

## Corporate Finance: Profitability

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João Carvalho das Neves  
Professor of Finance, ISEG  
[icneves@iseg.ulisboa.pt](mailto:icneves@iseg.ulisboa.pt)  
2018-2019

## Search for the drivers of the business: Start with an industry analysis

### On the environment:

- Where is the industry in term of the product cycle? Is it a start up, a mature, growing or declining industry?
- Is it a cyclical or non-cyclical industry?
- Is it much correlated or uncorrelated with economic business cycle?
- Is there any pressure to consolidate?
- What is the level of competition within the industry?
- Who are the major players?
- Any regulatory risk?

### On the firm:

- How does the company deal with competition?
- Who owns the firm? A family, the public, a fund? Shareholders' capital structure?

## Shareholders return on equity

- Return on equity is one of the most important ratios of profitability that investors care about.
- It's a basic test of how effectively a company's management uses investors' money.
- ROE shows whether management is able to generate return to shareholders at an acceptable rate.

$$\text{Return on equity (ROE)} = \frac{\text{Net Earnings}}{\text{Shareholders' Equity}}$$

Decomposition of ROE in a specific year:

$$\text{ROE} = \text{Business model} \times \text{Financial Leverage} \times \text{Nonrecurring} \times \text{Taxation}$$

## Traditional DuPont model: Profitability x Asset utilization x Leverage

$$\text{ROE} = \underbrace{\left( \frac{\text{Net Income}}{\text{Sales}} \right)}_{\text{Net Profit Margin}} \times \underbrace{\left( \frac{\text{Sales}}{\text{Total Assets}} \right)}_{\text{Asset Turnover}} \times \underbrace{\left( \frac{\text{Total Assets}}{\text{Book Value of Equity}} \right)}_{\text{Equity Multiplier}}$$

Return on Assets

- Good idea, but some deficiencies..
- ROA - Numerator and denominator are not in the same basis:
  - i) Net income are the remuneration of shareholder, but Assets are financed by shareholders, banks, bondholders, other creditors and trade suppliers
- It doesn't explicit the impact of income taxes
- It doesn't explicit the impact of the cost of financing
- It doesn't evidence the performance from recurring and non-recurring activities

## This is the integrative model to analyze ROE

$$ROE = \left( \frac{Op. Earnings}{IC} + \left( \frac{Op. Earnings}{IC} - \frac{Interest\ expenses}{Debt} \right) \times \frac{D}{E} \right) \times \frac{EBT}{Recurring\ Earnings} \times (1 - t)$$

Profitability from strategic and operational management

Profitability from capital structure policy

Impact of non-recurring items in profitability

Impact of income taxes

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5

## Income Statement (per function) USA Approach

	31/12/2016	31/12/2017
	EUR	EUR
Total Revenues	12 272 049	21 993 912
Cost of goods sold	6 293 257	12 562 633
Selling, general and administrative expenses	3 298 154	4 106 488
Depreciation & Amortization	2 006 904	1 685 608
Operating P/L	673 734	3 639 182
Special items	0	0
EBIT	673 734	3 639 182
Financial revenue	0	0
Financial expenses	168 548	559 724
Net financial expenses	168 548	559 724
Earnings before tax	505 186	3 079 458
Taxation	80 297	1 082 867
Net income	424 889	1 996 591

Lack of proper identification of:

1. Variable and fixed expenses
2. Recurring Items

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6

## Income Statement (by nature) European Model

	31/12/2016 EUR	31/12/2017 EUR
<i>Total Revenues</i>	12 272 049	21 993 912
<i>Material costs</i>	2 666 136	8 868 062
<i>Supplies and Services</i>	3 627 121	3 694 571
<i>Personnel expenses</i>	3 041 754	3 873 565
<i>Other operational expenses</i>	256 400	232 923
<i>Depreciation &amp; Amortization</i>	2 006 904	1 685 608
<i>Operating P/L [=EBIT]</i>	673 734	3 639 182
<i>Financial revenue</i>	0	0
<i>Financial expenses</i>	168 548	559 724
<i>Net financial expenses</i>	168 548	559 724
<i>P/L before tax</i>	505 186	3 079 458
<i>Taxation</i>	80 297	1 082 867
<i>P/L for period [=Net income]</i>	424 889	1 996 591

Lack of proper identification of:

1. Variable and fixed expenses
2. Operational items
3. Recurring Items

## Managerial Income Statement

	31/12/2016 EUR	31/12/2017 EUR
<i>Total Revenues</i>	12 272 049	21 993 912
<i>Variable costs</i>	6 293 257	12 562 633
<i>Contribution margin</i>	5 978 792	9 431 278
<i>Fixed costs</i>	5 305 058	5 792 096
<i>Operating and Recurring Earnings</i>	673 734	3 639 182
<i>Financial revenue</i>	0	0
<i>Financial expenses</i>	168 548	559 724
<i>Net financial expenses</i>	168 548	559 724
<i>Recurring Earnings</i>	505 186	3 079 458
<i>Non-recurring earnings</i>	0	0
<i>P/L before tax</i>	505 186	3 079 458
<i>Taxation</i>	80 297	1 082 867
<i>P/L for period [=Net income]</i>	424 889	1 996 591

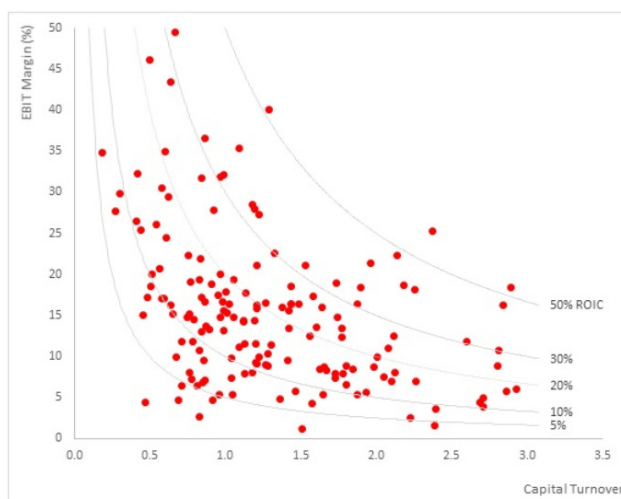
## Operating margin ratio: A measure of competitiveness and cost efficiency

$$\begin{aligned}
 \text{Contribution margin ratio} &= \frac{\text{Contribution margin}}{\text{Revenues}} \\
 &\times \\
 \text{Fixed expenses effect} &= \frac{\text{Operating earnings}}{\text{Contribution margin}} \\
 &= \\
 \text{Operating margin ratio} &= \frac{\text{Operating margin or EBIT}}{\text{Revenues}}
 \end{aligned}$$

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9

## What your business model? Margin x Turnover



ROI is a function of operating margins and capital efficiency.  
Dataset based on 159 global Consumer Products companies with a Market Value of USD10 billion+  
Source: HSBC

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10

## What your business model? Margin x Turnover

$$\text{Operating margin or EBIT margin} = \frac{\text{Operating margin or EBIT margin}}{\text{Revenues}}$$

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$$\text{Capital Turnover} = \frac{\text{Revenues}}{\text{Invested Capital}}$$

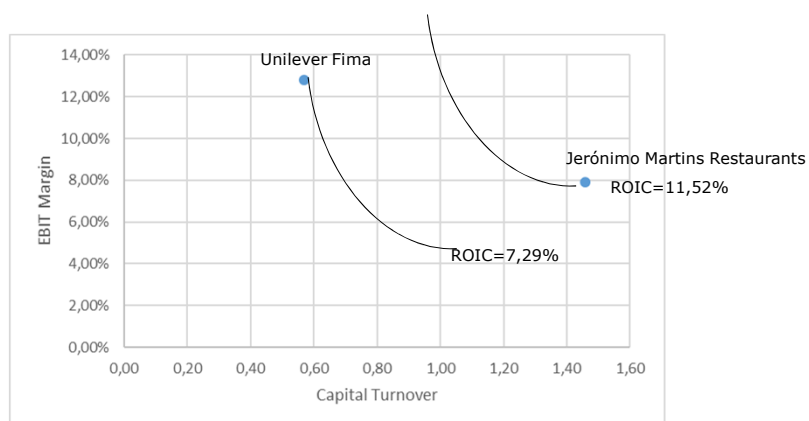
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$$\text{Return on Invested Capital (ROIC)} = \frac{\text{Operating Earnings or EBIT}}{\text{Invested Capital}}$$

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11

## How Business Models impacts on ROIC



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12

## Traditional approach (outdated)

$$\text{Operating margin or EBIT margin} = \frac{\text{Operating margin or EBIT margin}}{\text{Revenues}}$$

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$$\text{Asset Turnover} = \frac{\text{Revenues}}{\text{Assets}}$$

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$$\text{Return on Assets (ROA)} = \frac{\text{Operating Earnings or EBIT}}{\text{Assets}}$$

## The financial leverage effect

Scenarios	Case Base	
	With no Debt	With Debt
Debt ratio	0%	40%
Invested capital	1.000.000	1.000.000
Equity	1.000.000	600.000
Debt	0	400.000
Cost of Debt ( $k_d$ )	7,25%	7,25%
Income tax (t)	30%	30%
Operating earnings	95.000	95.000
Financial expenses	0	29.000
Earnings before taxes	95.000	66.000
Income taxes	28.500	19.800
Net earnings	66.500	46.200
ROIC (after taxes)	6,65%	6,65%
ROE	6,65%	7,70%

- ROE = ROIC if no leverage
- Financial leverage may improve ROE
- In which circumstances?

## The leverage effect: An additive model

With out non-recurring earnings:

$$ROE = \left( ROIC + (ROIC - \text{Cost of Debt}) \times \frac{D}{E} \right) \times (1 - t)$$

- ROE = ROIC if there is no debt
- As long as ROIC > Cost of debt financial leverage imply ROE > ROIC after taxes
- If ROIC < Cost of debt then it has a negative effect on ROE

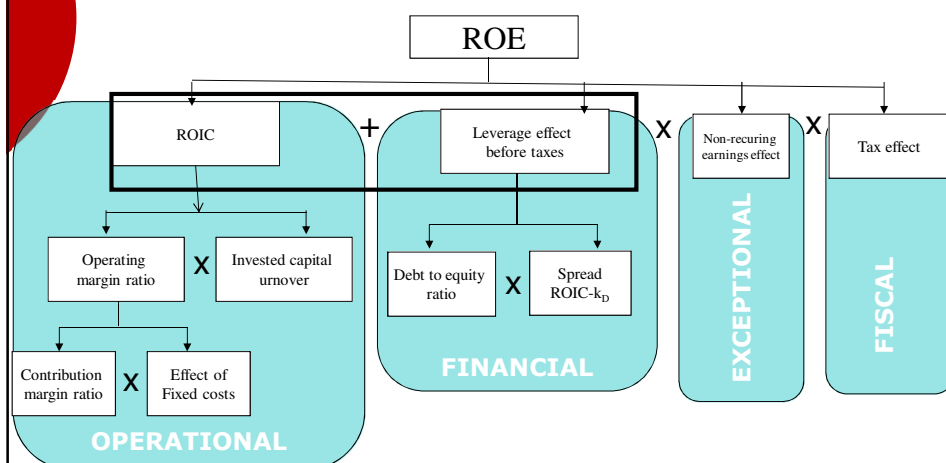
The full model:

$$ROE = \left( \frac{Op. Earnings}{IC} + \left( \frac{Op Earnings}{IC} - \frac{Interest expenses}{Debt} \right) \times \frac{D}{E} \right) \times \frac{EBT}{Recurring Earnings} \times (1 - t)$$

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15

## The additive model of ROE



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16