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CIHS

Financial Statements and ratios

Finance and Cost Analysis

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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.

Outline

Financial statements

- Balance sheet
- Income statement
- Statement of cash flow

Ratios

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



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.

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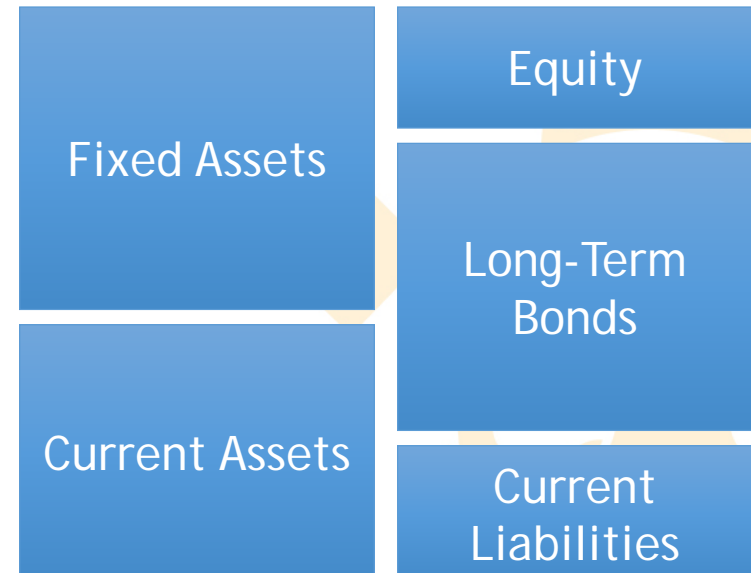
Profitability

Dupont analysis

Market value

in thousand ('000)

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



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Net working capital

Current Assets minus Current Liabilities (Usually positive for a healthy firm)

Liquidity

Speed and ease of conversion to cash without significant loss of value (avoids financial distress)

Debt versus Equity

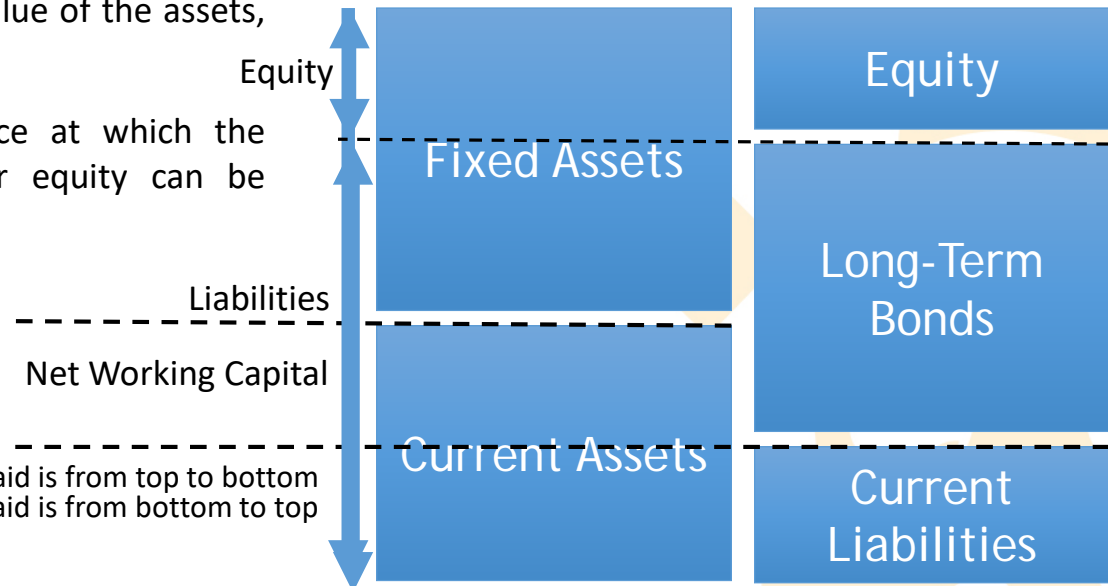
Shareholders' equity = Assets – Liabilities

Book value

the balance sheet value of the assets, liabilities, and equity

Market value

true value; the price at which the assets, liabilities, or equity can be bought or sold



Spanish PGC: increasing liquidity and when due to be paid is from top to bottom
GAAP: increasing liquidity and when due to be paid is from bottom to top

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

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Income Statement Equation: Net Income = Revenue - Expenses

Report revenues first and then deduct any expenses for the period

Top Line -- **Revenues**

Depreciation is one of the special accounts that will not require cash



Expenses

End result = **Net Income** Dividends paid to shareholders
= “Bottom Line” Addition to retained earnings

Bottom Line -- **difference between revenues and expenses**

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

Less: Preferred stock dividends

Net income available to common stockholders

Operating
Income

Financing and
tax
considerations

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Marginal vs. Average tax rates

Tax Liability on \$4,000,000

Corporate Tax Rates					
Taxable Income Levels		Tax Rate	Taxable Income	Tax 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)

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Operating Income

Financing and tax considerations

Two kinds of cash flows:

Financial Cash Flow: free cash for shareholders + bondholders

Accounting Cash Flow (Statement of Cash Flow): Cash for the company

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

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✓ 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.



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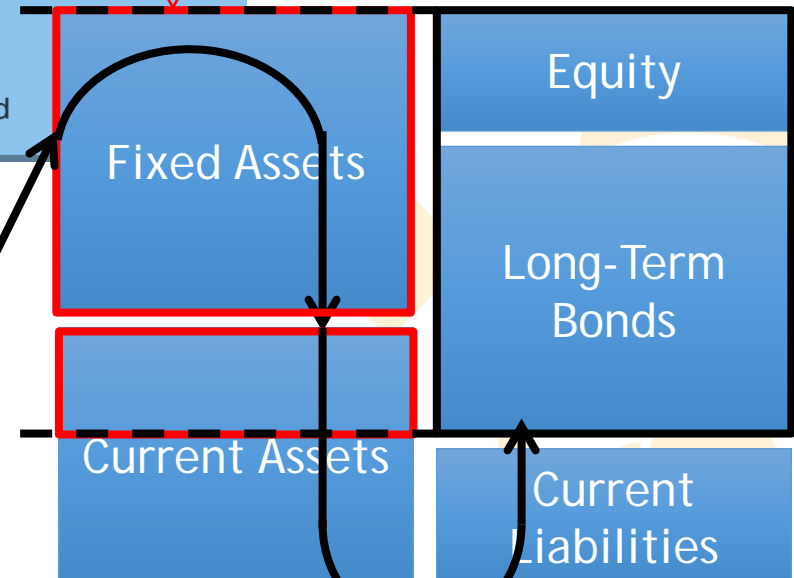
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EBT	571
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Net Income	400

EBIT + Depreciation - Taxes

We pay these guys later



Two kinds of cash flows:

Financial Cash Flow: free cash for shareholders + bondholders

Accounting Cash Flow (Statement of Cash Flow): Cash for the company

Statement of Cash Flows

Periods 2015

1. Cash Flows from operating activities

Net income	400
Depreciation	1.246
Net cash flow from P&L	1.646

Increase in inventory	-92
Increase in receivable	-108
Increase in payable	199
Increase in Accrual	75

Net cash flow from operating 1.719

2. Cash Flow form investing at -12.300

3. Cash flow from financing activities

Increase in stock	1.000
Dividends	0
Increase in debt/payable	9.833

Net cash flow from financing 10.833

Net change in cash 253

Cash in the beginning	450
Net change in cash	253
Cash at the end	703

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The **Statement of Cash Flows** does not add new information. In fact, it **can be obtained out of the Balance Sheet**. It just reorders assets and liabilities to explain the flows of cash.

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

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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

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

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Liquidity ratios or Short-term solvency: Relationship between firm's liquid (current) assets and current liabilities

Financial leverage ratios or Long-term solvency ratios: Measure how much debt (financial leverage) versus equity a firm uses to finance assets

Asset management 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

Ratios

Liquidity

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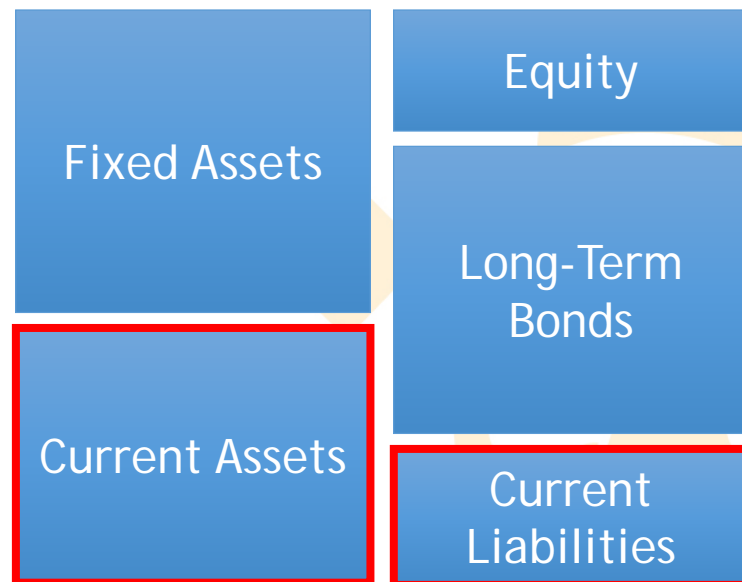
There are only two ways of dying for a company:

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

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

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

The Current Ratio



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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)

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

...again, we compare it to 1

Quick or Acid Test

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

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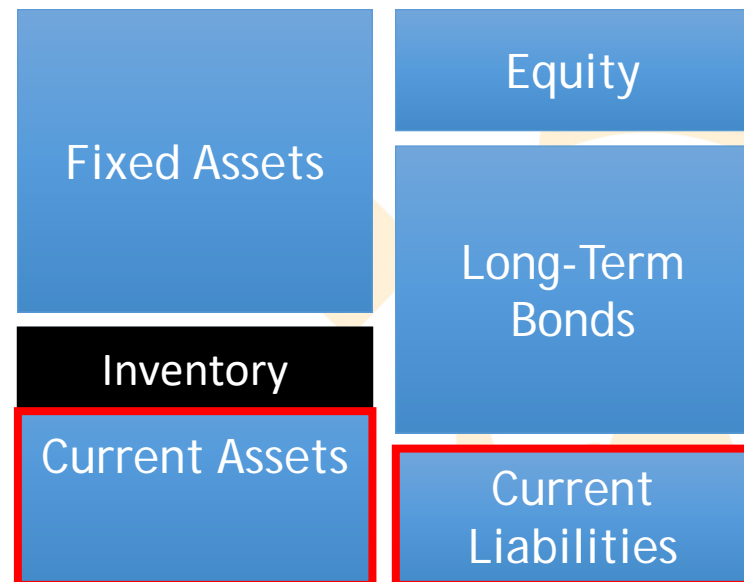
Asset management

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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)

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

...again, we compare it to 1

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

This situation would be
AWESOME

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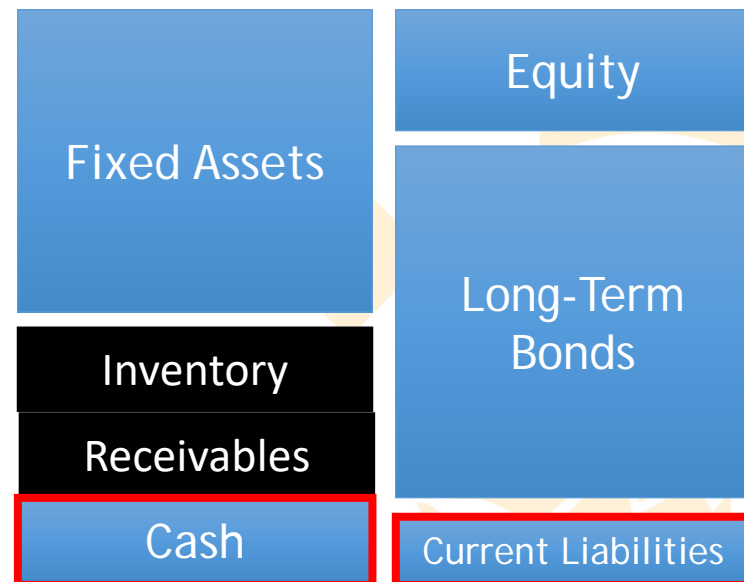
Debt management

Profitability

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Market value

Cash Ratio



Left-side Balance Sheet Ratios

These ratios explain how managers manage this

... and **how many times** a year they **turn it over** into this

Net Sales
<u>COGS</u>
Gross Profits
<u>Fixed Costs</u>
EBITDA
<u>Depreciation</u>
EBIT
<u>Interests</u>
EBT
<u>Taxes</u>
Net Income

Fixed Assets	Equity
Current Assets	Long-Term Bonds
	Current Liabilities

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

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

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

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

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

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Net Sales

COGS

Gross Profits

Fixed Costs

EBITDA

Depreciation

EBIT

Interests

EBT

Taxes

Net Income

Fixed Assets

Inventory

Receivables

Equity

Long-Term
Bonds

Payables

Current
Liabilities

$$\text{Days of Sales Outstanding} = \frac{\text{Receivables}}{\text{Annual Sales} / 365}$$

$$\text{Days of Sales in Inventories} = \frac{\text{Inventory}}{\text{Annual COGS} / 365}$$

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

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

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COGS

Gross Profits

Fixed Costs

EBITDA

Depreciation

EBIT

Interests

EBT

Taxes

Net Income

Fixed Assets

Inventory

Receivables

Equity

Long-Term
Bonds

Payables

Accruals

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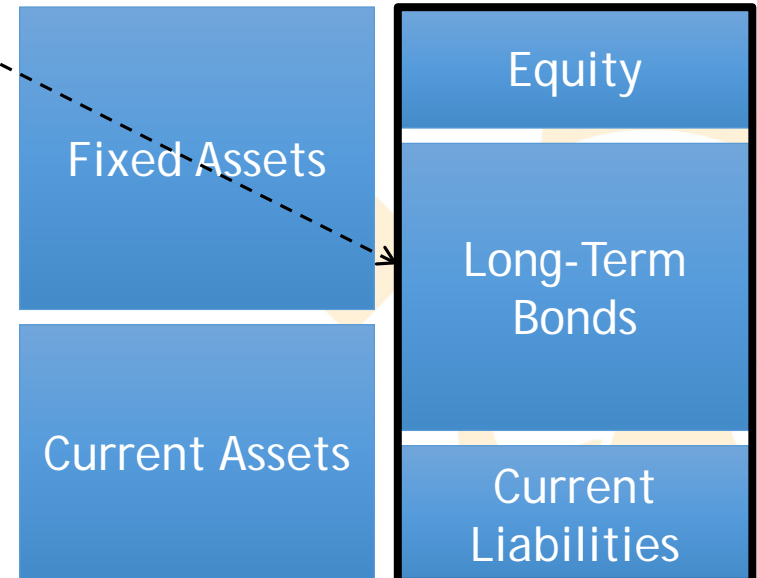
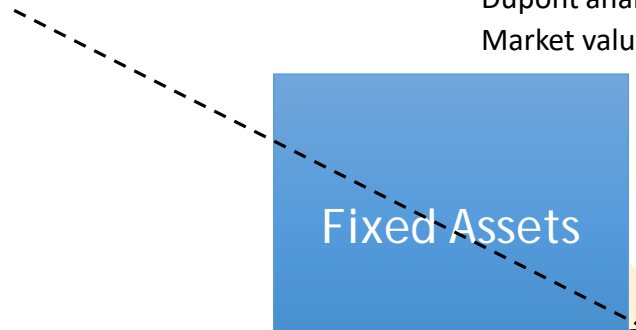
Profitability

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Right-side Balance Sheet Ratios

These ratios explain how managers manage this



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

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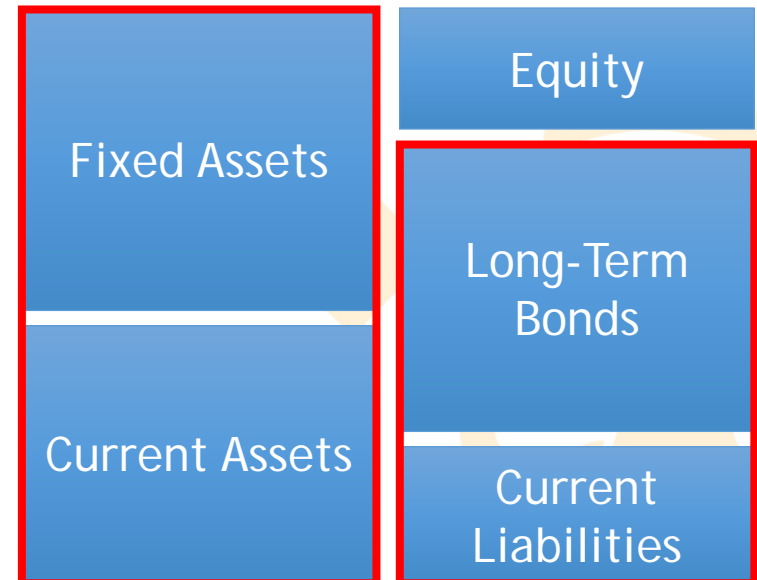
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Total Debt or Leverage Ratio

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



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

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

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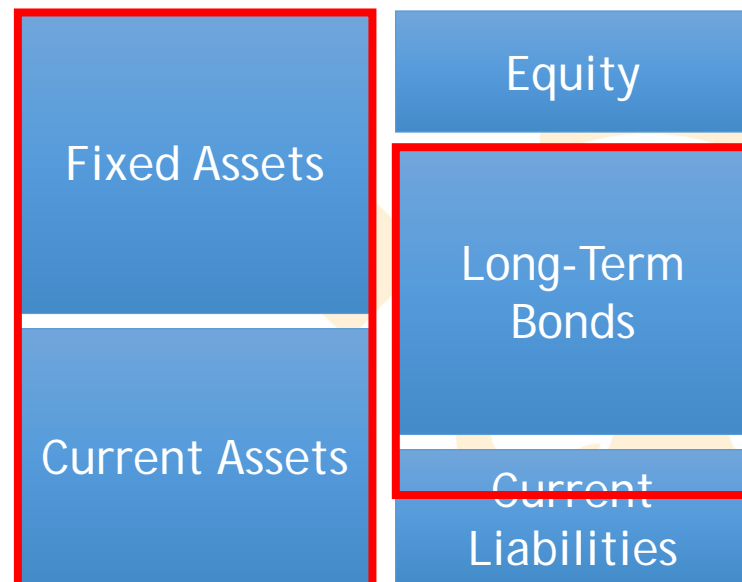
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Credit Ratio



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

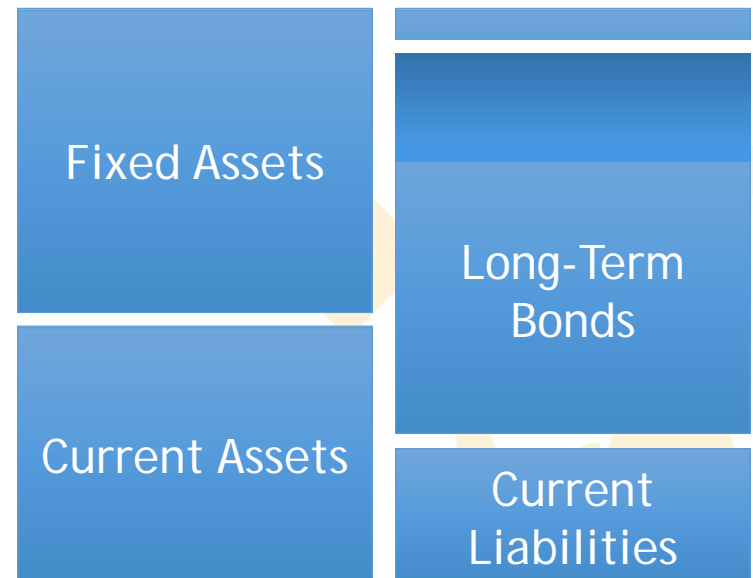
If the Multiplier increases, it means that the Equity becomes smaller when compared to Total Assets...

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

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

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

Equity Multiplier



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Times Interests Earned

The bigger, the better
for the banks

$$\text{Times Interests Earned} = \frac{\text{EBIT}}{\text{Interests}}$$

Net Sales

COGS

Gross Profits

Fixed Costs

EBITDA

Depreciation

EBIT

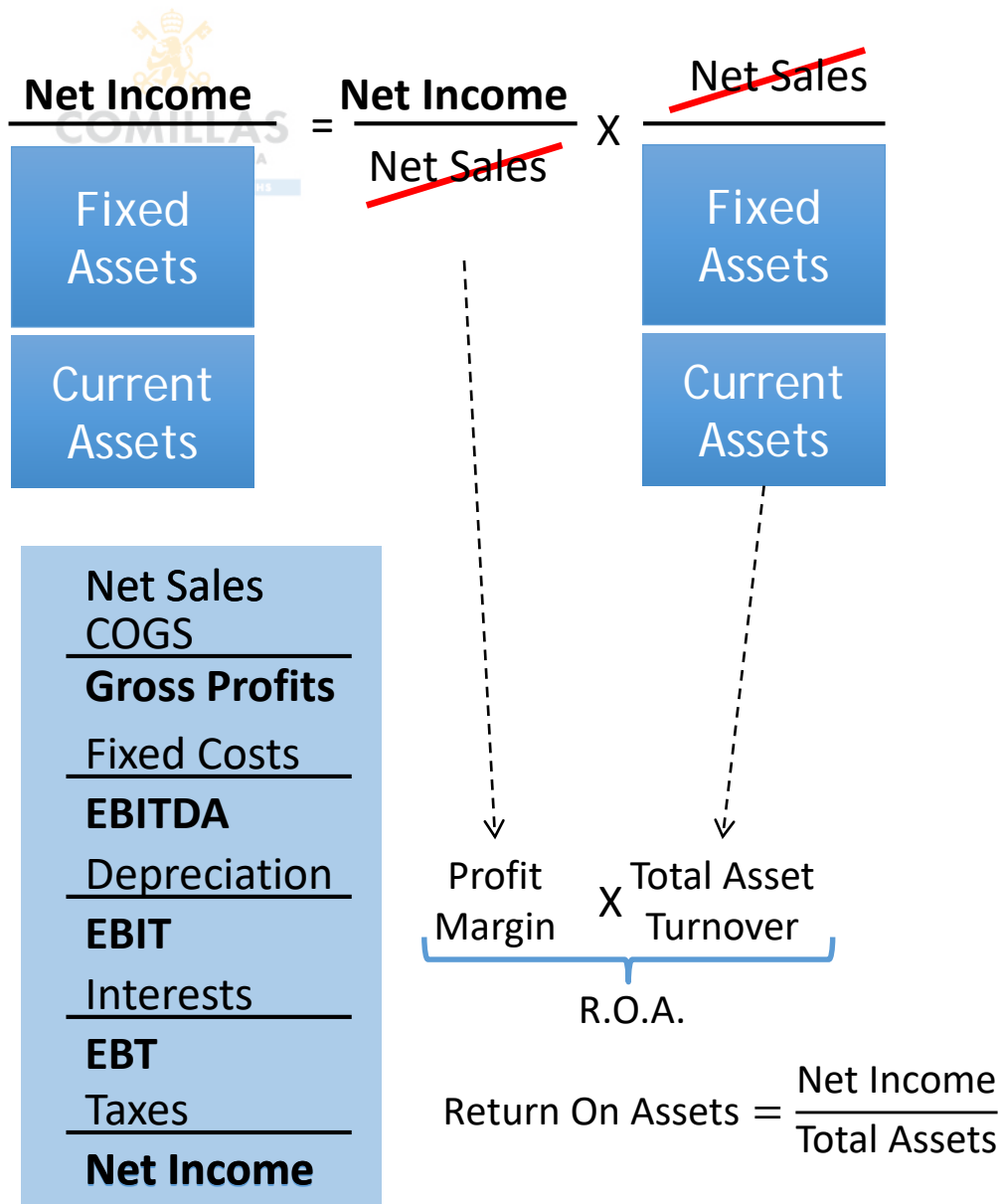
Interests

EBT

Taxes

Net Income





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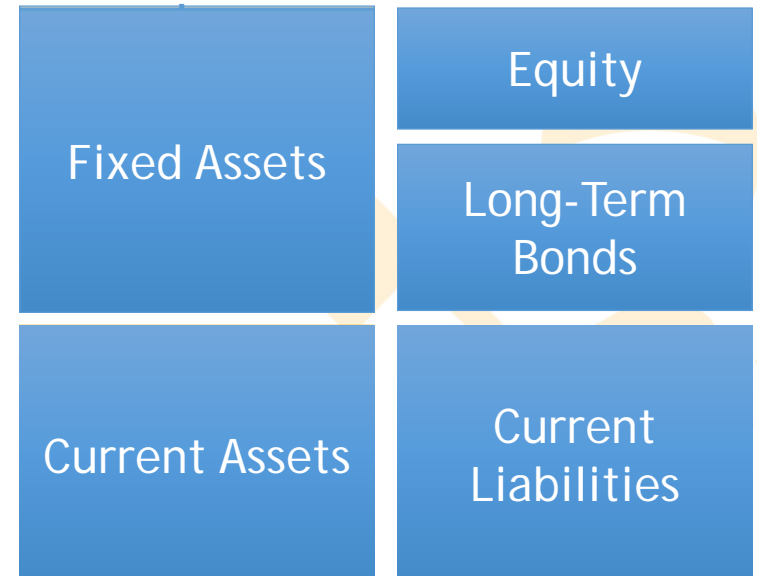
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R.O.A.



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Net Income

Net Income

Net Sales

Fixed Assets

Current Assets

Equity

Net Sales

Fixed Assets

Current Assets

Equity

Net Sales

COGS

Gross Profits

Fixed Costs

EBITDA

Depreciation

EBIT

Interests

EBT

Taxes

Net Income

Profit Margin

Total Asset Turnover

Equity Multiplier

R.O.A.

R.O.E

$$\text{Return On Equity} = \frac{\text{Net Income}}{\text{Equity}}$$

Fixed Assets

Equity

Long-Term Bonds

Current Assets

Current Liabilities

Profit margin

- Measures firm's operating efficiency
- How well does it control costs

Net Income

Equity

Net Income

Net Sales

Net Sales

Fixed Assets

Current Assets

Fixed Assets

Current Assets

Equity

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R.O.E

Fixed Assets

Equity

Long-Term Bonds

Current Assets

Current Liabilities

Profit Margin

Total Asset Turnover

Equity Multiplier

R.O.A.

$$\text{Return On Equity} = \frac{\text{Net Income}}{\text{Equity}}$$

Net Sales
COGS

Gross Profits

Fixed Costs

EBITDA

Depreciation

EBIT

Interests

EBT

Taxes

Net Income

Total asset turnover

- Measures the firm's asset use efficiency
- How well does it manage its assets

$$\frac{\text{Net Income}}{\text{Equity}} = \frac{\text{Net Income}}{\text{Net Sales}} \times \frac{\text{Net Sales}}{\frac{\text{Fixed Assets} + \text{Current Assets}}{2}} \times \frac{\text{Fixed Assets} + \text{Current Assets}}{2} \times \frac{2}{\text{Equity}}$$

Net Sales
COGS
Gross Profits
Fixed Costs
EBITDA
Depreciation
EBIT
Interests
EBT
Taxes
Net Income

Profit
Margin

Total Asset
Turnover

Equity
Multiplier

R.O.A.

$$\text{Return On Equity} = \frac{\text{Net Income}}{\text{Equity}}$$

Fixed
Assets

Current
Assets

Equity

R.O.E

Fixed Assets

Equity

Long-Term
Bonds

Current Assets

Current
Liabilities

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Equity multiplier

- Measures the firm's financial leverage
- $EM = TA/E = 1 + D/E$ ratio

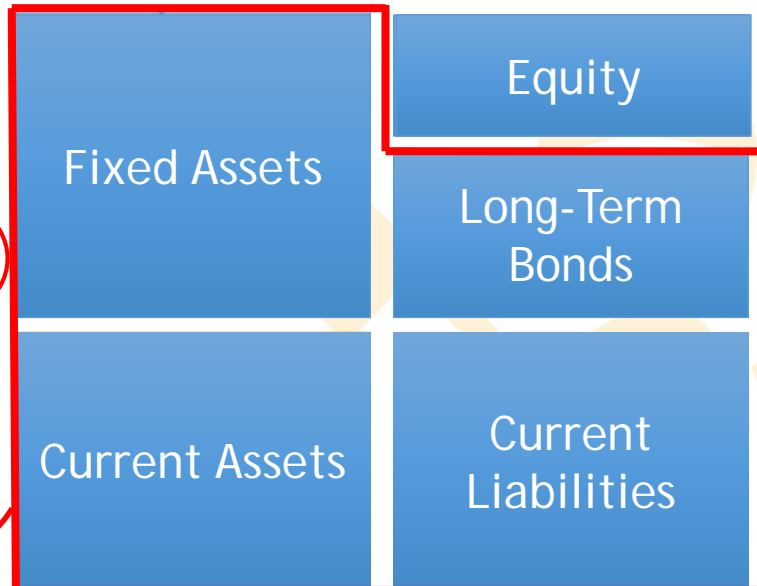
$$\frac{\text{Net Income}}{\text{Equity}} = \frac{\text{Net Income}}{\text{Net Sales}} \times \frac{\text{Net Sales}}{\frac{\text{Fixed Assets} + \text{Current Assets}}{\text{Equity}}} \times \frac{\text{Fixed Assets} + \text{Current Assets}}{\text{Equity}}$$

Net Sales
COGS
Gross Profits
Fixed Costs
EBITDA
Depreciation
EBIT
Interests
EBT
Taxes
Net Income

$$\underbrace{\text{Profit Margin} \times \text{Total Asset Turnover}}_{\text{R.O.A.}} \times \text{Equity Multiplier}$$

$$\text{Return On Equity} = \frac{\text{Net Income}}{\text{Equity}}$$

R.O.E



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Market
Value

Equity

Fixed
Assets

Current
Assets

Equity

Long-Term
Bonds

Current
Liabilities

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

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

The **EBITDA ratio** establishes the relationship between Value and Performance

EBITDA Ratio

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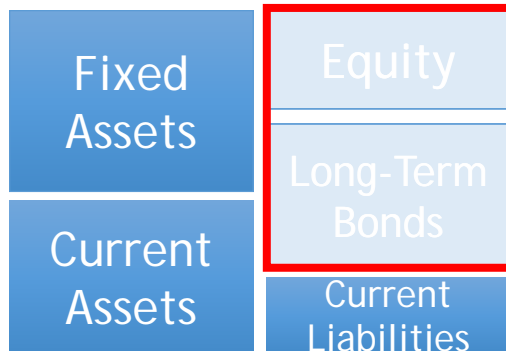
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The **Equity Value** is the total value for shareholders

The **Price-Earnings 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-Earnings Ratio

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Liquidity

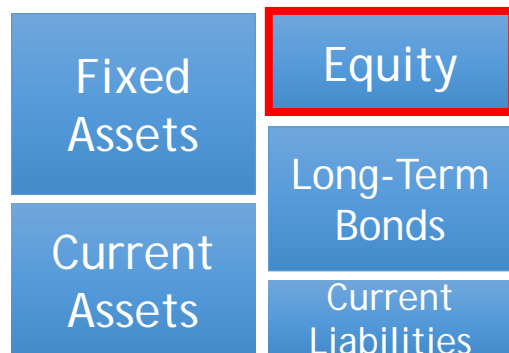
Asset management

Debt management

Profitability

Dupont analysis

Market value



Net Income



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

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

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

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