Enterprise Management and Entrepreneurship

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Financial Management

Lecture 2

Financial statements

- Relationship between financial statements

Balance Sheet

1.000	BANK DEPOSITS	EQUITY	1.000

EQUILIBRIUM

INCOME STATEMENT

CASH-FLOW STATEMENT

Money received
Initial equity 1.000

BANK DEPOSITS 1.000

- **Assets** and **Revenues**
- **Equity**
- **Liabilities and costs**

1. Firm is created with 1000€ capital

Financial statements

- Relationship between financial statements

Balance Sheet

5.000	EQUIPMENT AND REAL ESTATE	EQUITY	1.000
500	BANK DEPOSITS	DEBT	4.500

EQUILIBRIUM

INCOME STATEMENT

CASH-FLOW STATEMENT

Money received

<u>Initial equity</u> 1.000

<u>Bank debt</u> **4.500**

Money paid

<u>Equipment and real estate</u> **5.000**

<u>BANK DEPOSITS</u> **500**

Assets and **Revenues**

Equity

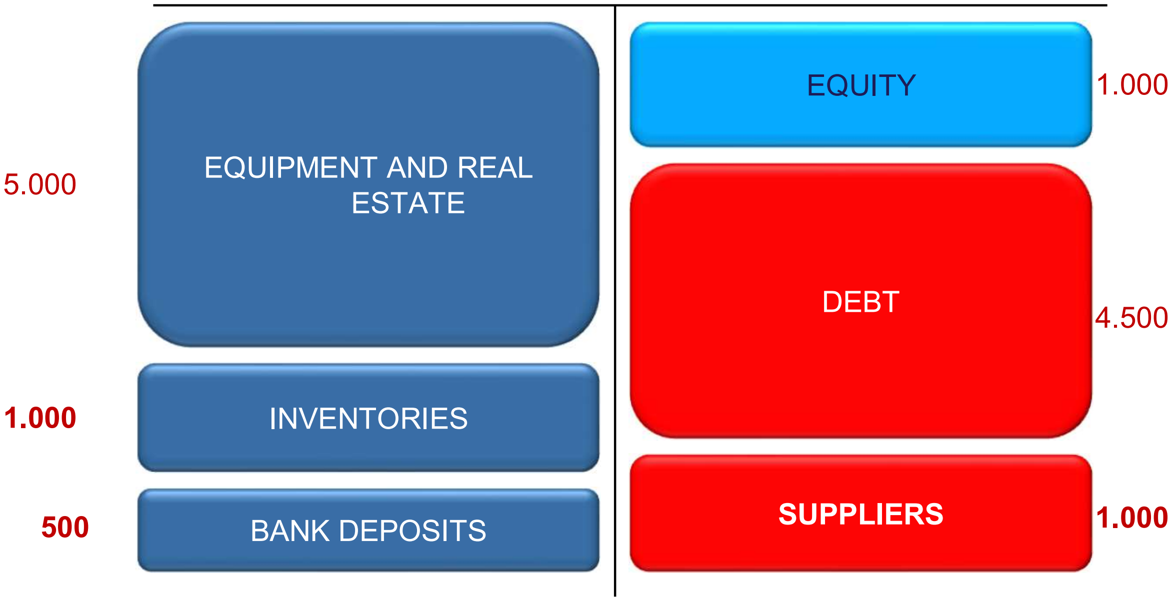
Liabilities and costs

2. Initial investment: equipment and real estate acquisition with higher value than the initial equity 5000€, It is paid 4500€ bank loan and 500€ in cash.

Financial statements

- Relationship between financial statements

Balance Sheet



EQUILIBRIUM

INCOME STATEMENT

CASH-FLOW STATEMENT

Money received
Initial equity 1.000
Bank debt 4.500

Money paid
Equipment and real estate 5.000

BANK DEPOSITS 500

Assets and **Revenues**

Equity

Liabilities and costs

3. Inventories acquisition with credit from supplier 1000€

Financial statements

- Relationship between financial statements

Balance Sheet

5.000	EQUIPMENT AND REAL ESTATE	EQUITY + NET INCOME	600
		DEBT	4.500
1.000	STOCKS	SUPPLIERS	1.000
100	BANK DEPOSITS		

EQUILIBRIUM

INCOME STATEMENT

SERVICES	**200**
LABOUR COSTS	**200**
NET INCOME	**(400)**

CASH-FLOW STATEMENT

Money received
Initial equity 1.000
Bank debt 4.500

Money paid
Equipment and real estate 5.000
Adm. and general expenses **400**

BANK DEPOSITS **100**

Assets and Revenues

Equity

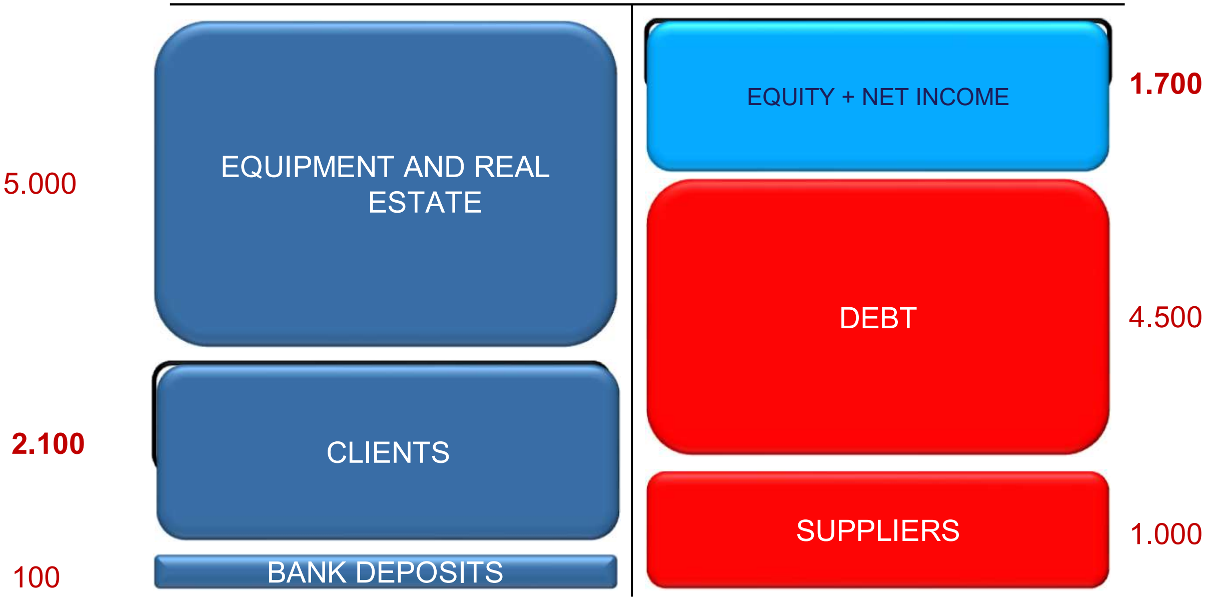
Liabilities and costs

4. Payment of salaries, electricity, water, insurance and other costs 200+200€ through bank account.

Financial statements

- Relationship between financial statements

Balance Sheet



EQUILIBRIUM

INCOME STATEMENT

SALES (REVENUES)	**2.100**
COST OF GOODS SOLD	**1.000**
SERVICES	200
LABOUR COSTS	200
NET INCOME	**700**

CASH-FLOW STATEMENT

Money received	
Initial equity	1.000
Bank debt	4.500
Money paid	
Equipment and real estate	5.000
Adm. and general expenses	400

BANK DEPOSITS **100**

Assets and **Revenues**

Equity

Liabilities and costs

5. The total amount of inventories (1000€) are sold for 2100€. Client does not pay with the sale.

Financial statements

- Relationship between financial statements

Balance Sheet

5.000	EQUIPMENT AND REAL ESTATE	EQUITY + NET INCOME	**1.700**
		DEBT	4.500
2.200	BANK DEPOSITS	SUPPLIERS	1.000

EQUILIBRIUM

INCOME STATEMENT

SALES (REVENUES)	2.100
COST OF GOODS SOLD	1.000
~~SERVICES~~	200
~~LABOUR COSTS~~	200
NET INCOME	**700**

CASH-FLOW STATEMENT

Money received	
Initial equity	1.000
Bank debt	4.500
Payment from clients	**2.100**
Money paid	
Equipment and real estate	5.000
Adm. and general expenses	400

BANK DEPOSITS **2.200**

Assets and **Revenues**

Equity

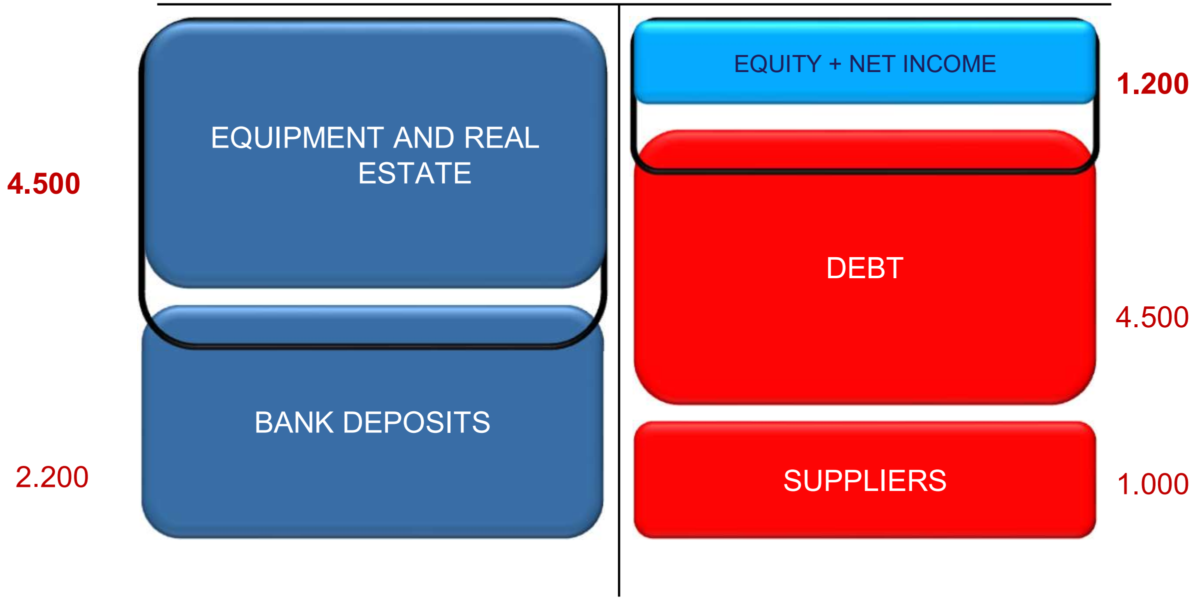
Liabilities and costs

6. Payment from client 2100€

Financial statements

- Relationship between financial statements

Balance Sheet



EQUILIBRIUM

INCOME STATEMENT

SALES (REVENUES)	2.100
COST OF GOODS SOLD	1.000
SERVICES	200
LABOUR COSTS	200
AMORTIZATIONS AND DEPRECIATIONS	**500**
NET INCOME	**200**

CASH-FLOW STATEMENT

Money received	
Initial equity	1.000
Bank debt	4.500
Payment from clients	2.100
Money paid	
Equipment and real estate	5.000
Adm. and general expenses	400

BANK DEPOSITS **2.200**

Assets and **Revenues**

Equity

Liabilities and costs

7. Equipment depreciation and amortization 500€

Financial statements

- Relationship between financial statements

Balance Sheet

4.500	EQUIPMENT AND REAL ESTATE	EQUITY + NET INCOME	**1.000**
		DEBT	**4.400**
1.900	BANK DEPOSITS	SUPPLIERS	1.000

EQUILIBRIUM

INCOME STATEMENT

SALES (REVENUES)	2.100
COST OF GOODS SOLD	1.000
SERVICES	200
LABOUR COSTS	200
AMORTIZATIONS AND DEPRECIATIONS	500
INTERESTS	**200**
NET INCOME	**0**

CASH-FLOW STATEMENT

Money received	
Initial equity	1.000
Bank debt	4.500
Payment from clients	2.100
Money paid	
Equipment and real estate	5.000
Adm. and general expenses	400
Bank repayment	**300**
BANK DEPOSITS	**1.900**

Assets and **Revenues**

Equity

Liabilities and costs

8. Partial payment to the bank (debt 100€ + interest 200€)

Financial statements

- Relationship between financial statements

Balance Sheet

Assets		Liabilities	
4.500	EQUIPMENT AND REAL ESTATE	EQUITY + NET INCOME	1.000
900	BANK DEPOSITS	DEBT	4.400

EQUILIBRIUM

INCOME STATEMENT

SALES (REVENUES)	2.100
COST OF GOODS SOLD	1.000
SERVICES	200
LABOUR COSTS	200
AMORTIZATIONS AND DEPRECIATIONS	500
INTERESTS	200
NET INCOME	0

CASH-FLOW STATEMENT

Money received	
Initial equity	1.000
Bank debt	4.500
Payment from clients	2.100
Money paid	
Equipment and real estate	5.000
Adm. and general expenses	400
Bank repayment	300
Payment to supplier	**1.000**
BANK DEPOSITS	**900**

Assets and **Revenues**

Equity

Liabilities and costs

9. Payment to supplier 1000€

Exercise 3

Basic concepts of financial analysis

Financial analysis

- Study of organization’s overall financial performance:

- **Objective**: Assessment of the economic and financial evolution of the organization and its ability to generate profits and pay its liabilities.

Financial analysis

1. Understand the organization, its macro and industry context
2. Systematize the information for the financial analysis
3. Financial analysis
   - Analysis of structure and evolution of income statement, balance sheet and cash-flow statement
   - Analysis of profitability
   - Analysis of efficiency / investment utilization
   - Financial stability
   - Liquidity

Financial analysis

1. Understand the macro and industry context

   - Macro environment →
     - Trends that can influence organization's performance
       - GDP growth rate
       - Employment rate;
       - inflation;
       - Consumption rate;
       - ...
     - International trends;

   - The industry environment → organization's position and evolution:
     - Industry evolution
     - Organization's position in the industry

Financial analysis

2. Systematize the information

   – Economic component
     • Capability to generate profits, operational capability of the organization – income statement

   – Financial component
     • Capability to respond to pay its liabilities – liquidity and financial stability – balance sheet and cash-flow statement

Financial analysis

3. Structural, evolution and ratio analysis

- Analysis of structure and evolution of income statement, balance sheet and cash-flow statement
- Analysis of profitability
- Analysis of efficiency / investment utilization
- Liquidity
- Financial stability

Analysis of structure and evolution of income statement

- Analyze the evolution of the revenue and cost structure
- Compare the revenue and cost structure with the industry

Home Improvement company example – Income statement 2011

	2011	2010	2009
Net sales	**$48.815**	**$47.220**	**$48.230**
Cost of goods sold	31.663	30.757	31.729
Gross Margin	**17.152**	**16.463**	**16.501**
Expenses			
Selling, general and admin	**12.006**	**11.737**	**11.176**
Depreciation	1.586	1.614	1.539
Interest	332	287	280
Total Expenses	13.924	13.638	12.995
Pre-tax income	3.228	2.825	3.506
Income tax	1.218	1.042	1.311
Net income	2.010	1.783	2.195

Balance sheet December 31st 2011

Assets	2011	2010	2009
Current assets			
Cash	652	632	245
Short-term investments	471	425	416
Inventory	**8.321**	**8.249**	**8.209**
Total current assets	9.967	9.732	9.190
Property	**22.089**	**22.499**	**22.722**
Long-term investments	**1.008**	**277**	**253**
Other assets	635	497	460
Total assets	33.699	33.005	32.625

Balance sheet December 31st 2011

Liabilities and shareholders'equity	2011	2010	2009
Current liabilities			
(Current portion of) Long-term debt	36	552	34
Short-term borrowings			987
Accounts payable	**4.351**	**4.287**	**4.109**
Accrued compensation and benefits	667	577	434
Deferred revenue	707	683	674
Other current liabilities	1.358	1.256	1.322
Total current liabilities	7.119	7.355	7.560
Long-term debt	**6.537**	**4.528**	**5.039**
Other liabilities	1.931	2.053	1.971
Total liabilities	15.587	13.936	14.570
Shareholders' equity	18.112	19.069	18.055
Total liabilities and shareholders' equity	33.699	33.005	32.625

Cash-flow statement 2011

Operations	2011	2010
Net income	**2.010**	**1783**
Depreciation and amortization	**1.586**	**1.614**
Var. Short-term investments	(46)	(9)
Var. Inventory	(72)	(40)
Var. Other current assets	(97)	(106)
Var. Accounts payable	64	178
Var. Accrued compensation and benefits	90	143
Var. Deferred revenue	24	9
Var. other current liabilities	102	(66)
Net cash-flow from operations	**3.661**	**3.506**

Cash-flow statement 2011

Financing	2011	2010
Var. Long-term debt	(516)	518
Var. Short-term borrowings		(987)
Var. Long-term debt	**2.009**	**(511)**
Var. Other liabilities	(122)	82
Var. Common stock	(47)	(277)
Dividends	**(2.946)**	**(525)**
Net Cash-flow from Financing	(1.622)	(1.700)

Cash-flow statement 2011

	2011	2010
Investing		
Net property purchases	**(1.176)**	**(1.391)**
Long-term investments	**(731)**	**(24)**
Other assets	(138)	(37)
Accumulated and other comprehensive income	26	33
Net cash-flow from from investing	**(2.019)**	**(1.419)**
Net cash-flow	**20**	**387**
Opening cash balance	632	245
Ending cash balance	652	632

Selected financial ratios from the industry

	2010
Gross profit to sales	34,8%
Operation expenses to sales	32,6%
Net income to sales	1,0%
Current ratio	3,1
Acid test	0,9
Age of accounts receivable	20 days
Age of inventory	104,6 days
Age of accounts payable	22 days
Inventory turnover	3,5 times
Debt to equity	0,9
Interest coverage	2,8 times
Return on equity	6,8%
Return on assets	3,5%
Total assets turnover	2,2 times

Analysis of structure of income statement (vertical analysis)

Vertical analysis	**2011**	**2010**	**2009**	**Industry**
Sales	100%	100%	100%	
Gross profit to sales	**35,1%**	**34,9%**	**34,2%**	**34,8%**
Operating expenses to sales	27,8%	28,3%	26,4%	**32,6%**
Net income to sales	**4,1%**	**3,8%**	**4,6%**	**1,0%**

Analysis of return

To what extent are the organization's activities, assets profitable? To what extent is the shareholders' equity profitable?

- Return on sales or production
  - Net income / sales
  - EBIT / sales (operational return on sales)
- Return on assets
  - ROA = net income / total assets
  - ROA = EBIT / Total assets (operational return on assets)
- Return on equity (ROE)
  - ROE = net income / equity

EBIT – Earning Before Interest and Taxes (resultado operacional)

Profitability ratios

Profitability ratios	2011	2010	2009	Industry
Return on sales	**4,1%**	**3,8%**	**4,6%**	**1,0%**
Return on assets	**6,0%**	**5,4%**	**6,7%**	**3,5%**
Return on equity	**11,1%**	**9,4%**	**12,2%**	**6,8%**

Measuring efficiency

To what extent is the organization managing its resources in an efficient way?

- Asset turnover
  - Asset turnover = sales / total assets
- Average inventory period
  - [Inventory / cost of goods sold]*365
- Average collection period
  - [accounts receivables / sales] *365
- Average payment period
  - [accounts payable / purchases]*365

Efficiency / investment utilization ratios

Efficiency ratios	2011	2010	2009	Industry
Inventory turnover	3,8	3,7	3,9	**3,5**
Fixed asset turnover	2,1	2,0	2,1	
Total asset turnover	1,5	1,4	1,5	**2,2**
Age of inventory	94,6 d	96,6 d	93,1 d	**104,6 d**
Age of accounts payable	49,5 d	50,2 d	46,6 d	**22d**

*the organization sells to final consumers (retailing), so average collection period is 0

Measuring liquidity

To what extent is the organization able to respond to its short-term liabilities

- Current ratio
  - Current assets / current liabilities
- Quick (acid test) ratio
  - [cash+marketable securities+receivables] / current liabilities
    or (current assets – inventory) / current liabilities
- Cash ratio
  - [cash+marketable securities] / current liabilities
    or (current assets – inventory – receivables) / current liabilities
- Working capital = current assets – current liabilities

Liquidity ratios

Liquidity ratios	**2011**	**2010**	**2009**	**Industry**
Current ratio	1,4	1,3	1,2	**3,1**
Quick ratio (acid test)	0,2	0,2	0,1	**0,9**
Working capital *(NFM)*	$2.848	$2.377	$1.630	

NFM – necessidades de fundo de maneio

Measuring financial stability and leverage

To what extent is the organization able to respond to its long-term liabilities?

- Equity to assets ratio
  - Equity / total assets
- Debt to equity
  - Debt / equity
- Coverage of fixed investments
  - [Equity+long-term debt] / fixed assets
- Interest coverage
  - EBIT / interest

Stability ratios

Stability ratios	2011	2010	2009	Industry
Debt to assets	46,3%	42,2%	44,7%	
Equity to assets	53,7%	57,8%	55,3%	
Debt to equity	0,9	0,7	0,8	**0,9**
Interest coverage	10,7	10,8	13,5	

DuPont analysis

$$ROE = \frac{\text{net income}}{\text{equity}} = 11{,}1\% \text{ vs. } 6{,}8\% \text{ (industry)}$$

$$ROE = \underbrace{\frac{\text{net income}}{\text{sales}} * \frac{\text{sales}}{\text{assets}}}_{\text{ROA}} * \frac{\text{assets}}{\text{equity}}$$

	profitability (profit margin)	asset turnover	financial leverage
Company	4,1%	1,5%	1,8
Industry	1,0%	2,2%	1,8

Financial analysis

- Enables the analysis of the organization's financial performance in the past and potential evolution
- Crucial to integrate the financial statements and ration analysis with information about the organization

Financial perspective

- How does the design and implementation of the organization’s strategy contributes to its growth, its profitability, and the organization's value for shareholders?

References

- Brigham, E.F. and Ehrhardt, M.C. (2008), Financial Management – Theory and Practice, Thomson South-Western.
- Borges, A., Rodrigues, A., Rodrigues, R., Rodrigues, J.A. (2021), Elementos de contabilidade geral, Áreas Editora.