Course Outline

I. Financial Accounting

1. Role of Accounting
2. Legal Framework
3. Understanding Financial Statements
4. Accrual Accounting
5. Generally Accepted Accounting Principles (GAAP)
6. Selected Topics
    - 6.1. Leasing
    - 6.2. Intangible Assets

6. Selected Topics
Intangible Assets

Belgium Standard format

Activa

I. Oprichtingskosten

Vaste activa

II. Immateriële vaste activa

III. Materiële vaste activa

IV. Financiële vaste activa

Vlottende activa

V. Vorderingen op meer dan één jaar

VI. Voorraden en bestellingen in uitvoering

VII. Vorderingen op ten hoogste één jaar

VIII. Geldbeleggingen

IX. Liquide middelen

X. Overlopende rekeningen

Totaal der activa

Passiva

Eigen vermogen

I. Inbreng

II. Herwaarderingsmeerwaarden

II. Reserves

IV. Overgedragen resultaat

V. Kapitaalsubsidies

VI. Voorschot aan vennoten op verdeling netto-actief

Voorzieningen en uitgestelde belastingen

VII A. Voorzieningen voor risico's en kosten

VII B. Uitgestelde belastingen

Schulden

VIII. Schulden > 1 jaar

IX. Schulden ≤ 1 jaar

X. Overlopende rekeningen

Totaal der passiva

(Art. 2, 2013/34/EC)
Whether particular assets are to be shown as fixed assets or current assets shall depend upon the ***purpose*** for which they are intended. Fixed assets shall comprise those assets which are intended ***for use on a continuing basis*** for the purposes of the undertaking's activities. (⇔ duration of assets held by the company)

6. Selected Topics
Intangible Assets – As part of long-lived assets

Tangible assets - physical items that *can be seen and touched*, such as land, buildings, equipment, and natural resources. Also known as fixed assets or plant assets

Intangible assets – identifiable non-monetary, assets *without physical* substance that will provide economic benefits, controlled and held by the entity for use in the business activity

6. Selected Topics – Intangible Assets

Belgian GAAP

(art. 3:82 Royal Decree 29/04/2019 & CBN-advises 2012/13 and 2016/16)

4 categories of intangible assets

- Development
- Concessions, patents, licenses, know-how, trademarks, and similar rights
- Goodwill
- Payments on account

6. Selected Topics – Intangible Assets

Costs of Development

Costs of Development – costs related to the concrete implementation of projects or studies for the production of new or substantially improved materials, equipment, products, processes, systems or services through the use of discoveries or knowledge before starting a production that can be commercialized

- **Until 2016**: The Belgian accounting laws did not make the distinction between costs for research and costs for development.

- **As of 1 January 2016** (RD 18/12/2015): Research costs cannot be included under 'Assets' anymore and shall be recognised as an expense during the period when incurred. (cfr. IFRS).

  -as it is difficult for management to value the benefits results of its internal research in a reliable (honestly and objectively) way;

  -as at some stages of research and development it is not yet certain that some benefits will be gained.

*Examples of activities in the **research phase**: activities aimed at obtaining new knowledge; the search for alternatives for materials, devices, products, processes, systems or services; hoping to acquire insight and new scientific or technical knowledge*

*Examples of activities in the **development phase**: the design, construction and testing of **prototypes** and models, prior to the production or the use;*

6. Selected Topics – Intangible Assets

Costs of Development

- If an enterprise **cannot distinguish** the research phase from the development phase → **expenditure** on that project is **treated** as if it were incurred in the **research phase**

- An intangible asset arising from development can be recognized if amongst other conditions the company can demonstrate:
  - the **technical feasibility** of completing the intangible asset
  - the **intention to complete** the intangible asset and use or sell it
  - the probable **future economic benefits**
  - the availability of **adequate technical and financial resources** to complete, use and sell the intangible asset

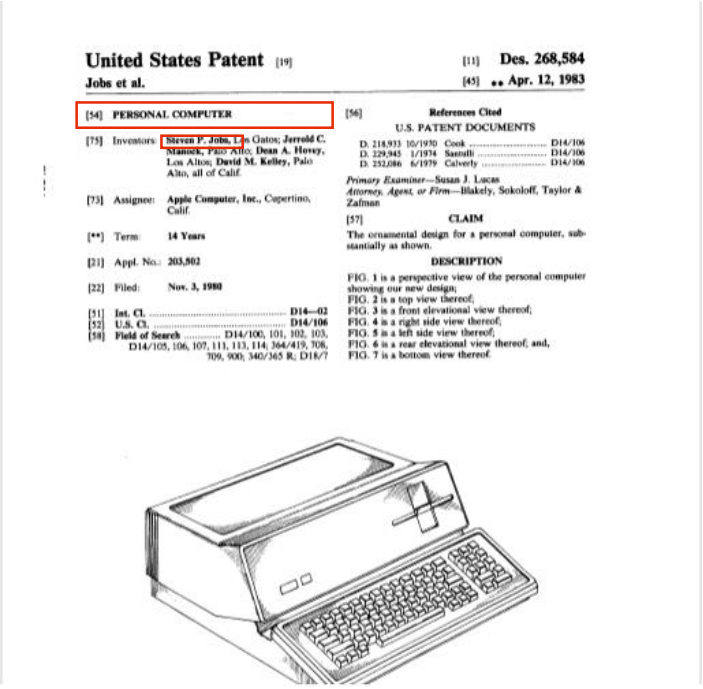
- *Transitional provision: For costs of research made before 1 January 2016 the old regime still applicable. Activated research costs that have nog been completely written off may continue to be considered as an asset.*

6. Selected Topics – Intangible Assets

Concessions, patents, licenses, know-how, trademarks, and similar rights

Patent - a grant by the federal government to an **inventor**, bestowing the exclusive rights to the patented process, design, or invention for a certain period

Example: Drug patent



United States Patent [19]
Jobs et al.

[11] Des. 268,584
[45] ** Apr. 12, 1983

[54] PERSONAL COMPUTER

[75] Inventors: Steven P. Jobs, Los Gatos; Jerrold C. Manock, Palo Alto; Dean A. Hovey, Los Altos; David M. Kelley, Palo Alto, all of Calif.

[73] Assignee: Apple Computer, Inc., Cupertino, Calif.

[**] Term: 14 Years

[21] Appl. No.: 203,502

[22] Filed: Nov. 3, 1980

[51] Int. Cl. D14--02
[52] U.S. Cl. D14/106
[58] Field of Search ..... D14/100, 101, 102, 103, D14/105, 106, 107, 111, 113, 114; 364/419, 708, 709, 900; 340/365 R; D18/7

[56] References Cited
U.S. PATENT DOCUMENTS

D. 218,933 10/1970 Cook D14/106
D. 229,945 1/1974 Sasnulli D14/106
D. 252,086 6/1979 Calverly D14/106

Primary Examiner—Susan J. Lucas
Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor & Zafman

[57] CLAIM

The ornamental design for a personal computer, substantially as shown.

DESCRIPTION

FIG. 1 is a perspective view of the personal computer showing our new design;
FIG. 2 is a top view thereof;
FIG. 3 is a front elevational view thereof;
FIG. 4 is a right side view thereof;
FIG. 5 is a left side view thereof;
FIG. 6 is a rear elevational view thereof; and,
FIG. 7 is a bottom view thereof.

6. Selected Topics – Intangible Assets

Concessions, patents, licenses, know-how, trademarks, and similar rights

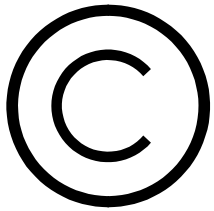
Franchises or licenses - privileges granted by the exclusive owner of a patent, copyright, trademark, to sell a product or service in accordance with specified conditions

An example is a local McDonald's franchise. The franchisee pays for the right to use the name and acquire branded products, such as cups and bags, and to share in advertising and special promotions. In return, the franchisee must meet the standards set forth by McDonald's.

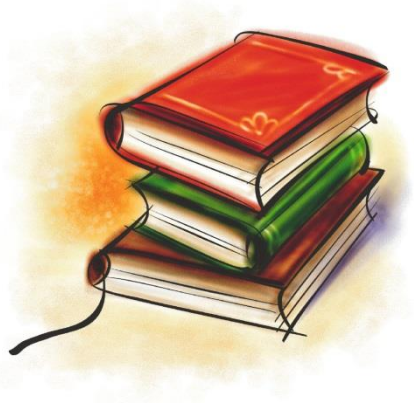
6. Selected Topics – Intangible Assets

Concessions, patents, licenses, know-how, trademarks, and similar rights

Copyright - exclusive rights granted by a government to reproduce and sell a book, musical composition, film, or similar creative items



When someone creates a product that is viewed as original and that required significant mental activity to create, this product becomes intellectual property that must be protected from unauthorized duplication. Examples of unique creations include computer software, art, poetry, graphic designs, musical lyrics and compositions, novels, film, original architectural designs, website content, etc. One safeguard that can be used to protect an original creation is copyright.



6. Selected Topics – Intangible Assets

Concessions, patents, licenses, know-how, trademarks, and similar rights

Trademarks - distinctive identifications of a manufactured product or of a service taking the form of a *name, a sign, a slogan, a logo, or an emblem*

A trademark is a recognizable insignia, phrase, word, or symbol that denotes a specific product and legally differentiates it from all other products of its kind. A trademark exclusively identifies a product as belonging to a specific company and recognizes the company's ownership of the brand.

- Useful life may be set by contract
- Amortize cost over useful life
  - May have indefinite life and not be amortized

6. Selected Topics – Intangible Assets

Goodwill

Goodwill - the ***excess of the cost*** of purchasing another company over the sum of the fair market value of its identifiable individual assets less the liabilities, **due to a.o. synergies expected, comparative advantage in the market, economies of scale, increased reputation (brandname), large customer database …**

Example: FedEx acquires Europa Company for $10 million. Europa has assets with a market value of $9 million and $2 million in liabilities, therefore, net assets equals $7 million. FedEx paid $3 million for goodwill as follows:

Purchase price paid for Europa Company		$10 million
Sum of the market values of Europa Company's assets	$9 million	
Less: Market values of Europa Company's liabilities	(2 million)	
Market value of Europa Company's net assets		7 million
Excess is called *goodwill*		$ 3 million

6. Selected Topics – Intangible Assets

Goodwill

Example of goodwill in consolidated accounts: A company P purchases 100% of the voting rights of company S for an amount of 200.

Balance sheet
Parent

Investment in S	200	SHE	300
Other assets	400	Liabilities	300

Balance sheet
Subsidiary

Assets	100	SHE	60
		Liabilities	40

6. Selected Topics – Intangible Assets

Goodwill

Balance sheet
Parent

Investment in S	200	SHE	300
Other assets	400	Liabilities	300

Balance sheet
Subsidiary

Assets 100		SHE	60
		Liabilities	40

Consolidated Balance sheet
Parent + Subsidiary

Assets of S	100	SHE of P	300
Other assets of P	400	Liabilities of S	40
Goodwill	140	Liabilities of P	300

Net equity of S:

= assets – liabilities = 60

Purchase price paid by P: 200

➔Goodwill of 140

6. Selected Topics – Intangible Assets

Goodwill

6. Selected Topics – Intangible Assets

Goodwill

Valuation Assumptions and Purchase Price Allocation:
We utilized estimated fair values at the 2015 Merger Date to allocate the total consideration exchanged to the net tangible and intangible assets acquired and liabilities assumed. This allocation was final as of July 3, 2016.

The final purchase price allocation to assets acquired and liabilities assumed in the transaction was (in millions):

Cash	$	314
Other current assets		3,423
Property, plant and equipment		4,179
Identifiable intangible assets		47,771
Other non-current assets		214
Trade and other payables		(3,026)
Long-term debt		(9,286)
Net postemployment benefits and other non-current liabilities		(4,739)
Deferred income tax liabilities		(16,675)
Net assets acquired		22,175
Goodwill on acquisition		30,462
Total consideration		52,637
Fair value of shares exchanged and equity awards		42,855
Total cash consideration paid to Kraft shareholders		9,782
Cash and cash equivalents of Kraft at the 2015 Merger Date		314
Acquisition of business, net of cash on hand	$	9,468

The 2015 Merger resulted in $30.5 billion of non tax deductible goodwill relating principally to synergies expected to be achieved from the combined operations and planned growth in new markets. Goodwill has been allocated to our segments as shown in Note 7, *Goodwill and Intangible Assets*.

The purchase price allocation to identifiable intangible assets acquired was:

	Fair Value (in millions of dollars)	Weighted Average Life (in years)
Indefinite-lived trademarks	$ 43,104	
Definite-lived trademarks	1,690	24
Customer-related assets	2,977	29
Total	$ 47,771	

We valued trademarks using either the excess earnings method or relief from royalty method, which are both variations of the income approach. We used the excess earnings method for our most significant trademarks due to their impact on the cash flows of the business and used the relief from royalty method for the remaining trademarks and licenses. For customer relationships, we used the distributor method, a variation of the excess earnings method that uses distributor-based inputs for margins and contributory asset charges.

'http://ir.kraftheinzcompany.com/static-files/e0ec203b-d7c4-4025-b263-52cfe321960f

6. Selected Topics – Intangible Assets

Goodwill

Recognition and fair value adjustments of acquired assets and liabilities

The individual assets and liabilities of the acquiree have to be revised to their fair value at acquisition date

This exercise may imply (de-)recognition of new (old) assets and liabilities

Goodwill will be the difference between the revalued net assets and the investment by the parent

Fair value at acquisition date is considered to be the new historical cost from the point of view of the parent

6. Selected Topics – Intangible Assets

Goodwill – Example Facebook

FACEBOOK, INC.
CONSOLIDATED BALANCE SHEETS
(In millions, except for number of shares and par value)

	December 31, 2014	December 31, 2013
Assets		
Current assets:		
Cash and cash equivalents	$ 4,315	$ 3,323
Marketable securities	6,884	8,126
Accounts receivable, net of allowances for doubtful accounts of $39 and $38 as of December 31, 2014 and December 31, 2013, respectively	1,678	1,109
Prepaid expenses and other current assets	793	512
Total current assets	13,670	13,070
Property and equipment, net	3,967	2,882
Intangible assets, net	3,929	883
Goodwill	17,981	839
Other assets	637	221
Total assets	$ 40,184	$ 17,895

6. Selected Topics

Goodwill – Example Facebook

The following table summarizes the preliminary allocation of the assets acquired and liabilities assumed based on their fair values on the assumed acquisition date and the related estimated useful lives of the amortizable intangible assets acquired (in millions, except for estimated useful life)

	WhatsApp		Oculus		Other	
	(in millions)	Useful lives (in years)	(in millions)	Useful lives (in years)	(in millions)	Useful lives (in years)
Finite-lived intangible assets:						
Acquired users	$ 2,026	7	$ —		$ —	
Trade names	448	5	113	7	26	5
Acquired technology	288	5	235	5	68	3 - 5
Other	21	2	19	2	61	5
IPR&D	—		60		—	
(Liabilities assumed) assets acquired	(33)		—		103	
Deferred tax liabilities	(899)		(107)		(48)	
Net assets acquired	$ 1,851		$ 320		$ 210	
Goodwill	15,342		1,533		275	
Total fair value consideration	$ 17,193		$ 1,853		$ 485	

Goodwill generated from the WhatsApp acquisition is primarily attributable to expected synergies from future growth, from potential monetization opportunities, from strategic advantages provided in the mobile ecosystem, and from expansion of our mobile messaging offerings. Goodwill generated from all other business acquisitions completed during the year ended December 31, 2014 is primarily attributable to expected synergies from future growth, from potential monetization opportunities and, also for Oculus, as a potential to expand our platform. All goodwill generated during this period is not deductible for tax purposes.

6. Selected Topics – Intangible Assets

Goodwill – Example Facebook

Facebook's $22bn WhatsApp buy: bubble or bargain?

- 400 million active users in December 2013.

- For the year ending December 31, 2013, WhatsApp had **$10.2 million in revenue** and a **net loss of $138.146 million**.

→ Less than 3 cent of revenue per user in 2013.
→ Facebook paid $55 per user!

6. Selected Topics – Intangible Assets

Goodwill – Example Facebook

Reason 1: WhatsApp is growing fast

6. Selected Topics – Intangible Assets

Goodwill – Example Facebook

Reason 2: Data

Reason 3: Association with "private" communication

Reason 4: Innovative

Reason 5: Youth

Reason 6: Competitors

6. Selected Topics – Intangible Assets

Goodwill – Example Google - Youtube

Google bought YouTube in 2006 for $1.65 billion of which it allocated over $1.1B to goodwill.

	Monthly 2005 Actuals											
	Jan 05	Feb 05	Mar 05	Apr 05	May 05	Jun 05	Jul 05	Aug 05	Sep 05	Oct 05	Nov 05	Dec 05
Revenue												
Network Banner Ads	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$15,057
Direct Sales	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$15,057**
Cost of Goods Sold												
Web Hosting	$0	$178	$119	$308	$417	$1,133	$6,497	$5,897	$7,251	$16,852	$131,949	$212,747
Data Center Rent	-	-	-	-	-	-	-	-	-	-	-	-
Data Center Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
Datacenter Allocation	-	-	-	-	-	-	-	-	-	-	-	-
Ad Serving Costs	-	-	-	-	-	-	-	-	-	-	-	-
Total COGS	**$0**	**$178**	**$119**	**$308**	**$417**	**$1,133**	**$6,497**	**$5,897**	**$7,251**	**$16,852**	**$131,949**	**$212,747**
Gross Profit	**$0**	**($178)**	**($119)**	**($308)**	**($417)**	**($1,133)**	**($6,497)**	**($5,897)**	**($7,251)**	**($16,852)**	**($131,949)**	**($197,690)**

2013: Revenue Youtube: $3,5 billion (6% of Google's total revenue)

2014: Revenue Youtube: $4 billion (6% of Google's total revenue)

	Monthly 2006 Actuals							
	Jan 06	Feb 06	Mar 06	Apr 06	May 06	Jun 06	Jul 06	Aug 06
Revenue								
Network Banner Ads	$133,091	$131,468	$22,117	$179,311	$404,032	$627,146	$519,719	$829,050
Direct Sales	-	-	-	20,000	16,710	125,000	352,768	1,667,986
Total Revenue	**$133,091**	**$131,468**	**$22,117**	**$199,311**	**$420,742**	**$752,146**	**$872,487**	**$2,497,036**
Cost of Goods Sold								
Web Hosting	$397,643	$525,138	$657,827	$713,494	$680,190	$980,342	$951,870	$1,176,391
Data Center Rent	-	70,397	38,081	52,773	106,738	111,022	168,082	214,198
Data Center Depreciation	-	-	-	41,802	59,368	59,368	108,357	130,725
Datacenter Allocation	-	-	-	10,000	22,499	22,499	22,499	31,873
Ad Serving Costs	-	-	-	-	-	-	63	368,302
Total COGS	**$397,643**	**$595,535**	**$695,909**	**$818,069**	**$868,794**	**$1,173,232**	**$1,250,870**	**$1,921,489**
Gross Profit	**($264,552)**	**($464,066)**	**($673,792)**	**($618,758)**	**($448,052)**	**($421,086)**	**($378,383)**	**$575,547**

6. Selected Topics – Intangible Assets

Goodwill – Example AB Inbev

AB InBev raises proposed offer for rival SABMiller to £67bn →106 billion dollar

- Share price on 14 September 2015: GBP 29.34
- Total Equity (31 March 2015): 24,35 billion dollar
- AB Inbev values SABMiller at: 106 billion dollar

July 2016

SABMiller board backs AB InBev's revised £79bn offer

AB InBev raises offer for SABMiller to £45 a share in cash →103.5 billion dollar

6. Selected Topics – Intangible Assets

Payments on Account

6. Selected Topics - Intangible assets

IAS 38 - 119

Classes of intangible assets: A grouping of assets of a similar nature and use in an entity's operations

Examples of separate classes may include:

- brand names;
- mastheads and publishing titles;
- computer software;
- licences and franchises;
- copyrights, patents and other industrial property rights, service and operating rights;
- recipes, formulae, models, designs and prototypes; and
- intangible assets under development.

→ The classes mentioned above are disaggregated (aggregated) into smaller (larger) classes if this results in more relevant information for the users of the financial statements.

6. Selected Topics – Intangible Assets

Recognition and valuation

1. Acquisition Value

   - Acquisition Value

   - Production/Manufacturing Cost

   - Value of the in-kind contribution

2. Amortization & Impairment

3. Revaluation

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

➢ ***Acquired externally***:

If intangible assets are ***purchased,*** then **acquisition costs** are capitalized.

→ *Value readably available via eg. Purchase contract, invoice*

→ *High level of* ***reliability***

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

Example 1: **Development** - Acquisition from third parties:

Company Y develops a prototype for Company X. The price paid for the prototype by Company X is 50,000 €. Company X activates.

Company X
Balance Sheet
31 December 2015

Assets		Owner's Equity + Liabilities	
Long lived assets	**50,000**	**Owner's equity**	
Research and development	50,000		
		Liabilities	**50,000**
		Long-term Debt	
Current Assets		*Current Liabilities*	
		Accounts Payable	50,000
Total Assets		**Total Liabilities & Owner's Equity**	

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

Example 2: **Concessions, patents, licences, know-how, trademarks, and similar rights** - Acquisition from third parties:

A producer of beer purchases a license for the production of the brand product "Pajottie". The acquisition of this license is 10,000 euros. The producer activates the cost.

Producer of Beer
Balance Sheet
31 December 2015

Assets		Owner's Equity + Liabilities	
Long lived assets	**10,000**	**Owner's equity**	
Concessions, patents, licences, know-how, trademarks, and similar rights	10,000		
		Liabilities	**10,000**
		Long-term Debt	
		Current Liabilities	
Current Assets		Accounts Payable	10,000
Total Assets		**Total Liabilities & Owner's Equity**	

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

Example 3: **Royalty fees**:

Company X acquires the license for the use of a production method. For this, the company pays an annual royalty of 15,000€

Company X
Balance Sheet
31 December 2015

Assets		Owner's Equity + Liabilities	
Long lived assets			
Current Assets	**(15,000)**	**Owner's equity**	**(15,000)**
Cash	(15,000)	*Capital*	
		Retained Earnings	(15,000)
		Liabilities	
Total Assets		**Total Liabilities & Owner's Equity**	

Income Statement

Sales	
Cost of Goods Sold	
Gross Margin	
Selling, General, Admin	(15,000)
Operating Profit	(15,000)
Interest Expense	
Income Tax Expense	
Net Income	(15,000)

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

➢***Acquired externally***:

If intangible assets are ***purchased,*** then **acquisition costs** are capitalized.

Main question:

How to determine the value of an intangible asset?

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

Traditional Intangible Assets Valuation Techniques

- Cost approach
- Market approach
- Income approach

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

Traditional Intangible Assets Valuation Techniques

Cost approach

→ **Replacement or reproduction focus**: calculates the estimated cost that would be required to create an equivalent or replacement intangible asset.

→ **Not often used as**:

- it does not consider future economic benefits arising from the asset, and
- the value of the asset is likely to be different from the costs incurred when creating it

→ **Useful for**:

- assets which are usually accounted for by the costs of reproduction, such as software, and
- in cases where there is no economic activity to review, such as early-stage technology that is not yet producing revenue

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

Traditional Intangible Assets Valuation Techniques

Market approach

→ Intangible assets are **valued by utilizing actual transaction values** derived from the sale, license or transfer of **similar assets** in **similar markets**.

→ When reliable transaction data are available, the Market Approach is considered the **most direct and systematic approach** for determining an accurate value for intangible assets

→ **Often not possible to use the market-price-oriented approach** as:

- there is **no observable active market** on which the intangible asset are traded.
- due to the **unique features** exhibited by each asset.

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

Traditional Intangible Assets Valuation Techniques

Income approach

→ uses estimates of **future estimated economic benefits** or cash flows and **discounts** them, for the associated time and **risks** involved, to a **present value**

→ **Most widely used approach**, because the information necessary to determine value using this approach is usually relatively accurate, and often readily available

→ A subtype of income-oriented approach is the **relief from royalty approach**:
the value of the intangible assets is calculated as the present value of the royalties that the company is relieved from paying as a result of ownership of the assets

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

➢ ***Assets created by the company:***

If intangible assets are ***internally generated***, in some cases **production costs** are capitalized, while in other cases the internally generated intangible shall not be recognized as an asset.

For example: research costs (since 2016 in BE GAAP)

Acquisition cost of raw material + (in)direct production costs

- Provide future economic benefits and identifiable
- Not exceed a prudent estimate of the use or future benefits of the asset
- Entity should have control
- Investment character unambiguous

→ *Estimation needed (eg. based upon future cash flows)*

→ *Low level of reliability*

Examples:

→ *Internally generated concessions, patents, licenses, know-how,…*

→ *Development*

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

➢ *Assets created by the company: Example 1*

An pharmaceutical company develops a new drug with groundbreaking applications. In order to protect this invention, the company applies for a patent. The fees to register the patent (4,000 euros) are capitalized.

➢ *Assets created by the company (Development): Example 2*

An entity is developing a new production process. During 20X5, expenditure incurred was 1,000 euros. As the entity is able to demonstrate that the production process met the criteria for recognition as an intangible asset, process is recognised as an intangible asset at a cost of 1,000 euros and not as an expense.

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

➢***Assets created by the company:***

If intangible assets are ***internally generated***, in some cases **production costs** are capitalized, while in other cases the internally generated intangible shall **not** be recognized as an asset.

→ Internally generated goodwill shall not be recognized as an asset (BE GAAP and IFRS)

→ IFRS: Internally generated brands, mastheads, publishing titles, customer lists and items similar in substance shall not be recognised as intangible assets

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

➢*Acquired externally* versus *Assets created by the company:*

Consolidated statement of financial position

As at Million US dollar	Notes	31 December 2017	31 December 2016 Adjusted[1]	31 December 2016 Reported[2]
Assets				
Non-current assets				
Property, plant and equipment	13	[illegible]	26 219	27 522
Goodwill	[illegible]	140 940	135 864	136 533
Intangible assets	[illegible]	45 674	44 789	44 568
Investments in associates and joint ventures	16	5 263	4 324	4 324
Investment securities	17	100	82	82
Deferred tax assets	18	1 216	1 261	1 261
Employee benefits	25	22	10	10
Income tax receivables		708	6	6
Derivatives	29H	25	146	146
Trade and other receivables	20	834	868	868
		222 166	**213 569**	**215 320**
Current assets				
Investment securities	17	1 304	5 659	5 659
Inventories	19	4 119	3 889	3 913
Income tax receivables		908	1 112	1 112
Derivatives	29H	458	971	971
Trade and other receivables	20	6 566	6 352	6 391
Cash and cash equivalents	21	10 472	8 579	8 579
Assets classified as held for sale	22	133	16 458	16 439
		23 960	**43 017**	**43 061**
Total assets		**246 126**	**256 586**	**258 381**

57,26%

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

➢*Acquired externally* versus *Assets created by the company:*

THE COCA-COLA COMPANY AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

December 31,	2017	2016
(In millions except par value)		
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	$ 6,006	$ 8,555
Short-term investments	9,352	9,595
TOTAL CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS	15,358	18,150
Marketable securities	5,317	4,051
Trade accounts receivable, less allowances of $477 and $466, respectively	3,667	3,856
Inventories	2,655	2,675
Prepaid expenses and other assets	2,000	2,481
Assets held for sale	219	2,797
Assets held for sale — discontinued operations	7,329	—
TOTAL CURRENT ASSETS	36,545	34,010
EQUITY METHOD INVESTMENTS	20,856	16,260
OTHER INVESTMENTS	1,096	989
OTHER ASSETS	4,560	4,248
PROPERTY, PLANT AND EQUIPMENT — net	8,203	10,635
TRADEMARKS WITH INDEFINITE LIVES	6,729	6,097
BOTTLERS' FRANCHISE RIGHTS WITH INDEFINITE LIVES	138	3,676
GOODWILL	9,401	10,629
OTHER INTANGIBLE ASSETS	368	726
TOTAL ASSETS	$ 87,896	$ 87,270

10,69%

6. Selected Topics – Intangible Assets

Accounting treatment - Recognition

➢ ***Acquired externally***:

If intangible assets are ***purchased,*** then **acquisition costs** are capitalized.

➢ ***Assets created by the company:***

If intangible assets are ***internally generated***, then **production costs** are capitalized.

➢ ***In-kind contribution***

If intangible assets are obtained through an ***in-kind contribution***, then the **contribution value** is capitalized.

6. Selected Topics – Intangible Assets

Recognition and valuation

1. Acquisition Value

2. Amortization & Impairment
   (Afschrijving en Waardevermindering)

3. Revaluation

6. Selected Topics – Intangible Assets

Accounting treatment – Amortization/Impairment

➢ ***Intangibles with a finite life time***:

- Intangible assets should be amortised over their estimated useful economic lives (there is no generally applicable maximum useful life)

- In exceptional cases where the useful life of goodwill and development costs cannot be reliably estimated, such assets shall be written off within maximum 10 years. An explanation of the period over which goodwill is written off shall be provided within the notes to the financial statements. (BE GAAP)

➢ ***Intangibles with an infinite life time***:

- Are subject to exceptional amortisation when, due to changes in economic or technological circumstances, their carrying value permanently exceeds their recoverable amount.

6. Selected Topics – Intangible Assets

Accounting treatment – Subsequent measurement of goodwill

IFRS before 2004 + European Accounting Directive:

Amortize goodwill on a systematic basis over the best estimate of its useful life

Rebuttable assumption of a maximum of 20 years

→ Simple and transparent, but side-effect on P/L

IFRS 3 Business Combinations (from 2004):

Test goodwill for impairment annually (or more frequently if indications of impairment):

carrying value ←→ recoverable amount

carrying value > recoverable amount : impairment

carrying value < recoverable amount : /

The revised value is based on new forecasts of the expected cashflows.

The write-off appears as a loss on the income statement.

→ Complex and subjective

6. Selected Topics – Intangible Assets

Accounting treatment – Subsequent measurement of goodwill

Two major disadvantages:

- *Measurement:*

Value of assets (like factories or software) can be validated externally

Queasy circularity about goodwill: the more a company bid up the price of an acquisition, the bigger the asset it can book

Process of impairment is subjective: buyers fold their acquisitions into their existing businesses → hard to separate them to measure their performance

Internally generated goodwill might be treated as acquired goodwill and shown as an asset on the balance sheet

- *Comparability:*

A firm built through past acquisitions has a bloated asset base → ratio of debt to assets would look healthier or its shares would look artificially cheap compared with their book value

6. Selected Topics – Intangible Assets

Recognition and valuation

1. Acquisition Value

2. Amortization & Impairment

3. Revaluation

6. Selected Topics – Intangible Assets

Accounting treatment – Amortization/Impairment

- Belgian GAAP (and US GAAP) **do not permit revaluations** of intangible assets

- Only subsequent reversal of impairment write-downs is required when the write-down is no longer economically justified.

!!! Depreciation and impairment losses on goodwill cannot reversed

!!! IFRS: Intangible assets may be carried at a **revalued amount** (based on fair value) less any subsequent amortisation and impairment losses only if fair value can be determined by reference to an active market. Such active markets are expected to be uncommon for intangible assets.

6. Selected Topics – Intangible Assets

Accounting treatment – Amortization/Impairment

Example

The recoverable amount of the know-how embodied in the process (including future cash outflows to complete the process before it is available for use) is estimated to be 500 euros.
At the end of 20X5, the production process is recognised as an intangible asset at a cost of 100 euros.

During 20X6, expenditure incurred is 2,000 euros.
At the end of 20X6, the recoverable amount of the know-how embodied in the process (including future cash outflows to complete the process before it is available for use) is estimated to be 1,900 euros.
At the end of 20X6, the cost of the production process is 2,100 euros (100 euros expenditure recognised at the end of 20X5 plus 2,000 euros expenditure recognised in 20X6).

The entity recognises an impairment loss of 200 euros to adjust the carrying amount of the process before impairment loss (2,100 euros) to its recoverable amount (1,900 euros).

This impairment loss will be reversed in a subsequent period if the requirements for the reversal of an impairment loss are met.

6. Selected Topics – Intangible Assets

Software

- **Software acquired externally**

  1. For internal use

  - Standard software → intangible asset
  - Specific software → intangible asset

  2. For commercialisation → stock

- **Software internally created by the company**

  1. For internal use → intangible asset

  2. For commercialisation

  - Specific software → work in progress
  - Standard software → intangible assets/stock

Course Outline

I. Financial Accounting

1. Role of Accounting
2. Legal Framework
3. Understanding Financial Statements
4. Accrual Accounting
5. Generally Accepted Accounting Principles (GAAP)
6. Selected Topics
7. Financial Statement Analysis

II. Tax Basics

III. Management Accounting

7. Financial Statement Analysis

Objectives

Definition

Using financial statements to assess a company's performance

Focuses on *past* performance to predict *future* performance

Objective

Different users of the financial statements might be interested in *different information*.

→ They all however want to make *good decisions*.

7. Financial Statement Analysis

Objectives – different users

***Creditors* want to know about short-term liquidity and long-term solvency.**

Short-term liquidity - an organization's ability to meet current payments as they become due (e.g. interest payable – A/P)

Long-term solvency - an organization's ability to generate enough cash to repay long-term debts as they mature (principal)

7. Financial Statement Analysis

Objectives – different users

***Equity investors* are more concerned with returns in the form of dividends and increased market price of the stock.**

These investors are naturally more interested in *profitability*.

Profits spur both dividends and increased stock prices (= market's assessment of the company future prospects).

7. Financial Statement Analysis

Horizontal Analysis

Horizontal analysis compares financial data ***over different time period*** (trend analysis)

Time index

Base year: index = 100

$$\text{Time index year t} = \frac{\text{Value year t}}{\text{Value base year}} * 100$$

7. Financial Statement Analysis

Horizontal Analysis

Geherstructureerd schema
Balans ABC per 31-12-20X1 en per 31-12-20X2 (in '000 €)
(in staffelvorm)

Activa	31-12-X1	31-12-X2	Passiva	31-12-X1	31-12-X2
(Uitgebreide) vastliggende Activa	**30,000**	**31,700**	**Permanent vermogen**	**56,151**	**56,367**
			Eigen vermogen	*32,151*	*34,367*
III. Materiële vaste activa	30,000	31,700	I. Kapitaal	23,000	23,000
			V. Overgedragen resultaat	9,151	11,367
			Vreemd vermogen op lange termijn	*24,000*	*22,000*
			VIII.A. Financiële schulden >1j	24,000	22,000
(Beperkt) vlottende Activa	**47,026**	**50,190**	**Vreemd vermogen op korte termijn**	**20,875**	**25,523**
Realiseerbare activa	*44,945*	*47,650*	IX.A. Vervallende schulden	2,000	2,000
VI.A Voorraden	26,470	27,530	IX.B. Financiële schulden <1j	5,635	8,500
VII.A. Handelsvorderingen	16,850	18,320	IX.C. Handelsschulden	8,340	9,721
VIII. Geldbeleggingen	1,625	1,800	IX.E. Belastingschulden	3,150	3,200
Liquide middelen	*2,081*	*2,540*	IX.F. Overige schulden	1,750	2,102
IX. Liquide middelen	2,081	2,540			
TOTAAL VAN DE ACTIVA	**77,026**	**81,890**	**TOTAAL VAN DE PASSIVA**	**77,026**	**81,890**

Horizontale analyse
Geherstructureerd schema
Balans ABC per 31-12-20X1 en per 31-12-20X2 (in '000 €)
(in staffelvorm)

Activa	31-12-X1	31-12-X2	Passiva	31-12-X1	31-12-X2
(Uitgebreide) vastliggende Activa	**100%**	**105.7%**	**Permanent vermogen**	**100%**	**100.4%**
			Eigen vermogen	*100%*	*106.9%*
III. Materiële vaste activa	100%	105.7%	I. Kapitaal	100%	100.0%
			V. Overgedragen resultaat	100%	124.2%
			Vreemd vermogen op lange termijn	*100%*	*91.7%*
			VIII.A. Financiële schulden >1j	100%	91.7%
(Beperkt) vlottende activa	**100%**	**106.7%**	**Vreemd vermogen op korte termijn**	**100%**	**122.3%**
Realiseerbare activa	*100%*	*106.0%*	IX.A. Vervallende schulden	100%	100.0%
VI.A Voorraden	100%	104.0%	IX.B. Financiële schulden <1j	100%	150.8%
VII.A. Handelsvorderingen	100%	108.7%	IX.C. Handelsschulden	100%	116.6%
VIII. Geldbeleggingen	100%	110.8%	IX.E. Belastingschulden	100%	101.6%
Liquide middelen	*100%*	*122.1%*	IX.F. Overige schulden	100%	120.1%
IX. Liquide middelen	100%	122.1%			
TOTAAL VAN DE ACTIVA	**100%**	**106.3%**	**TOTAAL VAN DE PASSIVA**	**100%**	**106.3%**

- Normal / Representative
- "+ of -" values: 140/141
- Comparable?
  - Firm structure
  - Valuation Methods

7. Financial Statement Analysis

Vertical Analysis

- Vertical analysis determines the ***relative importance*** of a particular item in the balance sheet or the income statement

- Items of the balance sheet are expressed as a percentage of total assets (100%).

- Each amount in the income statement is restated as a percentage of sales (100%).

7. Financial Statement Analysis

Vertical Analysis

Geherstructureerd schema
Balans ABC per 31-12-20X1 en per 31-12-20X2 (in '000 €)
(in staffelvorm)

Activa			**Passiva**		
	31-12-X1	31-12-X2		31-12-X1	31-12-X2
(Uitgebreide) vastliggende Activa	**30,000**	**31,700**	**Permanent vermogen**	**56,151**	**56,367**
			Eigen vermogen	*32,151*	*34,367*
			I. Kapitaal	23,000	23,000
III. Materiële vaste activa	30,000	31,700	V. Overgedragen resultaat	9,151	11,367
			Vreemd vermogen op lange termijn	*24,000*	*22,000*
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VIII. Geldbeleggingen	1,625	1,800	IX.E. Belastingschulden	3,150	3,200
Liquide middelen	*2,081*	*2,540*	IX.F. Overige schulden	1,750	2,102
IX. Liquide middelen	2,081	2,540			
TOTAAL VAN DE ACTIVA	**77,026**	**81,890**	**TOTAAL VAN DE PASSIVA**	**77,026**	**81,890**

Verticale analyse
Geherstructureerd schema
balans ABC per 31-12-20X1 en per 31-12-20X2 (in '000 €)
(in staffelvorm)

Activa			Passiva		
	31-12-X1	31-12-X2		31-12-X1	31-12-X2
(Uitgebreide) vastliggende Activa	**38.9%**	**38.7%**	**Permanent vermogen**	**72.9%**	**68.8%**
			Eigen vermogen	*41.7%*	*42.0%*
III. Materiële vaste activa	38.9%	38.7%	I. Kapitaal	29.8%	28.1%
			V. Overgedragen resultaat	11.9%	13.9%
			Vreemd vermogen op lange termijn	*31.2%*	*26.8%*
			VIII.A. Financiële schulden >1j	31.2%	26.8%
(Beperkt) vlottende Activa	**61.1%**	**61.3%**	**Vreemd vermogen op korte termijn**	**27.1%**	**31.2%**
Realiseerbare Activa	*58.3%*	*58.2%*	IX.A. Vervallende schulden	2.6%	2.4%
VI.A Voorraden	34.4%	33.6%	IX.B. Financiële schulden <1j	7.3%	10.4%
VII.A. Handelsvorderingen	21.9%	22.4%	IX.C. Handelsschulden	10.8%	11.9%
VIII. Geldbeleggingen	2.1%	2.2%	IX.E. Belastingschulden	4.1%	3.9%
Liquide middelen	*2.7%*	*3.1%*	IX.F. Overige schulden	2.3%	2.6%
IX. Liquide middelen	2.7%	3.1%			
TOTAAL VAN DE ACTIVA	**100%**	**100%**	**TOTAAL VAN DE PASSIVA**	**100%**	**100%**

7. Financial Statement Analysis

Vertical Analysis

Geherstructureerd Schema
Resultatenrekening ABC 20X2 (in '000 €)

Omzet	112.760	
Kostprijs (CoS)		85.300
Brutomarge (GM)		27.460
Bezoldigingen	14.040	
Brutobedrijfsresultaat		13.420
Afschrijvingen	1.900	
Uitzonderlijke resultaten	0	
Nettobedrijfsresultaat (EBIT)		11.520
Financiële kosten	3.160	
Courant resultaat voor belastingen (EBT)		8.360
Belastingen	3.344	
Courant resultaat na belastingen (EAT)		5.016
Totale nettoresultaat (NI)		**5.016**

Verticale analyse
Geherstructureerd schema
resultatenrekening ABC

Omzet	100.0%	
Kostprijs van de verkopen (CoS)	75.7%	
Brutomarge (GM)		24.3%
Bezoldigingen	12.4%	
Brutobedrijfsresultaat		11.9%
Afschrijvingen	1.7%	
Nettobedrijfsresultaat (EBIT)		10.2%
Financiële kosten	2.8%	
Courante nettowinst voor belastingen (EBT)		7.4%
Belastingen	3.0%	
Totale nettowinst (NI)		**4.4%**

7. Financial Statement Analysis

Finanacial Ratios

- The cornerstone of financial statement analysis is the use of ratios. A financial ratio is calculated by dividing one number of the financial statements accounts (numerator) by another number of the financial statement accounts (denominator): it shows the relationship between two numbers
- Financial ratios are sometimes grouped into categories:
  - Short-term liquidity ratios (incl. efficiency ratios)
  - Long-term solvency ratios
  - Profitability ratios (margin and effectiveness ratios)

7. Financial Statement Analysis

Financial Ratios - Evaluating

Financial ratios are evaluated using three types of comparisons:

Time-series comparisons: comparisons of a company's financial ratios with its own historical ratios.

Benchmarks: general rules of thumb specifying appropriate levels for financial ratios.

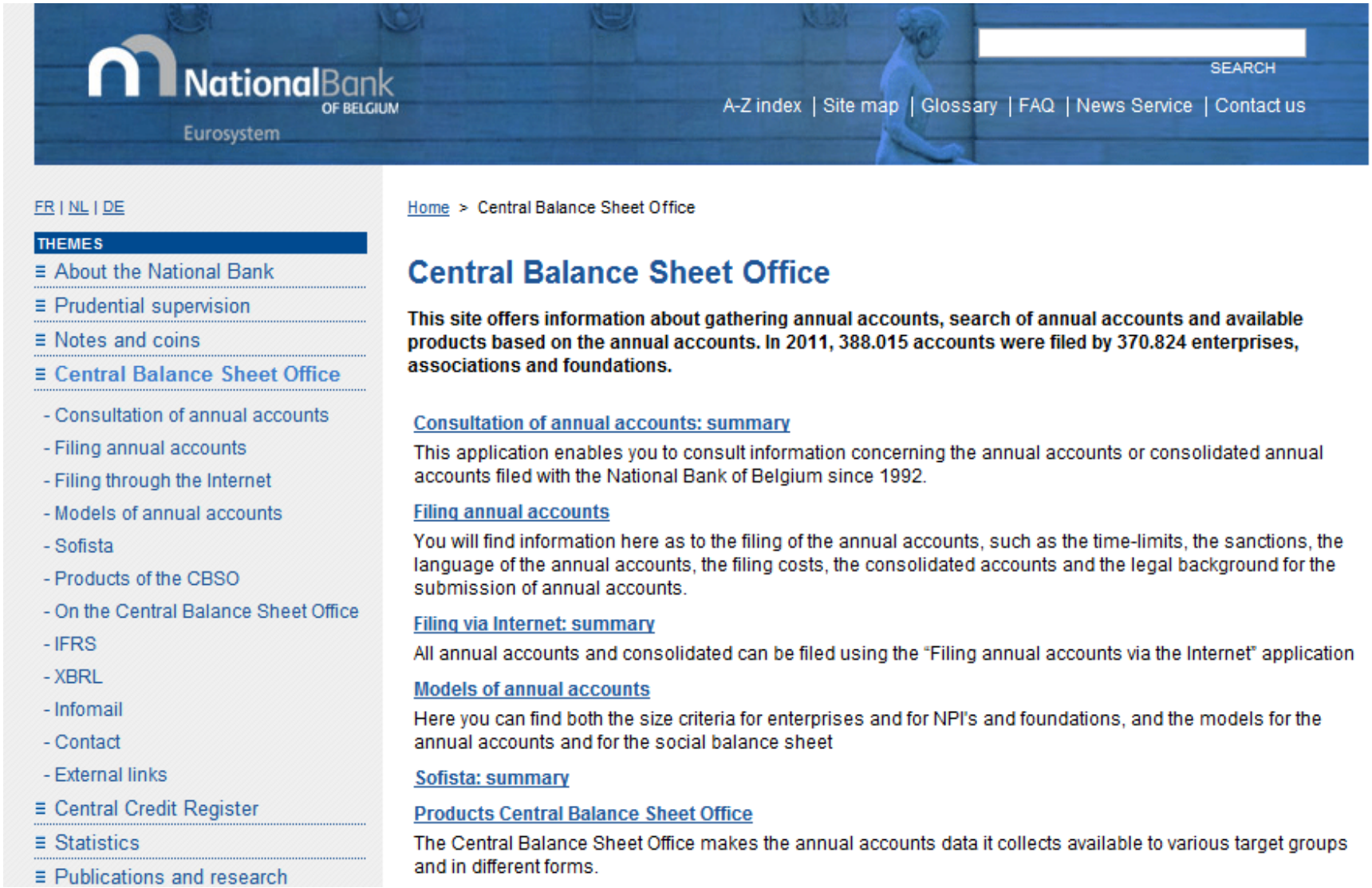
Cross-sectional comparisons: comparisons of a company's financial ratios with the ratios of other companies or with industry averages.

7. Financial Statement Analysis

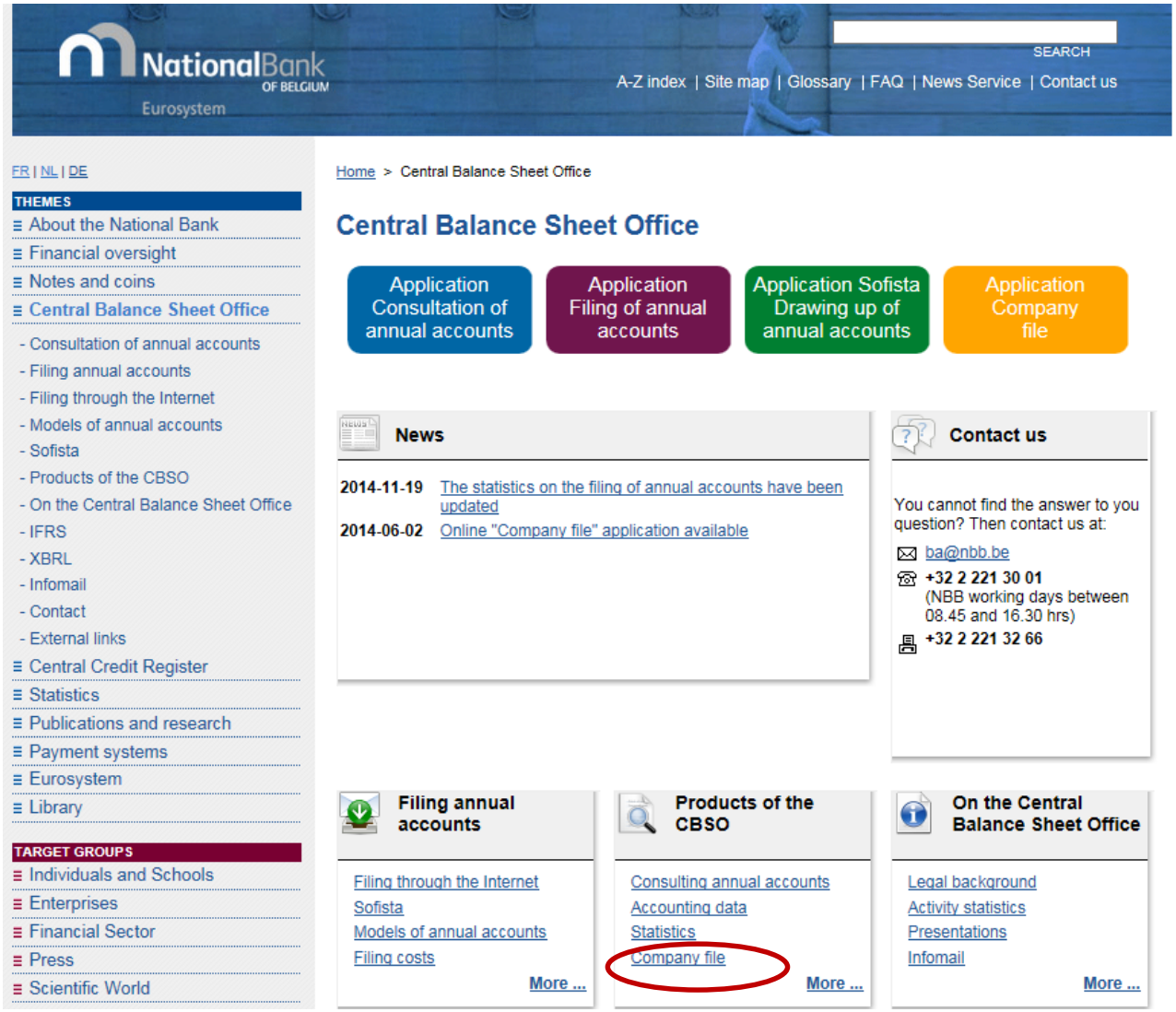
Financial Ratios – Gather information

Central Balance Sheet Office (NBB) (on-line and free consultation of the filed annual accounts; company file (30€))

7. Financial Statement Analysis
Financial Ratios – Gather information



7. Financial Statement Analysis
Financial Ratios – Gather information



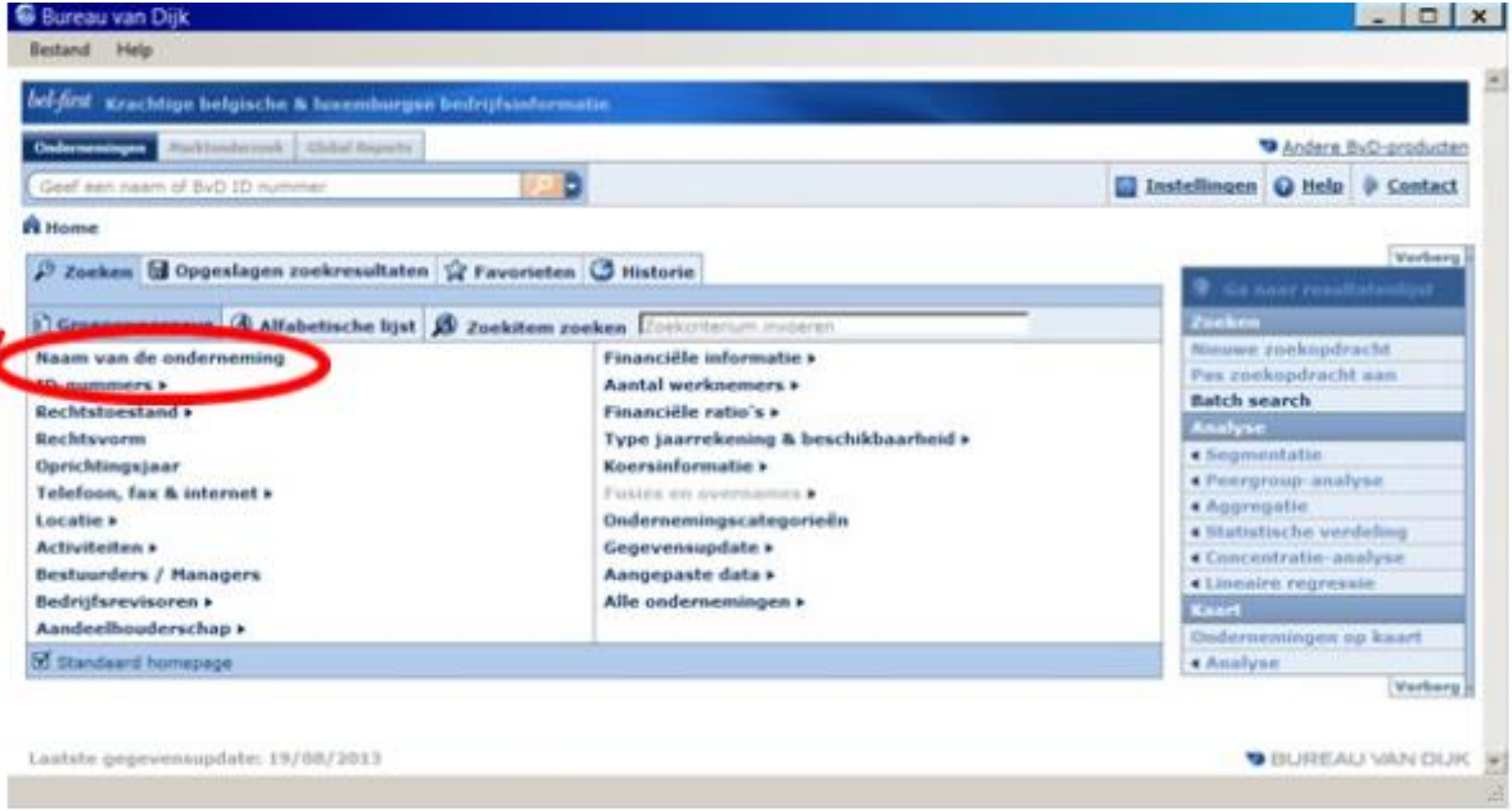
7. Financial Statement Analysis

Financial Ratios – Gather information

Central Balance Sheet Office (NBB) (on-line and free consultation of the filed annual accounts; company file (30€))

Belfirst cd-rom (for free in the VUB)

7. Financial Statement Analysis
Financial Ratios – Gather information



7. Financial Statement Analysis

Financial Ratios – Gather information

Central Balance Sheet Office (NBB) (on-line and free consultation of the filed annual accounts; company file (30€))

Belfirst cd-rom (for free in the VUB)

Graydon commercial report (not free)

GRAYDON

7. Financial Statement Analysis
Financial Ratios – Gather information

GRAYDON

Date: 22/11/2014
Client number: 000052
Re:
0406.952.018
MAKRO CASH & CARRY BELGIUM NV
NIJVERHEIDSSTRAAT 70
2160 WOMMELGEM

Credit advice / 'Multiscoring'

Date	22-02-2014
Advice	The calculated maximum credit amount is : 32.180.000 EUR
Graydon 'Multiscoring'	The Graydon 'Multiscoring' is of : 33/100
	At your request, the credit advice has been calculated according to the formula known or developed by you.
	It is only a part of the complete report contributing to the overall picture of a company's situation.

Official data

Business number	0406.952.018
Legal form	Limited company
Register legal persons	RLP ANTWERPEN
	Private law company
Commercial quality according to the CBE	Commercial enterprise, since 1/02/1970
VAT quality according to the CBE	Liable for VAT, since 1/01/1971
Telephone number	03/328.90.00
Telefax	03/328.94.11
Website address	http://www.makro.be
Trade name	MAKRO
	METRO - MCW
	MCCB
	METRO EN MCW EN MCCB
Date of constitution	8-12-1969
NSSO number	743376-95
Employers' category	10
	17
	317
Joint industrial committees	218

7. Financial Statement Analysis

Financial Ratios – Gather information

Central Balance Sheet Office (NBB) (on-line and free consultation of the filed annual accounts; company file (30€))

Belfirst cd-rom (for free in the VUB)

Graydon commercial report (not free)

CompanyWeb (not free)

Companyweb
weet met wie u zaken doet

7. Financial Statement Analysis
Financial Ratios – Gather information

7. Financial Statement Analysis

Financial Ratios – Gather information

Central Balance Sheet Office (NBB) (on-line and free consultation of the filed annual accounts; company file (30€))

Belfirst cd-rom (for free in the VUB)

Graydon commercial report (not free)

CompanyWeb (not free)

Website company (Investor Relations), press,...

7. Financial Statement Analysis

Financial Ratios – Liquidity

How well can a company meet its payment obligations in the short term?

BALANCE SHEET

Activa	**Passiva**
Oprichtingskosten	**Eigen vermogen**
Vaste Activa	Inbreng
Immateriële vaste activa	Herwaarderingsmeerwaarden
Materiële vaste activa	Reserves
Financiële vaste activa	Overgedragen resultaat
	Kapitaalsubsidies
Vlottende activa	Voorschot aan vennoten op verdeling netto-actief
Vorderingen > 1 jaar	**Voorzieningen en uitgestelde belastingen**
Voorraden en bestellingen in uitvoering	Voorzieningen
Vorderingen ≤ 1 jaar	Uitgestelde belastingen
Geldbeleggingen	**Schulden**
Liquide middelen	Schulden > 1 jaar
Overlopende rekeningen	Schulden ≤ 1 jaar
Totaal der activa	Overlopende rekeningen
	Totaal der passiva

7. Financial Statement Analysis

Financial Ratios – Liquidity

How well can a company meet its payment obligations in the short term?

Short term liquidity: an organization's ability to meet current payments as they become due.

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

Assess ***Quality*** of the underlying assets (A/R – inventories)

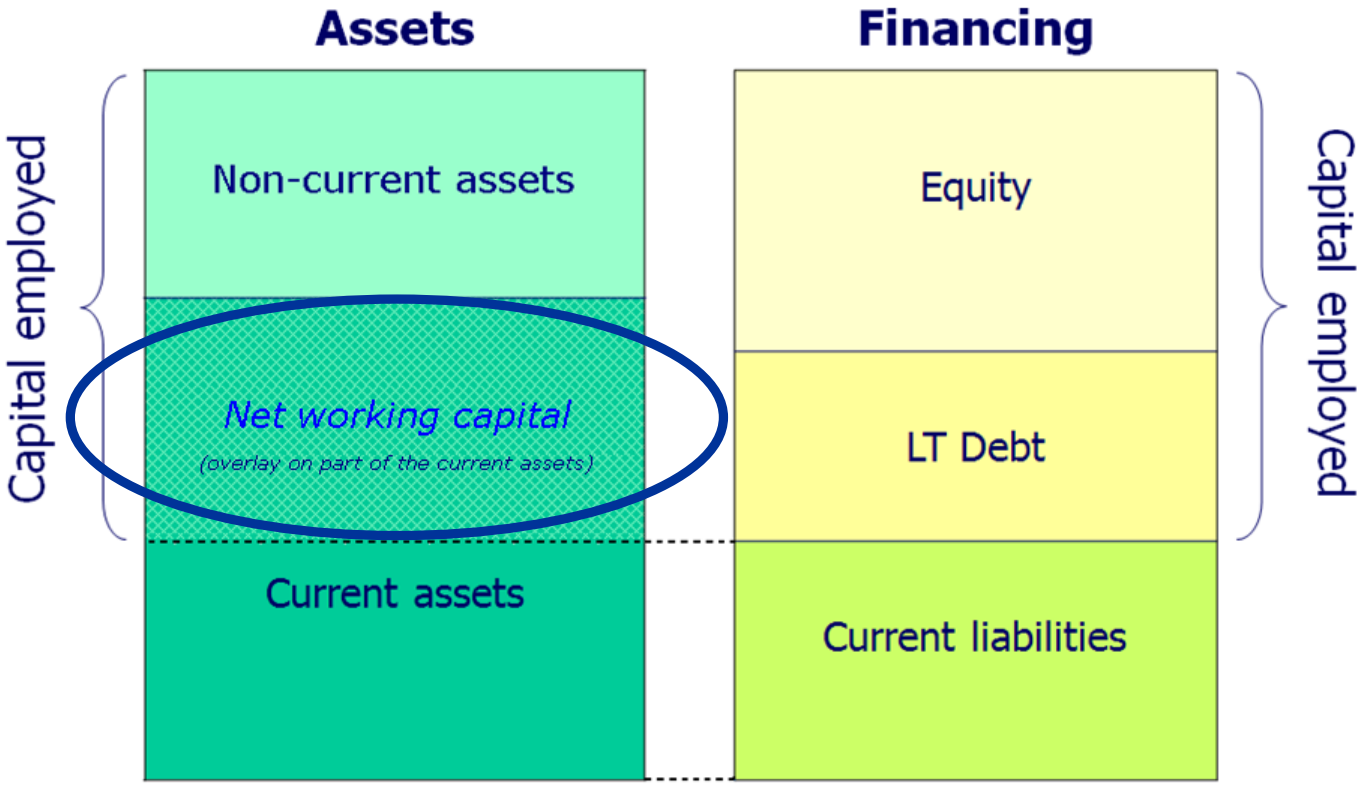
$$\text{Quick Ratio (acid test ratio)} = \frac{\text{Current Assets - Inventories}}{\text{Current Liabilities}}$$

7. Financial Statement Analysis

Financial Ratios – Liquidity

How well can a company meet its payment obligations in the short term?

- ✓ **Net working Capital**
  = current assets – current liabilities
  = (permanent) capital employed – non-current assets



7. Financial Statement Analysis

Example Clicktouch

1/1/2013 – 31/12/2013

BALANCE SHEET

Activa	
Oprichtingskosten	**0**
Vaste Activa	**583.081**
Immateriële vaste activa	8.382
Materiële vaste activa	466.841
Financiële vaste activa	107.859
Vlottende activa	**2.075.931**
Vorderingen > 1 jaar	
Voorraden en bestellingen in uitvoering	897.000
Vorderingen ≤ 1 jaar	684.706
Geldbeleggingen	
Liquide middelen	430.761
Overlopende rekeningen	63.464
Totaal der activa	**2.659.013**

Passiva	
Eigen vermogen	**1.393.133**
Kapitaal	579.977
Uitgiftepremies	
Herwaarderingsmeerwaarden	
Reserves	57.998
Overgedragen resultaat	755.159
Kapitaalsubsidies	
Voorzieningen en uitgestelde belastingen	**140.259**
Voorzieningen	140.259
Uitgestelde belastingen	
Schulden	**1.125.620**
Schulden > 1 jaar	34.090
Schulden ≤ 1 jaar	1.070.982
Overlopende rekeningen	20.548
Totaal der passiva	**2.659.013**

Current Ratio =

$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$= \frac{2.075.931}{1.091.530} = 1,90$$

Quick Ratio =

$$\frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$$

$$= \frac{1.178.931}{1.091.530} = 1,08$$

7. Financial Statement Analysis

Financial Ratios – Liquidity

Quality of underlying assets – efficiency ratios

Inventories: might be slowmoving – obsolete. It is important to know how fast inventory is sold.

How many times the inventory is renewed during the year

Efficiency Ratios (asset utilization): Inventory Turnover

- Measures number of times a company sells its average level of inventory during a year

Days Inventory Outstanding or Inventory Resident Period

- Converts inventory turnover ratio into days

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

$$\text{Days' inventory outstanding (DIO)} = \frac{365}{\text{Turnover}}$$

7. Financial Statement Analysis

Financial Ratios – Liquidity

Quality of underlying assets – efficiency ratios

A/R (Accounts Receivable): might be using long credit terms – uncollectible. It is important to know how fast A/R are converted into cash

How long does it take to collect money after a sale

Accounts Receivable Turnover

-Measures ability to collect cash from credit customers

-In general, the higher the better

-Tells how many times during the year average receivables were turned into cash

$$\text{Accounts receivable turnover} = \frac{\text{Net credit sales}}{\text{Average net accounts receivable}}$$

Days' Sales Outstanding or receivable collection period

- How many days' sales remain in accounts receivable
- Can be calculated in two ways:

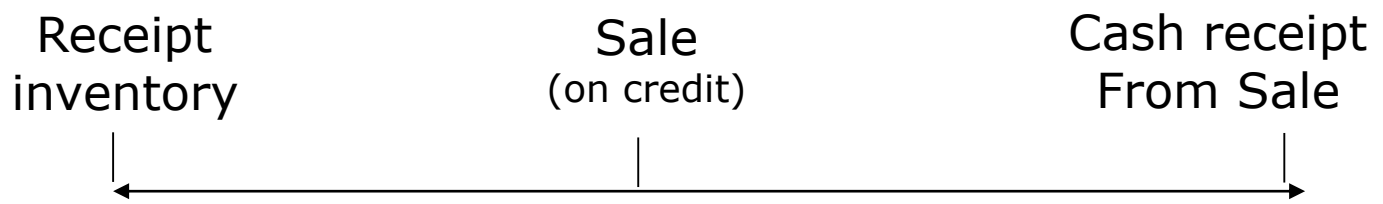
$$\text{Days' sales outstanding (DSO) (or days'-sales-in receivables)} = \frac{365}{\text{Turnover}}$$

OR

$$\text{Average daily sales} = \frac{\text{Net sales}}{365 \text{ days}}$$

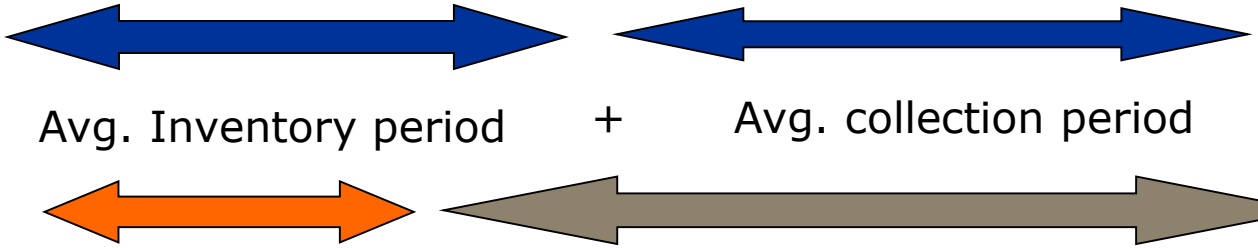
$$\text{Convert average daily sales to DSO} = \frac{\text{Average net accounts receivable}}{\text{Average daily sales}}$$

7. Financial Statement Analysis
Operating and cash conversion cycle



Operating cycle =

The time span during which goods and services enter
the company and the company receives cash for it from customers
<=> 1 year



Cash conversion cycle =

the time span during which cash is used to acquire goods
and services, which in turn are sold to customers, who in turn pay for
their purchases, with cash *cfr. working capital needs*

7. Financial Statement Analysis

Financial Ratios – Liquidity

Quality of underlying assets – efficiency ratios

A/P (Accounts Payable): how fast are A/P (and other operating payables e.g. payroll payables) paid with cash

Accounts Payable Turnover

- Measures number of times per year the entity pays off its accounts payable

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

Payable Outstanding Period

- Also known as Days' Payable Outstanding. How many days it takes a company to pay off accounts payable

$$\text{Days' payable outstanding (DPO)} = \frac{365}{\text{Turnover}}$$

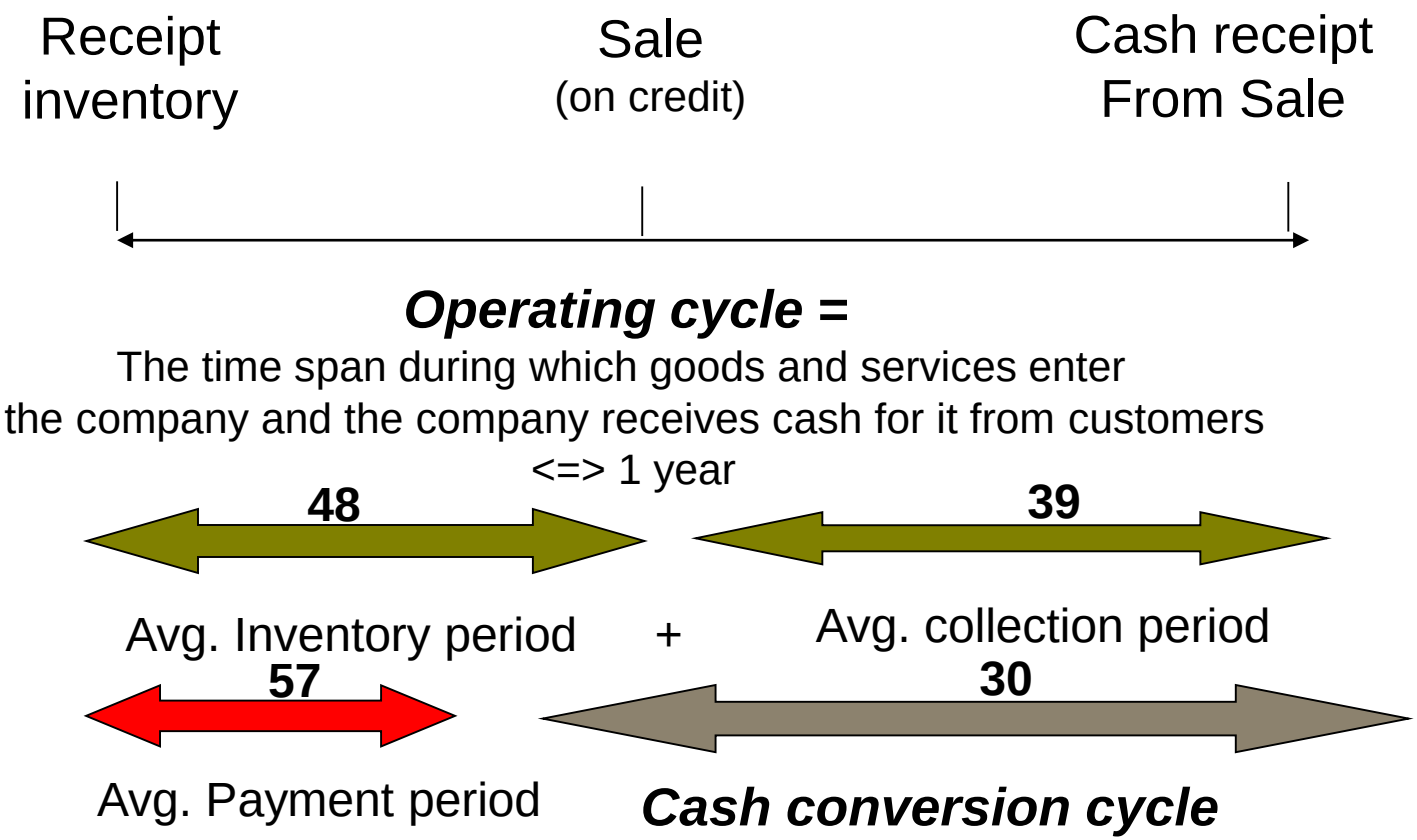
$$EI = BI + \mathbf{P} - COGS$$

$$COGS = BI + P - EI$$

7. Financial Statement Analysis

Example Clicktouch

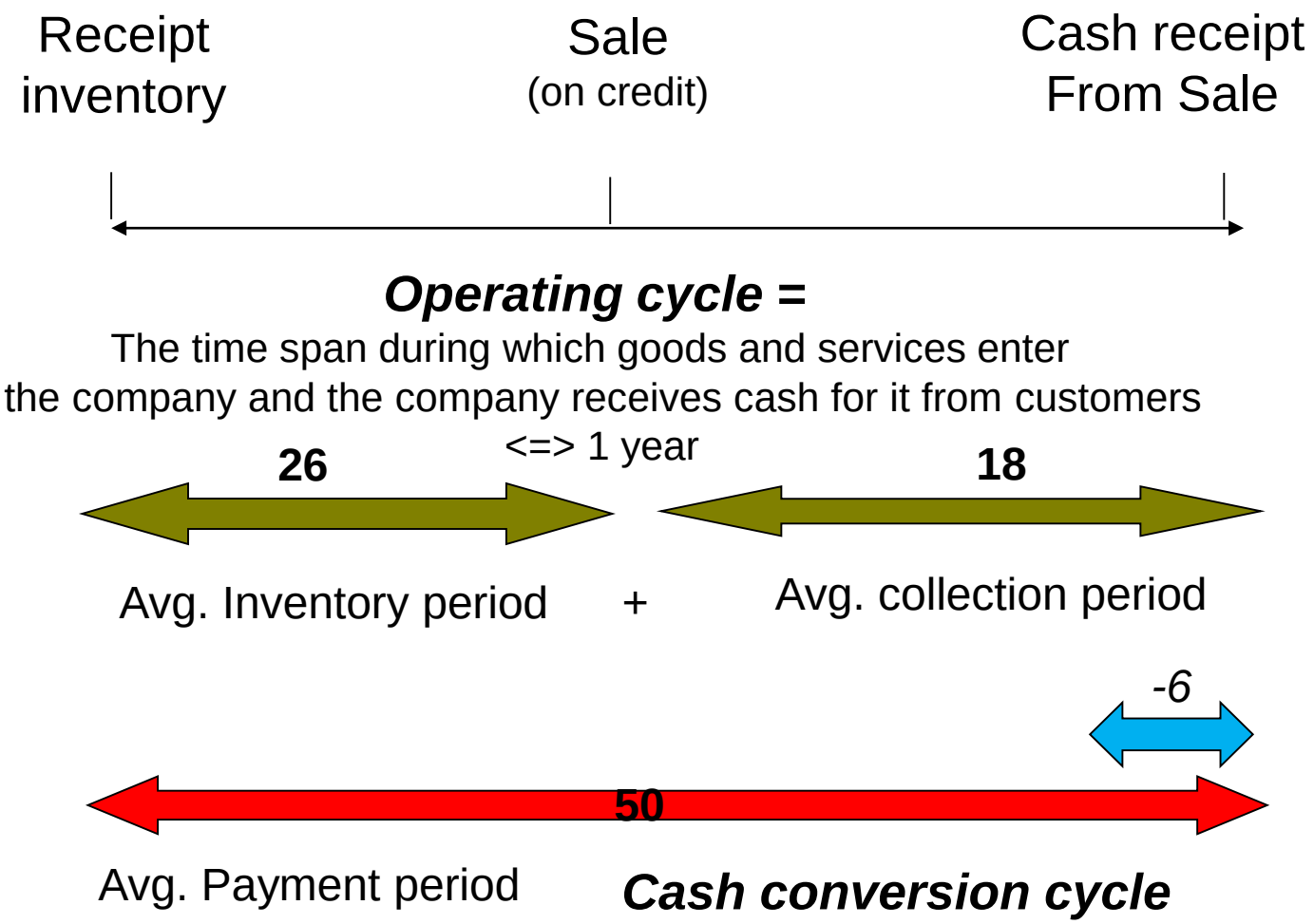
1/1/2013 – 31/12/2013



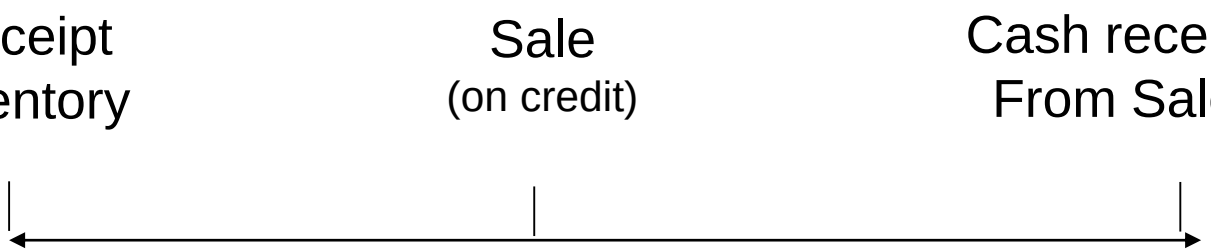
7. Financial Statement Analysis

Example Colruyt

4/2013 – 3/2014



7. Financial Statement Analysis
Operating and cash conversion cycle

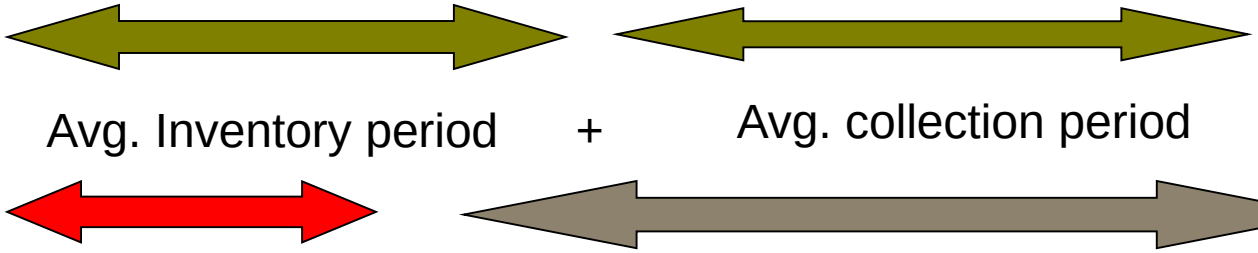


Operating cycle =

The time span during which goods and services enter the company and the company receives cash for it from customers

<=> 1 year

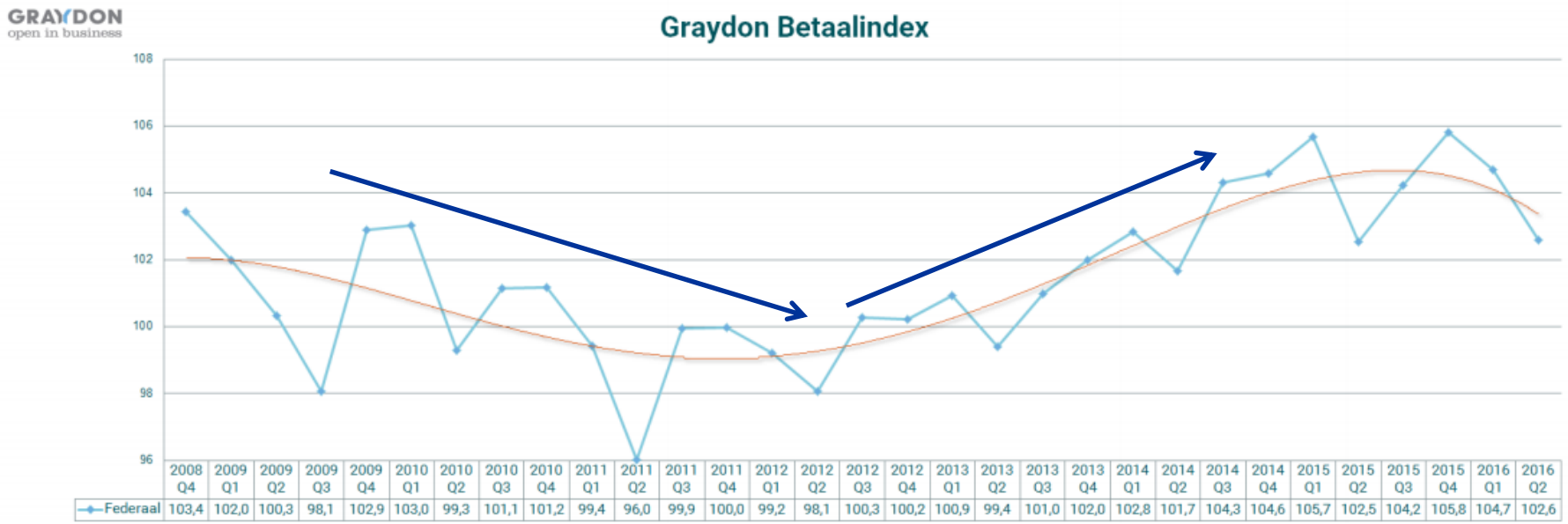
Influence crisis?



Cash conversion cycle =

the time span during which cash is used to acquire goods and services, which in turn are sold to customers, who in turn pay for their purchases, with cash *cfr. working capital needs*

7. Financial Statement Analysis
Payment behaviour of Belgian Companies



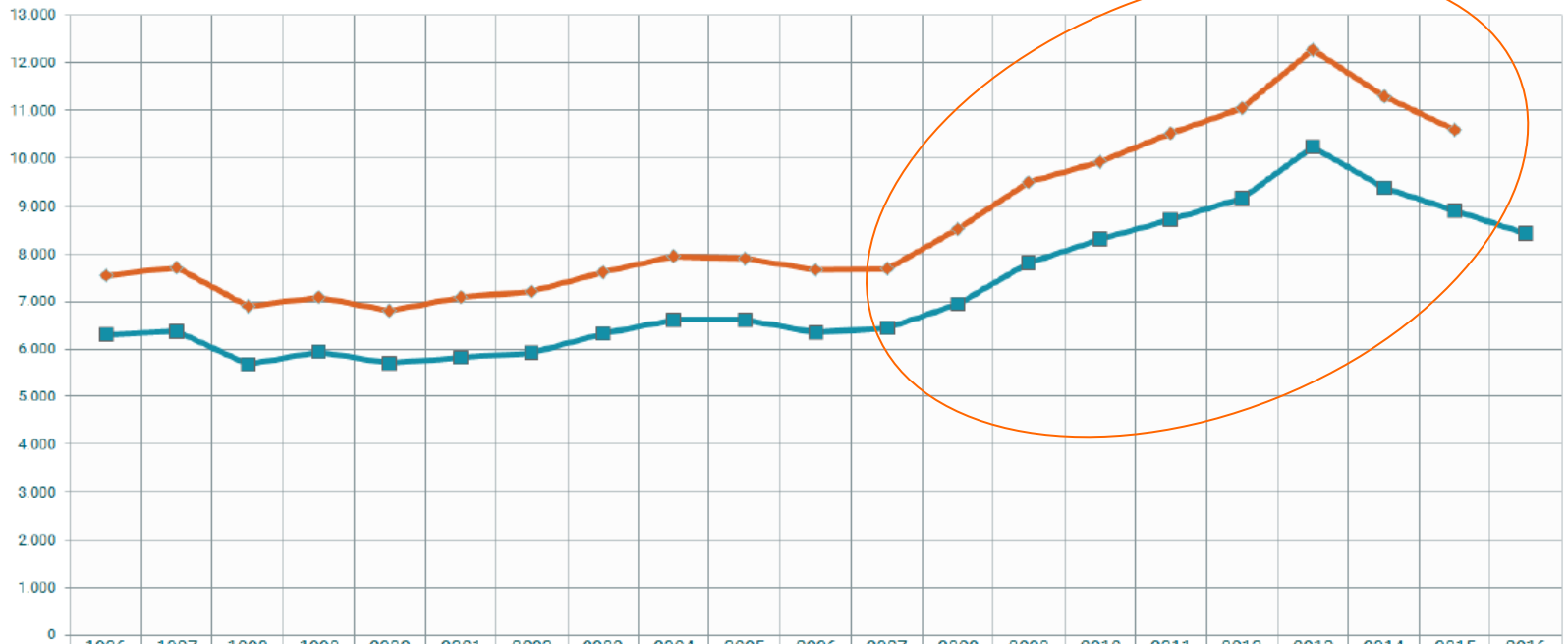
	2008 Q4	2009 Q1	2009 Q2	2009 Q3	2009 Q4	2010 Q1	2010 Q2	2010 Q3	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2	2013 Q3	2013 Q4	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2
Federaal	103,4	102,0	100,3	98,1	102,9	103,0	99,3	101,1	101,2	99,4	96,0	99,9	100,0	99,2	98,1	100,3	100,2	100,9	99,4	101,0	102,0	102,8	101,7	104,3	104,6	105,7	102,5	104,2	105,8	104,7	102,6

Source: Graydon (2016) B2B- Studie Betaalgedrag Q2
www.graydon.be

7. Financial Statement Analysis
Payment behaviour of Belgian Companies

GRAYDON
open in business

Evolutie faillissementen op jaarbasis en voor de periode: Januari-oktober
Évolution des faillites sur base annuelle et pour la période: Janvier-octobre
bron/source: Graydon Belgium nv/sa www.graydon.be



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Totaal	7.538	7.710	6.888	7.093	6.814	7.085	7.203	7.627	7.952	7.902	7.657	7.697	8.518	9.504	9.939	10.519	11.052	12.279	11.289	10.601	
Januari-oktober	6.291	6.375	5.677	5.955	5.699	5.835	5.908	6.314	6.611	6.614	6.351	6.435	6.944	7.818	8.303	8.721	9.160	10.240	9.375	8.903	8.434

Source: *Graydon (2015) Studie faillissementen 2 November 2016*

7. Financial Statement Analysis

Payment behaviour of Belgian Companies

Cash is king?! Some rounded figures (www.graydon.be)

700.000 entities	8.000 failliet	→	10.100 (1/110)
	2008		2015
- 350.000 companies	6.500		8.100
2/3 BVBA	*BVBA (1/54)*		*BVBA (1/57)*
1/3 NV	*NV (1/104)*		*NV (1/110)*
- 350.000 sole propriotorship	1.500 (1/250)		2.000 (1/256)

1/5 failures

Due to late or non-payment!!

7. Financial Statement Analysis

Financial Ratios – Solvability

How well a company can meet its long-term commitments (debt and interest)?

BALANCE SHEET

Activa	**Passiva**
Oprichtingskosten	**Eigen vermogen**
Vaste Activa	Inbreng
Immateriële vaste activa	Herwaarderingsmeerwaarden
Materiële vaste activa	Reserves
Financiële vaste activa	Overgedragen resultaat
	Kapitaalsubsidies
Vlottende activa	Voorschot aan vennoten op verdeling netto-actief
Vorderingen > 1 jaar	**Voorzieningen en uitgestelde belastingen**
Voorraden en bestellingen in uitvoering	Voorzieningen
Vorderingen ≤ 1 jaar	Uitgestelde belastingen
Geldbeleggingen	**Schulden**
Liquide middelen	Schulden > 1 jaar
Overlopende rekeningen	Schulden ≤ 1 jaar
Totaal der activa	Overlopende rekeningen
	Totaal der passiva

7. Financial Statement Analysis
Financial Ratios – Solvability

Long term solvency: an organization's ability to generate enough cash to repay long-term debts as they mature

!! Definition of solvency ratio!!

$$\text{Total debt to total assets} = \frac{\text{Total liabilities}}{\text{Total assets}}$$

60%

$$\text{Total debt to equity} = \frac{\text{Total liabilities}}{\text{Stockholders' equity}}$$

Debt financing introduces financial risk because it implies fixed commitments in the form of interest payments and principal repayment and exposure to interest rate movements.

7. Financial Statement Analysis
Example Clicktouch
1/1/2013 – 31/12/2013

BALANCE SHEET

Activa		**Passiva**	
Oprichtingskosten	**0**		
Vaste Activa	**583.081**	**Eigen vermogen**	**1.393.133**
Immateriële vaste activa	8.382	Kapitaal	579.977
Materiële vaste activa	466.841	Uitgiftepremies	
Financiële vaste activa	107.859	Herwaarderingsmeerwaarden	
		Reserves	57.998
		Overgedragen resultaat	755.159
		Kapitaalsubsidies	
Vlottende activa	**2.075.931**	**Voorzieningen en uitgestelde belastingen**	**140.259**
Vorderingen > 1 jaar		Voorzieningen	140.259
Voorraden en bestellingen in uitvoering	897.000	Uitgestelde belastingen	
Vorderingen ≤ 1 jaar	684.706	**Schulden**	**1.125.620**
Geldbeleggingen		Schulden > 1 jaar	34.090
Liquide middelen	430.761	Schulden ≤ 1 jaar	1.070.982
Overlopende rekeningen	63.464	Overlopende rekeningen	20.548
Totaal der activa	**2.659.013**	**Totaal der passiva**	**2.659.013**

Total debt to total assets

$$= \frac{\text{Total Debt}}{\text{Total Assets}}$$

$$= \frac{1.125.620}{2.659.013} = 0,42$$

Total debt to total equity =

$$\frac{\text{Total Debt}}{\text{Shareholders' equity}}$$

$$= \frac{1.125.620}{1.393.133} = 0,81$$

7. Financial Statement Analysis
Financial Ratios – Solvability

The prudent use of debt is a major part of intelligent financial management.

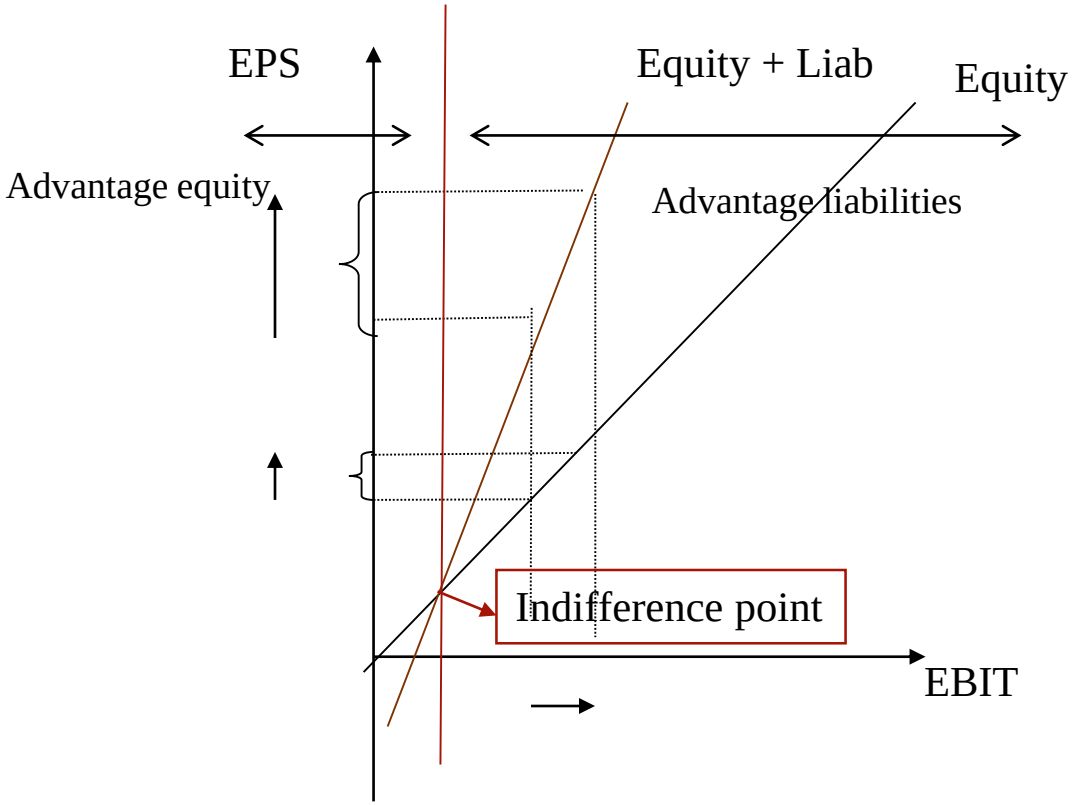
Debt financing is more attractive than equity financing because:

- Interest payments are deductible for income tax purposes, but dividends are not deductible.
- The ownership rights to voting and profits are kept by the present shareholders.
- Using borrowed money at fixed interest rates might enhance the rate of return on common equity (= financial leverage, trading on the equity)

7. Financial Statement Analysis

Financial Ratios – Solvability

Trading on the Equity



7. Financial Statement Analysis

Financial Ratios – Solvability

Financial Leverage

	Case 1 – 100% Equity		Case 2 – 30% debt	
EBIT	100,000	200,000	100,000	200,000
Interest			15,000	15,000
EBT	100,000	200,000	85,000	185,000
Tax (40%)	40,000	80,000	34,000	74,000
EAT	60,000	120,000	51,000	111,000
# shares	25,000	25,000	17,500	17,500
EPS	2,4	4,8	2,91	6,34
% increase in EBIT		**100%**		**100%**
% increase in EPS		**100%**		**118%**

7. Financial Statement Analysis

Financial Ratios – Solvability

Financial Leverage

	Case 1				Case2
EBIT	6000	←	10000	→	14000
Interest	2000		2000		2000
EBT	4000		8000		12000
Tax (40%)	1600		3200		4800
EAT	2400		4800		7200
# shares	1000		1000		1000
EPS	2,4	←	4,8	→	7,2
% change in EBIT	**-40%**				**+40%**
% change in EPS	**-50%**				**+50%**

7. Financial Statement Analysis

Financial Ratios – Solvability

Trading on the Equity

Benefits:

- Larger returns to the common shareholders, as long as overall income is large enough to cover the increased interest payments

$$\text{Interest coverage} = \frac{\text{EBIT}}{\text{I}}$$

Example Clicktouch:

$$\text{Interest coverage} = \frac{127.629}{8.567} = 15$$

7. Financial Statement Analysis
Financial Ratios – Solvability
Optimal debt ratio? Industry related!

- Industry with high level of tangible assets (mortgage!);

- Bv. Paperindustry (debt / SHE: 1,36) ←→ Pharmaceutical industry (debt / SHE: ,079) [Kester (1986)]

- Industry with stable operating income (EBIT);

7. Financial Statement Analysis
Financial Ratios – Profitability

Profitability Ratios

Margin ratios (return on sales)

show how successful management is in creating profit from a given quantity of sales

Return on investment (ROI) ratios

take into account the investment needed to generate the profit

$$\text{Net profit margin} = \frac{\text{Profit after tax}}{\text{Sales}}$$

$$\text{Gross operating margin} = \frac{\text{Sales less Cost of sales}}{\text{Sales}}$$

$$\text{Net operating margin} = \frac{\text{Profit before interest and tax}}{\text{Sales}}$$

$$\text{Return on equity (ROE)} = \frac{\text{Profit after tax}}{\text{Equity}}$$

$$\text{Return on assets (ROA)} = \frac{\text{Profit before interest}}{\text{Total assets}}$$

$$= \frac{\text{Profit after tax + (Interest * (1-tax rate))}}{\text{Total assets}}$$

$$\text{Return on capital employed (ROCE)} = \frac{\text{Profit before interest on LT-debt}}{\text{Equity + LT-debt}}$$

7. Financial Statement Analysis
Financial Ratios – Profitability

Profitability Ratios

***Margin ratios* (return on sales)**

show how successful management is in creating profit from a given quantity of sales

Net profit margin	=	$\frac{\text{Profit after tax}}{\text{Sales}}$
Gross operating margin	=	$\frac{\text{Sales less Cost of sales}}{\text{Sales}}$
Net operating margin	=	$\frac{\text{Profit before interest and tax}}{\text{Sales}}$

Often the *nature of the business* of a company affects the gross profit as compared to other types of companies (service vs. production company).

→ Retailers often lower their gross profit margins and selling prices and hope that the lower selling prices will increase sales volume enough to compensate for the lower gross profit.

→ Industries with higher gross profit percentages tend to have the lowest *inventory turnover*.

7. Financial Statement Analysis
Financial Ratios – Profitability

How effectively does the company uses its ets to generate returns for all suppliers of capital?

Each reflects the profit generated by a specific pool of funds, excluding the costs of the specific funds considered

How effectively does the company uses its equity or total assets to generate returns for suppliers of funds?

Different denominators (investment base) and numerators (profit figure retained

Return on investment (ROI) ratios

take into account the investment needed to generate the profit

$$\text{Return on equity (ROE)} = \frac{\text{Profit after tax}}{\text{Equity}}$$

$$\text{Return on assets (ROA)} = \frac{\text{Profit before interest}}{\text{Total assets}}$$

$$= \frac{\text{Profit after tax + (Interest * (1-tax rate))}}{\text{Total assets}}$$

$$\text{Return on capital employed (ROCE)} = \frac{\text{Profit before interest on LT-debt}}{\text{Equity + LT-debt}}$$

7. Financial Statement Analysis
Financial Ratios – ROA Decomposition

There is a conventional relationship between management performance ratios which links return on investment, profit margin and asset turnover as follows:

$$\frac{\text{Profit before interest}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} = \frac{\text{Profit before interest}}{\text{Total assets}}$$

Profit margin x Asset turnover = ROA

Assume: ROA decreases over a number of periods

➔**Cause?** Asset turnover, Profit margin or both?

Assume: Asset turnover drops

➔**Cause?** Sales, assets or both?

Examples:

(1) Due to competition, sales decrease and one is not able to adjust inventory levels accordingly

(2) Recent investments in IT were necessary to support current competitive position

Assume: Profit margin decreases

➔**Cause?** *Increasing operating expenses, decreasing sales prices, …*

7. Financial Statement Analysis
Financial Ratios – ROE Decomposition

Financial leverage

Taking the analysis one step further, the return on equity can be analytically linked to the return on assets ratio with the introduction the concept of financial leverage.

$$\frac{\text{Net profit for the period}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Equity}} = \frac{\text{Net profit for the period}}{\text{Equity}}$$

Proportion of assets acquired with funds supplied by the shareholders

ROA x Financial leverage = ROE

Financial leverage will increase if debt financing increases

7. Financial Statement Analysis
Financial Ratios – ROE Decomposition

ROA x Financial leverage = ROE

Financial leverage coefficient = ROE%/ROA%

$$\frac{ROE\%}{ROA\%} = \frac{\frac{profit\ after\ interest}{equity}}{\frac{profit\ before\ interest}{assets}}$$

$$= \frac{profit\ after\ interest}{equity} \times \frac{assets}{profit\ before\ interest}$$

$$= \frac{profit\ after\ interest}{profit\ before\ interest} \times \frac{assets}{equity}$$

Financial leverage coefficient > 1 if ROE% > ROA%

7. Financial Statement Analysis
Financial Ratios – Financial Leverage

Total assets = 1,000
ROA = 10%
cost of debt = 7%
Tax N/A

Debt /Equity	**0%** 0 debt/1,000 equity	**100%** 500 debt/500 equity	**150%** 600 debt/400 equity	**300%** 750 debt/250 equity
Profit before interest	100	100	100	100
Cost of debt	0	35	42	52.5
Net profit	100	65	58	47.5
ROE	10%	13%	14.5%	19%
Financial leverage coefficient	10%/10% = 1 (no leverage)	13%/10% = 1.30	1.45	1.90

If ROA%<i%: ➔ financial leverage has a negative effect for shareholders
If ROA%>i%: ➔ financial leverage has a positive effect for shareholders

7. Financial Statement Analysis
Financial Ratios – Financial Leverage

Total assets = 1,000
ROA = 5%
cost of debt = 7%
Tax N/A

Debt /Equity	**0%** 0 debt/1,000 equity	**100%** 500 debt/500 equity	**150%** 600 debt/400 equity	**300%** 750 debt/250 equity
Profit before interest	50	50	50	50
Cost of debt	0	35	42	52.5
Net profit	50	15	8	-2.5
ROE	5%	3%	2%	-1%
Financial leverage coefficient	5%/5% = 1 (no leverage)	3%/5% = 0.6	0.4	-0.2

If ROA%<i%: ➔ financial leverage has a negative effect for shareholders
If ROA%>i%: ➔ financial leverage has a positive effect for shareholders

7. Financial Statement Analysis
Financial Ratios – The Dupont Model

Combining ROI decomposition and financial leverage brings us to the following overall model (also called the DuPont model):

$$\frac{\text{Net profit for the period}}{\text{Equity}} = \frac{\text{Net profit for the period}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Equity}}$$

ROE = Net profit margin x Asset turnover x Financial leverage

7. Financial Statement Analysis
Example

	20X6	20X5	20X4
Statement of profit or loss	€ '000	€ '000	€ '000
Sales	3 674	2 987	1 643
Cost of Sales	- 2 718	- 2 151	- 1 133
	956	836	510
Distribution costs	- 412	- 392	- 242
Administrative expenses	- 183	- 190	- 86
	361	254	182
Interest	- 315	- 243	0
	46	11	182
Taxation	- 15	-3	- 65
Net profit	***31***	***8***	***117***
Statement of financial position			
Non-Current assets			
Intangible assets	2 100	2 200	0
Tangible assets	4 446	4 220	2 085
Investments	0	0	240
Current assets			
Inventories	301	255	105
Receivables	38	42	29
Cash at bank	68	54	73
Total assets	***6 953***	***6 771***	***2 532***
Financing			
Ordinary shares (€1)	1 200	1 200	1 200
Retained Earnings	1 241	1 210	1 202
	2 441	2 410	2 402
Long-term debt	4 000	4 000	0
Trade payables	512	361	130
Total equity and liabilities	***6 953***	***6 771***	***2 532***

Ratios:	20X6	20X5	20X4
Management performance ratios			
1. Profitability ratios			
ROE	1.27%	0.33%	4.87%
ROA	3.62%	2.63%	4.62%
ROCE	3.90%	2.78%	4.87%
EPS	0.0258	0.0067	0.0975
Gross operating margin	26.02%	27.99%	31.04%
Net operating margin	9.83%	8.50%	11.08%
Net profit margin	0.84%	0.27%	7.12%
2. Asset utilization ratios			
Total asset turnover	0.53	0.44	0.65
Long-term asset turnover	0.56	0.47	0.71
Inventory turnover	9.03	8.44	10.79
Receivables turnover	96.68	71.12	56.66
Financial strength ratios			
3. Long-term solvency risk ratios			
Gearing	163.87%	165.98%	0.00%
Gearing (Total finance)	62.10%	62.40%	0.00%
Interest cover	1.15	1.05	0.00
4. Short-term liquidity ratios			
Current ratio	0.79	0.97	1.59
Acid test ratio	0.21	0.27	0.78
Days inventory outstanding	40.42	43.27	33.83
Credit given	3.78	5.13	6.44
Credit obtained	68.76	61.26	41.88

7. Financial Statement Analysis
Example

- Major expansion in 20X5:
  - Probably by acquisition of another company as all asset categories ↑ and a major intangible appears
  - Debt ↑
  - Dilution of margins

- Asset utilization ratios ↓ in 20X5 and ↑ in 20X6:
  - Less efficient use of assets in 20X5 (post-acquisition inefficiencies? Or a high takeover price?)
  - Organic growth in 20X6

⇨ Steps has been taken to improve profits in combined group and sales continue ↑ (from 2,987 in 20X5 to 3,674 in 20X6)

7. Financial Statement Analysis
Example

- Gross margin ↓ from 28% in 20X5 to 26% in 20X6: gross margin has been sacrificed to achieve ↑ sales (selling price ↓?)

- Debt ↑:
  - from all-equity to a gearing of 62%
  - highly vulnerable to interest rate ↑ in its present highly-geared structure

20X5: ROA < i%: 2.63% < 6%

20X6: ROA < i%: 3.62% < 7.9%

7. Financial Statement Analysis
Example

ROA x Financial leverage = ROE

Financial leverage coefficient = ROE%/ROA%

$$\frac{ROE\%}{ROA\%} = \frac{\frac{profit\ after\ interest}{equity}}{\frac{profit\ before\ interest}{assets}} = \frac{profit\ after\ interest}{equity} \times \frac{assets}{profit\ before\ interest}$$

$$= \frac{profit\ after\ interest}{profit\ before\ interest} \times \frac{assets}{equity}$$

	20X4	20X5	20X6
$\frac{\text{profit after interest}}{\text{profit before interest}}$	1	0.045	0.123
$\frac{\text{assets}}{\text{equity}}$	1.054	2.810	2.848
Financial leverage coefficient	1.054	0.125	0.350
ROA	4.62%	2.63%	3.62%
ROE	4.87%	0.33%	1.27%

A/P are interest-free

7. Financial Statement Analysis
Example

- Without further equity finance not able to expand for some time

⇨ The company has gone from a small, profitable and low risk operation to a higher, less profitable, more risky business. This initiative may well prove worthwhile in a few years but is not satisfactory for shareholders in the short term

7. Financial Statement Analysis
Thomas Cook

Thomas Cook	2017	2018
ROA	2,98%	-0.12%
Financiële hefboom (TA/EV)	25.80	22,57
ROE	3.61%	-55,97%
Interest % (LT schuld)	9,35%	7,54%
# d kl. Kred (DSO)		30.88
# d lev. Kred (DPO)		110.27

Tui	2018
ROA	6,31%
Financiële hefboom (TA/EV)	3,60
ROE	18,90%
Interest % (LT schuld)	6,22%
# d kl. Kred (DSO)	18,36
# d lev. Kred (DPO)	61,14

Berekend op basis van :
https://www.thomascookgroup.com/investors/insight_external_assest/Thomas_Cook_AR_2018_web.pdf

https://www.tuigroup.com/damfiles/default/tuigroup-15/en/investors/6_Reports-and-presentations/Reports/2018/TUI_AR18_EN.pdf-41a3f925c083a43d9ef92d2abeb95a62.pdf

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

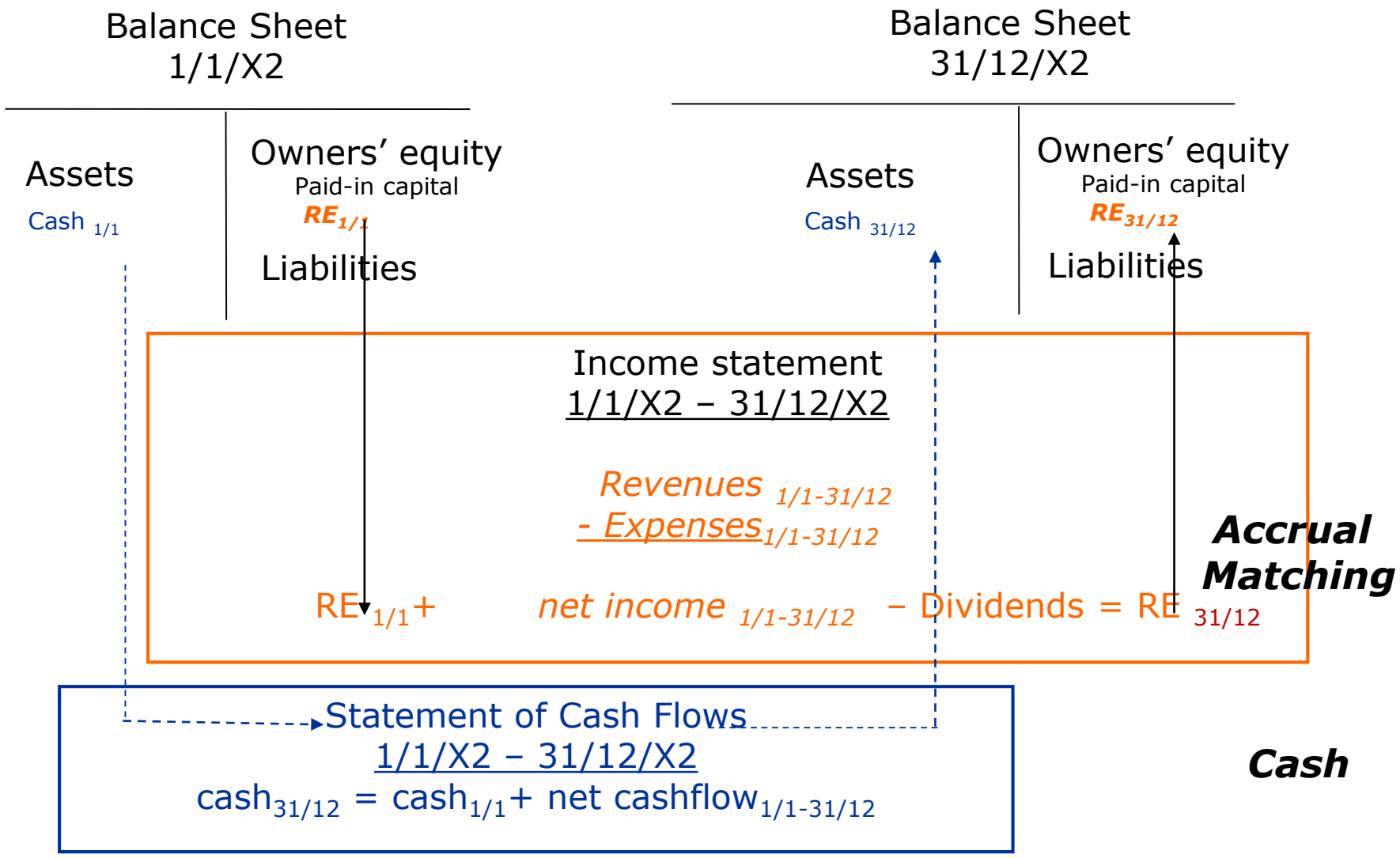
- Balance sheet – shows financial position *on a given day*
- Income statement – shows performance *over a given period*
- Statement of cash flows – shows performance *<u>over a given period</u>*

- The statement of cash flows provides a thorough ***explanation of the changes*** that occurred in a firm's ***cash balance*** during the entire accounting period.
- Cash flows are ***factual details*** of incoming and outgoing flows of cash, while the statement of financial position and the statement of profit or loss emanate from professional judgement and the use of GAAP.

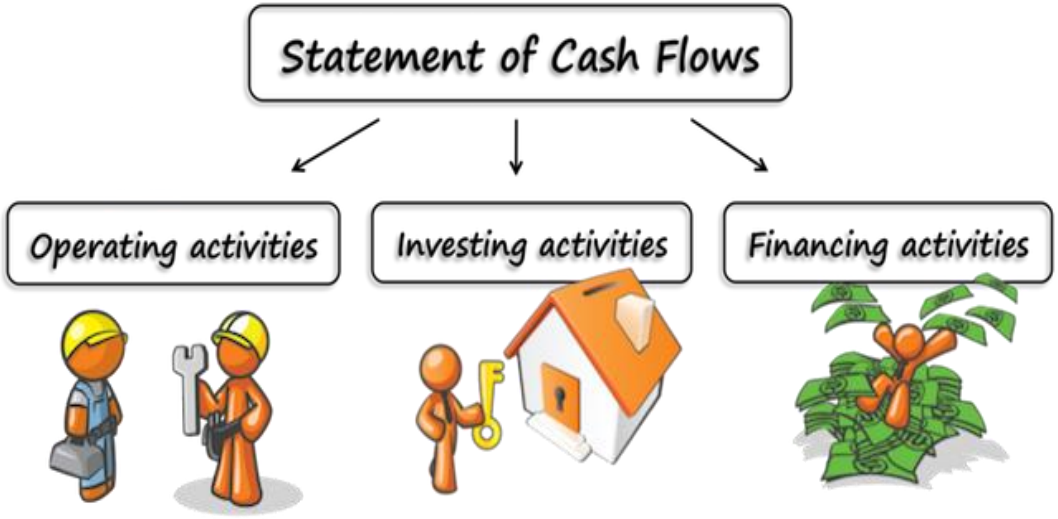
7. Financial Statement Analysis

Cash Flow Analysis

Relationship between Balance Sheet/Income Statement/Statement of cash flows

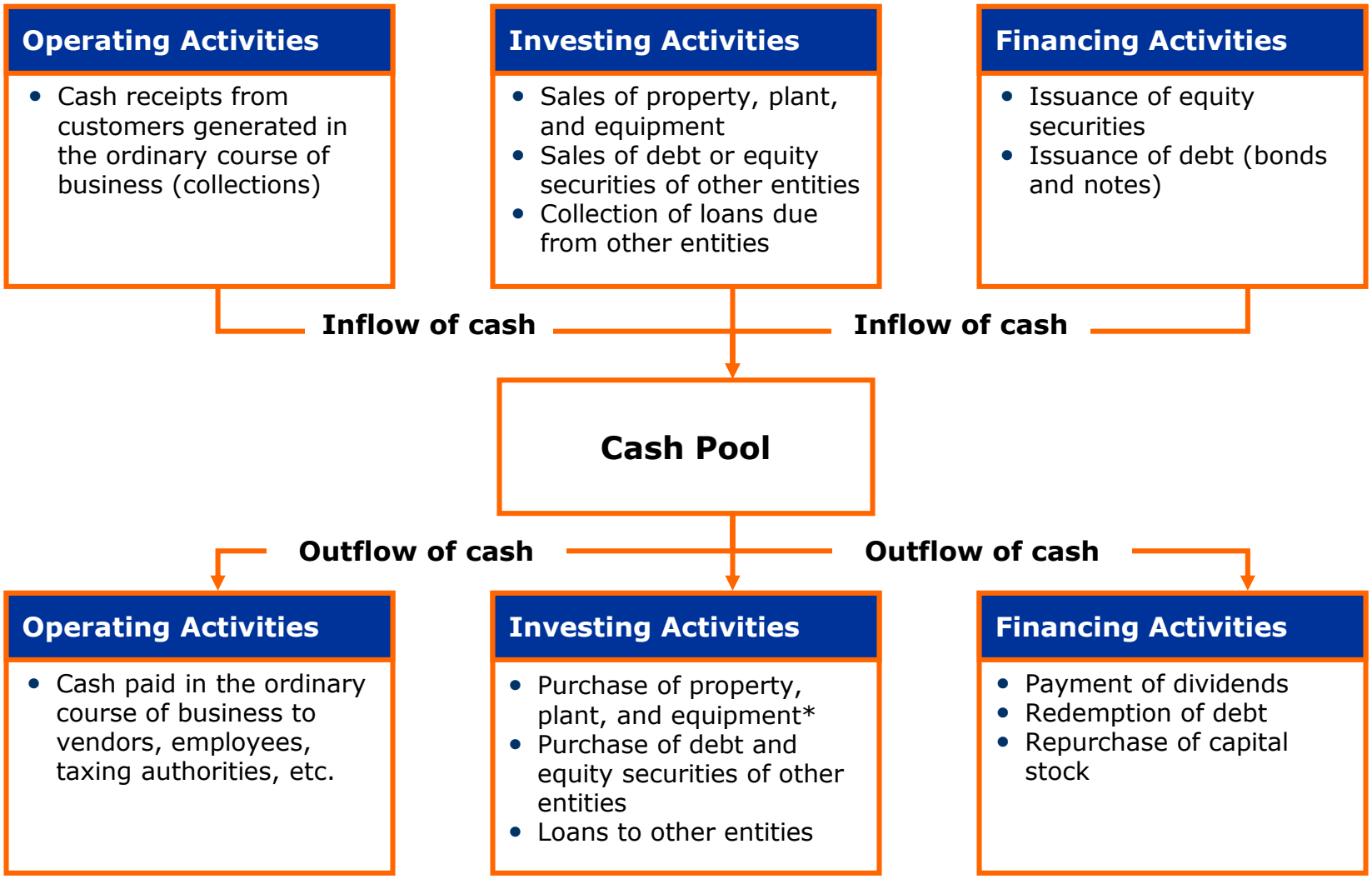


7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement



Cash Flow	$m
Net cash inflow (outflow) from operating activities	x (x)
Net cash inflow (outflow) from investing activities	x (x)
Net cash inflow (outflow) from financing activities	x (x)
Net increase (decrease) in cash	x (x)
Cash at beginning of year	x
Cash at end of year	$x

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement



* Including M&A activities

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM OPERATING ACTIVITIES
TWO APPROACHES

Two approaches may be used to compute cash flow from operating activities.

- Direct method - the method that shows net cash provided by operating activities as *collections minus operating distributions.* by keeping track of each individual cash transaction (cash basis income statement)

- Indirect method (reconciliation method) - the method that adjusts the accrual *net income* to reflect only cash receipts and outlays

Under either method, the final cash flow from operating activities will be the same.

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM OPERATING ACTIVITIES
TWO APPROACHES

The **direct method** shows each major class of gross cash receipts and gross cash payments. The operating cash flows section of the statement of cash flows under the direct method would appear something like this:

Cash receipts from customers	xx,xxx
Cash paid to suppliers	xx,xxx
Cash paid to employees	xx,xxx
Cash paid for other operating expenses	xx,xxx
Interest paid	xx,xxx
Income taxes paid	xx,xxx
Net cash from operating activities	**xx,xxx**

The **indirect method** adjusts accrual basis net profit or loss for the effects of non-cash transactions. The operating cash flows section of the statement of cash flows under the indirect method would appear something like this:

Profit before interest and income taxes		xx,xxx
Add back depreciation		xx,xxx
Add back impairment of assets		xx,xxx
Increase in receivables	xx,xxx	
Decrease in inventories		xx,xxx
Increase in trade payables		xx,xxx
Interest expense	xx,xxx	
Less Interest accrued but not yet paid	xx,xxx	
Interest paid		xx,xxx
Income taxes paid		xx,xxx
Net cash from operating activities		**xx,xxx**

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM OPERATING ACTIVITIES
AN EXAMPLE

ECO-BAG COMPANY
Balance Sheet (in thousands)
December 31, 20X3 and 20X2

Current assets:			**Current liabilities:**		
Cash	$ 16	$ 25	Accounts payable	$ 74	$ 6
Accounts receivable	45	25	Wages and salaries payable	25	4
Inventory	100	60			
Total current assets	$161	$110	Total current liabilities	99	10
Fixed assets, gross	581	330	Long-term debt	125	5
Accum. depreciation	(101)	(110)	Paid-in-capital	148	50
Net	480	220	Retained earnings	269	265
			Total liabilities and		
Total assets	$641	$330	stockholders' equity	$641	$330

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM OPERATING ACTIVITIES
AN EXAMPLE

ECO-BAG COMPANY
Statement of Income (in thousands)
for the Year Ended December 31, 20X3

Sales		$200
Costs and expenses:		
Cost of goods sold	$100	
Wages and salaries	36	
Depreciation	17	
Interest	4	
Total costs and expenses		157
Income before income taxes		43
Income taxes		20
Net income		$ 23

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM OPERATING ACTIVITIES
AN EXAMPLE – USING THE DIRECT METHOD

ECO-BAG COMPANY
Statement of Cash Flows (in thousands)
for the Year Ended December 31, 20X3

CASH FLOWS FROM OPERATING ACTIVITIES:	
Cash collections from customers	**$180**
Cash payments:	
To suppliers	**$ 72**
To employees	**15**
For interest	**4**
For taxes	**20**
Total cash payments	**(111)**
Net cash provided by operating activities	**$ 69**

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW
AN EXAMPLE – USING THE DIRECT METHOD

Collections from sales to customers are usually the largest source of operating cash inflows.

Disbursements for purchases of goods to be sold and operating expenses are usually the largest sources of operating cash outflows.

Operating cash inflows minus operating cash outflows equals the net cash provided by (or used by) operating activities.

Instead of by keeping track of each individual cash transaction (cash basis income statement), Accountants often compute collections and other operating cash flow items **from revenue and expense accounts** in the income statement.

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM OPERATING ACTIVITIES
WORKING FROM INCOME STATEMENT TO CASH AMOUNTS

In our example, $180,000 was ***collected*** from customers. That amount is determined as follows:

	Sales	**$200,000**
+	Beginning accounts receivable	25,000
	Potential collections	**$225,000**
–	Ending accounts receivable	45,000
	Cash collections from customers	$180,000

or

Sales	**$200,000**
Decrease (increase) in accounts receiv.	**(20,000)**
Cash collections from customers	**$180,000**

Note that the increase in A/R means that sales > collections

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM OPERATING ACTIVITIES
WORKING FROM INCOME STATEMENT TO CASH AMOUNTS

In our example, $72,000 was ***paid*** from customers. The difference between cost of goods sold and ***cash payments*** to suppliers can be determined by looking at inventory and accounts payable.

	Cost of goods sold	**$100,000**
+	Ending inventory	100,000
	Inventory to account for	$200,000
–	Beginning inventory	(60,000)
	Purchases of inventory	**$140,000**
	Beginning trade accounts payable	**$ 6,000**
+	Purchases of inventory	140,000
	Total amount to be paid in cash	**$146,000**
–	Ending trade accounts payable	(74,000)
	Accounts paid in cash	**$ 72,000**

EI = BI + Purchases – COGS

EI + COGS – BI = Purchases

Cost of goods sold	**$100,000**
Increase (decrease) in inventory	**40,000**
Decrease (increase) in trade accounts pay.	**(68,000)**
Payments to suppliers	**$ 72,000**

$$\Delta Cash = \Delta L + \Delta SE - \Delta NCA$$

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM OPERATING ACTIVITIES
AN EXAMPLE – USING THE INDIRECT METHOD

- The indirect method begins with *total net income* (and does *not* consider each revenue and expense account *individually)*.
- The indirect method *reconciles* accrual net income to cash flows from operating activities.

Items included in the <u>reconciliation</u> between income and cashflow:

- *Depreciation* (and by extension any other non-cash expense) is added back to net income because it was deducted in arriving at net income, but it does not represent any use of cash.
- Additions or deductions are made for *changes in related asset or liability accounts* (items that affect net income and net cash flow differently).

The general rules for additions and deductions to adjust net income using the indirect method are the same as those for adjusting line items on the income statement under the direct method.

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM OPERATING ACTIVITIES
AN EXAMPLE – USING THE INDIRECT METHOD

Cash flow from operating activities =
Net income + depreciation +/- Δ net working capital

	Net income		**$23**
	Adjustments to reconcile net income to net cash provided by operating activities		
	Depreciation		**$ 17**
Net working capital	**Net increase in accounts receivable**	**(20)**	
	Net increase in inventory	**(40)**	
	Net increase in accounts payable	**68**	
	Net increase in wages and salaries payable	**21**	
	Total additions and deductions		**46**
	Net cash provided by operating activities		**$ 69**

7. Financial Statement Analysis
Cash Flow Analysis
Relating Cash Flow and Net Income

Four possible combinations of net income and cash flows exists.

Relationship	**1**	**2**	**3**	**4**
Cash flow from operations	**+**	**+**	**–**	**–**
Net income	**+**	**–**	**+**	**–**

<u>Four possible situations:</u>

- Situation 1 confirms the profitability of the company.
- Situation 2 can occur where a company has large noncash expenses such as depreciation.
- Situation 3 is often an indication of trouble but may also be an indication of a rapidly growing company.
- Situation 4 confirms the lack of profitability of the company.

7. Financial Statement Analysis
Cash Flow Analysis
Indicators revealing solvency risk

Figure 1: Phases of corporate distress

Source: Euler Hermes Rating GmbH

Table 2: Leading indicators for corporate distress four years prior to insolvency

	Germany	France	Italy	Spain
Profitability (ROCE) (EBIT / Net financial debt + equity)	7%	6%	0.2%	3.7%
Capitalization (Equity / Total assets)	20.6%	23.2%	15.6%	23.3%
Interest coverage (EBIT/Interest expense)	0.8x	1.1x	0.5x	1.0x

Source: Euler Hermes Rating GmbH

Source: Boata and Gerdes (Sept. 2019) Three indicators can reveal SME insolvency Risk up to Four years in advance. The View, Economic Research (see Canvas)

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM INVESTING ACTIVITIES
AN EXAMPLE – USING THE INDIRECT METHOD

Changes in fixed assets can usually be explained by:

- Assets acquired
- Asset dispositions
- Depreciation expense

Increase in net book value = Acquisitions – Disposals - Depreciation expense

Increase in net book value + Depreciation expense = Acquisitions - Disposals

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM INVESTING ACTIVITIES
AN EXAMPLE – USING THE DIRECT METHOD

ECO-BAG COMPANY
Statement of Cash Flows (in thousands)
for the Year Ended December 31, 20X3
(continued)

CASH FLOWS FROM INVESTING ACTIVITIES:	
Purchases of fixed assets	**$(287)**
Proceeds from sale of fixed assets	**10**
Net cash used by investing activities	**(277)**

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM FINANCING ACTIVITIES
AN EXAMPLE – USING THE INDIRECT METHOD

Changes in stockholders' equity can be explained by:

- New issuances of stock
- Net income
- Dividends

Increase in Paid in capital = New issuance of shares

Increase in RE = net income - dividends

Dividends = net income – increase in RE

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW FROM FINANCING ACTIVITIES
AN EXAMPLE – USING THE DIRECT METHOD

ECO-BAG COMPANY
Statement of Cash Flows (in thousands)
for the Year Ended December 31, 20X3
(continued)

CASH FLOWS FROM FINANCING ACTIVITIES:	
Proceeds from issue of long-term debt	**$120**
Proceeds from issue of common stock	**98**
Dividends paid	**(19)**
Net cash provided by financing activities	**199**
Net cash provided by operating activities	**69**
Net cash provided by investing activities	**(277)**
Net decrease in cash	**(9)**
Cash, December 31, 20X2	**25**
Cash, December 31, 20X3	**$ 16**

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

CASH FLOW
AN EXAMPLE – USING THE DIRECT METHOD

In this example, cash decreases by $9,000.

- Operating activities contribute $69,000 cash during the period.
- Investing activities use $277,000 cash during the period.
- Financing activities contribute $199,000 cash during the period.

This example shows how a firm may have net income but still have a decline in cash!

7. Financial Statement Analysis
Cash Flow Analysis – Cash Flow Statement

FREE CASH FLOW

FCF = net cash flow from operating and from investing activities = net cash flow available for the financing parties of the company (= debtors and stockholders)

Used in company valuation

CASH FLOWS FROM OPERATING ACTIVITIES	
Net income	$23
Adjustments to reconcile net income to net cash provided by operating activities	
Depreciation	$ 17
Net increase in accounts receivable	(20)
Net increase in inventory	(40)
Net increase in accounts payable	68
Net increase in wages and salaries payable	21
Total additions and deductions	46
Net cash provided by operating activities (1)	$ 69
CASH FLOWS FROM INVESTING ACTIVITIES:	
Purchases of fixed assets	$(287)
Proceeds from sale of fixed assets	10
Net cash used by investing activities (2)	(277)
FREE CASH FLOW (1) + (2)	*(208)*
CASH FLOWS FROM FINANCING ACTIVITIES:	
Proceeds from issue of long-term debt	$120
Proceeds from issue of common stock	98
Dividends paid	(19)
Net cash provided by financing activities (3)	199
Net decrease in cash	*(9)*