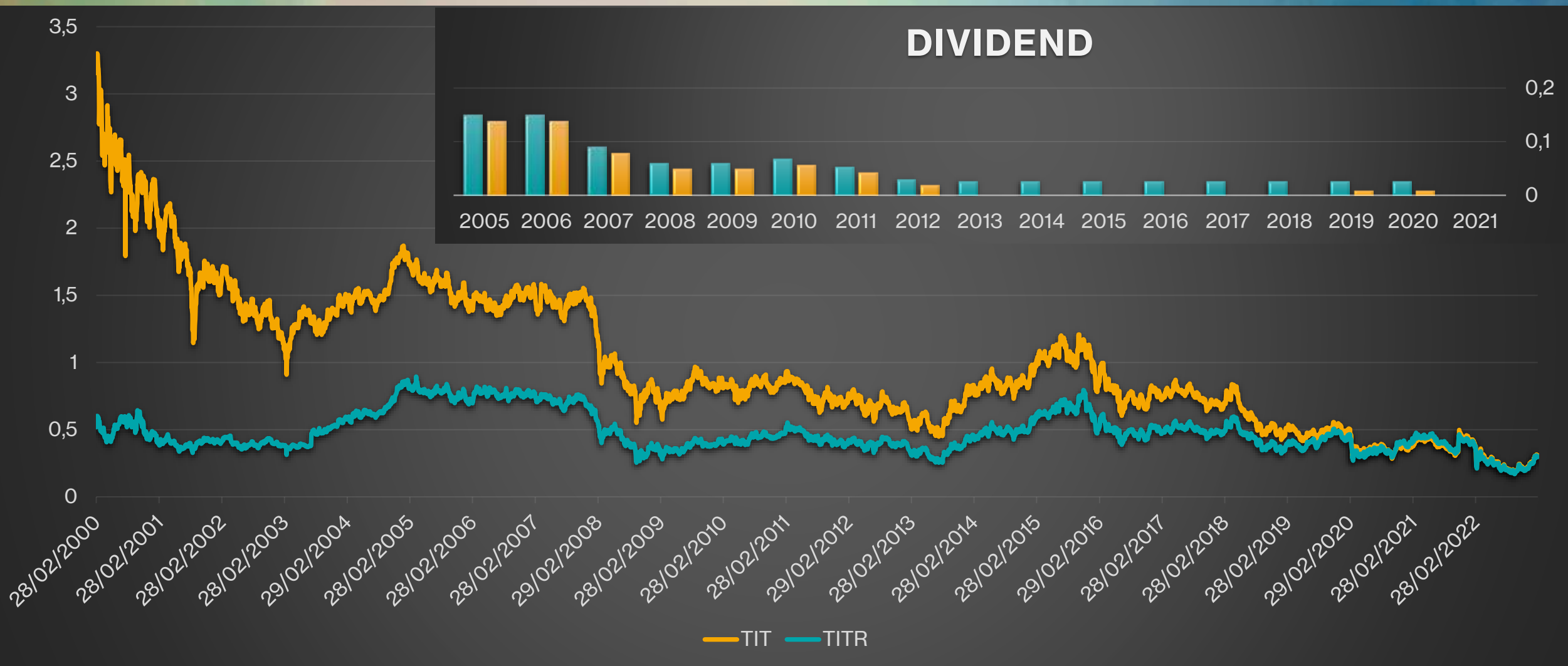
- fixed predetermined dividend
 - limited voting rights
 - priority over common stock
 - frequently held by founders

- **Tracking stock:** performing as a division/project rather than a whole firm



Features/contents strongly depend on **country-specific regulation**

TELECOM – TIT vs TITR (no voting, dividend 5% of 0.55€, increased 2% of the same value compared to common stock)



EXAMPLES

PURPOSE AND FEATURES

Stock “styles”:

- **Income stocks** (f.i. in mature and profitable sectors):
 - More frequent and steady dividend payment
 - Focus on flows, rather than on capital gains
- **Growth stocks** (f.i. in innovative sectors):
 - Rapidly increasing profits reinvested rather than distributed
 - Focus on (future potential) capital gains
- **Value stocks** (f.i. due to company-specific events and moments):
 - Healthy but “underpriced” stocks compared to peers/fundamentals
 - Focus on future opportunities, management, ... rather than financials



Also, **volumes** (large, mid, small cap stocks)

Verizon Communications Inc. (VZ)

NYSE - NYSE Delayed Price. Currency in USD

[Add to watchlist](#)

[Quote Lookup](#)



51.19 **+0.17** **(+0.33%)** **51.15** **-0.04** **(-0.08%)**

At close: January 27 04:00PM EST

After hours: 07:59PM EST

[Summary](#) [Chart](#) [Conversations](#) [Statistics](#) [Historical Data](#) [Profile](#) [Financials](#) [Analysis](#) [Options](#) [Holders](#) [Sustainability](#)

[Full screen](#)

[Indicators](#) [Comparison](#) [Date Range](#) [1D](#) [5D](#) [1M](#) [3M](#) [6M](#) [YTD](#) [1Y](#) [2Y](#) [5Y](#) **Max** [Interval 1W](#) [Line](#) [Draw](#)



EXAMPLES

Amazon.com, Inc. (AMZN)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

[Add to watchlist](#)

[Quote Lookup](#)



2,792.75 **+15.30 (+0.55%)** **2,818.99** **+26.24 (+0.94%)**

At close: January 27 04:00PM EST

After hours: 07:59PM EST

[Summary](#) [Chart](#) [Conversations](#) [Statistics](#) [Historical Data](#) [Profile](#) [Financials](#) [Analysis](#) [Options](#) [Holders](#) [Sustainability](#)

[Full screen](#)

[Indicators](#) [Comparison](#) [Date Range](#) [1D](#) [5D](#) [1M](#) [3M](#) [6M](#) [YTD](#) [1Y](#) [2Y](#) [5Y](#) [Max](#) [Interval 1W](#) [Line](#) [Draw](#)



EXAMPLES

Volkswagen AG (VWAGY)

Other OTC - Other OTC Delayed Price. Currency in USD

☆ Add to watchlist

Quote Lookup



28.50 -0.19 (-0.66%)

At close: January 27 03:59PM EST

Summary **Chart** Conversations Statistics Historical Data Profile Financials Analysis Options Holders Sustainability

Full screen

Indicators Comparison Date Range 1D 5D 1M 3M 6M YTD 1Y 2Y 5Y **Max** Interval 1W Line Draw



EXAMPLES

MARKETS



- **Exchanges:**

- **auctions + continuous trading**
- intermediated by **brokers**
- external+internal **regulation**
- **submarkets/segments**
- **for profit firms** issuing stocks (f.i. LSE – QIA 10%, ...)

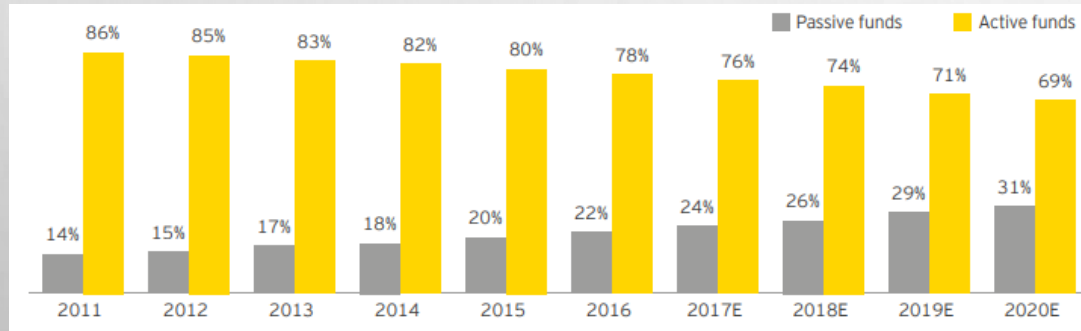
- **OTC:**

- mostly electronic (for liquid stocks)
- through **dealers' own PTF**
- IT allows increasing competition (MTF, ECN, ...)
- Increased counterparty risks

INNOVATIONS

ETF/ETC/ETN – ETP:

- **PTF of financial instruments**
- **Listed and traded like stocks**
- **Low transaction costs**
- **Mainly passive investing over a benchmark**

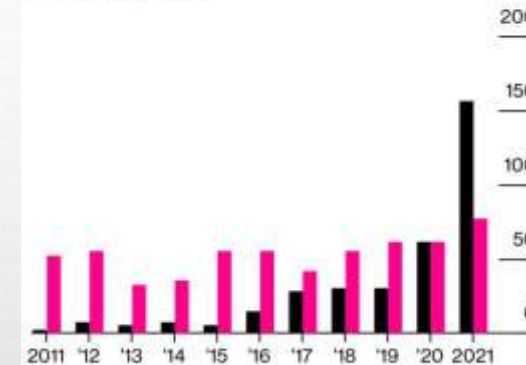


Difficult times increase the need for activism?

Taking Off

Active ETF launches are double passive debuts this year

■ Active ■ Passive

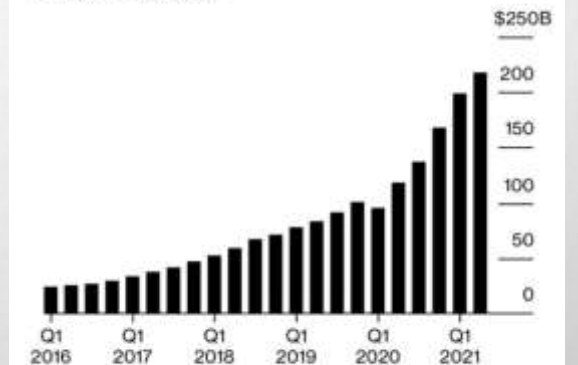


Source: Bloomberg

Getting Active

Assets are growing fast as stock-picking ETFs grab flows

■ Active ETFs - AUM



Source: Bloomberg

AUCTIONS VS CONTINUOUS TRADING

Auctions:

- **Control** over participants and **transparency**
- **Price set by “best” buyers** (best advantage=highest price)
- **Information** increase values: less volatility, better expectations
- Costly, less efficient, limited time availability



Continuous trading:

- better price discovery/signaling, lower evaluation errors
- more short-term volatility: firms/environment change quickly (growth, discounting, estimates, ...)
- Less costly, pricing all over the trading day, dynamic books and more sophisticated orders (f.i. limit)
- Trading advantage of some parties (informative, tech)



Currently, a hybrid:

- open/close auctions / Trading halts and volatility auctions
- Some important, global markets are auctioned (f.i. LME)



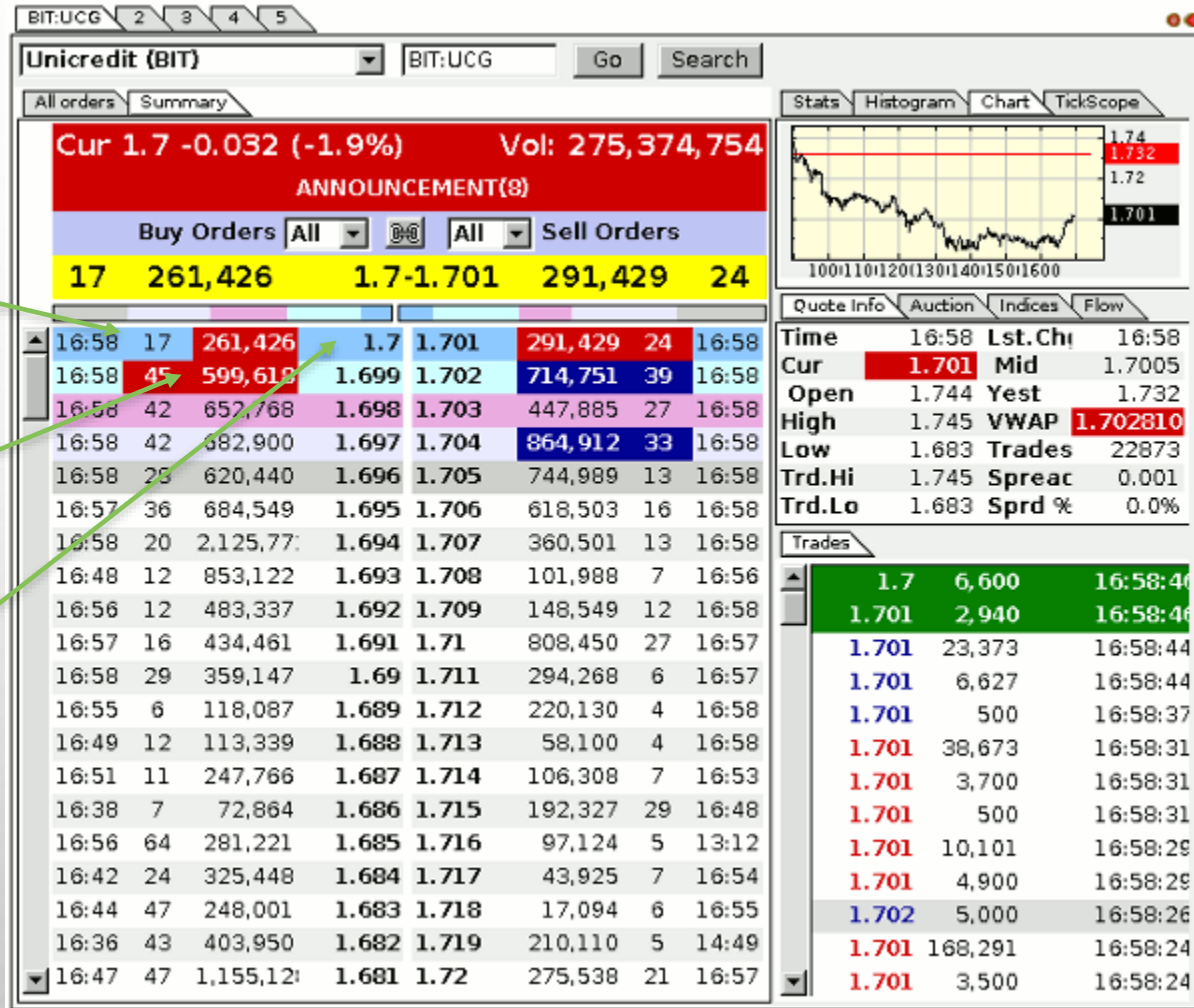
Nobel 2020: **Milgrom** e **Wilson** for their studies on auctions

BOOKS

Time and number of orders

Cumulative quantity

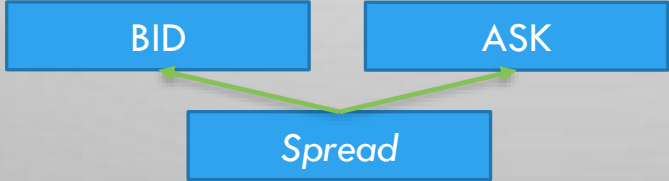
Price



Price trends

KPIs

Last trades



INFORMATION AND TRADING

- **Prices, volumes, trends, contract data**
- Most data provided in **real-time**
- Company **financials**, analysts' **forecasts**
- Market indexes, submarkets, industry, ...
- **Books** of orders
- News on markets, firms, regulation, politics, ...
- Statistics and market reviews
- ...



STOCK EVALUATION - 1

- **First strategy:** PV of future CF (**dividend discount model**)
- Robust, solid, consistent... but the challenge requires to simplify

- Generally:

$$P_0 = \frac{D_1}{1+k_e} + \dots + \frac{D_n}{(1+k_e)^n} + \frac{P_n}{(1+k_e)^n}$$



- If n is really 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, assume constant dividend growth (**Gordon** growth model – but many variations exist, with terminal values, different paths, ...):

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

Issues: growth companies, growth greater than cost of capital, short-term trading strategies, ...

STOCK EVALUATION - 2

- **Second strategy:** similar firms should have similar long-run market/book ratios (**multiples, P/E, ...**)
- **P/E** compares **price** with **earnings**: greater values mean that market expects a rise in **earnings** or a lower level of **uncertainty**
- **P/BV** compares **price** with **equity** (total or tangible), measuring the link between historic / forward-looking measures
- **P/CF** compares **price** with **operating cash flow**: earnings may be managed and affected by non-cash items
- ...



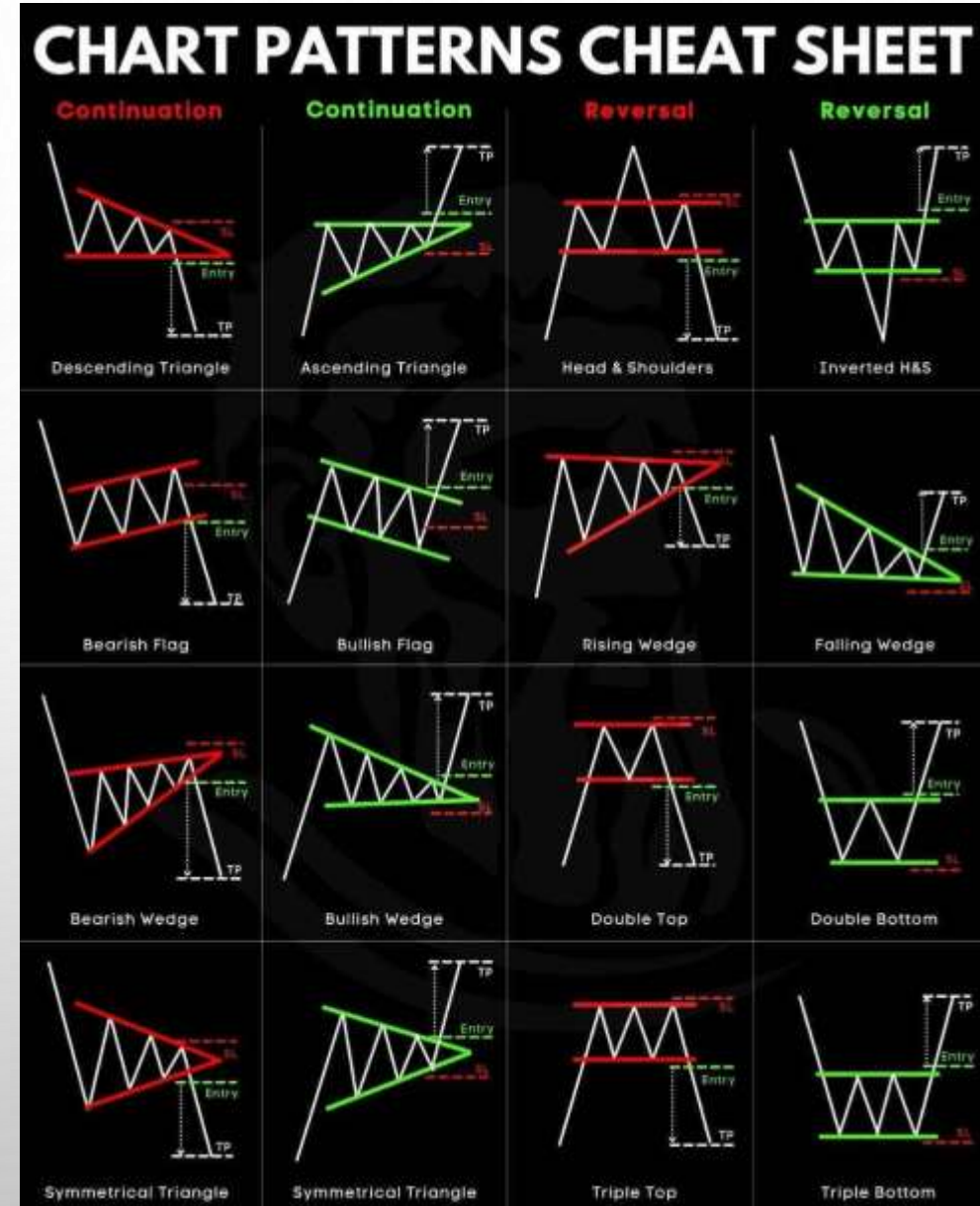
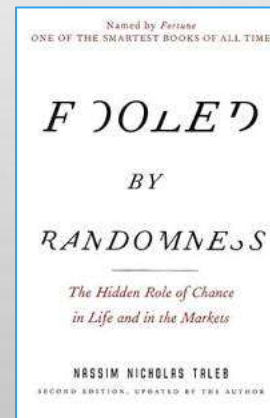
Issues: defining “peers”, different accounting frameworks, contrasting results, ...

STOCK EVALUATION - 3

- **Third strategy:** extrapolating information from prices in highly efficient markets to predict market sentiment and investors' behavior (**technical analysis**)
- Sounds reasonable in a behavioural sense, but encompasses a lot of “witchery” (and also sorcerers...)
- Limited data requirements («everything» is in prices)

Issues:

- Short-termed: “fundamentals” emerge in the long run
- Outperformance seems just randomness
- Requires to align price information from several highly correlated markets (and deal with spurious correlations, feedback loop effects, tail events, ...)



«The Callan Periodic Table of Investment Returns»

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Gbl ex- U.S. Fixed 22.37%	Emerging Market Equity 56.82%	Real Estate 37.96%	Emerging Market Equity 34.00%	Real Estate 42.12%	Emerging Market Equity 39.38%	U.S. Fixed Income 5.24%	Emerging Market Equity 78.51%	Small Cap Equity 26.85%	U.S. Fixed Income 7.84%	Real Estate 27.73%	Small Cap Equity 38.82%	Real Estate 15.02%	Large Cap Equity 1.38%	Small Cap Equity 21.31%	Emerging Market Equity 37.28%	Cash Equivalent 1.87%	Large Cap Equity 31.49%	Small Cap Equity 19.96%	Large Cap Equity 28.71%
U.S. Fixed Income 10.26%	Small Cap Equity 47.25%	Emerging Market Equity 25.55%	Real Estate 15.35%	Emerging Market Equity 32.17%	Dev ex- U.S. Equity 12.44%	Gbl ex- U.S. Fixed 4.39%	High Yield 58.21%	Real Estate 19.63%	High Yield 4.98%	Emerging Market Equity 18.23%	Large Cap Equity 32.39%	Large Cap Equity 13.69%	U.S. Fixed Income 0.55%	High Yield 17.13%	Dev ex- U.S. Equity 24.21%	U.S. Fixed Income 0.01%	Small Cap Equity 25.52%	Large Cap Equity 18.40%	Real Estate 26.09%
Real Estate 2.82%	Real Estate 40.69%	Dev ex- U.S. Equity 20.38%	Dev ex- U.S. Equity 14.47%	Dev ex- U.S. Equity 25.71%	Gbl ex- U.S. Fixed 11.03%	Cash Equivalent 2.06%	Real Estate 37.13%	Emerging Market Equity 18.88%	Gbl ex- U.S. Fixed 4.36%	Dev ex- U.S. Equity 16.41%	Dev ex- U.S. Equity 21.02%	U.S. Fixed Income 5.97%	Cash Equivalent 0.05%	Large Cap Equity 11.96%	Large Cap Equity 21.83%	High Yield -2.08%	Dev ex- U.S. Equity 22.49%	Emerging Market Equity 18.31%	Small Cap Equity 14.82%
Cash Equivalent 1.78%	Dev ex- U.S. Equity 39.42%	Small Cap Equity 18.33%	Large Cap Equity 4.91%	Small Cap Equity 18.37%	U.S. Fixed Income 6.97%	High Yield -28.16%	Dev ex- U.S. Equity 33.67%	High Yield 15.12%	Large Cap Equity 2.11%	Small Cap Equity 16.36%	High Yield 7.44%	Small Cap Equity 4.89%	Real Estate -0.79%	Emerging Market Equity 11.19%	Small Cap Equity 14.65%	Gbl ex- U.S. Fixed -2.15%	Real Estate 21.91%	Gbl ex- U.S. Fixed 10.11%	Dev ex- U.S. Equity 12.62%
High Yield -1.37%	High Yield 28.97%	Gbl ex- U.S. Fixed 12.54%	Small Cap Equity 4.55%	Large Cap Equity 15.79%	Large Cap Equity 5.49%	Small Cap Equity -33.79%	Small Cap Equity 27.17%	Large Cap Equity 15.06%	Cash Equivalent 0.10%	Large Cap Equity 16.00%	Real Estate 3.67%	High Yield -2.45%	Dev ex- U.S. Equity -3.04%	Real Estate 4.06%	Gbl ex- U.S. Fixed 10.51%	Large Cap Equity -4.38%	Emerging Market Equity 18.44%	Dev ex- U.S. Equity 7.59%	High Yield 5.28%
Emerging Market Equity -6.16%	Large Cap Equity 28.68%	High Yield 11.13%	Cash Equivalent 3.07%	High Yield 11.85%	Cash Equivalent 5.00%	Large Cap Equity -37.00%	Large Cap Equity 26.47%	Dev ex- U.S. Equity 8.95%	Small Cap Equity -4.18%	High Yield 15.81%	Cash Equivalent 0.07%	Cash Equivalent 0.03%	Small Cap Equity -4.41%	Dev ex- U.S. Equity 2.75%	Real Estate 10.36%	Real Estate -5.63%	High Yield 14.32%	U.S. Fixed Income 7.51%	Cash Equivalent 0.05%
Dev ex- U.S. Equity -15.80%	Gbl ex- U.S. Fixed 19.36%	Large Cap Equity 10.88%	High Yield 2.74%	Gbl ex- U.S. Fixed 8.16%	High Yield 1.87%	Dev ex- U.S. Equity -43.56%	Gbl ex- U.S. Fixed 7.53%	U.S. Fixed Income 6.54%	Real Estate -6.46%	U.S. Fixed Income 4.21%	U.S. Fixed Income -2.02%	Emerging Market Equity -2.19%	High Yield -4.47%	U.S. Fixed Income 2.65%	High Yield 7.50%	Small Cap Equity -11.01%	U.S. Fixed Income 8.72%	High Yield 7.11%	U.S. Fixed Income -1.54%
Small Cap Equity -20.48%	U.S. Fixed Income 4.10%	U.S. Fixed Income 4.34%	U.S. Fixed Income 2.43%	Cash Equivalent 4.85%	Small Cap Equity -1.57%	Real Estate -48.21%	U.S. Fixed Income 5.93%	Gbl ex- U.S. Fixed 4.95%	Dev ex- U.S. Equity -12.21%	Gbl ex- U.S. Fixed 4.09%	Emerging Market Equity -2.60%	Gbl ex- U.S. Fixed -3.09%	Gbl ex- U.S. Fixed -6.02%	Gbl ex- U.S. Fixed 1.49%	U.S. Fixed Income 3.54%	Dev ex- U.S. Equity -14.09%	Gbl ex- U.S. Fixed 5.09%	Cash Equivalent 0.67%	Emerging Market Equity -2.54%
Large Cap Equity -22.10%	Cash Equivalent 1.15%	Cash Equivalent 1.33%	Gbl ex- U.S. Fixed -8.65%	U.S. Fixed Income 4.33%	Real Estate -7.39%	Emerging Market Equity -53.33%	Cash Equivalent 0.21%	Cash Equivalent 0.13%	Emerging Market Equity -18.42%	Cash Equivalent 0.11%	Gbl ex- U.S. Fixed -3.08%	Dev ex- U.S. Equity -4.32%	Emerging Market Equity -14.92%	Cash Equivalent 0.33%	Cash Equivalent 0.86%	Emerging Market Equity -14.57%	Cash Equivalent 2.28%	Real Estate -9.04%	Gbl ex- U.S. Fixed -7.05%

EXAMPLES



EXAMPLES

Which of the following Italian stocks is riskier (11.2013)?

Stock	Price	Div	1y price expected
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

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

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

Which of these Italian stocks is expected to grow faster (11.2013)?

Stock	Price	Div	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%

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

Stock	g
ENEL	20.36%
Sal. Ferragamo	8.69%
Campari	5.91%
MPS	-5.09%
Fondiaria-SAI	-5.88%

EXAMPLES

Vai su [wooclap.com](https://www.wooclap.com) e usa il codice **FMAI23**



Rank, from the highest to the lowest, the following EU sectors by their P/E ratio (2022)



1 Insurance

2 Steel

3 Green and renewable energy

4 Shoe

5 Advertising



Clicca sullo schermo di proiezione per avviare la domanda



Vai su [wooclap.com](https://www.wooclap.com) e usa il codice **FMAI23**



Rank, from highest to lowest, the following EU sectors based on their P/BV (2022)



1 Precious metals

2 Real estate

3 Semiconductor

4 Education

5 Oil/Gas distribution



Clicca sullo schermo di proiezione per avviare la domanda

Vai su **wooclap.com** e usa il codice **FMAI23**



Rank, from highest to lowest, the following EU sectors by their expected 5-years growth rate



1 Hotel/Gaming

2 Healthcare products

3 Environmental & waste services

4 Air transport

5 Shipbuilding and marine



Clicca sullo schermo di proiezione per avviare la domanda

