Accounting

Johan Boissard

December 15, 2010

1 Introduction

1. Opening of the accounts: balance sheet to accounts (01.01)
2. Recording of transactions
   - Assets and liabilities + equity
   - expenses and revenues
3. Closing: accounts to **balance sheet** and **income statement** (31.12)

1.1 Terminology

- Debit: that which is owed
- Debtor: owes money to somebody (receivables)
- Credit: that which is loaned
- Creditor: somebody whom money is owed (payables)

In the banking system, it is the opposite!

2 Accounts

2.1 Double-entry accounting

For every debit entry, there must be a corresponding credit entry of the same amount

Example of transaction: Equipment to Cash 1000, (means "Purchase of a machine for 1′000 CHF)

debit		**credit**	**amount** [CHF]
Equipment	/	Bank	1000

2.2 Journal and Ledger

The **Journal** is a chronological record of business transactions during a given period.
The **Ledger** contains the individual accounts.

	Position accounts Never set to 0		**Performance accounts** Set to 0 every beginning of year	
	assets actifs	**liabilities** passifs	**expense** charges	**revenues** produits
Def	items belonging to the company	debts of company (+capital)	expenses during year	revenues during year
	debit-credit	credit-debit	debit-credit	credit-debit
	+/-	-/+	+/-	-/+
Increase	debit side	credit side	debit side	credit side
Decrease	credit side	debit side	credit side	debit side
OB	from balance sheet	from balance sheet	0	0
EB	to balance sheet	to balance sheet	to income statement	to income statement
Examples	Cash	Payables	Cost of sale	Sales revenues
	Receivables	Bank Loan	Salary	Interest revenues
	Inventories	**Equity**	Rent	
	Equipment		Energy	
	Land		Maintenance	
	VAT input taxes	VAT output taxes		

Table 1: Summary of the different accounts and their properties

3 Balance sheet and Income sheet

3.1 Balance sheet (Bilan)

The balance sheet is made up of 2 sides: assets & liabilities + equity

3.1.1 Assets

The assets column is organized as follows:

1. current assets
    a) cash and cash equivalents (post, bank accounts)
    b) marketable securities
    c) accounts receivable (debtors)
    d) inventory (stock)
    e) prepayments
2. fixed assets
    a) Equipment, vehicles, furniture, fixtures and fittings
    b) Investment
    c) Land and Building

This should represent the **order of liquidity**.

3.1.2 Liabilities + equity

This column is organized as follows:

1. short-term (or current) Liabilities (less than one year turn-over)
    a) Bank current account
    b) Accounts payable (creditors)
    c) Short-term provision
    d) Accruals
2. long-term (or non-current) liabilities (more than one-year turn-over)
    a) Mortgage
    b) Debenture
    c) Long-term provision
3. equity (capital + shares of company)
    a) Share capital
    b) Reserves
    c) Retained earnings

3.2 The "accounting equation"

$$\text{Total assets} = \text{Total liabilities} + \text{Equity} \tag{1}$$

Amount in left column equals amount on right column.

3.3 Income statement (Compte de résultats)

1. Provides informations on the profit or loss of the company
2. has a balance of 0 at the beginning of the year
3. is a summary of the expenses and revenues accounts at closing
4. The **result** is transferred to the balance sheet

$$\begin{aligned} \text{Gross-profit} &= \text{Sales revenues} - \text{Cost of goods sold} && (2)\\ \text{Operating profit} &= \text{Gross profit} - \text{Operating costs} && (3)\\ \text{Net income} &= \text{Operating profit} \pm \text{Non-operating performance} && (4) \end{aligned}$$

3.4 The accounting cycle

starts with a balance sheet at the beginning of the period and ends with a balance sheet at the end of the period.

4 Merchandising and inventories

Two different ways to record it:

	Perpetual inventory system			**Periodic inventory system**		
		Purchase of 10 items at 2'000 CHF each				
purchase	inventory/	cash	20'000	cost of sale/	cash	20'000
		Sale of 6 items at 3'000 CHF each				
sales	cash/	sales revenue	18'000	cash/	sales revenue	18'000
	cost of sale /	inventory	12'000			
		Physical inventory 4 items at 2000 CHF each				
adjustment				inventory/	cost of sales	8'000

4.1 Variations of cost of sales

4.1.1 FIFO (first in first out)

First that came in (price_0) is the first to go.

4.1.2 LIFO (last in first out)

Last that came in (price_0) is the first to go. (preferred method in Switerland)

4.1.3 Weighted average cost

Average cost of the good bought.

5 Drawing account

6 VAT - Value Added Tax (TVA)

6.1 VAT

VAT is a general consumption tax on goods and services. It covers all goods and services that are not expressly exempted from tax.

6.1.1 Goods and services exempted from tax

1. Postal-services
2. All health care services
3. Educational and training services
4. most sporting and cultural services (theatre, music)
5. Insurance transactions
6. Most bank transactions
7. Changes in ownership of buildings and land (housing)

6.1.2 VAT rates

Standard rate	8.0%	
Reduced rate	2.5%	food, beverage, books, newspapers..
Special rate	3.8%	accommodations (hotels)

6.1.3 Purchase of a good

Example of transaction:

debit		**credit**	**amount** [CHF]
Cost of sales	/		300
Vat input	/		24
	/	Payables	324

6.1.4 Sale of a good

Example of transaction:

debit		**credit**	**amount** [CHF]
Receivables	/		1080
	/	Sales revenues	1000
	/	VAT out	80

6.1.5 Settlement

Example of transaction:

debit		**credit**	**amount** [CHF]
VAT out	/	VAT in	8
VAT out	/	Cash	16

7 Discounts

Example of transaction: Payment of suppliers' invoice 81′000 CHF under deduction of 2%

debit		**credit**	**amount** [CHF]	
Payables	/		81′000	
	/	Bank	79′380	$= 81'000 \cdot 0.98$
	/	Cost of Sales	1′500	$= (81'000 - 79'380) \cdot \frac{100}{108}$
	/	VAT input tax	120	$= (81'000 - 79'380) \cdot \frac{8}{108}$

Example of transaction: debtor settle invoice 54′000 CHF less 2% by paying into bank account

debit		**credit**	**amount** [CHF]	
	/	Receivables	54′000	
Bank	/		52′920	$= 54'000 \cdot 0.98$
Sales revenue	/		1′000	$= (54'000 - 52'920) \cdot \frac{100}{108}$
VAT output tax	/		80	$= (54'000 - 52'920) \cdot \frac{8}{108}$

8 Securities

Example of transaction: Purchase of securities 20′000 CHF, bank fees 300 CHF.

debit		**credit**	**amount** [CHF]
	/	Bank	20′300
Securities	/		20′000
Securities expenses	/		300

Example of transaction: sale of the securities 24′000 CHF, bank fees 320 CHF

debit		**credit**	**amount** [CHF]
Securities	/	Securities revenues	4′000
Bank	/		23′680
Securities expense	/		320
	/	Securities	24′000

Note: ne pas oublier la ligne de revenu de la sécurité, sinon la balance ne joue plus.

9 Accruals

4 accounts

- Accrued revenues (receivable/débit), ce que l'entreprise va recevoir, mais pour lequel elle n'a pas encore émis de facture ou intérêt à recevoir. Prendre en compte l'année en cours
- Accrued expenses and deferred values (payable/crédit), ce que l'entreprise doit payer, mais dont la facture n'a pas encore été émise ou intérêt à payer. Prendre en compte l'année en cours
- Prepaid expenses (receivable/débit). Ce qui a déjà été payé. Prendre en compte l'année suivante.

- Deferred revenues (payable/crédit).

They appear at beginning and end of year.

example Securities (90′000) made of bonds of the firm ABB, 4% due on 31.10.

debit		**credit**	**amount** [CHF]	
Accrued revenues	/	Securities revenues	600	$= 90'000 \cdot 0.04 \cdot \frac{2}{12}$

example Bank loan 400′000 CHF, interest 5% payable 31.03 and on 30.09

debit		**credit**	**amount** [CHF]	
Securities expenses	/	Accrued expenses	5′000	$= 400'000 \cdot 0.05 \cdot \frac{3}{12}$

10 Withholding tax

La taxe avant impôt (peut être récupérée si déduite).

example Collection of the interest coupons on bonds of the firm ABB (90′000 at 4%). The withholding tax amount is 35%

debit		**credit**	**amount** [CHF]	
Bank	/		2′340	$= 3'600 - 1'260$
Debtor Withholding Tax	/		1′260	$= 3'600 \cdot 0.35$
	/	Securities revenues	3′600	$= 90'000 \cdot 0.04$

11 Provisions

- taxes: tax expenses / provisions for taxes
- guarantees: guarantees expenses / provisions for guarantees
- bad debts: loss on receivable / provision on bad debts

La dissolution de provision se fait dans le compte inverse si on est dans la même année sinon dans **extraordinary revenues**. Page 6 cours 5.

example A provision for guarantee of 10′000 CHF

debit		**credit**	**amount** [CHF]
Guarantee expenses	/	Provisions for guarantee	10′000

example The provision for currency risks of 200′000 can be reduced by 50′000 CHF at year-end.

debit		**credit**	**amount** [CHF]
Provisions for currency risks	/	Extraordinary revenues	50′000

12 Depreciation

2 types of depreciation

- direct → depreciation expenses / machine
- indirect → depreciation expenses / accumulated depreciation

12.1 Methods for calculating depreciation

12.1.1 Straight line method

1. set duration of machine
2. every year reduce by $\frac{\text{price of mschine}}{\text{duration}}$

Example purchase of a machine for 10′000 CHF, residual value after 5 years: 0 CHF. ⇒ Every year $\frac{10000}{5} = 2000$ CHF less value.

12.1.2 Reducing balance method

1. set rate: double the rate of the striaght line method (in our example $2 \cdot \frac{2000}{10000} = .4 = 40\%$)
2. reduce the price by 40%.

Example purchase of a machine for 10′000 CHF, residual value after 5 years: 0 CHF.

year	book value	depreciation
0	100′000	
1	60′000	40′000
2	36′000	24′000
3	21′600	14′400
4	12′960	8′640
5	7′776	5′184

12.2 example

1. on 01.01.2001 cash acquisition of 2 machines for 100′000 CHF each
2. on 31.12.2001 depreciation 40% of the book value
3. on 31.03.2002 sale ofone machine for 70′000 CHF cash
4. on 31.12.2002 depreciation 40% from the book value
5. on 01.07.2003 sale of the 2$^{\text{nd}}$ machine for 25′000 CHF cash

Direct method:

	debit		**credit**	**amount** [CHF]	
1	Machinery	/	Cash	200′000	$= 2 \cdot 100'000$
2	Depreciation expenses	/	Machinery	8′000	$= 2 \cdot 100'000 \cdot 0.4$
3	Depreciation expenses	/	Machinery	6′000	$= (100'000 \cdot (1 - 0.4)) \cdot 0.4 \cdot \frac{3}{12}$
	Cash	/	Machinery	54′000	$= 60'000 - 6'000$
	Cash	/	Extra. revenues	16′000	$= 70'000 - 54'000$
4	Depreciation revenues	/	Machinery	24′000	$= 60'000 \cdot 0.4$
5	Depreciation revenues	/	Machinery	7′200	$= (60'000 - 24'000) \cdot 0.4 \cdot \frac{6}{12}$
	Cash	/	Machinery	28′800	$= 36'000 - 7'200$
	Book loss	/	Machinery	3′800	$= 28'800 - 25'000$

Indirect method:

	debit		**credit**	**amount** [CHF]	
1	Machinery	/	Cash	200′000	$= 2 \cdot 100'000$
2	Depreciation expenses	/	Acc. dep.	8′000	$= 2 \cdot 100'000 \cdot 0.4$
3	Depreciation expenses	/	Acc. dep.	6′000	$= (100'000 \cdot (1 - 0.4)) \cdot 0.4 \cdot \frac{3}{12}$
	Acc. dep	/	Dep. dep.	46′000	$= 40'000 + 6'000$
	Cash	/	Machinery	54′000	$= 60'000 - 6'000$
	Cash	/	Extra. revenues	16′000	$= 70'000 - 54'000$
4	Depreciation revenues	/	Acc. dep.	24′000	$= 60'000 \cdot 0.4$
5	Depreciation revenues	/	Acc. dep.	7′200	$= (60'000 - 24'000) \cdot 0.4 \cdot \frac{6}{12}$
	Acc. dep	/	Dep. dep.	71′200	$= 40'000 + 24'000 + 7'200$
	Cash	/	Machinery	28′800	$= 36'000 - 7'200$
	Book loss	/	Machinery	3′800	$= 28'800 - 25'000$

13 Evaluation

13.1 Principle of prudence

- Book **gains** are recorded **after** they have been realised
- Book **losses** are recorded **before** they are definitely realised

For instance, some shares by the company do a good performance: book value do not change
If they do bad, they are recorded at the average value of the month preceding the closing.

Valuation of work in progress and finished goods inventory Tableau exemple for homogenous production

	Items	% of completion	Total items	Cost per item	Overall costs
Beg. balance	3′500	80%	2′800	150 CHF	420′000 CHF
Ending balance	6′000	30%	1′800	150 CHF	270′000 CHF
Reduction in inventory					150′000 CHF

Tableau exemple for heterogenous production

exemple of entry for the previous table

debit		**credit**	**amount** [CHF]	
Work in Process inventory	/	Inventory Adjustments	88′000	$= 264'000 - 176'000$
Inventory adjustments	/	Finished goods inventory	75′000	$= 396'000 - 321'000$

		Work in process		Finished goods	
		01.01.20.0	31.12.20.0	01.01.20.0	31.12.20.0
Direct material		80'000	120'000	180'000	150'000
OAR indirect material costs	30%	24'000	36'000	54'000	45'000
Direct labour		40'000	60'000	90'000	70'000
OAR indirect production costs	80%	32'000	48'000	72'000	56'000
		176'000	264'000	396'000	321'000

Figure 1: heterogenous production