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F&CA

Financial statements and ratios

Outline

- Financial statements
 - Balance sheet
 - Income statement
 - Statement of cash flow
- Ratios
 - Liquidity
 - Asset management
 - Debt management
 - Profitability
 - Market value
 - Dupont analysis



Financial statements

The manager's primary goal is to maximize the shareholder's wealth. As a consequence, the main objective is to bring the value of the company up. This value is usually based on the stream of cash flows the firm will generate in the future. But to make decisions to improve such an estimation, the manager must analyze past financial statements

Annual Report

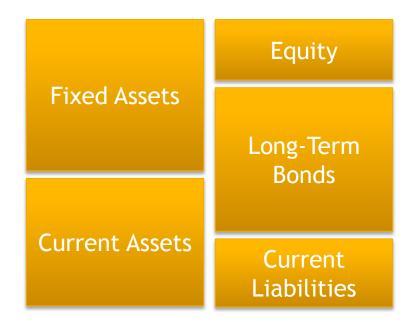
This is probably one of the most important reports in a corporation. This report includes: the balance sheet, the income statement and the statement of cash flows. These statements give an accounting picture of the firm's operations and financial positions.



Financial Statements: Balance Sheet

The **Balance Sheet** represents snapshots of its financial position on the very last day of each year. Take into account that this picture changes daily as inventories are bought and sold, fixed assets are added or retired or financing activities (bank loans or investors capital calls) are increased or paid down.

in thousand ('000)			
		Common Stock	8.500
		Other (Reserves, etc)	2.200
Fixed Assets	31.150	Net Income	400
Acc. Depreciat.	3.346	Equity	11.100
Net Fixed Assets	27.804		
		Liabilities (Debt, etc)	16.733
Inventories	492		
Receivables	2.108	Payables	949
Cash	703	Accruals	2.325
Current Assets	3.303	Current Liabilities	3.274
Total Assets	31.107	Total Eq. & Liab.	31.107





Financial Statements: Balance sheet

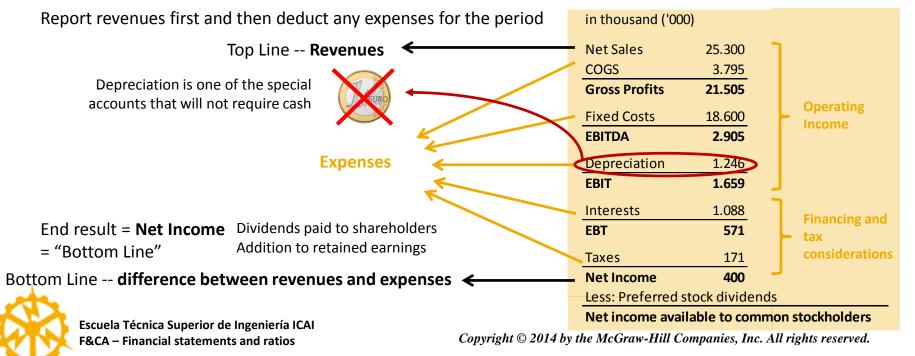
The **Balance Sheet** represents snapshots of its financial position on the very last day of each year. Take into account that this picture changes daily as inventories are bought and sold, fixed assets are added or retired or financing activities (bank loans or investors capital calls) are increased or paid down.

Current Assets minus Current Liabilities (Usually **Net working capital** positive for a healthy firm) Speed and ease of conversion to cash without Liquidity significant loss of value (avoids financial distress) **Debt versus Equity** Shareholders' equity = Assets – Liabilities the balance sheet value of the assets. **Book value** liabilities, and equity Equity Equity true value; the price at which the Market value **Fixed Assets** assets, liabilities, or equity can be bought or sold Long-Term Liabilities Bonds **Net Working Capital** Current Assets Spanish PGC: increasing liquidity and when due to be paid is from top to bottom Current **GAAP**: increasing liquidity and when due to be paid is from bottom to top Liabilities

Financial Statements: Income statement

The **Income Statement** (the writing or the "diary" within the Balance sheet) shows the financial performance of the company over a period of time (usually one year, even though it can be also prepared monthly or quarterly). This is NOT a snapshot. The Income Statement reflects performance DURING the period

Income Statement Equation: Net Income = Revenue - Expenses



Financial Statements: Income statement

The Income Statement (the writing or the "diary" within the Balance sheet) shows the financial performance of the company over a period of time (usually one year, even though it can be also prepared monthly or quarterly). This is NOT a snapshot. The Income Statement reflects performance DURING the period

Margi	nal v	vs. /	Aver	age	tax	rates
_				_		

Tax	Liability on	\$4,	000,000				
	Corpo	orat	e Tax Rates		Taxable		Tax
	Taxable Inco	me	Levels	Tax Rate	Income L		Liability
\$	-	\$	50.000	15%	\$ 50.000	\$	7.500
\$	50.001	\$	75.000	25%	\$ 25.000	\$	6.250
\$	75.001	\$	100.000	34%	\$ 25.000	\$	8.500
\$	100.001	\$	335.000	39%	\$ 235.000	\$	91.650
\$	335.001	\$	10.000.000	(34%)	\$ 3.665.000	\$	1.246.100
\$	10.000.001	\$	15.000.000	35%			
\$	15.000.001	\$	18.333.333	38%			
\$	18.333.334		- /	35%			
					\$ 4.000.000	\$	1.360.000

Average Rate = 34% Marginal Rate = 34%

Marginal: % tax paid on the next dollar earned

Average – total tax bill / taxable income

If considering a project that will increase taxable income by \$1

million, which tax rate should you use in your analysis?

	in thousand ('000))	
	Net Sales	25.300	٦
	COGS	3.795	
	Gross Profits	21.505	
	Fixed Costs	18.600	Operating Income
	EBITDA	2.905	meome
	Depreciation	1.246	
	EBIT	1.659	J
	Interests	1.088	Financing and
	EBT	571	- tax
+	- Taxes	171	considerations
	Net Income	400	J
	Less: Preferred s	tock divide	nds
	Net income avail	able to con	nmon stockholders
			477 4 7 . 7

Cash flow

- I. The cash flow identity
 - Cash flow from assets = Cash flow to creditors (bondholders)
 - + Cash flow to stockholders (owners)
- II. Cash flow from assets
 - Cash flow from assets = Operating cash flow
 - Net capital spending
 - Change in net working capital (NWC)

where

- Operating cash flow = Earnings before interest and taxes (EBIT)
 - + Depreciation Taxes
- Net capital spending = Ending net fixed assets Beginning net fixed assets
 - + Depreciation
- Change in NWC = Ending NWC Beginning NWC
- III. Cash flow to creditors (bondholders)
 - Cash flow to creditors = Interest paid Net new borrowing
- IV. Cash flow to stockholders (owners)
 - Cash flow to stockholders = Dividends paid Net new equity raised
- ✓ One of the most important pieces of information derived from financial statements
- ✓ Our focus: how cash is generated from utilizing assets and how it is paid to those who finance the asset purchase.

table 2.4 Statement of Cash Flows for DPH Tree Farm, Inc.						
DPH TREE FARM, INC. Statement of Cash Flows for Year Ending December 31, 2012 (in millions of dollars)						
	2012					
A. Cash flows from operating activities						
Net income	\$90					
Additions (sources of cash):						
Depreciation	13					
Increase in accrued wages and taxes	5					
Increase in accounts payable	5					
Subtractions (uses of cash):						
Increase in accounts receivable						
Increase in inventory11						
Net cash flow from operating activities \$97						
B. Cash flows from investing activities						
Subtractions:						
Increase in fixed assets	-\$68					
Increase in other long-term assets						
Net cash flow from investing activities	-\$68					
C. Cash flows from financing activities						
Additions:						
Increase in notes payable	\$ 0					
Increase in long-term debt	5					
Increase in common and preferred stock	0					
Subtractions:						
Pay preferred stock dividends	-10					
Pay common stock dividends	-25					
Net cash flow from financing activities	_\$30					
D. Net change in cash and marketable securities	-\$ 1					



Example: cash-flow U.S. Corporation

		Baland	e Sheet			
Assets			Liabiities & Own	Liabiities & Owners' Equity		
	2009	2010		2009	2010	
Current Assets			Current Liabilities			
Cash	\$104	\$160	Accounts Payable	\$232	\$266	
Accounts Receivable	455	688	Notes Payable	196	123	
Inventory	553	555	Total	\$428	\$389	
Total	\$1,112	\$1,403				
Fixed Assets						
Net Fixed assets	\$1,644	\$1,709	Long-term debt	\$408	\$454	
			Owners' equity			
			Common stock and			
			paid-in surplus	600	640	
			Retained earnings	1,320	1,629	
			Total	\$1,920	\$2,269	
			Total Liabilties &	·	·	
Total assets	\$2,756	\$3,112	Owners Equity	\$2,756	\$3,112	

U.S. Corporation				
Income Statemer	nt			
Net sales		\$1,509		
Cost of goods sold		750		
Depreciation	65			
Earnings before interest and taxe	\$694			
Interest Paid	70			
Taxable income	\$624			
Taxes	212			
Net Income	\$412			
Dividends				
Addition to retained earnings				

$$= $694 + 65 - 212 = $547$$

$$\Delta$$
NWC = ending NWC – beginning NWC

$$= (\$1403 - 389) - (\$1112 - 428) = \$330$$

CFFA =
$$547 - 130 - 330 = $87$$



Example: cash-flow U.S. Corporation

		U.S. Co	rporation		
		Balanc	e Sheet		
Assets	3		Liabiities & Owne	rs' Equity	
	2009	2010		2009	2010
Current Assets			Current Liabilities		
Cash	\$104	\$160	Accounts Payable	\$232	\$266
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			paid-in surplus	600	640
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			Total	\$1,920	\$2,269
			Total Liabilties & Owners		
Total assets	\$2,756	\$3,112	Equity	\$2,756	\$3,112

U.S. Corporation					
Income Statemer	nt				
Net sales		\$1,509			
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Earnings before interest and taxes	\$694				
Interest Paid	70				
Taxable income	\$624				
Taxes	212				
Net Income	\$412				
Dividends					
Addition to retained earnings					

• CFFA = CF/CR + CF/SH

CF/CR = interest paid – net new borrowing

= \$70 - (\$454 - 408) = \$24

CF/SH = dividends paid – net new equity

= \$103 - (\$640 - 600) = \$63

CFFA = \$24 + \$63 = \$87

Outline

- Financial statements
 - Balance sheet
 - Income statement
 - Statement of cash flow
 - Statement of retained earnings

Ratios

- Liquidity
- Asset management
- Debt management
- Profitability
- Market value
- Dupont analysis



Ratios

Some considerations

Why using ratios?

- Internal uses
 - Performance evaluation compensation and comparison between divisions
 - Planning for the future guide in estimating future cash flows
- External uses
 - Creditors
 - Suppliers
 - Customers
 - Stockholders

Problems using ratios

Conglomerates

No readily available comparables

Global competitors

Different accounting procedures

Different fiscal year ends

Differences in capital structure

Seasonal variations and one-time events

Benchmarking

Ratios need to be compared to something

Time-Trend Analysis

How the firm's performance is changing through

time

Internal and external uses

Peer Group Analysis

Compare to similar companies or within

industries



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Standardized Financial Statements

- Common-Size Balance Sheets: All accounts = percent of total assets (%TA)
- Common-Size Income Statements: All line items = percent of sales or revenue (%SLS)
- Standardized statements are useful for:
 - Comparing financial information year-to-year
 - Comparing companies of different sizes, particularly within the same industry

Ratio analysis:

- ✓ Allow for better comparison through time or between companies
- ✓ Used both internally and externally
- √ For each ratio, ask yourself:
 - What the ratio is trying to measure Why that information is important



Categories of Financial Ratios

- <u>Liquidity ratios</u> or Short-term solvency: Relationship between firm's liquid (current) assets and current liabilities
- <u>Financial leverage ratios</u> or Long-term solvency ratios: Measure how much debt (financial leverage) versus equity a firm uses to finance assets
- <u>Asset management</u> or Turnover ratios: Measure efficiency of firm's asset use (Inventory, Accounts receivable, Fixed assets, Accounts payable management)
- Profitability ratios: Show the combined effect of liquidity, asset management and debt management on firm's operating results
 - Closely monitored by investors
 - Stock prices react very quickly to unexpected changes in these ratios
- Market value ratios: Reflect what investors think of the company's future performance and risk



The most common financial ratios

TABLE 3.5

Common financial ratios

I. Short-term solvency, or liquidity, ratios

$$Current ratio = \frac{Current assets}{Current liabilities}$$

Cash ratio =
$$\frac{\text{Cash}}{\text{Current liabilities}}$$

II. Long-term solvency, or financial leverage, ratios

Times interest earned ratio =
$$\frac{EBIT}{Interest}$$

III. Asset utilization, or turnover, ratios

$$Inventory\ turnover = \frac{Cost\ of\ goods\ sold}{Inventory}$$

Days' sales in inventory =
$$\frac{365 \text{ days}}{\text{Inventory turnover}}$$

Payables turnover =
$$\frac{\text{Cost of goods sold}}{\text{Accounts payable}}$$

Total asset turnover =
$$\frac{\text{Sales}}{\text{Total assets}}$$

IV. Profitability ratios

$$Profit margin = \frac{Net Income}{Sales}$$

Return on assets (ROA) =
$$\frac{\text{Net income}}{\text{Total assets}}$$

Return on equity (ROE) =
$$\frac{\text{Net income}}{\text{Total equity}}$$

$$ROE = \frac{Net income}{Sales} \times \frac{Sales}{Assets} \times \frac{Assets}{Equity}$$

V. Market value ratios

$$Price-sales ratio = \frac{Price per share}{Sales per share}$$

$$Market-to-book ratio = \frac{Market value per share}{Book value per share}$$

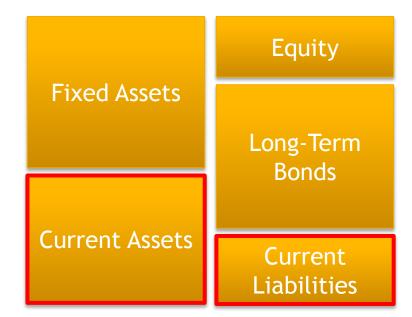
There are only two ways of dying for a company:

- **Liquidity ratios**
- **1. Bankruptcy Chapter**: equity below 50% of the share Capital (announced and slow death)
- 2. **Default** (sudden death is difficult to detect)

Current Ratio =
$$\frac{\text{Current Assets}}{\text{Current Liabilities}} > 1$$

The Current Ratio

Liquidity ratios raise a red flag whenever there's danger of **default**





There are only two ways of dying for a company:

Liquidity ratios

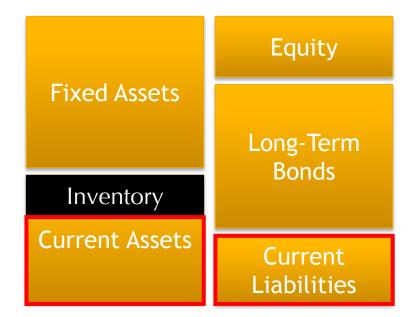
- **1. Bankruptcy Chapter**: equity below 50% of the share Capital (announced and slow death)
- 2. **Default** (sudden death is difficult to detect)

Acid Test Ratio =
$$\frac{\text{Current Assets-Inventories}}{\text{Current Liabilities}}$$

...again, we compare it to 1

Quick or Acid Test

Liquidity ratios raise a red flag whenever there's danger of **default**





There are only two ways of dying for a company:

- **1. Bankruptcy Chapter**: equity below 50% of the share Capital (announced and slow death)
- **2. Default** (sudden death is difficult to detect)

Cash Ratio =
$$\frac{\text{Cash}}{\text{Current Liabilities}}$$

...again, we compare it to 1

Liquidity ratios raise a red flag whenever there's danger of **default**

This situation would be AWESOME

Outline

Financial statements
Balance sheet
Income statement
Statement of cash flow

Ratios

Liquidity

Cash Ratio

Asset management Debt management Profitability Dupont analysis

Market value

Fixed Assets

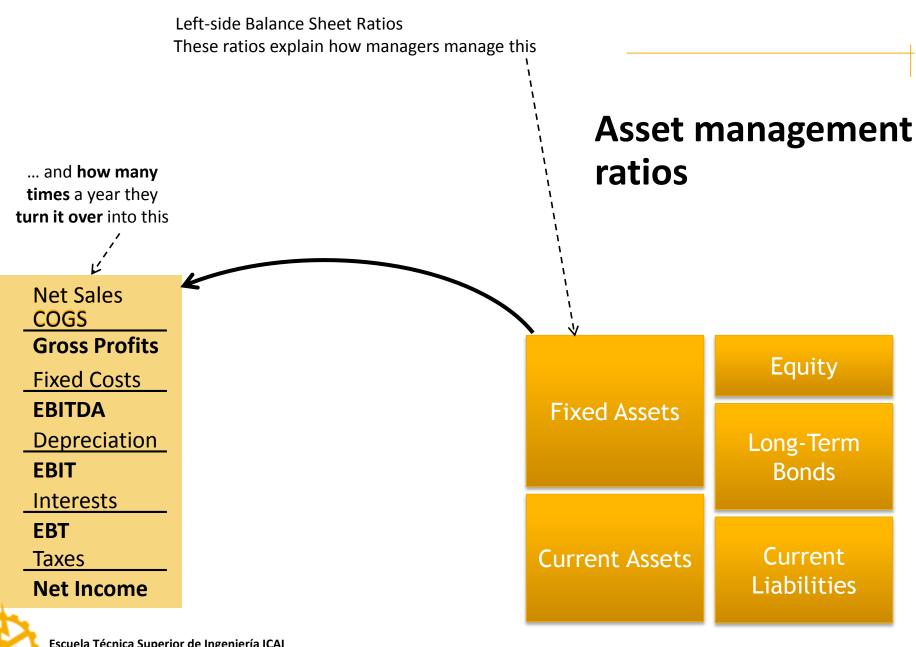
Long-Term
Bonds

Receivables

Cash

Current Liabilities





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Inventory Turnover =
$$\frac{\text{COGS}}{\text{Inventories}}$$

Payables Turnover =
$$\frac{\text{COGS}}{\text{Payables}}$$

Receivables Turnover =
$$\frac{\text{Sales}}{\text{Receivables}}$$

$$Fixed Assets Turnover = \frac{Sales}{Net Fixed Assets}$$

Asset management ratios

 $Total \ Assets \ Turnover = \frac{Sales}{Total \ Assets}$

Net Sales COGS

Gross Profits

Fixed Costs

EBITDA

Depreciation

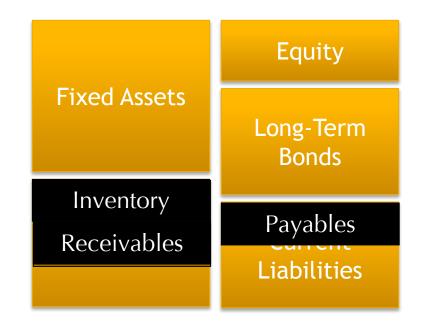
EBIT

Interests

EBT

Taxes

Net Income



Days of Sales Outstanding =
$$\frac{\text{Receivables}}{\text{Annual Sales/}_{365}}$$
Days of Sales in Inventories =
$$\frac{\text{Inventory}}{\text{Annual COGS/}_{365}}$$
Days' costs in Payables =
$$\frac{\text{Payables}}{\text{Annual COGS/}_{365}}$$

Days' costs in Payables =
$$\frac{\text{Payables}}{\text{Annual COGS}/365}$$

Days to Pay Accruals =
$$\frac{\text{Accruals}}{\text{Annual Fixed Costs}/365}$$

Asset management ratios

Net Sales COGS

Gross Profits

Fixed Costs

EBITDA

Depreciation

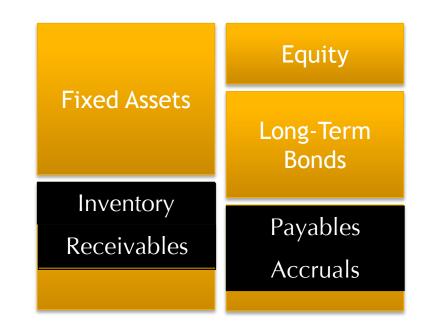
EBIT

Interests

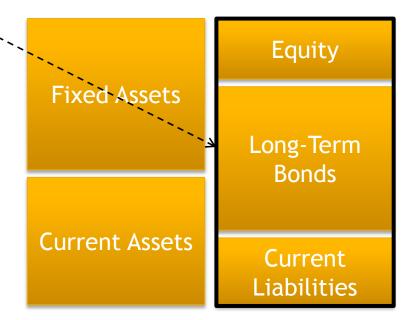
EBT

Taxes

Net Income



Right-side Balance Sheet Ratios These ratios explain how managers manage this

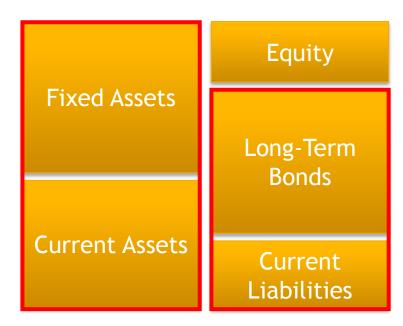




$$Total \ Debt \ Ratio = \frac{Total \ Assets - Equity}{Total \ Assets} = \frac{Total \ Liabilities}{Total \ Assets}$$

Total Debt or Leverage Ratio

...famous 70%-30% or 60%-40%

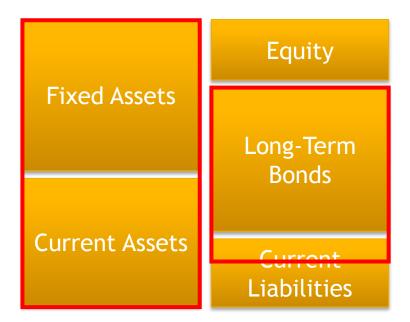




$$Credit Ratio = \frac{Long term Debt + Short term Debt}{Total Assets}$$

Credit Ratio

...famous 70%-30% or 60%-40%





Equity Multiplier =
$$\frac{\text{Total Assets}}{\text{Equity}}$$

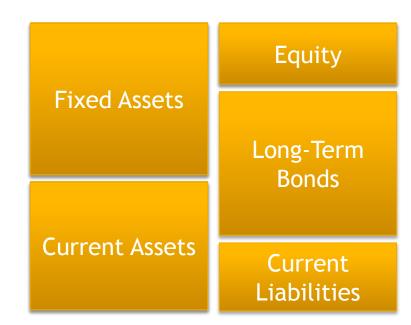
Capital Intensity =
$$\frac{\text{Equity}}{\text{Total Assets}}$$

If the Multiplier increases, it means that the Equity becomes smaller when compared to Total Assets...

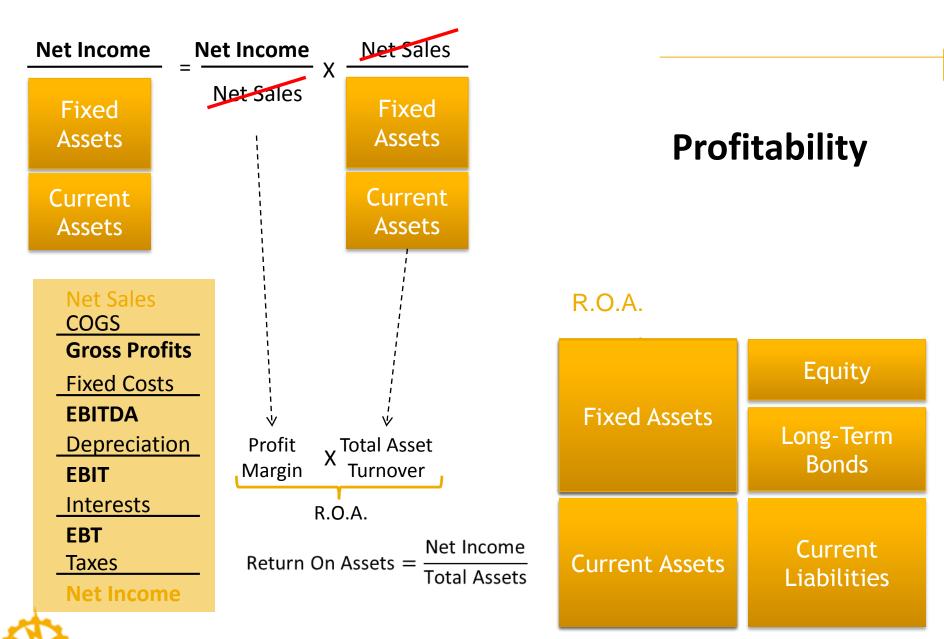
...which means that Debt is bigger...

...therefore, this ratio is similar to Leverage Ratio (Total Debt Ratio)

Equity Multiplier

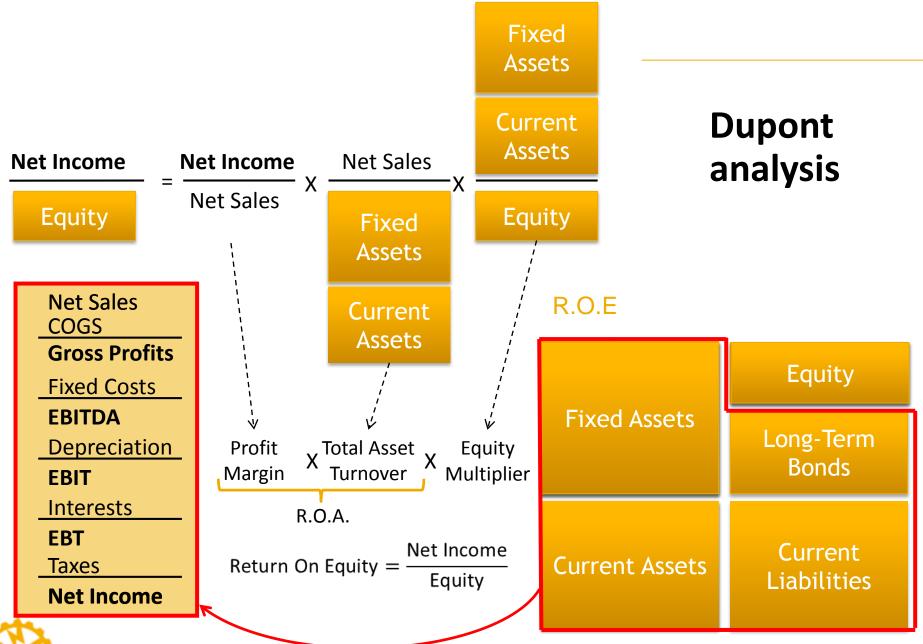






Using the Dupont identity

- ROE = PM * TAT * EM
 - Profit margin
 - Measures firm's operating efficiency
 - How well does it control costs
 - Total asset turnover
 - Measures the firm's asset use efficiency
 - How well does it manage its assets
 - Equity multiplier
 - Measures the firm's financial leverage
 - EM = TA / TE = 1 + D/E ratio



Market Value The **book value** of a company is the Equity Value in the Balance Sheet

...but the book value is the COST value of assets (under GAAP), and therefore, it does not record the increase in value over time (e.g. trade-mark)...

...so the REAL value in the market is usually higher

Market-to-Book Ratio

Market value

Equity

Fixed Assets

Current Assets

Equity

Long-Term
Bonds

Current
Liabilities



The **Enterprise Value** is the total value for both, shareholders and bondholders

The **EBITDA** ratio establishes the relationship

in thousand ('000)

 Net Sales
 25.300

 COGS
 3.795

 Gross Profits
 21.505

Fixed Costs 18.600

EBITDA 2.905

Depreciation 1.246 **EBIT** 1.659

Interests 1.088

EBT 571

Taxes 171

Net Income 400

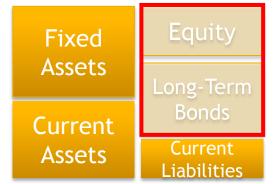
EBITDA Ratio

between Value and Performance

Long-Term Bonds

Market value

Market Value



EBITDA

The **Equity Value** is the total value for shareholders

in thousand ('000)

Gross Profits	21.505
COGS	3.795
Net Sales	25.300
	25 200

EBITDA	2.905
Fixed Costs	18.600
Gross Profits	21.505

FRII	1.659

interests	1.088
EBT	571

Taxes	171

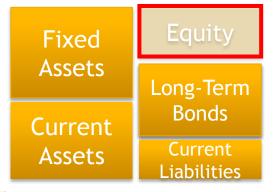
Net Income	400
netincome	400

The	Price-Earnings	ratio	also	establishes	the
relati	onship between	Value a	and Pe	rformance	

This ratio is usually calculated per-share first (divided by the number of shares outstanding)

Price-Earnings Ratio

Market value





The **Equity Value** is the total value for shareholders

in thousand ('000)

Net Sales	25.300
COGS	3.795
	04 -0-
Gross Profits	21.505

Fixed Costs 18.600 EBITDA 2.905

Depreciation	1.246
FRIT	1 659

Interests	1.088

EBT		5	71

Taxes	171

Net Income	400
------------	-----

Fixed Assets

Current Assets

Current Liabilities

The **Price-sales ratio** also establishes the relationship between Value and Performance

This ratio is usually calculated per-share first (divided by the number of shares outstanding)

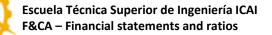
Price-Sales Ratio



Market value

Market Value





ANNEX



Dole Cola Example

DOLE COLA				
2014 Income Statement				
Net sales			\$	600
Cost of goods sold			\$	300
Depreciation			\$	150
EBIT			\$	150
Interest paid			\$	30
Taxable income			\$	120
Taxes			\$	41
Net income			\$	79
Dividends	\$	30		
Addtion to retained earnings	\$	49		

Dole Cola Operating Cash Flow

DOLE COL	Α			
2014 Income Statement				
Net sales			\$	600
Cost of goods sold			\$	300
Depreciation			\$	150
EBIT			\$	150
Interest paid			\$	30
Taxable income			\$	120
Taxes			\$	41
Net income			\$	79
Dividends	\$	30		
Addtion to retained earnings	\$	49		

DOLE COLA			
2014 Operating Cash Flow			
EBIT		\$	150
+ Depreciation		\$	150
- Taxes		\$	41
		\$	259



Dole Cola Net Capital Spending & Change in Net Working Capital

DOLE COLA		
2014 Net Capital Spend	ling	
Ending Net Fixed Assets	\$	750
- Beginning Net Fixed Assets	\$	500
+ Depreciation	\$	150
	\$	400

DOLE COLA		
2014 Change in Net Worl	king Capital	
2014 Current Assets	\$2,260.0	
2014 Current Liabilities	\$1,710.0	
2014 Net Working Capital		\$ 550
2013 Current Assets	\$2,130.0	
2013 Current Liabilities	\$1,620.0	
2013 Net Working Capital		\$ 510
Escuela Técnica Sup Charngeiein Wet Working Capital	May the McGray Hill	\$ 40 ₄



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Dole Cola Cash Flow from Assets

DOLE COLA	·	
2014 Cash Flow from Asse	ets	
Operating Cash Flow	\$	259
- Net Capital Spending	\$	400
- Change in Net Working Capital	\$	40
	\$	(181)





Dole Cola CFFA – Option 2

DOLE COL	4			
2014 Income Statement				
Net sales			\$	600
Cost of goods sold			\$	300
Depreciation			\$	150
EBIT			\$	150
Interest paid			\$	30
Taxable income			\$	120
Taxes			\$	41
Net income			\$	79
Dividends	\$	30		
Addtion to retained earnings	\$	49		

DOLE COLA	
2014 Cash Flow from Assets	
Operating Cash Flow	\$ 259
- Net Capital Spending	\$ 400
- Change in Net Working Capital	\$ 40
	\$ (181)



Dole Cola Cash Flow to Stockholders & Creditors

DOLE COLA	\		
2014 Cash Flow to C	redito	ors	
Cash Flow from Assets	\$	(181	
= CF to stockholders	\$	30	
+ CF to creditors	•	???	
DOLE COLA	\		
2014 Cash Flow to C	redito	ors	
Interest Paid			
- Net New Borrowing		???	



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Dole Cola Cash Flow to Creditors

DOLE COLA		·		
2014 Cash Flow to Creditors				
Interest Paid		\$	30	
- Net New Borrowing	???	\$	(241)	
		\$	(211)	



