

Equity VALUATION

- Introduction to Industry and Company Analysis
- Intrinsic Value Calculation



RV ROLLS-ROYCE HOLD Equity

ROLLS-ROYCE HOLD Equity | RV | Related Functions Menu

RR/ LN GBP ↑ 96.800 -1.860 L96,780 / 96.810L 6091x1069
 At 18:25 d Vol 30,110,764 O 98.660L H 99.560L L 94.900L Val 2.907B

RR/ LN Equity Export Settings Relative Valuation

Comp Source Analyst Curated (BI) Index BI Air & Def P&I Mfg Val Curr USD

Segment Revenue %
 Whole Firm 100%
 Aircraft & Parts 74%
 Engine & Transmission 26%

RR/ LN Multiples - Premium to Whole Firm Comps | EQRV
 Metric BF P/E
 RR/ LN 31.2x
 Comps Avg 22.8x
 % Premium 31

Overview Comp Sheets Markets EPS Preview Ownership Credit Custom

Name	Mkt Cap (GBP)	Last Px (GBP)	Chg Pct 1D	Chg Pct 1M	Rev - 1 Yr Gr:Y	EPS - 1 Yr Gr:Y	P/E	ROE	Dvd 12M Yld
Average	6.75B	51.90	-1.17%	0.71%	-5.55%	-41.36%	148.51	2.26%	1.09%
101) ROLLS-ROYCE HOLDINGS PLC	8.10B	0.97	-1.89%	7.34%	-5.13%	--	65.53	--	--
102) SAFRAN SA	36.11B	84.53	-1.82%	4.47%	-9.01%	-66.97%	1.00k	1.54%	0.42%
103) TRANSDIGM GROUP INC	27.32B	492.67	-1.30%	1.74%	-5.98%	-0.42%	51.73	--	--
104) THALES SA	20.93B	98.09	0.86%	9.24%	-4.69%	51.08%	25.78	17.84%	1.67%
105) HEICO CORP	14.28B	117.07	-1.54%	3.02%	4.40%	-3.45%	65.97	14.72%	0.12%
106) AVIC XI'AN AIRCRAFT INDUST-A	9.00B	3.25	-4.46%	-10.88%	-2.34%	-20.42%	114.56	4.01%	0.31%
107) MTU AERO ENGINES AG	8.69B	162.69	-0.61%	1.75%	5.31%	24.26%	46.69	9.95%	0.64%
108) CAE INC	6.24B	19.70	-3.01%	-4.42%	-17.70%	-90.64%	48.95	6.06%	--
109) MEGGITT PLC	5.99B	7.65	-0.08%	1.73%	-11.57%	--	192.67	0.96%	--
110) SAAB AB-B	3.80B	27.99	0.38%	14.22%	6.51%	811.96%	23.75	8.49%	1.36%
111) SPIRIT AEROSYSTEMS HOLD-CL A	3.61B	34.32	-3.02%	6.38%	16.10%	47.23%	--	-55.30%	0.09%
112) HEXCEL CORP	3.57B	42.49	-1.34%	2.82%	-11.83%	-64.29%	150.13	2.12%	0.18%
113) AVICOPTER PLC-A	3.48B	5.90	-1.05%	-9.71%	10.86%	20.41%	31.69	9.89%	0.79%
114) AVICHINA INDUSTRY & TECH-H	3.27B	0.42	-2.03%	-3.33%	20.31%	36.31%	11.32	8.81%	1.40%
115) ULTRA ELECTRONICS HLDGS PLC	2.36B	33.08	-0.54%	3.83%	-1.06%	11.91%	35.19	18.36%	1.74%
116) AAR CORP	1.26B	35.90	-0.32%	7.12%	-20.26%	-39.62%	22.22	7.77%	--
117) TRIUMPH GROUP INC	1.21B	18.67	-0.61%	2.65%	-35.53%	-1.43k%	30.34	--	--
118) AECC AERO SCIENCE & TECHNO-A	829.86M	2.51	-1.51%	-8.37%	-19.58%	--	--	-0.36%	--
119) SENIOR PLC	527.63M	1.26	0.00%	2.28%	-10.21%	-88.12%	21.59	0.91%	--
120) DUCOMMUN INC	477.23M	39.86	-0.76%	3.80%	2.62%	6.66%	17.78	8.92%	--
121) MAGELLAN AEROSPACE CORP	342.21M	5.93	-0.21%	-3.77%	-7.53%	-41.80%	863.68	0.09%	4.33%

(Accounting Adjustments: Adjusted for Abnormal Items When Applicable)

Suggested Functions EEO Analyze a company's consensus estimates CN Read the latest news on a company

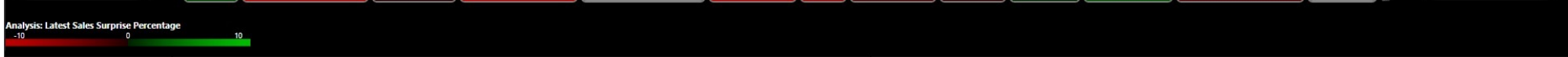
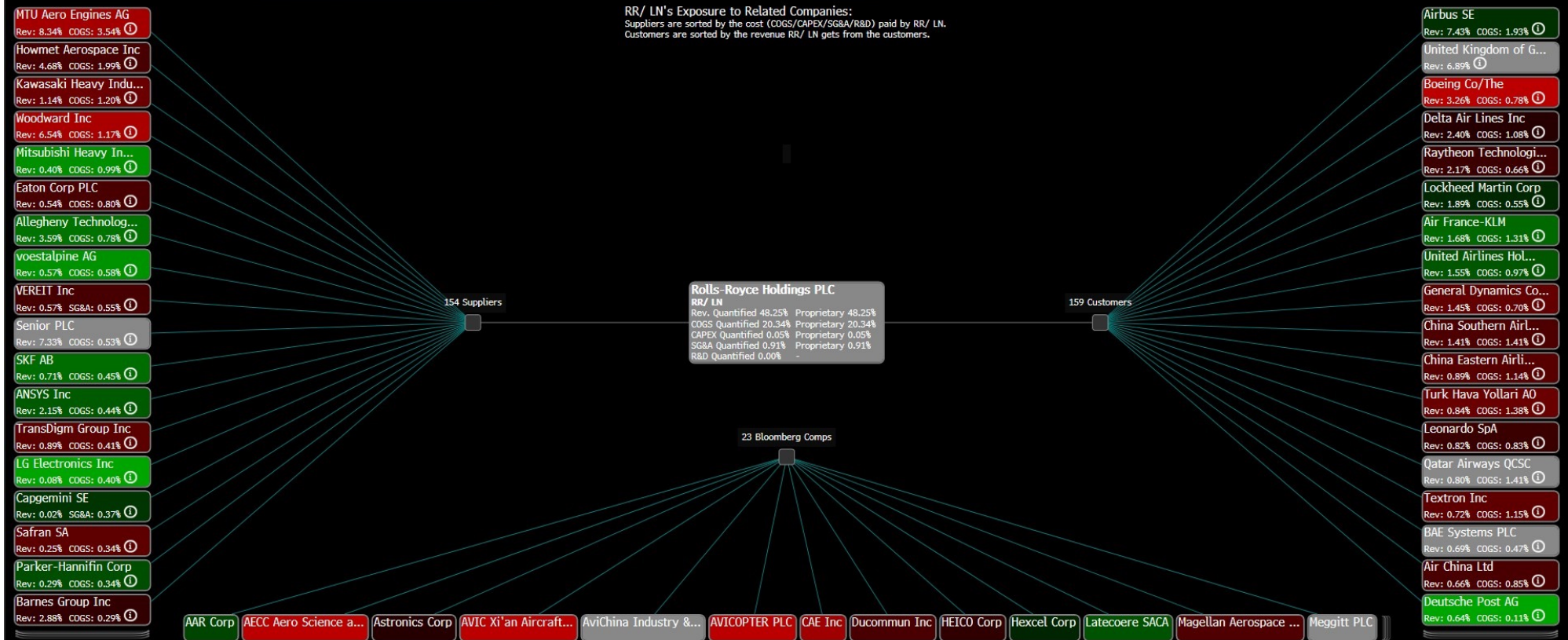
Sem zadejte hledaný výraz

17°C Převáz. oblačno 17:41 06.04.2022

RR/ LN Gbp ↑ **96.770** -1.890 [Chart] L96.740/96.780L 19195x3699
 At 18:26 d Vol 30,267,515 0 98.660L H 99.560L L 94.900L Val 2.922B

RR/ LN Equity Peers Actions Export Supply Chain Analysis

Viewing Rolls-Royce Holdings PLC As of 04/06/22
 Analyze Latest Sales Surprise % GBP Display Name Filters
 Show As 7) Chart 8) Table Sort By Company Exposure Show Events None



Uses of Industry Analysis

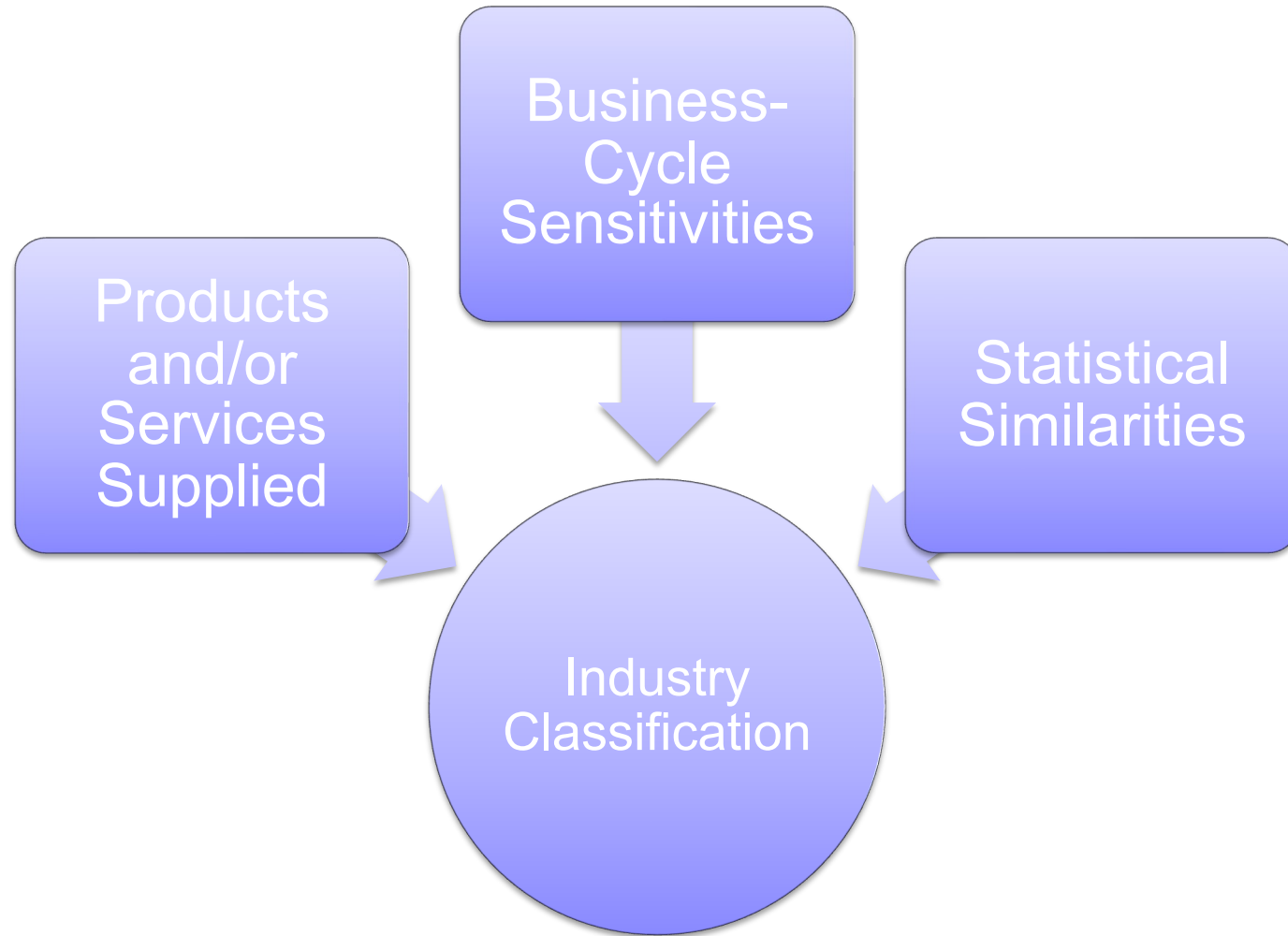


Understanding a company's business and business environment

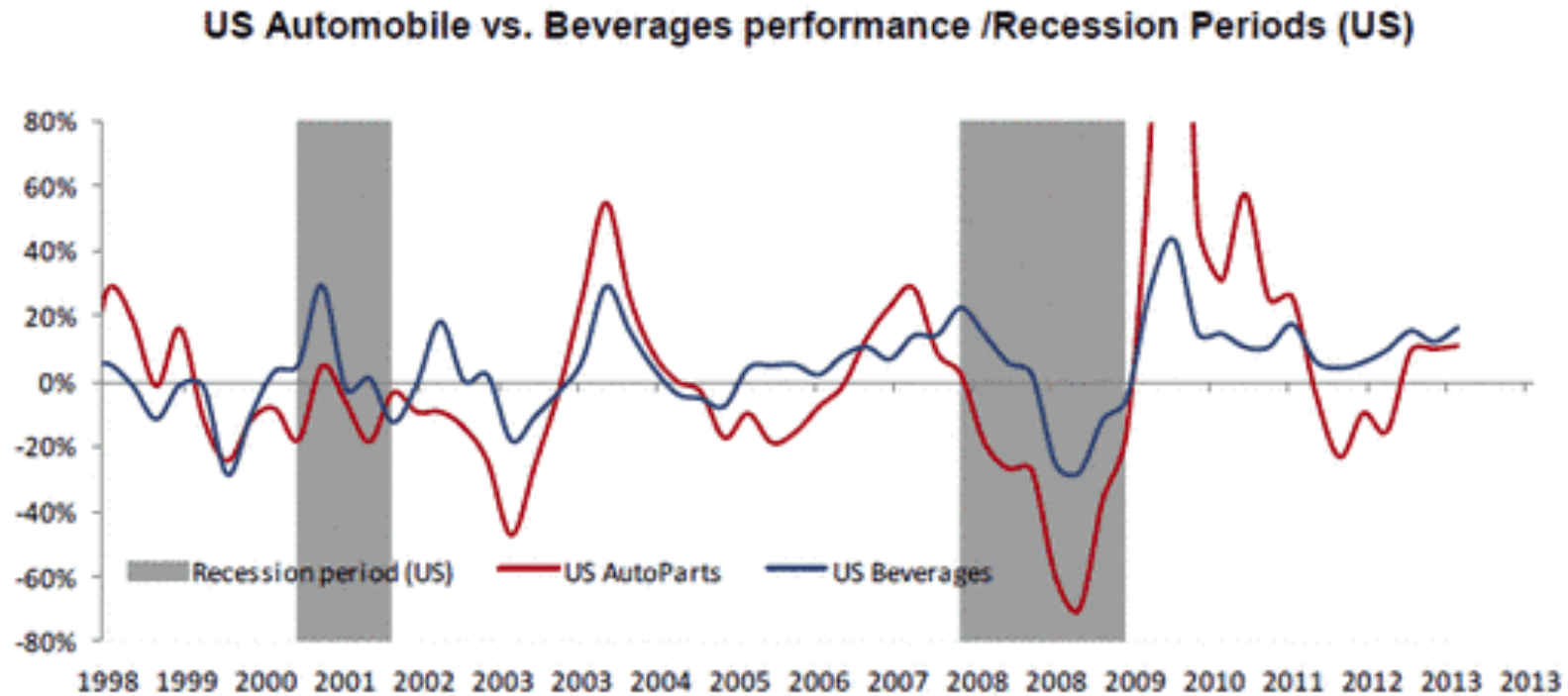


Identifying active equity investment opportunities

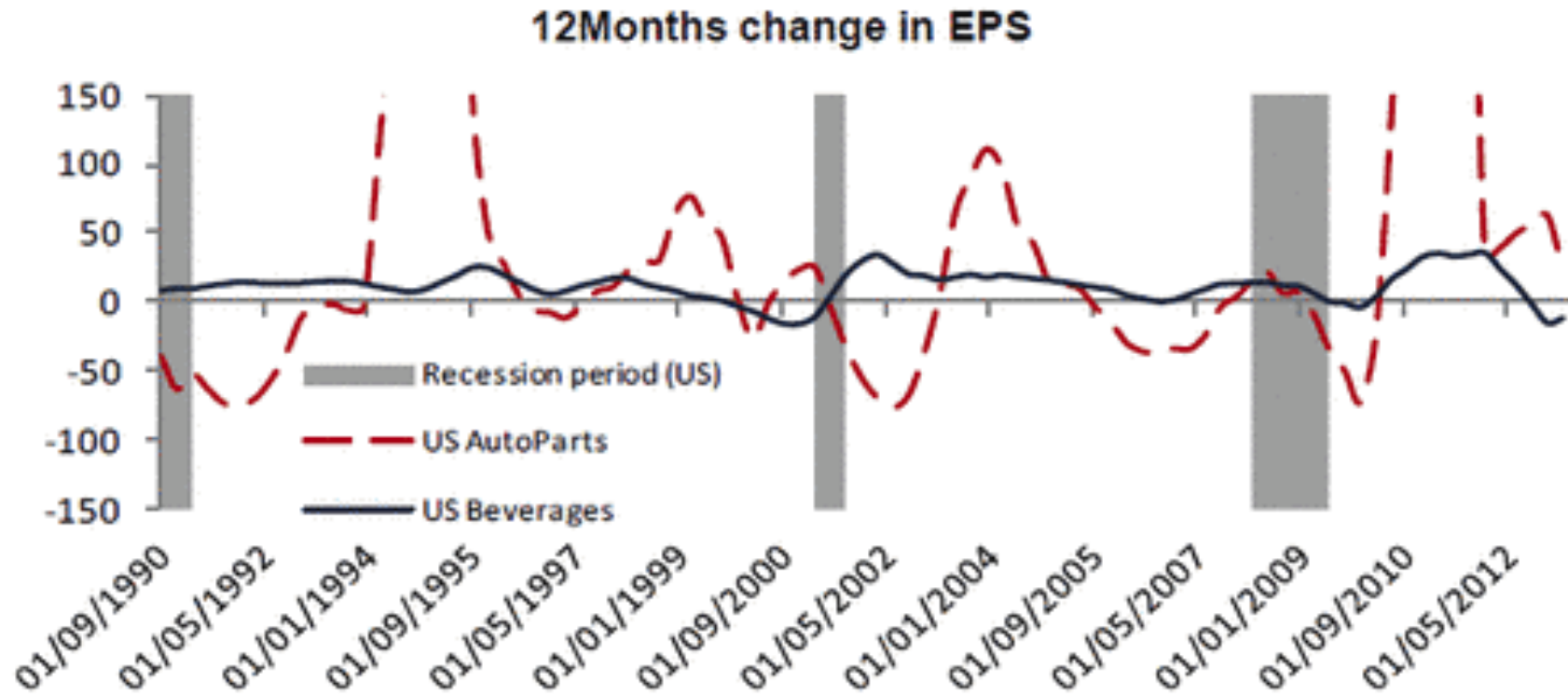
Approaches to Identifying Similar Companies



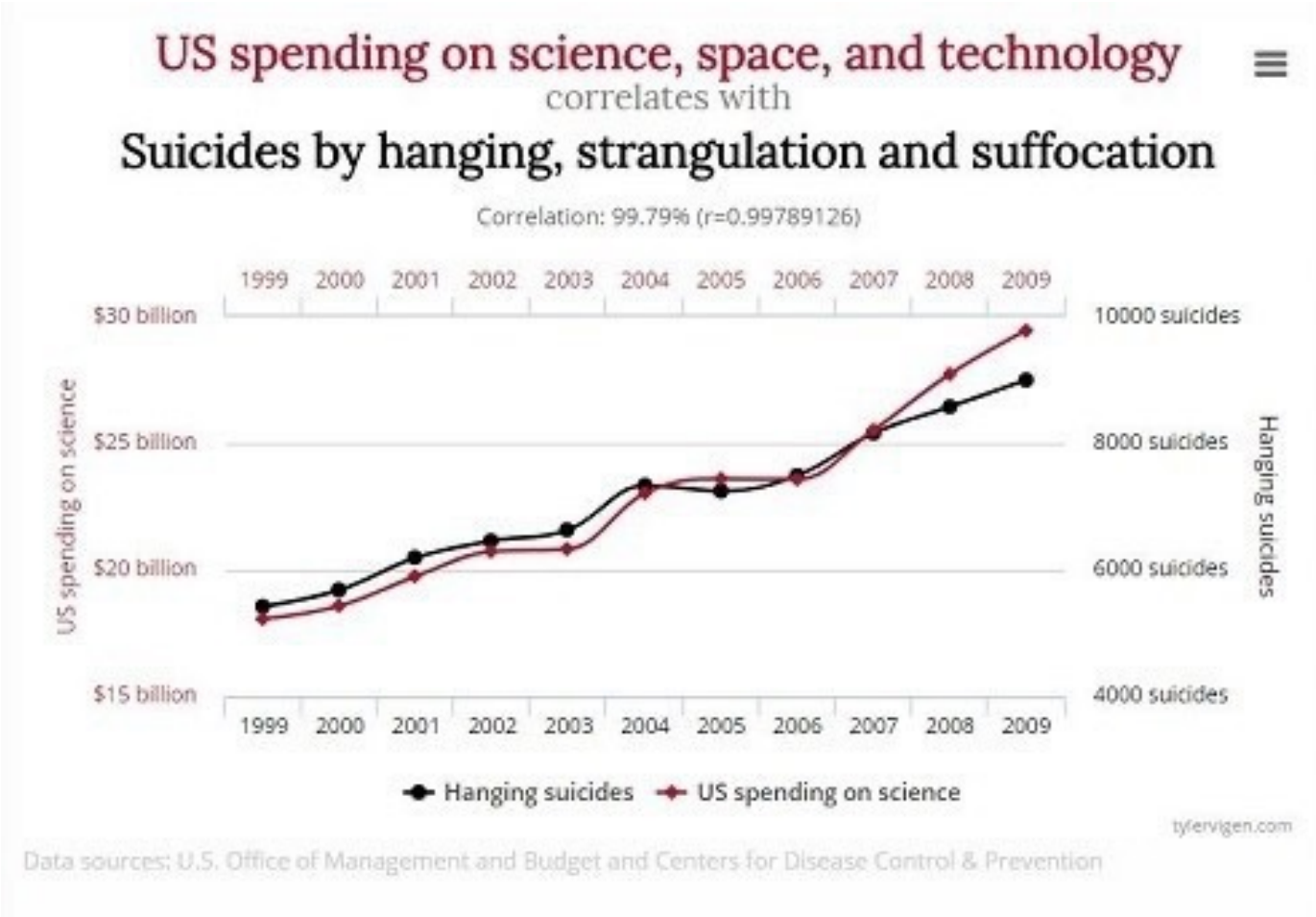
Cyclical vs. Defensive



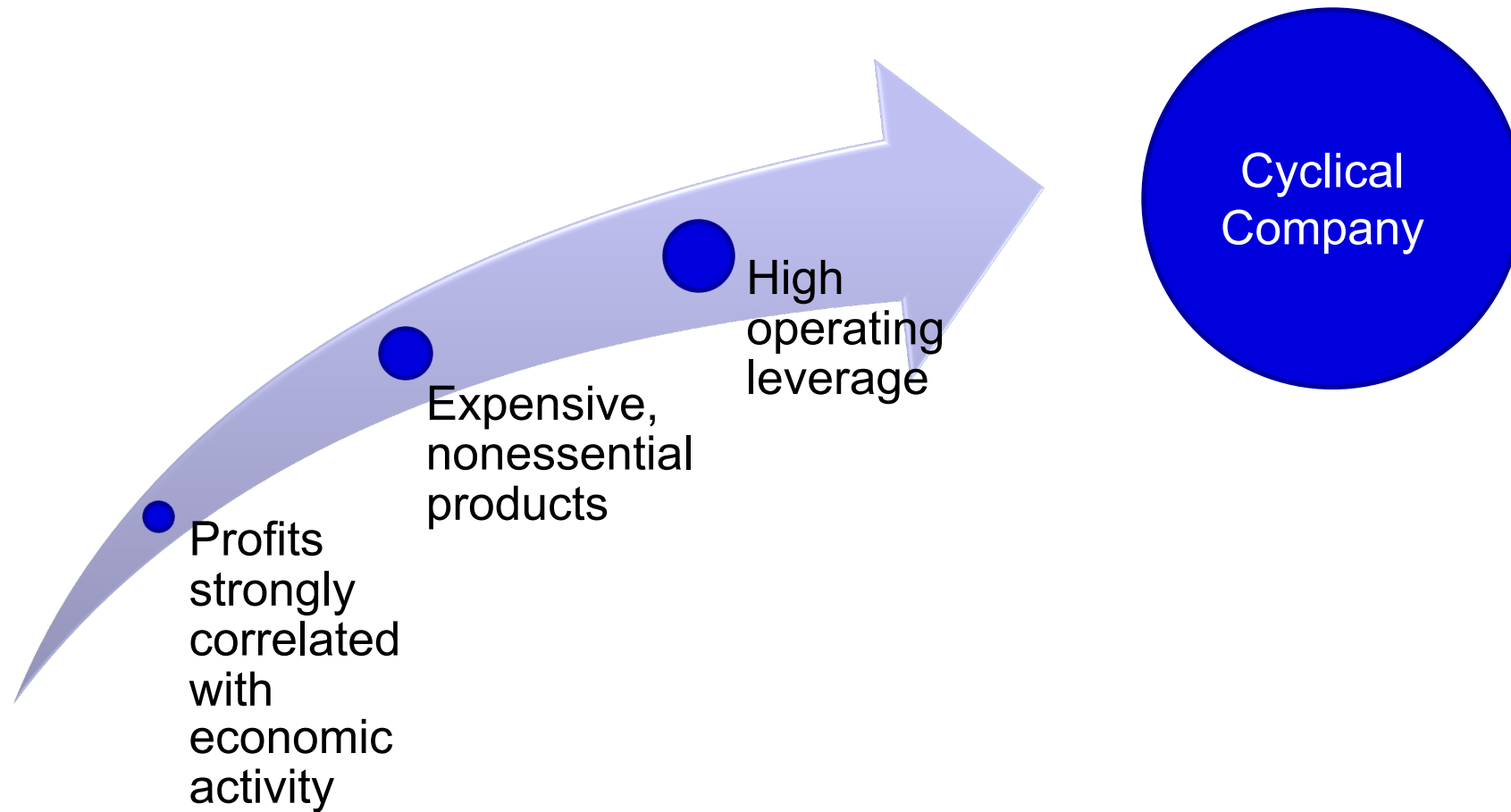
Cyclical vs. Defensive



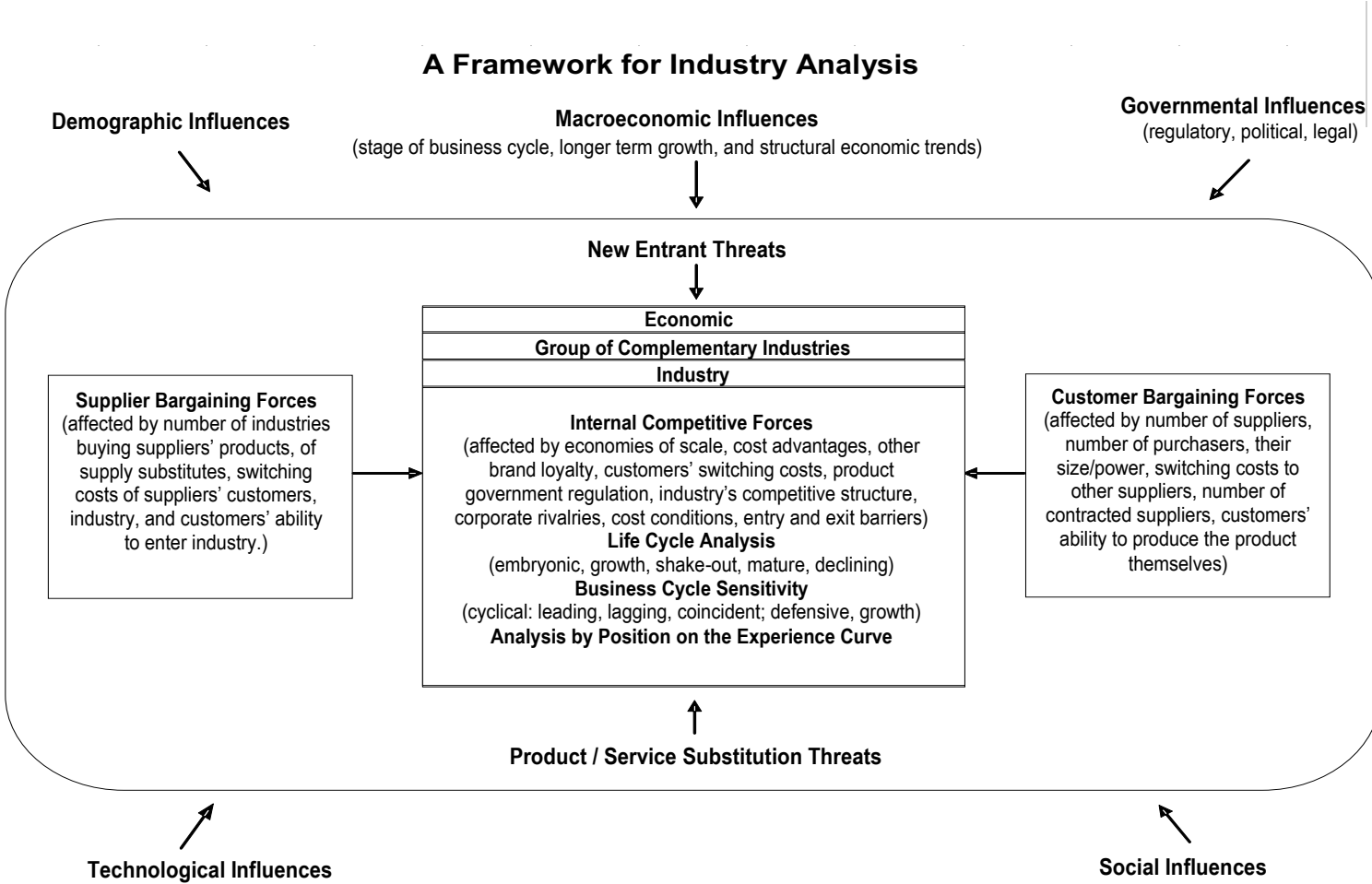
Myth of correlation



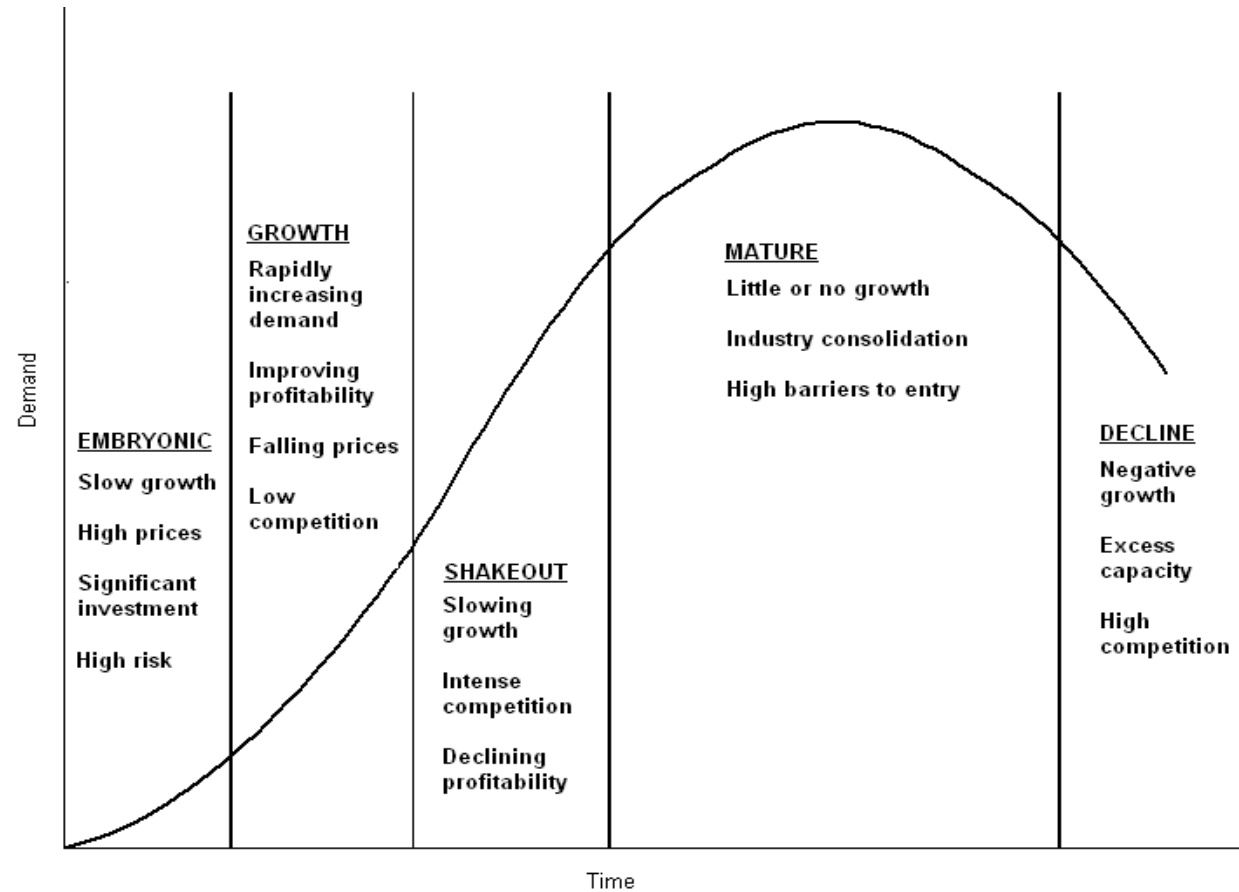
Cyclical and Noncyclical Companies



Framework for Industry Analysis



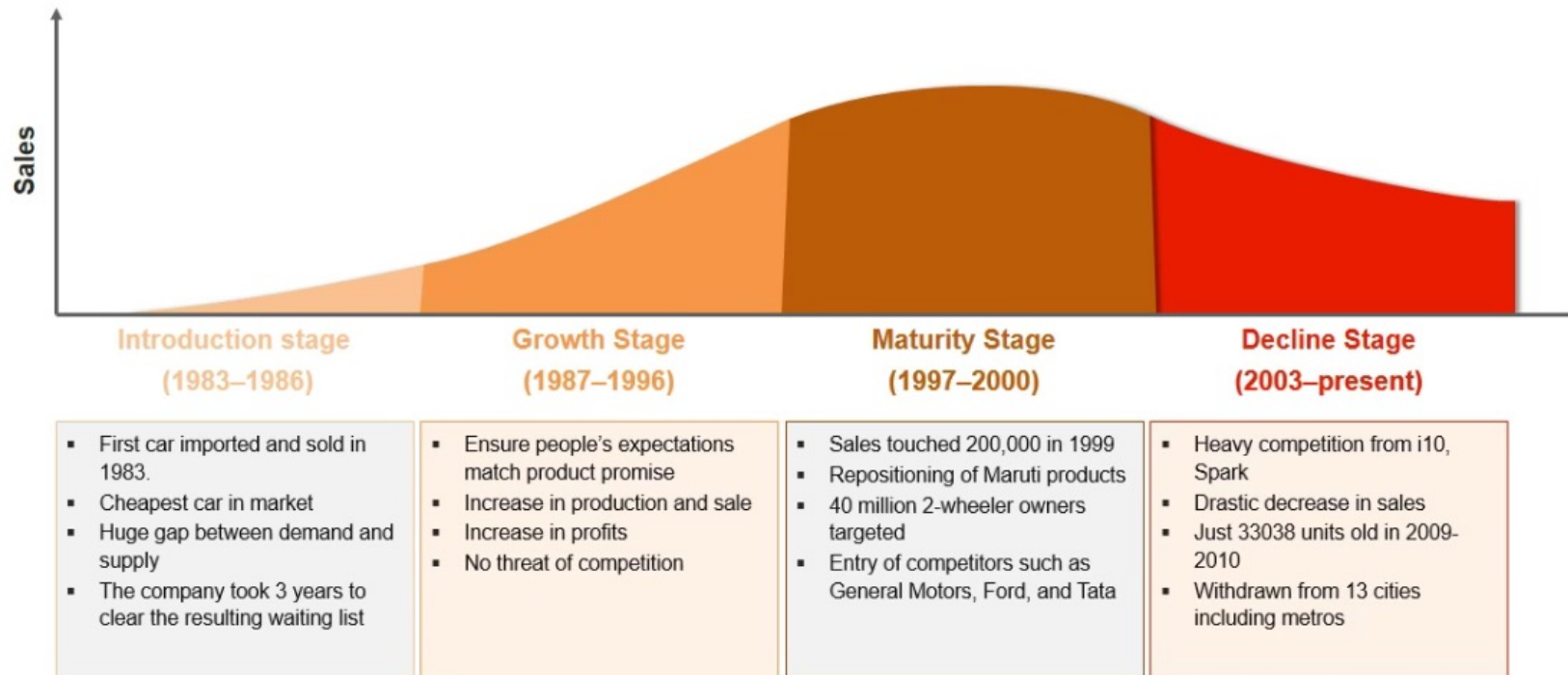
Industry Life Cycle



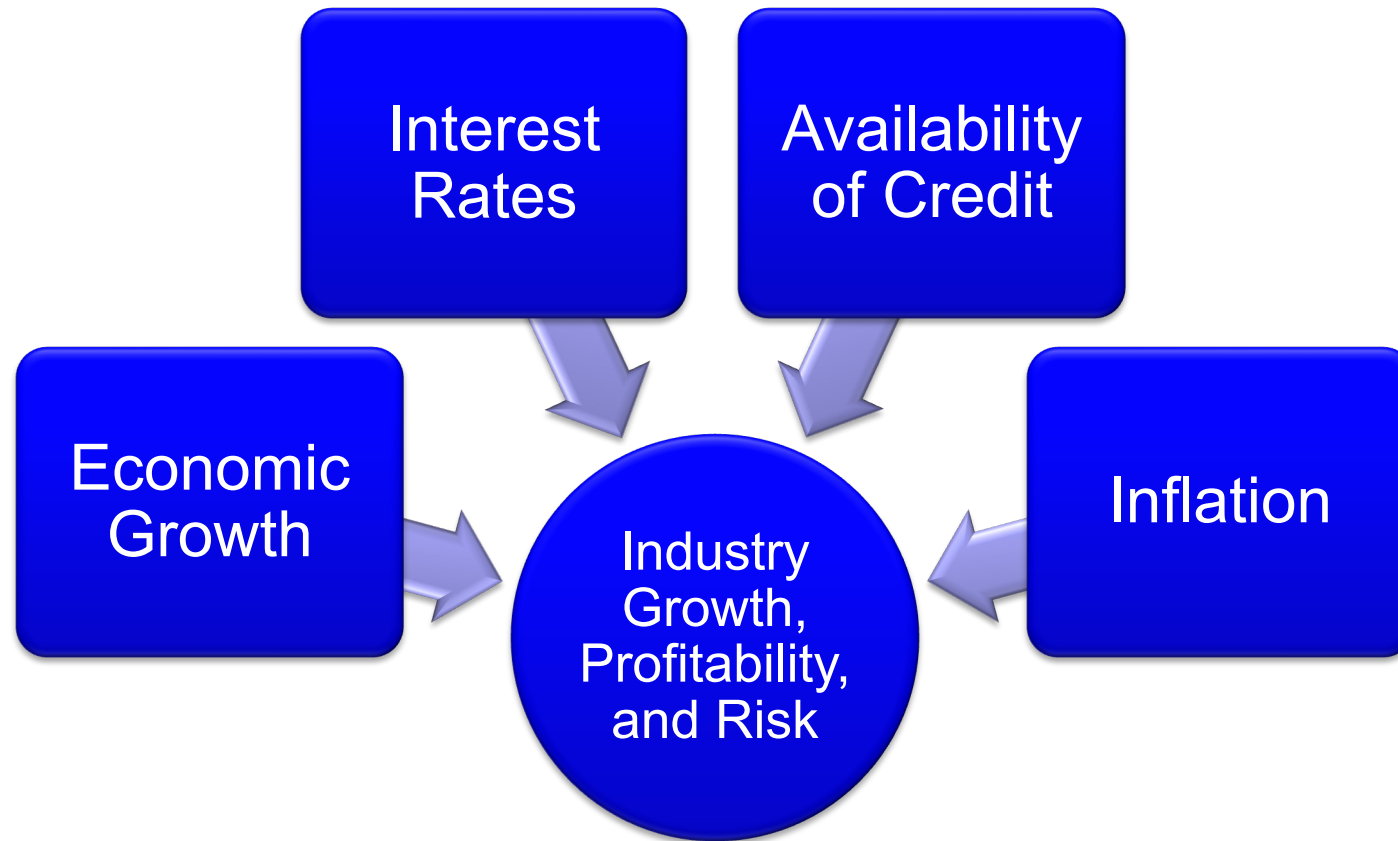
Source: Based on Figure 2.4 in Hill and Jones (2008).



Example - PLC of Maruti 800



Macroeconomic Influences on Industry Growth, Profitability, and Risk



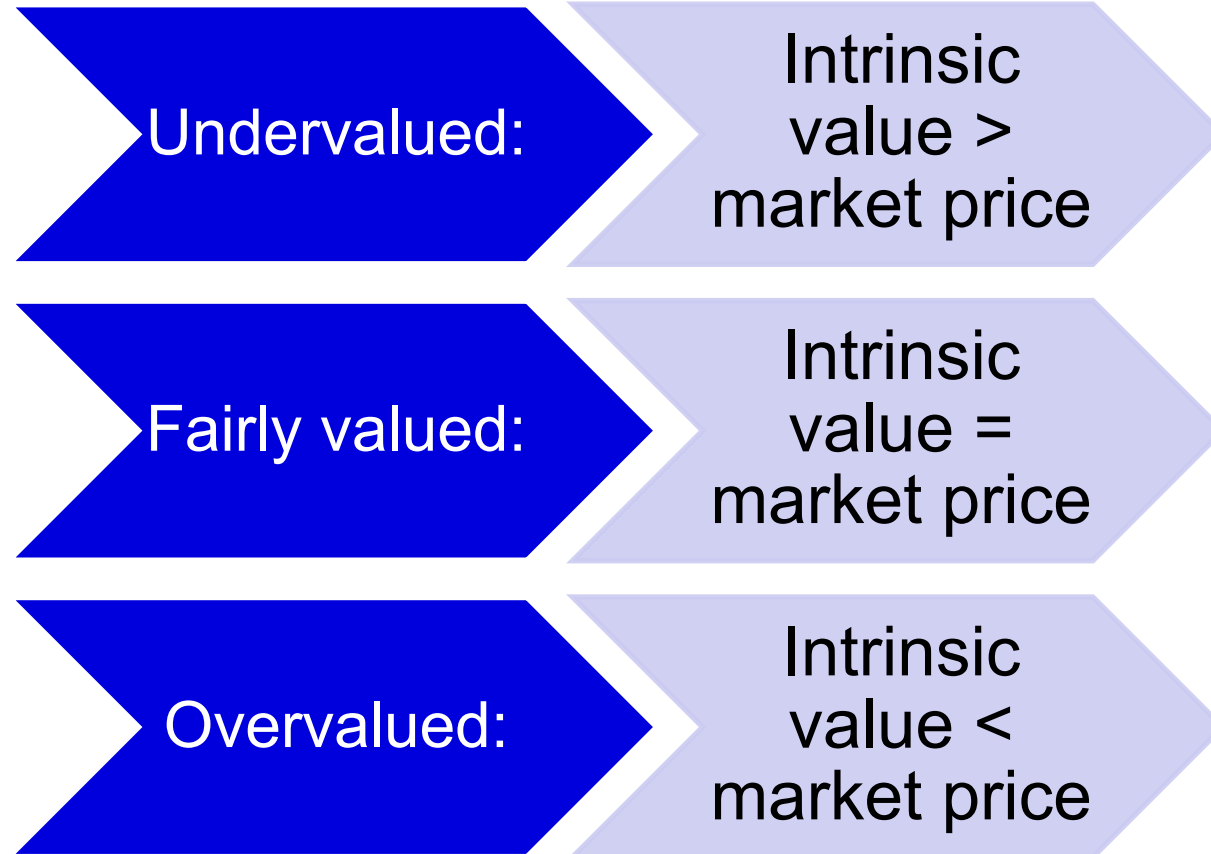
Industry Analysis for Branded Pharmaceuticals

Major Companies	Pfizer, Novartis, Merck, GlaxoSmithKline
Barriers to Entry/Success	Very High: Substantial financial and intellectual capital required to compete effectively. A potential new entrant would need to create a sizable R&D operation, a global distribution network, and large-scale manufacturing capacity.
Level of Concentration	Concentrated: A small number of companies control the bulk of the global market for branded drugs. Recent mergers have increased the level of concentration.
Impact of Industry Capacity	Not applicable: Pharmaceutical pricing is primarily determined by patent protection and regulatory issues, including government approval of drugs and manufacturing facilities. Manufacturing capacity is of little importance.
Industry Stability	Stable: The branded pharmaceutical market is dominated by major companies and consolidation via mega-mergers. Market shares shift quickly, however, as new drugs are approved and gain acceptance or lose patent protection.
Life Cycle	Mature: Overall demand does not change greatly from year to year.
Price Competition	Low/Medium: In the United States, price is a minimal factor because of the consumer- and provider-driven, deregulated health care system. Price is a larger part of the decision process in single-payer systems, where efficacy hurdles are higher.
Demographic Influences	Positive: Populations of developed markets are aging, which slightly increases demand.
Government & Regulatory Influences	Very High: All drugs must be approved for sale by national safety regulators. Patent regimes may differ among countries. Also, health care is heavily regulated in most countries.
Social Influences	Not applicable.
Technological Influences	Medium/High: Biologic (large-molecule) drugs are pushing new therapeutic boundaries, and many large pharmaceutical companies have a relatively small presence in biotech.
Growth vs. Defensive vs. Cyclical	Defensive: Demand for most health care services does not fluctuate with the economic cycle, but demand is not strong enough to be considered “growth.”

Industry Analysis for Confections/Candy

Major Companies	Cadbury, Hershey, Mars/Wrigley, Nestle
Barriers to Entry/Success	Very High: Low financial or technological hurdles, but new players would lack the established brands that drive consumer purchase decisions.
Level of Concentration	Very Concentrated: Top four companies have a large proportion of global market share. Recent mergers have increased the level of concentration.
Impact of Industry Capacity	Not applicable: Pricing is driven primarily by brand strength. Manufacturing capacity has little effect.
Industry Stability	Very Stable: Market shares change glacially.
Life Cycle	Very Mature: Growth is driven by population trends and pricing.
Price Competition	Low: A lack of private-label competition keeps pricing stable among established players, and brand/familiarity plays a much larger role in consumer purchase decisions than price.
Demographic Influences	Not applicable.
Government & Regulatory Influences	Low: Industry is not regulated, but childhood obesity concerns in developed markets are a low-level potential threat. Also, high-growth emerging markets may block entry of established players into their markets, possibly limiting growth.
Social Influences	Not applicable.
Technological Influences	Very Low: Innovation does not play a major role in the industry.
Growth vs. Defensive vs. Cyclical	Defensive: Demand for candy and gum is extremely stable.

Estimated Value and Market Price



Major Categories of Equity Valuation Models

Present value models

- Dividend discount models
- Free cash flow models

Multiplier models

- Share price multiples
- Enterprise value multiples

Asset-based valuation models

- Adjustments to book value





Present Value Models

Value of an investment = present value of expected future benefits

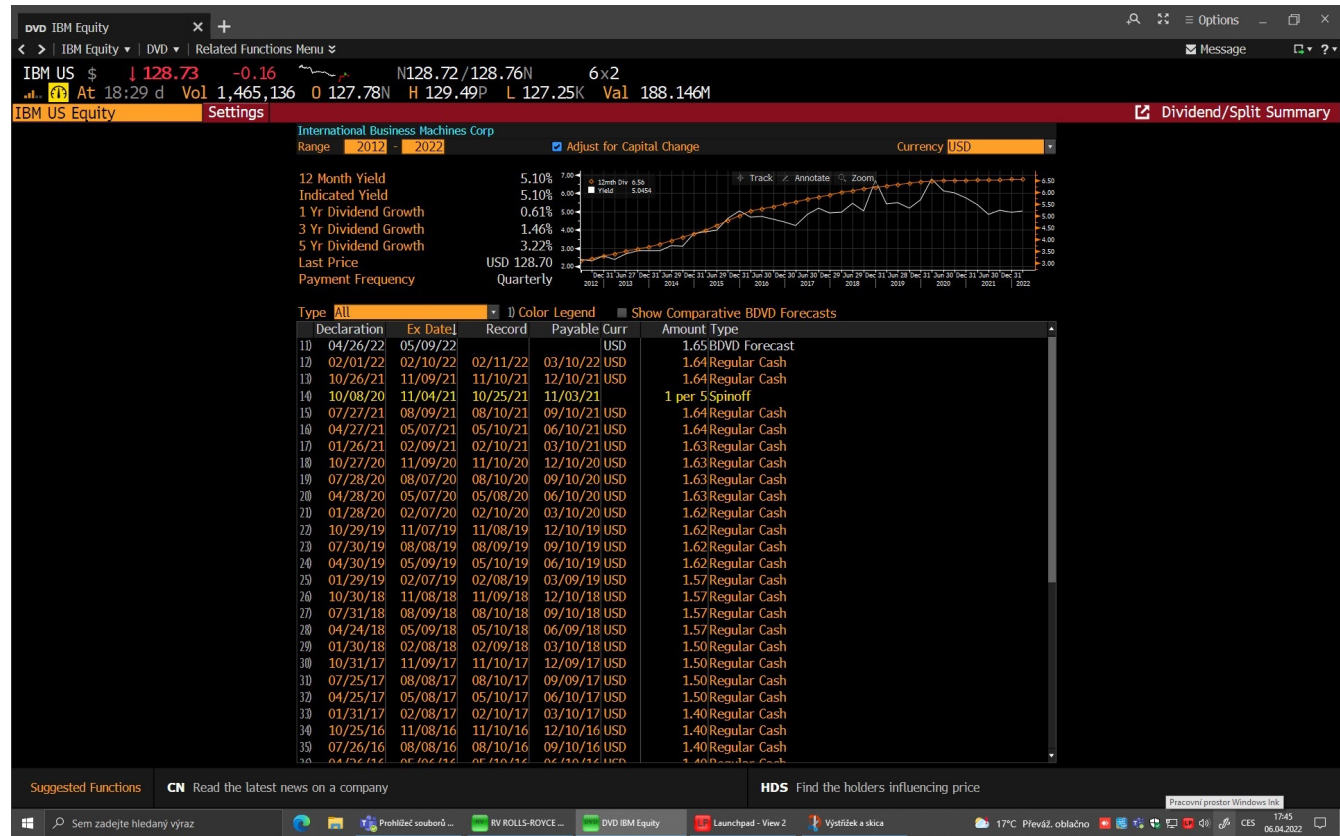
Future benefits
= dividends

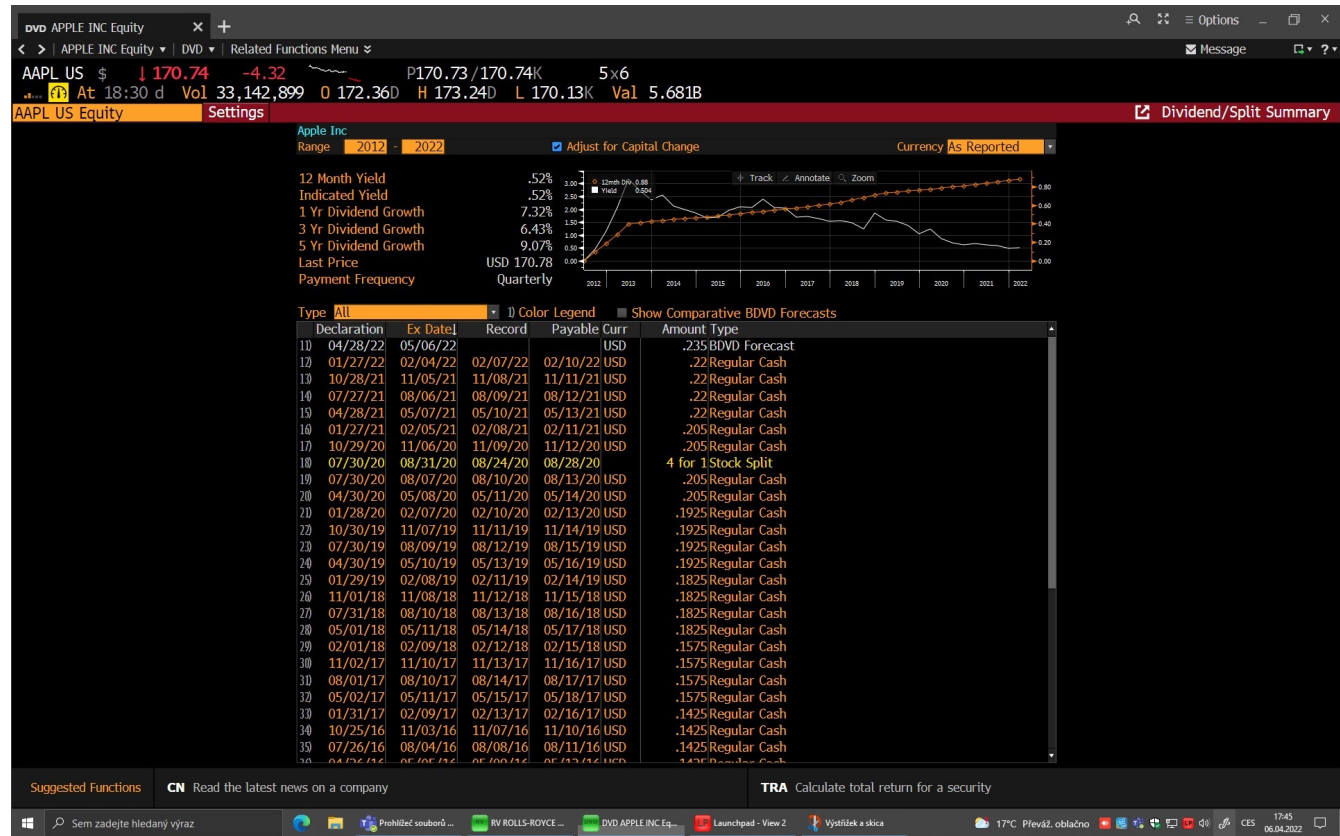
$$V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t}$$

Future benefits
= free cash flow

$$\text{Value of equity} = \sum_{t=1}^{\infty} \frac{FCFE_t}{(1+r)^t}$$

$$\text{Value of firm} = \sum_{t=1}^{\infty} \frac{FCFF_t}{(1+WACC)^t}$$





NYSE:IBM

International Business Machines Dividend Yield, History & Payout Ratio

\$128.30 -0.76 (-0.59%)
(As of 03/23/2022 12:00 AM ET)

[ADD](#) [COMPARE](#) [SHARE](#)

Today's Range	\$128.25 - \$129.32	Volume	2.91 million shs	P/E Ratio	20.20
50-Day Range	\$121.35 - \$137.79	Average Volume	5.73 million shs	Dividend Yield	5.08%
52-Week Range	\$114.56 - \$152.84	Market Capitalization	\$115.38 billion	Beta	1.1

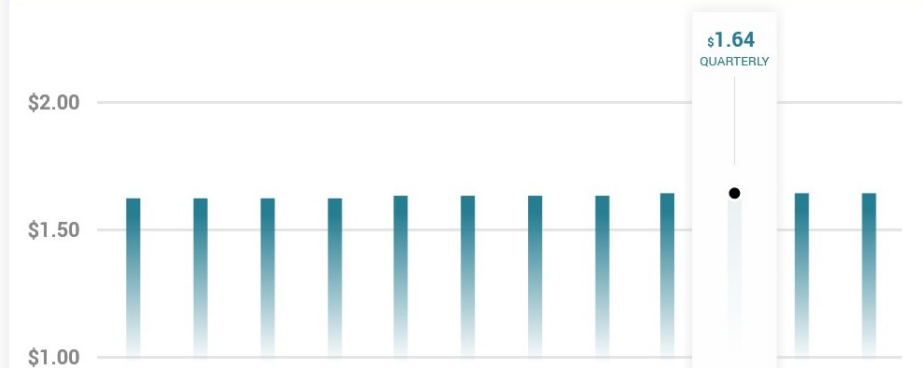
[PROFILE](#) [ANALYST RATINGS](#) [CHART](#) [COMPETITORS](#) [DIVIDEND](#) [EARNINGS](#) [FINANCIALS](#) [INSIDER TRADES](#) [INSTITUTIONAL OWNERSHIP](#) [HEADLINES](#) [OPTIONS CHAIN](#) [SEC FILINGS](#) [SHORT INTEREST](#) [SOCIAL MEDIA](#) [SUSTAINABILITY](#)

DIVIDEND YIELD 5.11%	ANNUAL DIVIDEND \$6.56	DIVIDEND INCREASE TRACK RECORD 27 Years
3-YEAR DIVIDEND GROWTH 1.79%	DIVIDEND PAYOUT RATIO 103.31%	RECENT DIVIDEND PAYMENT MAR. 10

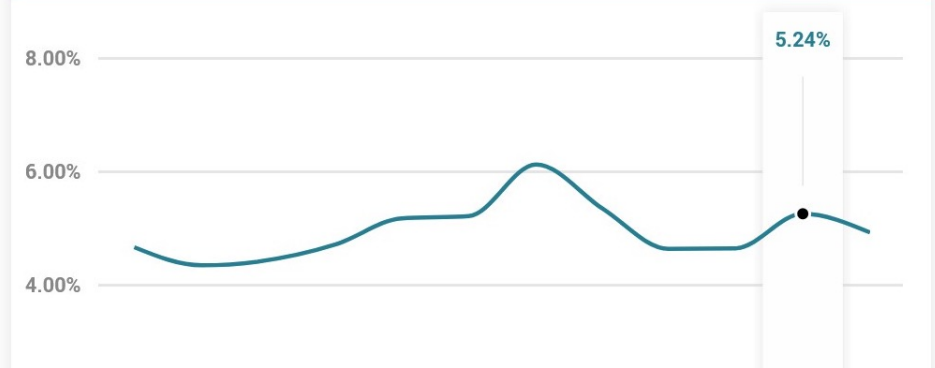
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Enter your email address below to receive the **DividendStocks.com newsletter**, a concise daily summary of stocks that are about to go ex-dividend as well as new dividend announcements.

DIVIDEND PAYMENTS BY MONTH (OR QUARTER)



DIVIDEND YIELD OVER TIME



NASDAQ:AAPL

Followed 1,293 Times

Most-Upgraded Stocks

Searched 950 Times

Apple Dividend Yield, History & Payout Ratio

\$170.21 +1.39 (+0.82%)
(As of 03/23/2022 04:00 PM ET)

ADD COMPARE SHARE

Today's Range	\$167.65 - \$172.64	Volume	97.97 million shs	P/E Ratio	28.18
50-Day Range	\$150.62 - \$176.28	Average Volume	95.75 million shs	Dividend Yield	0.52%
52-Week Range	\$118.86 - \$182.94	Market Capitalization	\$2.78 trillion	Beta	1.19

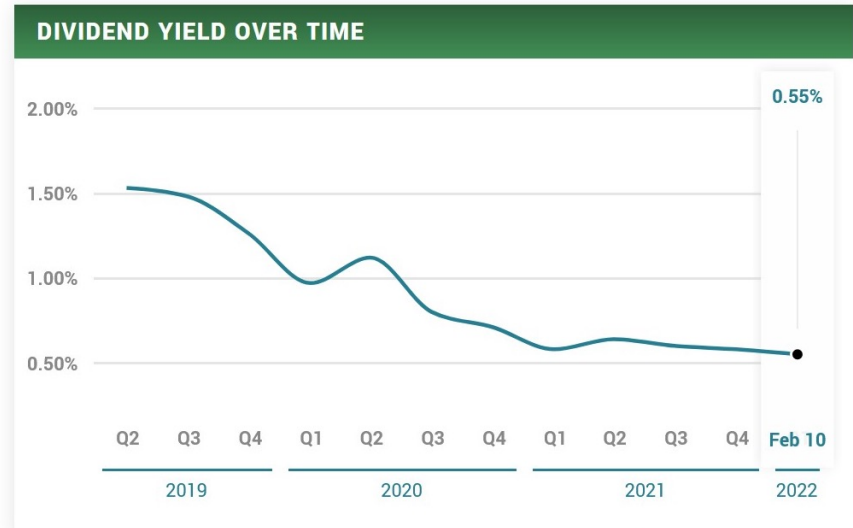
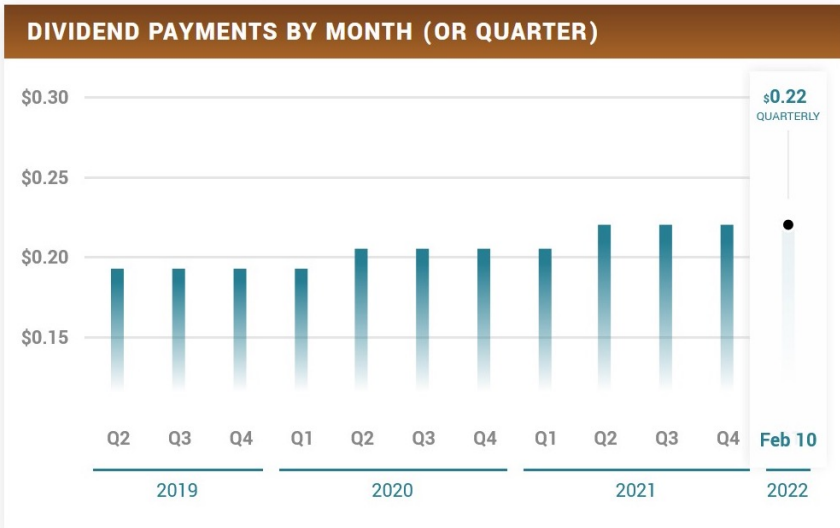
PROFILE ANALYST RATINGS CHART COMPETITORS **DIVIDEND** EARNINGS FINANCIALS INSIDER TRADES INSTITUTIONAL OWNERSHIP HEADLINES OPTIONS CHAIN SEC FILINGS SHORT INTEREST SOCIAL MEDIA SUSTAINABILITY

DIVIDEND YIELD 0.52%	ANNUAL DIVIDEND \$0.88	DIVIDEND INCREASE TRACK RECORD 9 Years
3-YEAR DIVIDEND GROWTH 7.06%	DIVIDEND PAYOUT RATIO 14.57%	RECENT DIVIDEND PAYMENT FEB. 10

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Your Email Address



Preferred Stock Valuation (Non-callable, Non-convertible Shares)

Perpetual

$$V_0 = \frac{D_0}{r} = \frac{\$5.50}{0.06} \approx \$91.67$$

The Gordon Growth Model

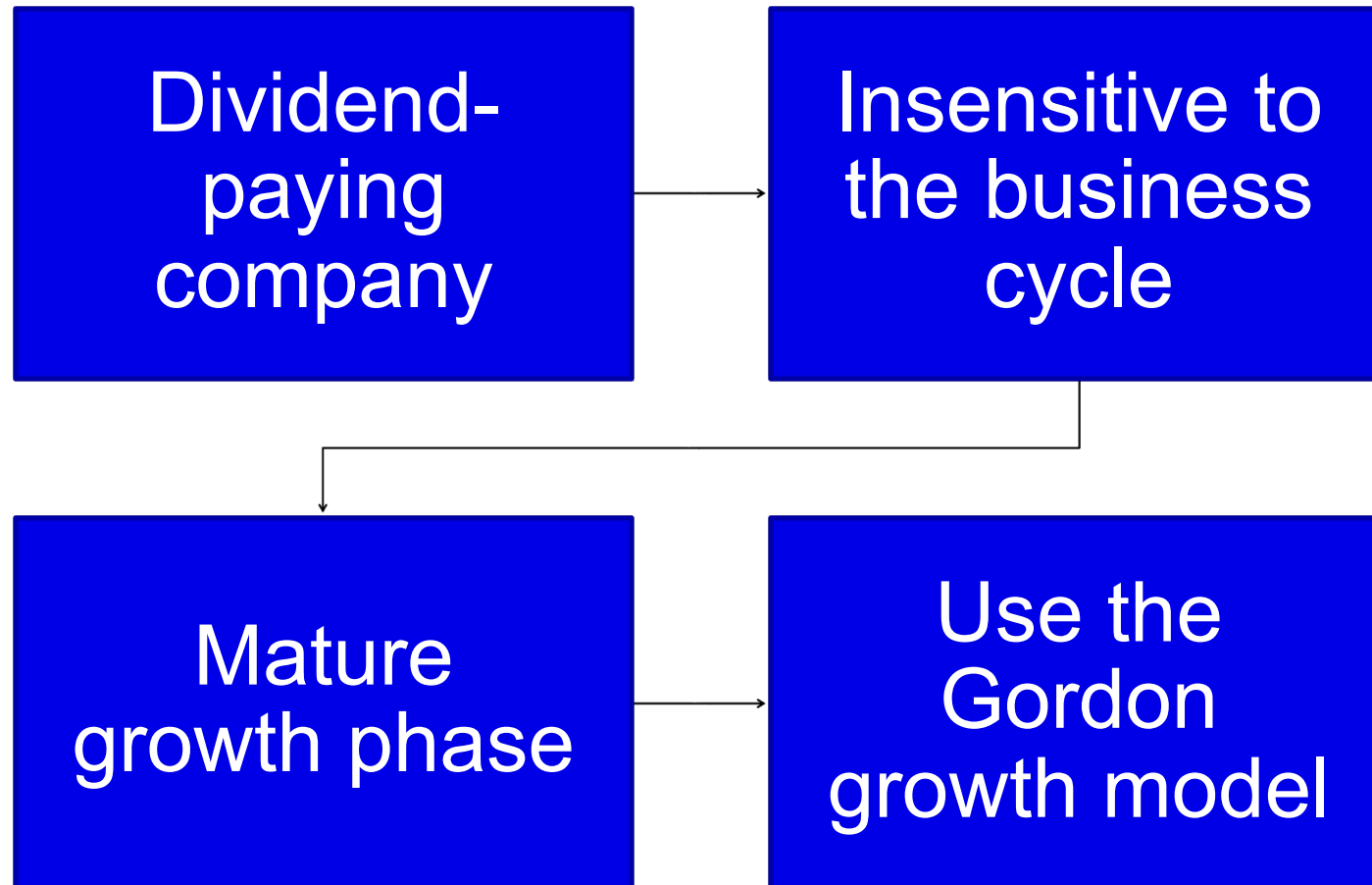
Assumptions:

- Dividends are the correct metric to use for valuation purposes.
- The dividend growth rate is forever: It is perpetual and never changes.
- The required rate of return is also constant over time.
- The dividend growth rate is strictly less than the required rate of return.

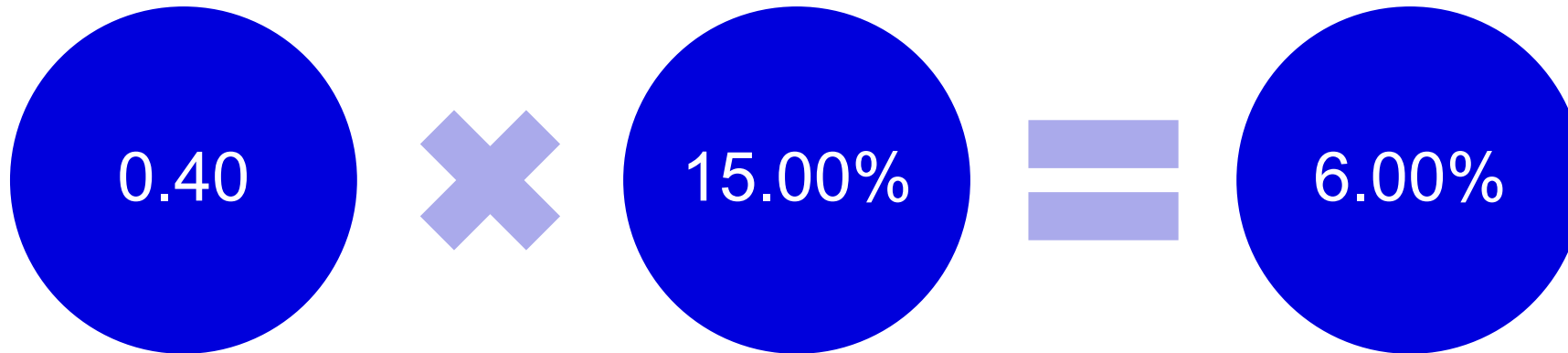
$$V_0 = \sum_{t=1}^{\infty} \frac{D_0(1+g)^t}{(1+r)^t} = \frac{D_0(1+g)}{r-g} = \frac{D_1}{r-g}$$

$$V_0 = \frac{\text{EUR}5.00(1+0.04)}{0.08-0.04} = \text{EUR}130$$

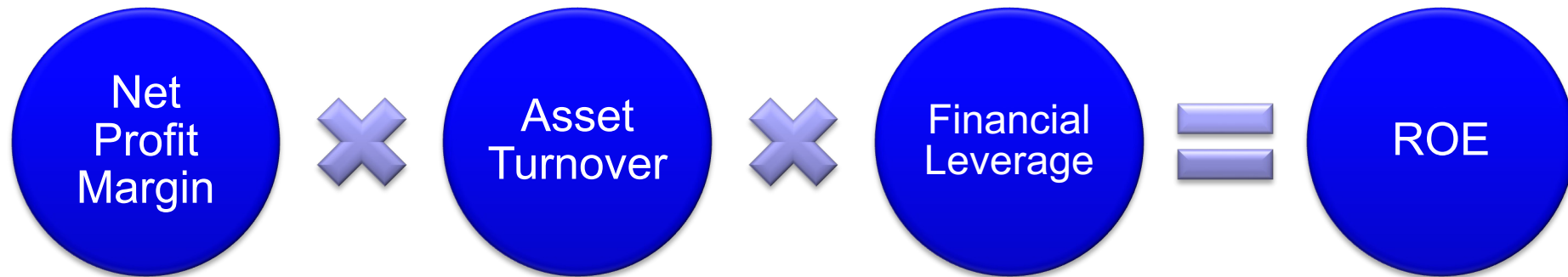
When Is the Gordon Growth Model Most Appropriate for Valuing Equity?



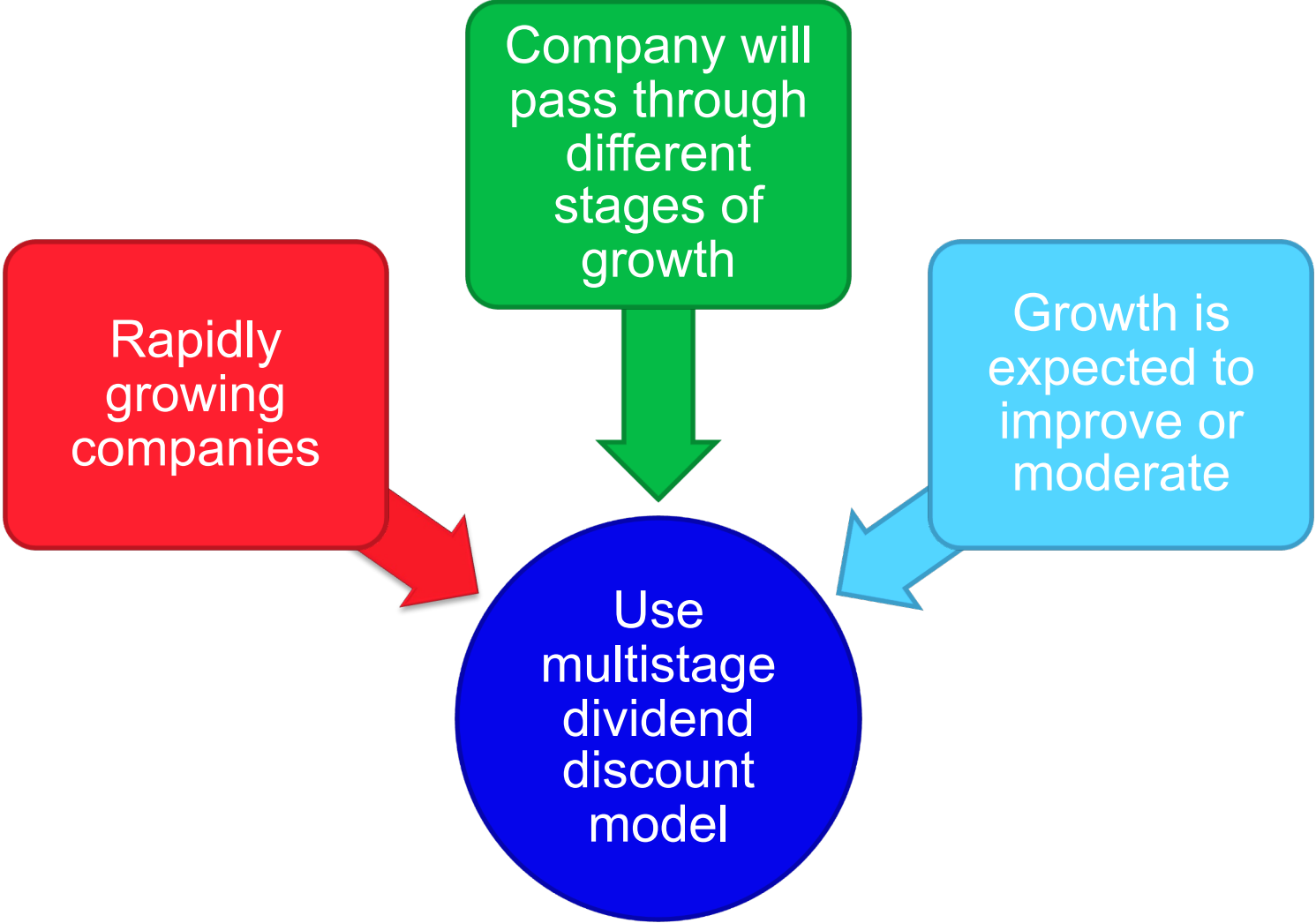
Estimating a Long-Term Growth Rate



Decomposition of ROE



Multistage Dividend Discount Model



The Two-Stage Dividend Discount Model

Dividends grow at rate g_S for n years and rate g_L thereafter:

$$V_0 = \sum_{t=1}^n \frac{D_0 (1 + g_S)^t}{(1 + r)^t} + \frac{V_n}{(1 + r)^n}$$

$$V_n = \frac{D_{n+1}}{r - g_L}$$

$$D_{n+1} = D_0 (1 + g_S)^n (1 + g_L)$$

The Two-Stage Dividend Discount Model (continued from previous slide)

$$D_1 = \$5.00(1 + 0.10) = \$5.50$$

$$D_2 = \$5.00(1 + 0.10)^2 = \$6.05$$

$$D_3 = \$5.00(1 + 0.10)^3 = \$6.655$$

$$D_4 = \$5.00(1 + 0.10)^3(1 + 0.05) = \$6.98775$$

$$V_3 = \frac{\$6.98775}{0.15 - 0.05} = \$69.8775$$

$$V_0 = \frac{\$5.50}{1 + 0.15} + \frac{\$6.05}{(1 + 0.15)^2} + \frac{\$6.655}{(1 + 0.15)^3} + \frac{\$69.8775}{(1 + 0.15)^3}$$

$$V_0 \approx \$59.68$$

Price Multiples

Group or sector of stocks



Use price multiples as a
screen



Identify overvalued and
undervalued stocks

Popular Price Multiples

Price-to-earnings
ratio (P/E)

- Stock price \div earnings per share

Price-to-book
ratio (P/B)

- Stock price \div book value per share

Price-to-sales
ratio (P/S)

- Stock price \div sales per share

Price-to-cash
flow ratio (P/CF)

- Stock price \div cash flow per share

Price Multiples for Telefónica and Deutsche Telekom

	Telefónica			Deutsche Telekom		
	2008	2007	2006	2008	2007	2006
(1) Total assets (€ billions)	99.9	105.9	109.0	123.1	120.7	130.2
<i>Asset growth</i>	-5.7%	-2.8%	--	2.0%	-7.3%	--
(2) Net revenues (€ billions)	57.9	56.4	52.9	61.7	62.5	61.3
<i>Revenue growth</i>	2.7%	6.6%	--	-1.3%	2.0%	--
(3) Net cash flow from operating activities (€ billions)	16.4	15.6	15.4	15.4	13.7	14.2
<i>Cash flow growth</i>	5.1%	1.3%	--	12.4%	-3.5%	--
(4) Book value of common shareholders' equity (€ billions)	19.6	22.9	20.0	43.1	45.2	49.7
<i>Debt ratio:</i> $1 - [(4) \div (1)]$	80.4%	78.4%	81.7%	65.0%	62.6%	61.8%
(5) Net profit (€ billions)	7.8	9.1	6.6	1.5	0.6	3.2
<i>Earnings growth</i>	-14.3%	37.9%	--	150.0%	-81.3%	--
(6) Weighted average number of shares outstanding (millions)	4,646	4,759	4,779	4,340	4,339	4,353
(7) Price per share (€)	15.85	22.22	16.22	10.75	15.02	13.84
<i>Price-to-revenue ratio (P/R):</i> $(7) \div [(2) \div (6)]$	1.3	1.9	1.5	0.8	1.0	1.0
<i>P/CF:</i> $(7) \div [(3) \div (6)]$	4.5	6.8	5.0	3.0	4.8	4.2
<i>P/B:</i> $(7) \div [(4) \div (6)]$	3.8	4.6	3.9	1.1	1.4	1.2
<i>P/E:</i> $(7) \div [(5) \div (6)]$	9.4	11.6	11.7	31.1	108.6	18.8

Sources: Company websites: www.telefonica.es and www.deutschetelekom.com.

Justified Value of a Multiple

Fundamentals or
cash flow predictions



Discounted cash
flow model



Justified value of a
multiple

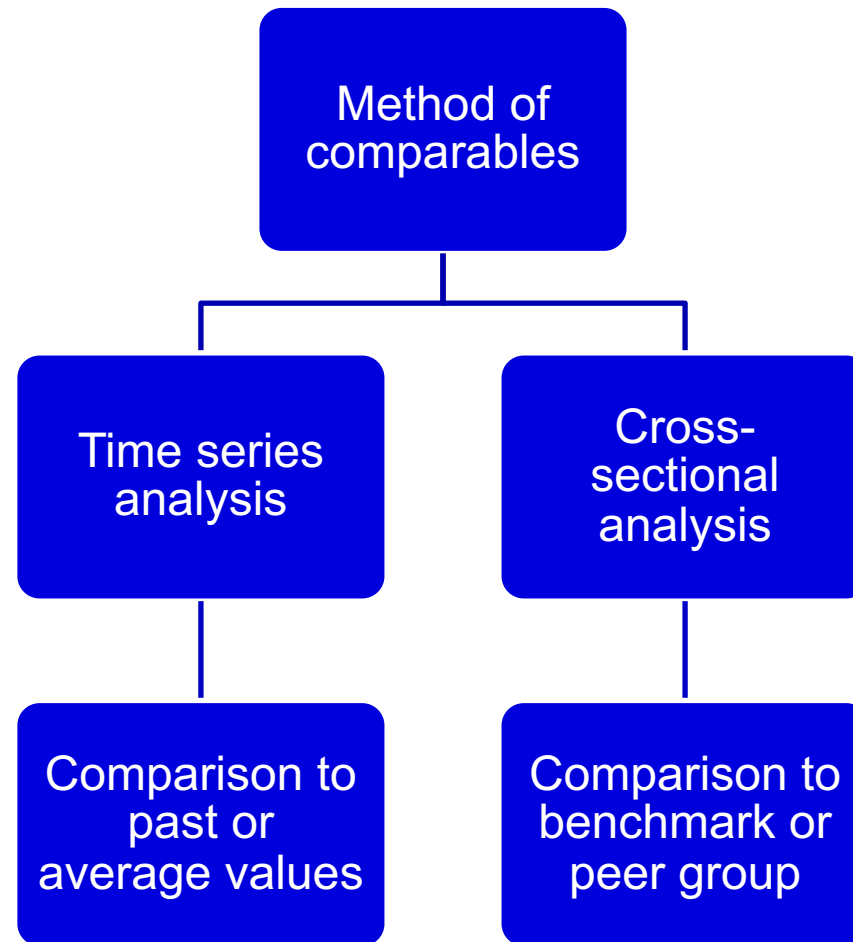
Justified Forward P/E for Nestlé

Required Rate of Return = 12 percent

Constant Dividend Growth Rate	Dividend Payout Ratio				
	40.0%	42.5%	45.0%	47.5%	50.0%
7.0%	8.0	8.5	9.0	9.5	10.0
7.5%	8.9	9.4	10.0	10.6	11.1
8.0%	10.0	10.6	11.3	11.9	12.5
8.5%	11.4	12.1	12.9	13.6	14.3
9.0%	13.3	14.2	15.0	15.8	16.7
9.5%	16.0	17.0	18.0	19.0	20.0
10.0%	20.0	21.3	22.5	23.8	25.0
10.5%	26.7	28.3	30.0	31.7	33.3

$$P_0 = \frac{D_1}{r - g} \xRightarrow{\text{algebra}} \frac{P_0}{E_1} = \frac{D_1 / E_1}{r - g} = \frac{p}{r - g} = \frac{0.45}{0.12 - 0.085} \approx 12.9$$

The Method of Comparables



Price-to-Sales Ratio Data for Major Automobile Manufacturers (2009)

Company	P/S
General Motors	0.01
Ford Motor	0.14
Daimler	0.27
Nissan Motor	0.32
Honda Motor	0.49
Toyota Motor	0.66

P/E Data for Canon

Year	Price (a)	EPS (b)	P/E (a) ÷ (b)
2004	¥5,546	¥387.8	14.3
2005	¥6,883	¥432.9	15.9
2006	¥6,703	¥342.0	19.6
2007	¥5,211	¥377.6	13.8
2008	¥2,782	¥246.2	11.3

Sources: EPS and P/E data are from Canon's website: www.canon.com. P/E is based on share price data from the Tokyo Stock Exchange.

Enterprise Value Multiples



EV/Operating Income Data for Nine Major Mining Companies

Company	Ticker Symbol	EV (C\$ millions)	Operating Income (OI) (C\$ millions)	EV/OI
BHP Billiton	BHP	197,112.00	9,794.00	20.1
Rio Tinto	RIO	65,049.60	7,905.00	8.2
Anglo American	AAL	48,927.30	6,208.00	7.9
Barrick Gold	ABX	35,288.00	1,779.00	19.8
Goldcorp	G	28,278.00	616.66	45.9
Newmont Mining	NEM	22,040.80	1,385.00	15.9
AngloGold Ashanti	AU	19,918.30	-362.00	-55.0
Alcoa	AA	17,570.40	4,166.00	4.2
Freeport-McMoRan Copper & Gold	FCX	11,168.40	2,868.75	3.9

Source: www.miningnerds.com

Advantages and Disadvantages

Present value models

- Theoretically appealing and provide a direct computation of intrinsic value
- Input uncertainty can lead to poor estimates of value

Multiplier models

- Ratios are easy to compute and analysis is easily understood
- Problems with selecting a peer group or “comps”

APPL US \$ ↓ 170.522 -4.538 Q170.52 / 170.53K 6x2
 At 18:32 d Vol 33,430,963 O 172.36D H 173.24D L 170.13K Val 5.73B

APPL US Equity Relative Valuation

Comp Source **Analyst Curated (BI)** Index **BI GL Mbl Hndset Mfg Val** Curr **USD**

Segment	Revenue %
Whole Firm	100%
Communications Equipment	52%
Specialty Online Retailers	19%
Computer Hardware & Storage	18%
Consumer Electronics	10%



Overview **Comp Sheets** Markets EPS Preview Ownership Credit Custom

Name (BI Peers)	Mkt Cap (USD)	Last Px (USD)	Chg Pct 1D	Chg Pct 1M	Rev - 1 Yr Gr:Y	EPS - 1 Yr Gr:Y	P/E	ROE	Dvd 12M Yld
Average	1.04T	76.28	-1.87%	0.03%	13.94%	55.03%	20.07	48.59%	1.05%
101) APPLE INC	2.78T	170.56	-2.59%	4.53%	33.26%	70.82%	28.27	145.38%	0.52%
102) SAMSUNG ELECTRONICS CO LTD	335.67B	56.23	-1.01%	-2.28%	18.07%	50.07%	11.86	12.17%	1.58%
103) HTC CORP	1.69B	2.05	-2.00%	-2.16%	-9.52%	44.19%	--	-11.76%	--

(Accounting Adjustments: Adjusted for Abnormal Items When Applicable) Analyze List

Suggested Functions **ANR** Get analyst recommendations & ratings **BQ** See a market snapshot for a security





