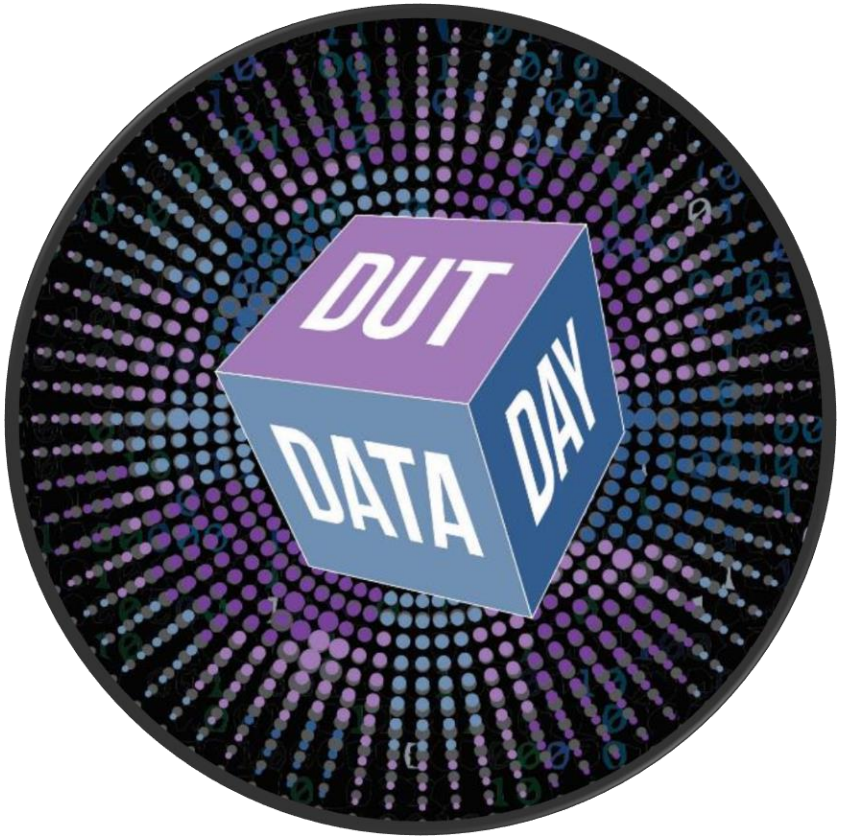

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ENVISION2030

FINANCE AND INFORMATION MANAGEMENT/ INFORMATION TECHONOLOGY

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FINANCIAL ANALYSIS (CHAPTER 5)

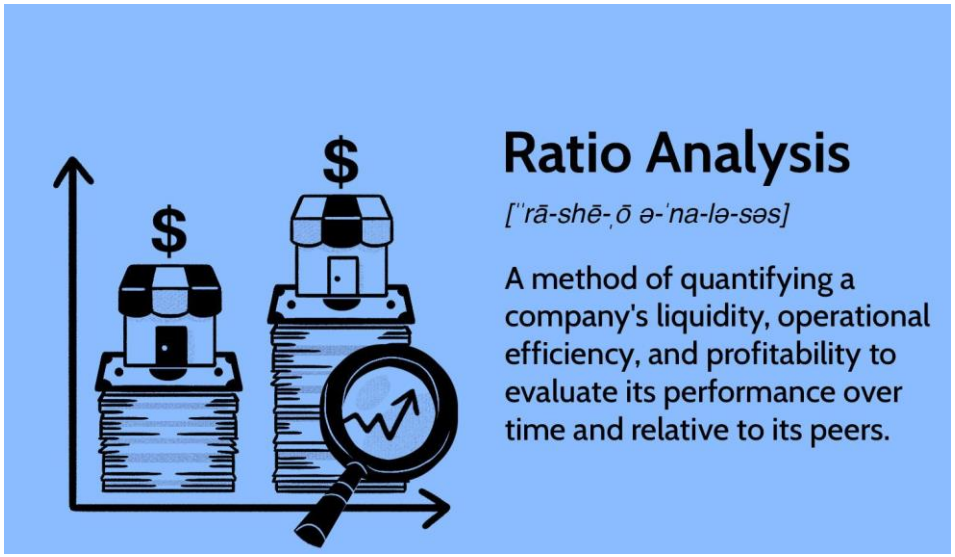
KEY CONCEPTS

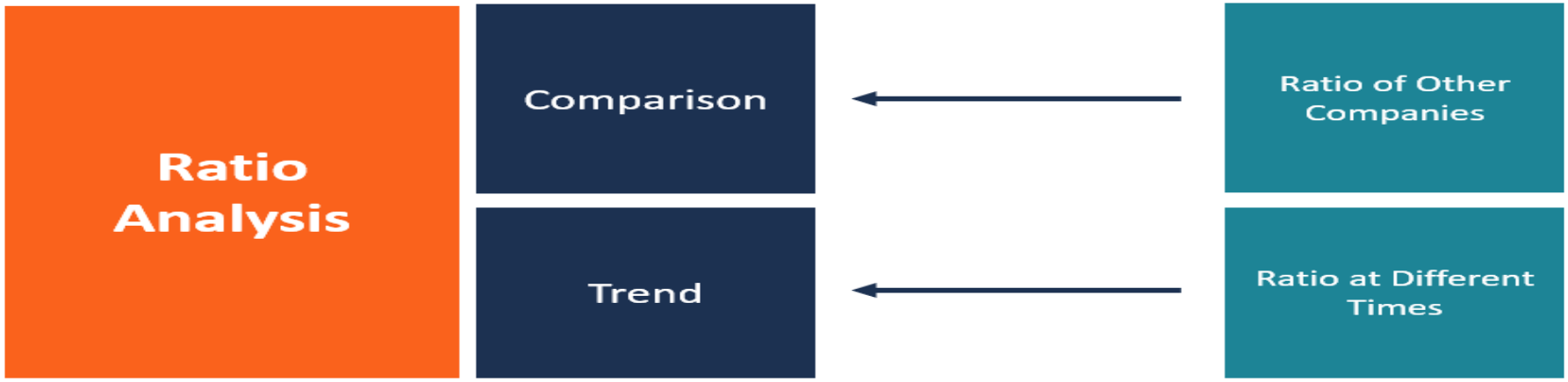
- Financial analysis tools
- Determinants of firm value and ratio analysis
- Drivers of profitability and growth
- Measuring overall profitability
- Gross profit margin
- Decomposing asset turnover
- Financial leverage analysis
- Liquidity analysis
- Debt and coverage ratios

FINANCIAL ANALYSIS TOOLS

- There are **two** primary tools in financial analysis:
  - **Ratio analysis** – to assess how various line items in financial statements relate to each other and to measure relative performance.
  - **Cash flow analysis** – to evaluate liquidity and the management of operating, investing, and financing activities as they relate to cash flow.

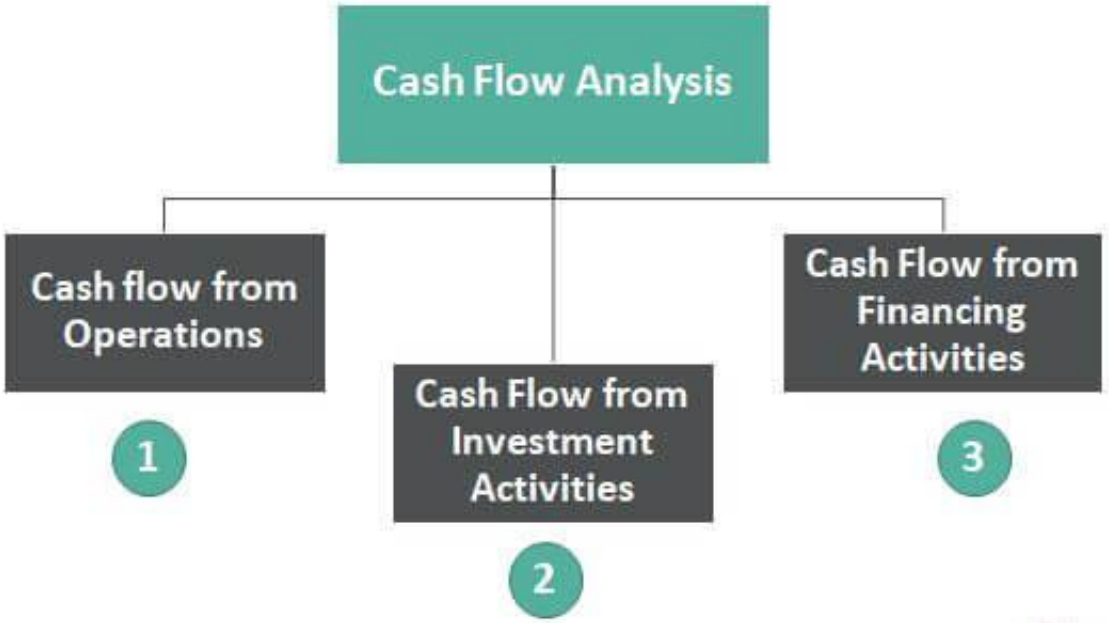
RATIO ANALYSIS





CASH FLOW ANALYSIS

Cash Flow Statements Analysis



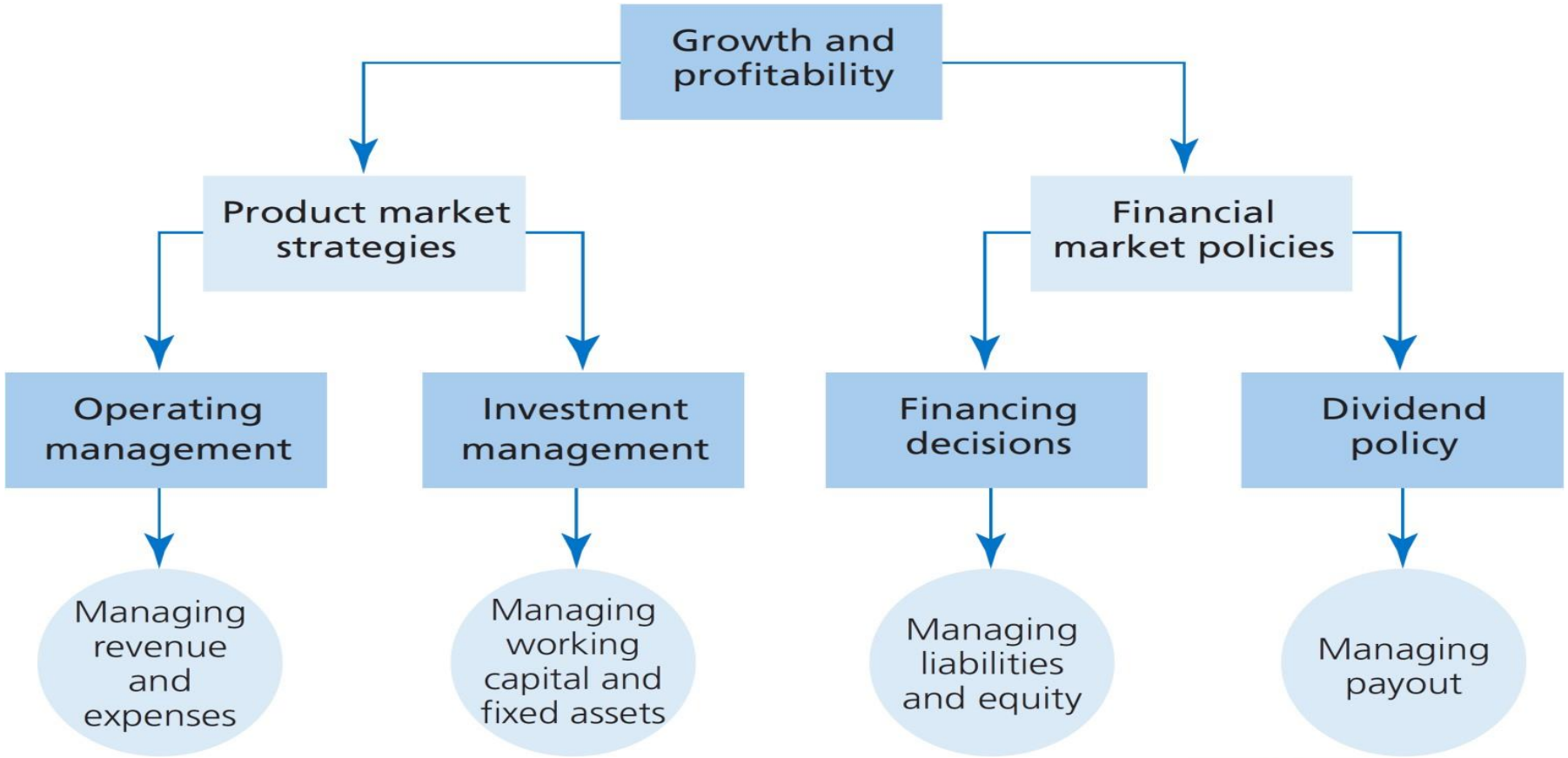
DETERMINANTS OF FIRM VALUE AND RATIO ANALYSIS

- Profitability and growth drive firm value.

- Managers can employ four levers to achieve growth and profit targets:
  - Operating management
  - Investment management
  - Financing strategy
  - Dividend policy
- Ratio analysis seeks to evaluate the firm's effectiveness in these areas.

DRIVERS OF PROFITABILITY AND GROWTH

FIGURE 5.1 Drivers of a firm's profitability and growth



RATIO ANALYSIS

- Evaluating ratios requires comparison against some benchmark. Such benchmarks include:
  - Ratios over time from prior periods (time series)
  - Ratios of other firms in the industry (cross-sectional)
  - Some absolute benchmark
- Effective ratio analysis must attempt to relate underlying business factors to the financial numbers as detailed as possible
- The text illustrates ratio analysis by applying it to European fashion retailers: Hennes & Mauritz, Inditex, and other industry peers. (Case Study)

MEASURING OVERALL PROFITABILITY

- ROE is a comprehensive measure of and is a good starting point to systematically analyze firm performance.

$$\text{ROE} = \frac{\text{Profit or loss}}{\text{Shareholders' Equity}}$$

TABLE 5.1 Return on equity for Hennes & Mauritz and its industry peers

Ratio	H&M 2014	H&M 2013	Inditex 2014	Inditex 2013	Other peers 2014
Return on equity (%)	41.3	38.5	25.4	26.8	13.6

DECOMPOSING PROFITABILITY: TRADITIONAL APPROACH

ROE = ROA * Equity multiplier

$$= \frac{\text{Profit or Loos}}{\text{Total Assets}} * \frac{\text{Total Assets}}{\text{Equity}}$$

$$\text{ROA} = \frac{\text{Profit or Loos}}{\text{Revenue}} * \frac{\text{Revenue}}{\text{Total Assets}}$$

Net Profit Margin/ Return On Revenue

Asset Turnover

DECOMPOSING PROFITABILITY:ALTERNATIVE APPROACH

- The traditional approach has some limitations imposed by the composition of the denominator and numerator
- An alternative approach computes ROE as ultimately

  being equal to:

Return on Business Assets + Spread * Financial leverage

INTERMEZZO: DEFINITIONS

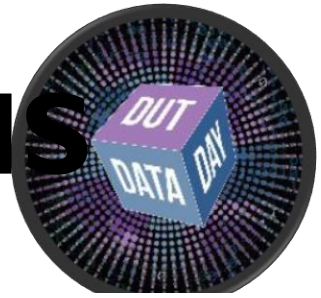


TABLE 5.3 Definitions of accounting items used in ratio analysis

Item	Definition
Income statement items	
Interest expense after tax	Interest expense × (1 – Tax rate)[a]
Net investment profit after tax (NIPAT)	(Investment income + Interest income) × (1 – Tax rate)
Net operating profit after taxes (NOPAT)	Profit or loss – Net investment profit after tax + Interest expense after tax
Balance sheet items	
Operating working capital	(Current assets – Excess cash and cash equivalents) – (Current liabilities – Current debt and current portion of non-current debt)[b]
Net non-current operating assets	Non-current tangible and intangible assets + (Net) derivatives – (Net) deferred tax liability – Non-interest-bearing non-current liabilities
Investment assets	Minority equity investments + Other non-operating investments + Excess cash and cash equivalents
Net operating assets	Operating working capital + Net non-current operating assets
Business assets	Net operating assets + Investment assets
Debt	Total interest-bearing non-current liabilities + Current debt and current portion of non-current debt
Capital	Debt + Group equity

a. This calculation treats interest expense as absolute value, independent of how this figure is reported in the income statement.

b. Excess cash and cash equivalents is defined as total cash and cash equivalents minus the cash balance needed for operations. In the analysis of Hennes & Mauritz and its peers, we set the cash balance needed for operations equal to 8 percent of revenue, the long-term average cash balance in the European apparel retail industry.

DETAIL OF ALTERNATIVE ROE DECOMPOSITION

$$\text{ROE} = \frac{\text{NOPAT} + \text{NIPAT}}{\text{Equity}} - \frac{\text{Interest expense after tax}}{\text{Equity}}$$

$$= \frac{\text{NOPAT} + \text{NIPAT}}{\text{Business assets}} \times \frac{\text{Business assets}}{\text{Equity}} - \frac{\text{Interest expense after tax}}{\text{Debt}} \times \frac{\text{Debt}}{\text{Equity}}$$

$$= \frac{\text{NOPAT} + \text{NIPAT}}{\text{Business assets}} * \left(1 + \frac{\text{Debt}}{\text{Equity}}\right) - \frac{\text{Interest expense after tax}}{\text{Debt}} \times \frac{\text{Debt}}{\text{Equity}}$$

$$= \text{Return on business assets} + (\text{Return on business assets} - \text{Effective interest rate after tax}) \times \text{Financial leverage}$$

$$= \text{Return on business assets} + \text{Spread} \times \text{Financial leverage}$$

DETAIL OF ALTERNATIVE ROE DECOMPOSITION

$$\text{ROBA} = \frac{\text{NOPAT}}{\text{Business Assets}} + \frac{\text{NIPAT}}{\text{Business Assets}}$$

$$= \frac{\text{NOPAT}}{\text{Operating assets}} \times \frac{\text{Operating assets}}{\text{Business assets}} + \frac{\text{NIPAT}}{\text{Investment Assets}} + \frac{\text{Investment Assets}}{\text{Business Assets}}$$

$$= \text{Return on net operating assets} \times \frac{\text{Net operating Assets}}{\text{Business Assets}} + \text{Return on net operating assets} + \frac{\text{Investment Assets}}{\text{Business Assets}}$$

$$\text{Return on operating assets} = \frac{\text{NOPAT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Operating assets}}$$

H&M VERSUS INDUSTRY PEERS: COMPARISON OF ROE COMPONENTS

TABLE 5.4 Distinguishing operating, investment and financing components in ROE decomposition

Ratio	H&M 2014	H&M 2013	Inditex 2014	Inditex 2013	Other peers 2014
Net operating profit margin (%)	13.7	13.7	13.9	14.4	5.5
× Operating asset turnover	1.40	1.40	1.69	1.83	1.28
= Return on net operating assets (%)	19.2	19.2	23.6	26.5	7.0
Return on net operating assets (%)					
× (Net operating assets/business assets)	0.94	0.92	0.78	0.76	0.94
+ Return on investment assets (%)	4.0	3.6	1.3	0.5	2.2
× (Investment assets/business assets)	0.06	0.08	0.22	0.24	0.06
= Return on business assets (%)	18.3	17.9	18.7	20.1	6.8
Spread (%)	16.8	16.6	17.3	18.6	3.6
× Financial leverage	1.36	1.24	0.39	0.36	1.91
= Financial leverage gain (%)	22.9	20.6	6.7	6.7	6.8
ROE = Return on business assets + financial leverage gain (%)	41.3	38.5	25.4	26.8	13.6

DISCUSSION OF RESULTS FROM PROFITABILITY ANALYSIS

Note the differences between key components of the traditional and alternative FY 2014 ROE decompositions:

	H&M Traditional	H&M Alternative	Inditex Traditional	Inditex Alternative
Asset Turnover	1.11	1.40	0.99	1.69
ROA	14.7%	19.2%	13.8%	23.6%
Financial Leverage	2.81	1.36	1.85	0.39

ASSESSING OPERATING MANAGEMENT: INCOME STATEMENT RATIOS

- Common-sized income statements facilitate comparisons of key line items across time and different firms.

- Additionally, the following ratios are also helpful:

  – Gross profit margin (by function only)
  – EBITDA margin
  – NOPAT margin
  – Recurring NOPAT margin

GROSS PROFIT MARGIN

- Measures the profitability of sales, less direct costs of sales:

The gross profit margin is an indicator of:

- The price premium that a firm's product commands in the market
- The efficiency of a firm's procurement and/or production process

$$\text{Gross profit margin} = \frac{\text{Revenue - Cost of Sales}}{\text{Revenue}}$$

NOPAT AND EBITDA MARGINS

- The NOPAT margin provides a comprehensive measure of operations:

$$\text{NOPAT margin} = \frac{\text{NOPAT}}{\text{Revenue}}$$

- The EBITDA margin eliminates the significant non-cash expenses of depreciation and amortization along with interest and taxes:

$$\text{EBITDA margin} = \frac{\text{Earnings before interest, taxes, depreciation and amortization}}{\text{Revenue}}$$

A COMPARISON OF KEY INCOME STATEMENT RATIOS FOR H&M AND ITS INDUSTRY PEERS

TABLE 5.5 Common-sized income statement and profitability ratios

Ratio	H&M 2014 (%)	H&M 2013 (%)	Inditex 2014 (%)	Inditex 2013 (%)	Other peers 2014 (%)
Line items as a percentage of revenue					
Revenue	100.0	100.0	100.0	100.0	100.0
Net operating expense	(82.3)	(82.0)	(81.6)	(80.9)	(92.7)
Other income/expense	0.0	0.0	(0.4)	(0.6)	0.1
Net operating profit before tax	17.7	18.0	18.0	18.5	7.4
Investment income	0.0	0.0	0.2	0.0	0.1
Interest income	0.2	0.3	0.1	0.1	0.1
Interest expense	(0.8)	(0.7)	(0.4)	(0.4)	(2.2)
Tax expense	(3.9)	(4.2)	(4.1)	(4.0)	(1.4)
Profit or loss	13.2	13.3	13.9	14.2	3.9
Net operating expense line items as a percentage of revenue (by nature)					
Personnel expense	(16.5)	(16.7)	(16.0)	(16.2)	(20.2)
Cost of materials	(40.8)	(40.5)	(40.2)	(40.7)	(40.7)
Depreciation and amortization	(13.9)	(14.2)	(12.9)	(13.4)	(8.8)
Other operating income/expense	(11.1)	(10.6)	(10.5)	(10.6)	(22.9)
Operating expense line items as a percentage of revenue (by function)					
Cost of sales	(41.2)	(40.9)	N/A	N/A	N/A.
Selling, general, and administrative expense	(41.1)	(41.2)	N/A	N/A	N/A
Key profitability ratios					
Gross profit margin	58.8	59.1	N/A	N/A	N/A
EBITDA margin	31.8	32.5	31.0	31.6	16.4
NOPAT margin	13.7	13.7	13.9	14.4	5.6
Net profit margin	13.2	13.3	13.9	14.2	3.9

DECOMPOSING ASSET TURNOVER

- Asset management is a key indicator of how effective a firm's management is.
- Asset turnover may be broken into two primary components:
  - Working capital management
  - Non-current asset management

WORKING CAPITAL MANAGEMENT

- Working capital is the difference between current assets and current liabilities.

- Key ratios useful to analyzing the management of working capital include:

  - Operating working capital to sales
  - Operating working capital turnover
  - Accounts receivable turnover
    - Day's receivables
  - Inventory turnover
    - Day's inventory
  - Accounts payable turnover
    - Day's payables

ASSET MANAGEMENT RATIOS FOR H&M AND ITS PEERS

TABLE 5.6 Asset management ratios

Ratio	H&M 2014	H&M 2013	Inditex 2014	Inditex 2013	Other peers 2014
Operating working capital/Revenue (%)	10.8	12.0	5.0	4.3	13.8
Net non-current operating assets/Revenue (%)	60.5	59.5	54.0	50.3	64.2
PP&E/Revenue (%)	59.9	59.2	53.9	50.5	56.8
Operating working capital turnover	9.28	8.36	19.99	23.25	7.27
Net non-current operating asset turnover	1.65	1.68	1.85	1.99	1.56
PP&E turnover	1.67	1.69	1.86	1.98	1.76
Trade receivables turnover	44.76	48.39	21.61	20.12	11.08
Days' receivables	8.0	7.4	16.7	17.9	32.5
Inventories turnover	3.42	3.26	4.27	4.18	2.45
Days' inventories	105.1	110.3	84.3	86.2	147.1
Trade payables turnover	11.90	11.44	2.17	2.03	3.74
Days' payables	30.3	31.5	166.0	177.0	96.3
Cash conversion cycle (in days)	82.9	86.3	–65.0	–72.9	83.3

FINANCIAL LEVERAGE ANALYSIS

- Borrowing allows a firm to access to capital, but increases the risk of ownership for equity holders.

- Analysis of leverage can be performed on both current and non-current debts:

  – Liquidity analysis relates to evaluating current liabilities
  – Solvency analysis relates to longer term liabilities

LIQUIDITY ANALYSIS

- There are several ratios useful to evaluate a firm's liquidity, including:
  - Current ratio
  - Quick ratio
  - Cash ratio
  - Operating cash flow ratio
- Each of these ratios attempts to measure the ability of a firm to pay its current obligations.

LIQUIDITY ANALYSIS

- Knowing how the liquidity ratios are calculated allows the user to understand how to interpret them:

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$\text{Quick ratio} = \frac{\text{Cash and marketable securities} + \text{Trade receivables (net)}}{\text{Current liabilities}}$$

$$\text{Cash ratio} = \frac{\text{Cash and marketable securities}}{\text{Current liabilities}}$$

$$\text{Operating cash flow ratio} = \frac{\text{Cash flow from operations}}{\text{Current liabilities}}$$

DEBT AND COVERAGE RATIOS

- Beyond short-term survival, solvency measures the ability of a firm to meet long-term obligations.
- Several useful ratios are used to analyze solvency. For example:

$$\text{Liabilities-to-equity ratio} = \frac{\text{Total liabilities}}{\text{Shareholders' equity}}$$

$$\text{Debt-to-equity ratio} = \frac{\text{Current debt} + \text{Non-current debt}}{\text{Shareholders' equity}}$$

$$\text{Debt-to-capital ratio} = \frac{\text{Current debt} + \text{Non-current debt}}{\text{Current debt} + \text{Non-current debt} + \text{Shareholders' equity}}$$

MORE DEBT AND COVERAGE RATIOS

- Two ratios that specifically address the ability to pay interest on debts are:

$$\text{Interest coverage (earnings-based)} = \frac{\text{Profit or loss} + \text{Interest expense} + \text{Tax expense}}{\text{Interest expense}}$$

$$\text{Interest coverage (cash flow-based)} = \frac{\text{Cash flow from operations} + \text{Interest expense} + \text{Taxes paid}}{\text{Interest expense}}$$

ASSESSING THE SUSTAINABLE GROWTH RATE

- A comprehensive measure of a firm's ratios is the sustainable growth rate, which uses ROE:

$$\text{Sustainable growth rate} = \text{ROE} \times (1 - \text{Dividend payout ratio})$$

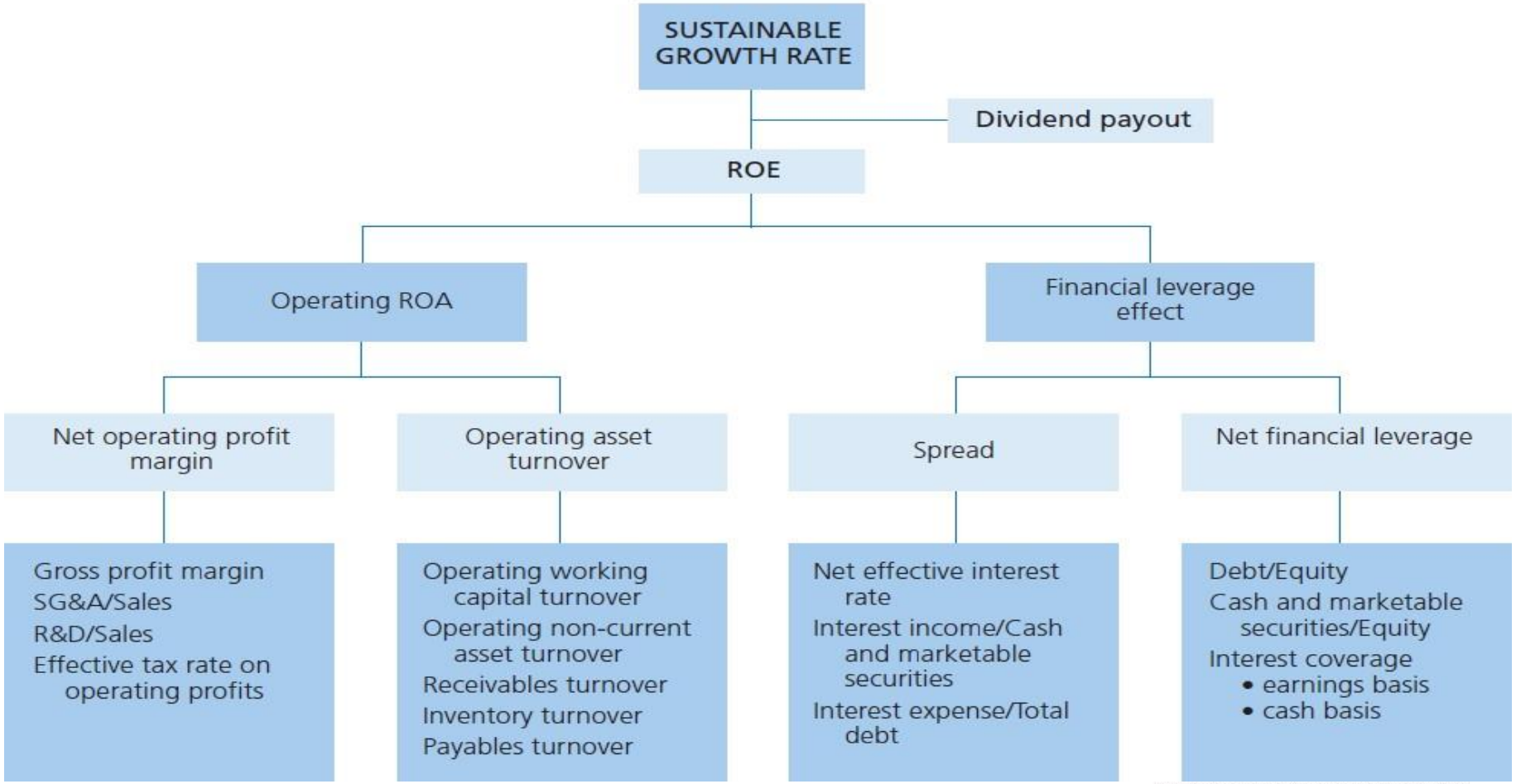
where

$$\text{Dividend pay-out ratio} = \frac{\text{Cash dividends paid}}{\text{Profit or Loss}}$$

- Sustainable growth rate measures the ability of a firm to maintain its profitability and financial policies. It's components may be seen in Figure 5-2.

FIGURE 5.2

FIGURE 5.2 Sustainable growth rate framework for financial ratio analysis



CASH FLOW ANALYSIS

- The ratio analysis previously discussed used accrual accounting.
- Cash flow analysis can provide further insights into operating, investing, and financing activities.
- All companies using IFRS are required to include a statement of cash flows in their financial statements.

ANALYZING CASH FLOW INFORMATION

- A number of questions can be answered through analysis of the statement of cash flows. For example:
  - Operating activities
    - How strong is the firm’s internal cash flow generation?
    - How well is working capital being managed?
  - Investing activities
    - How much cash did the company invest in growth assets?
  - Financing activities
    - What type of external financing does the company rely on?
    - Did the company use internally generated funds for investments?
    - Did the company use internally generated funds to pay dividends?

CASH FLOW ANALYSIS

- Differences in reporting cash flow information allow for variation across firms that complicate comparisons.
- Analysts can make adjustments to net income to arrive at free cash flows, a commonly used metric for financial analysis.
- Table 5.11 in the next slide illustrates the various calculations using financial information from H&M and Inditex.

CASH FLOW ANALYSIS FOR H&M AND INDITEX

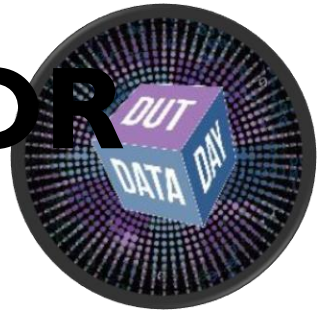


TABLE 5.11 Cash flow analysis

Line item (SEK or € millions)	H&M 2014	H&M 2013	Inditex 2014	Inditex 2013
Profit before Interest and Tax	**26,815.6**	**23,115.5**	**3,293.4**	**3,101.4**
Taxes Paid plus Tax Shield on Interest Paid	(6,298.7)	(3,310.2)	(729.6)	(917.1)
Non-Operating Losses (Gains)	0.0	0.0	(99.3)	(68.2)
Non-Current Operating Accruals	20,968.4	18,219.5	2,374.4	2,224.6
Operating Cash Flow before Working Capital Investments	**41,485.3**	**38,024.8**	**4,838.8**	**4,340.7**
Net (Investments in) or Liquidation of Operating Working Capital	(793.0)	250.0	(101.7)	(121.2)
Operating Cash Flow before Investment in Non-Current Assets	**40,692.3**	**38,274.8**	**4,737.1**	**4,219.5**
Interest Received	328.0	367.0	26.0	22.5
Dividends received	0.0	0.0	0.0	0.0
Net (Investments in) or Liquidation of Operating or Investment Non-Current Assets	(38,930.8)	(29,498.7)	(4,395.2)	(2,860.2)
Free Cash Flow Available to Debt and Equity	**2,089.5**	**9,143.1**	**367.9**	**1,381.8**
Interest Paid After Tax	(920.9)	(705.3)	(52.2)	(49.9)
Net Debt (Repayment) or Issuance	14,279.4	7,033.3	1,065.9	96.8
Free Cash Flow Available to Equity	**15,448.0**	**15,471.0**	**1,381.6**	**1,428.7**
Dividend (Payments)	(15,723.0)	(15,723.0)	(1,510.4)	(1,377.7)
Net share (Repurchase) or Issuance	0.0	0.0	0.0	0.0
Net Increase (Decrease) in Cash Balance	**(275.0)**	**(252.0)**	**(128.8)**	**51.0**

CONCLUDING COMMENTS

- There are two primary tools in financial analysis:
  - **Ratio analysis** – to assess how various line items in financial statements relate to each other and to measure relative performance.
  - **Cash flow analysis** – to evaluate liquidity and the management of operating, investing, and financing activities as they relate to cash flow.
  - Both forms of analyses must be evaluated while considering whether firm performance is consistent with the strategic initiatives of management.

THANK YOU