

# ***Valuation Principles and Practice***

## ***Part II***

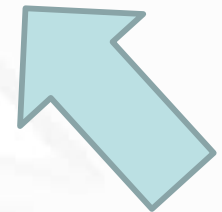
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## Two approaches to valuation

- Intrinsic valuation: The value of an asset is a function of its fundamentals – cash flows, growth and risk. In general, discounted cash flow models are used to estimate intrinsic value.
- Relative valuation: The value of an asset is estimated based upon what investors are paying for similar assets. In general, this takes the form of value or price multiples and comparing firms within the same business.



# Multiples

- Relative valuation models are used to value companies by comparing them to other businesses based on certain metrics such as:
  - ✓ Enterprise Value/Sales,
  - ✓ EV/EBITDA,
  - ✓ and P/E ratios.

Why?

# Multiples

Why?

To compare different firms, we need

- 1) “market-based”
- 2) standardized

measures

# Why?

## An example from EU Food manufacturing

Identifier	BON-FR	CLI-IT	NLM-DE	UNBL-FR
<b>Name</b>	Bonduelle SCA	Centrale del Latte d'Italia Spa	FRoSTA AG	Unibel SA
<b>Country</b>	France	Italy	Germany	France
<b>EBIT</b>	50,04	4,79	42,69	262,82
<b>EBITDA/Interest Expense</b>	5,47	3,85	55,11	5,63
<b>Total Assets</b>	2.173,12	277,78	481,68	4.539,56
<b>CAPEX/EBITDA</b>	59,47	10,86	32,61	42,93
<b>Return on Equity</b>	1,08	4,54	15,57	6,99
<b>Free Cash Flow</b>	-88,33	33,28	96,36	59,03
<b>Book Value Per Share</b>	26,39	5,26	37,68	650,63
<b>Latest Price</b>	8,27	3,07	73,62	1.006,86
<b>Price to Earnings</b>	24,52	14,58	12,47	24,62
<b>Price to Sales</b>	0,11	0,12	0,72	0,53

# Earnings multiples

Very basic intuition:

A value of any asset is related (proportional) to the earnings it generates.

# Earnings multiples

- When buying a stock, it is common to look at the price paid as a multiple of the earnings per share generated by the company.
- This **price/earnings ratio** can be estimated:
  - ✓ using earnings per share over the last four quarters, which is called a *trailing PE*,
  - ✓ or an expected earnings per share in the next financial year, called a *forward PE*.

# The Price Earnings Ratio

- The *price earnings ratio (PE)* is a widely watched measure of much the market is willing to pay for \$1.00 of earnings from the firms.

$$\text{Price} = \frac{P}{E} \times E$$



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	Enel	Eni
Price (22 May)	6,03	13,06
Capital gain (loss)	0,33%	0,20%
EV (€B)	112,25	57,3
Market cap	61,55	44,06
ROE	0,105	0,2481
EBITDA (€B)	16,68	22,86
Revenues (Ttm) (€B)	130,23	128,52
Trailing P/E	19,54	3,45
Forward P/E	11,22	5,1

## The Price Earnings Ratio

If the industry PE ratio for a firm is 16, what is the current stock price for a firm with earnings for \$1.13 / share?

# The Price Earnings Ratio

Answer:

$$\text{Price} = 16 \times \$1.13 = \$18.08$$

# Earnings Multiples

- When buying a business, as opposed to just the equity in the business, it is common to examine the value of the firm, usually net of cash (enterprise value), as a multiple of the operating income or the earnings before interest, taxes, depreciation, and amortization (EV/EBITDA)

# Understanding earning multiples

The simplest dividend discount model: the price of the share is the expected value of future dividends:

$$P_t = \frac{DPS_{t+1}}{K_e - g_t} = \frac{DPS_t(1 + g_t)}{K_e - g_t}$$

Where  $DPS_{t+1}$  is the next dividend per share,  $K_e$  the cost of equity and  $g_t$  the stable growth rate

# Understanding earning multiples

Let's divide both sides by the Earnings Per Share ( $EPS_t$ )

$$\begin{aligned} \frac{P_t}{EPS_t} &= \frac{DPS_{t+1}}{(EPS_t)(K_e - g_t)} = \frac{DPS_t(1 + g_t)}{(EPS_t)(K_e - g_t)} = \\ &= \frac{PayoutRatio_t(1 + g_t)}{K_e - g_t} \end{aligned}$$

## Book Value or Replacement Value Multiples

- Investors often look at the relationship between the market's assessment of the value of equity and the book value of equity (or net worth) as a measure of how over- or undervalued a stock is;
- the **price/book value ratio** that emerges can vary widely across industries, depending again on the growth potential and the quality of the investments in each.
- When valuing businesses, we estimate this ratio using the value of the firm and the book value of all capital (rather than just the equity)

## Price/book value ratio

Let's divide both sides by the Book value of equity per share ( $BV_t$ )

$$P_t = \frac{DPS_t(1 + g_t)}{K_e - g_t}$$

$$\frac{P_t}{BV_t} = \frac{1}{BV_t} \frac{EPS_t DPS_t(1 + g_t)}{EPS_t (K_e - g_t)}$$



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$$\frac{P_t}{BV_t} = \frac{ROE_t \times PayoutRatio_t(1 + g_t)}{K_e - g_t}$$

## Revenue multiples

- For equity investors, this ratio is the **price/sales ratio** (PS), where the market value of equity is divided by the revenues generated by the firm.
- For firm value, this ratio can be modified as the **enterprise value/sales** ratio (VS), where the numerator becomes the enterprise value of the firm

## Price/sales ratio

Similarly, let's divide both sides by the value of sales per share ( $Sales_t$ )

$$\frac{P_t}{Sales_t} = \frac{1}{Sales_t} \frac{EPS_t}{EPS_t} \frac{DPS_t(1 + g_t)}{K_e - g_t}$$

$$\frac{P_t}{Sales_t} = \frac{NetProfitMargin \times PayoutRatio_t(1 + g_t)}{K_e - g_t}$$

# The use of comparable firms

- When we use multiples, we tend to use them in conjunction with comparable firms to determine the value of a firm or its equity.
- This analysis begins with two choices:
  - ✓ the multiple that will be used in the analysis
  - ✓ and the group of firms that will make up the comparable firms.

# 1. Choosing comparable firms

- The first step in relative valuation is usually the selection of comparable firms. A comparable firm is one with cash flows, growth potential, and risk similar to the firm being valued. It would be ideal if we could value a firm by looking at how an exactly identical firm—in terms of risk, growth, and cash flows—is priced.

## 2. Controlling for differences among firms

- Simple approaches. In this case, we modify the multiple to take into account the most important variable determining it.
- Thus, the PE ratio is divided by the expected growth rate in earnings per share (EPS) for a company to determine a growth-adjusted PE ratio or the PEG ratio.
- Similarly, the PBV ratio is divided by the ROE to find a value ratio. These modified ratios are then compared across companies in a sector.

Table 12.14 ENTERTAINMENT FIRM PE RATIOS AND GROWTH RATES: NOVEMBER 2013

Company	Market Capitalization (\$)	Current PE	Trailing PE	Forward PE	Expected Growth (%)	PEG Ratio
The Walt Disney Company	126,427	20.60	20.60	18.40	12.40	1.66
Twenty-First Century Fox, Inc.	70,451	9.93	11.51	19.70	20.90	0.55
Time Warner Inc.	56,889	18.84	14.53	15.50	12.60	1.15
Viacom, Inc.	35,492	14.82	14.82	14.80	13.10	1.13
The Madison Square Garden Company	4,300	30.19	29.53	28.50	17.60	1.68
Lions Gate Entertainment Corp.	4,270	18.40	19.87	19.40	20.00	0.99
Live Nation Entertainment, Inc.	4,068	NA	NA	NM	9.00	NA
Cinemark Holdings Inc.	3,445	20.40	21.44	16.60	14.80	1.45
Regal Entertainment Group	3,089	21.33	18.06	17.70	10.00	1.81
DreamWorks Animation SKG Inc.	2,764	NA	NA	43.30	82.30	NA
AMC Entertainment Holdings, Inc.	2,079	32.85	20.28	14.90	86.60	0.23
World Wrestling Entertainment Inc.	1,608	51.21	142.29	NM	20.00	7.11
Rentrak Corporation	648	NA	NA	152.80	115.00	NA
Carmike Cinemas Inc. (NasdaqGS:CKEC)	606	6.29	6.48	24.40	6.75	0.96
<b>Average</b>	<b>22,581</b>	<b>22.26</b>	<b>29.04</b>	<b>32.17</b>	<b>31.50</b>	<b>1.70</b>
<b>Median</b>	<b>3,756</b>	<b>20.40</b>	<b>19.87</b>	<b>18.90</b>	<b>16.20</b>	<b>1.15</b>

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### 3. Growth vs Value stocks

- High PE stocks are often called **growth stocks**
  - They obtain their value from their expected earnings growth rates
- Low PE stocks are often called **value stocks**
  - ‘cheap’ relative to current earnings
  - They obtain their value from investment already in place

## References

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- Watson D., Head A., Mantovani G., Rossi E., Corporate Finance. Principles and Practice in Europe, Pearson Italia, 2017. (Ch. 9-10)