Financial Analysis

(selected presentation slides)

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Financial Statement Analysis – Course Objectives

- Understand the main building blocks
  (balance sheet, income statement, cash flow statement)
- Familiarize with fundamental accounting concepts
- Analyze and adjust line items to fair value
- Enhance managerial and financial decision taking

Become a knowlegable reader of financial information:
- able to evaluate the „bigger picture“ and to ask the right questions
- aware of international differences in accounting treatment with respect to reserves accounting, intangibles, leases, f eign currency translation, taxation, etc.

Typical users of financial statements

User Group	Main purpose
Management	Financial decision taking, M&A, evaluation of value
Shareholders/Owners	Investment/value analysis, management supervision
Debt Investors	Investment and credit/debt capacity analysis
Banks and Lenders	Credit/debt capacity, solvency and liquidity analysis
Suppliers	Credit and business risk analysis
Employees/Stakeholders	Career decisions, investment analysis
Government/Regulators	Regulatory supervision, corporate governance, etc.
Public/Consumer	Corporate governance, consumer protection, etc.

Main building blocks of financial statements

Statement Type	Reference	Main financial information
1. Balance Sheet	p.	Assets (short term and long term) Liabilities (short term and long term) Equity (common, preferred, RE, etc.)
2. Income Statement	p.	Revenue / Sales Cost / Cost of goods sold Net Income
3. Cash Flow Statement	p.	Cash flow from operations Cash flow from investing Cash flow from financing
4. Others	p.	Management Discussion and Analysis Footnotes and additional information

The Balance Sheet – Structural overview

Assets

Cash & Cash Equivalents
Accounts Receivables (AR)
Inventories
Deferred income taxes
Other current assets
Total current assets

Gross fixed assets
Accumulated depreciation
Net fixed assets
Other long term assets
Total long term assets

TOTAL ASSETS

Liabilities

Accounts Payables (AP)
Short term debt
Other current liabilities
Total current liabilities

Long term debt
Other long term liabilities
Total long term debt

Common & Preferred Equity
Retained Earnings
Total Equity

TOTAL LIABILITIES & EQUITY

The Income Statement – Structural overview

Income Statement (IS)

Net Sales/Revenues
- Cost of goods sold (COGS)
Gross Profit

- Selling, general & administration (SG&A)
- Depreciation
- Amortization
- Other operating expenses
Operating Income

- Interest and other debt expenses
Income/Earnings before tax (EBT)

-Tax
NET INCOME

The Cash Flow Statement – Structural overview

Cash Flow Statement (CFS)

Net Income
+ Depreciation/Amortization
+/- Increases/Decreases in Current Liabilities
+/- Decreases/Increases in Current Assets
Cash from operating activities (CFO)

- Capital Expenditures (Capex)
+/- Sales/Purchases of other assets
Cash from investing activities (CFI)

+/- Issuance/Redemption of short/long term debt
- Payment of preferred/common dividends
- Share repurchases
Cash from financing activities (CFF)

NET CASH FLOW

- Main CFS components: CFO, CFI and CFF.
  Supplementary notes might be added to the CFS.

- Changes in non-cash net working capital:
  Increases in current assets/decreases in current liabilities are uses of cash. Decreases in current assets/increases in current liabilities are sources of cash.

Financial Statement Analysis - Ratios

- Ratios based on the financial statements provide an insight into the financial performance of a company. They can provide a benchmark or relative performance target for decision taking.

- Depending on the perspetive, the respective users of financial information prioritize the relative importance of the observed ratios differently: the management might primarily focus on operating performance and growth oriented ratios, whereas lenders might primarily track liquidity and risk related performance ratios.

- Ratios should always be put in context, e.g. relative to internal changes or to industry competitors and the overall economic development.

- The main intention is to identify areas for further analysis in order to understand underlying issues and to project future developments.

Financial Ratio Analysis – Operating Performance

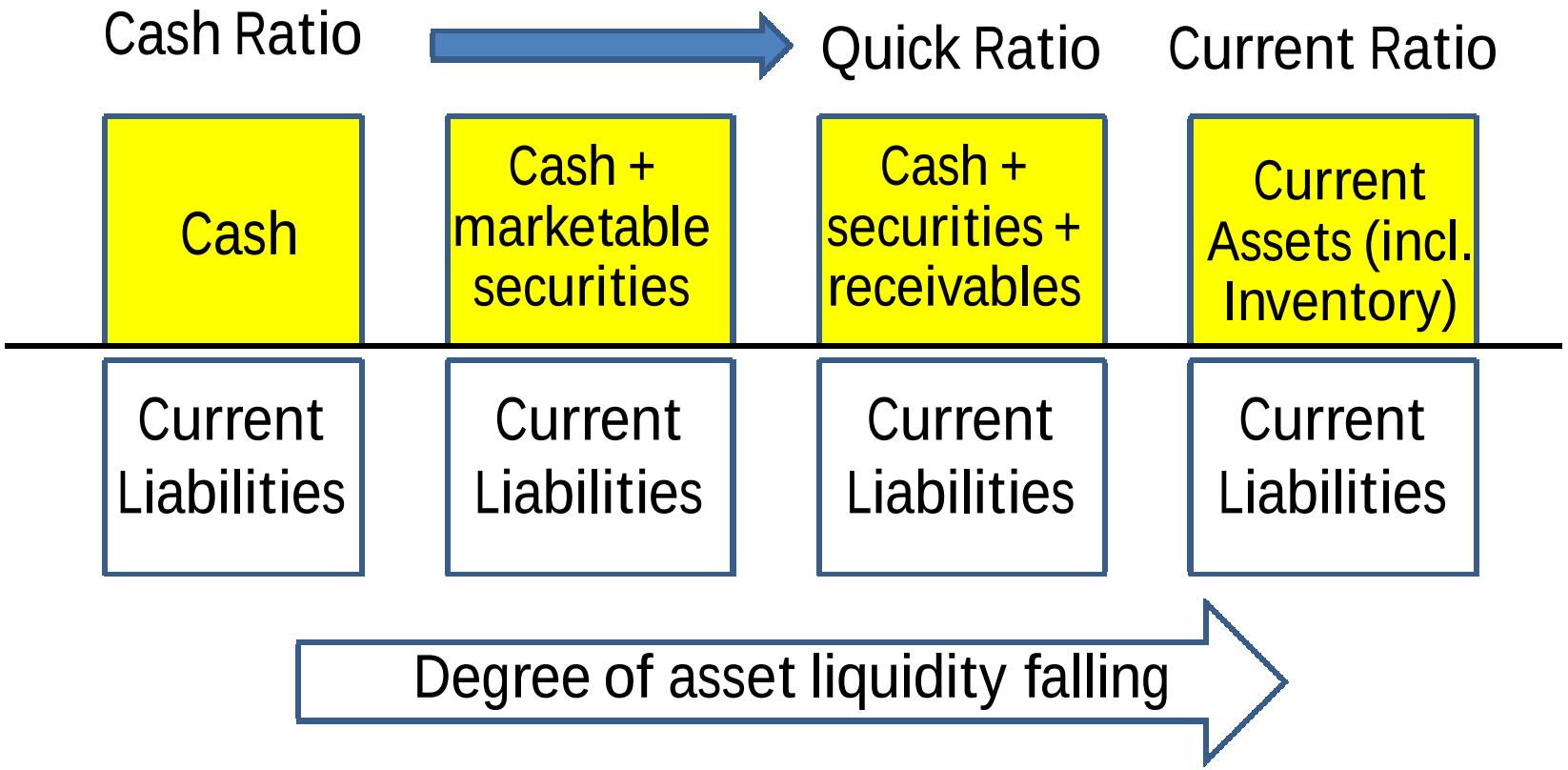
- The asset and equity turnover ratios provide an overview with respect to the operating efficiency of a company.
- They should be considered in the context of the respective industry.
- Although high ratios are typically desired, there are ade - offs between optimizing the ratios and potentially neglecting asset investments to support future sales growth – or – a change in the capital structure can improve a ratio without the actually desired effect on performance.

$$\text{fixed or total asset turnover} = \frac{\text{net sales}}{\text{average fixed or total assets}}$$

$$\text{equity turnover} = \frac{\text{net sales}}{\text{average equity}}$$

Operating Activity – Liquidity Ratios

- Liquidity is a key concern for the viability of a company.
- High liquidity ratios are typically preferred (e.g. by creditors), however, they can also expose weaknesses in management/investing processes.



Operating Activity – Cash Conversion

- Aim to reduce the time required to convert invested capital back into cash.
- Although low cycle values are typically desired to reduce net working capital, there are potential trade-offs, e.g. between credit terms/AR and sales.

Cash Conversion Cycle	=	Av. Acc.Rec. Collection Period	+	Average Inventory Period	-	Av. Acc. Pay. Payment Period

Cash Conversion Cycle	=	$\frac{365}{\text{acc. receiv. turnover}}$	+	$\frac{365}{\text{inventory turnover}}$	-	$\frac{365}{\text{acc. payable turnover}}$

Cash Conversion Cycle	=	$\frac{365}{\text{(net sales/ Av. Acc.Rev.)}}$	+	$\frac{365}{\text{(CoGS/ Av. Inventory)}}$	-	$\frac{365}{\text{(CoGS/ Av. Acc.Pay.)}}$

Financial Ratio Analysis – Operating Profitability

Net Sales

- Cost of Goods Sold (CoGS)

Gross Profit

- Operating Expense (SG&A, etc.)

Operating Profit (EBIT)

- Interest

Earnings before tax (EBT)

- Tax

Net Income (NI)

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Net Sales}}$$

$$\text{Operating Profit Margin} = \frac{\text{EBIT}}{\text{Net Sales}}$$

$$\text{Net Profit Margin} = \frac{\text{NI}}{\text{Net Sales}}$$

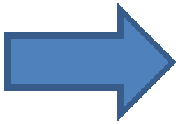
- General objective to achieve high margins (production and operating efficiency), on a sustainable basis relative to respective industry competitors.
- In order to conservatively assess the future profitability it is important to only consider income from continuing operations.

Growth rate and DuPont-Analysis (ROE)

- The attainable growth rate of a company can be approximated by the return on equity (ROE) and the retention rate (RR); g = ROE*RR, whereby the RR = (1- payout ratio) = (1- dividends/net income)
- DuPont Analysis: Breaking ROE (= NI/Equity) up in individual components.
  (note: use end-of-year equity, rather than averages)

$$ROE = \text{Profit Margin} \times \text{Asset Turnover} \times \text{Leverage (Equity Multiplier)}$$

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



Calculate the ROE and compare the result if the debt-to-asset ratio changes +/- 20%

Limitations to financial ratio analysis

• Financial ratio analysis is limited by several factors. The analysis is dependent on the quality of the underlying financial data (so adjustments might be required to obtain a fair picture of the facts) and the information should always be seen in context of the general business cycle, industry cycle, developments, practices and sensitivities to seasonality, firm specific changes, the type of the business and its products or services, etc.

• Financial ratio analysis can help to identify sources of weaknesses. However, the application always needs to consider the „bigger picture“. Simply aiming to maximize a ratio without being aware of potential trade-offs can be counter-productive with respect to other objectives. For instance, aiming to reduce working capital with the objective to minimize financing costs can cause sales and profitability to decline as the credit terms might constrain competitiveness.