Χρηματοοικονομική ΙΙ

Ενότητα 1: Ανάλυση των προοπτικών της επιχείρησης. Προβλέψεις

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Τμήμα Οργάνωσης και Διοίκησης Επιχειρήσεων

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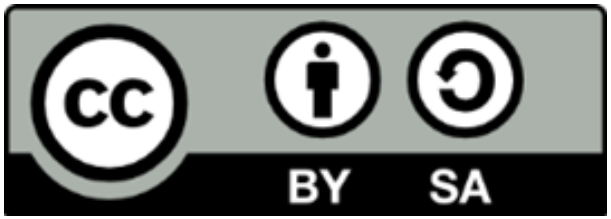

Χρηματοδότηση

- Το παρόν εκπαιδευτικό υλικό έχει αναπτυχθεί στα πλαίσια του εκπαιδευτικού έργου του διδάσκοντα.
- Το έργο «Ανοικτά Ακαδημαϊκά Μαθήματα στο Πανεπιστήμιο Μακεδονίας» έχει χρηματοδοτήσει μόνο τη αναδιαμόρφωση του εκπαιδευτικού υλικού.
- Το έργο υλοποιείται στο πλαίσιο του Επιχειρησιακού Προγράμματος «Εκπαίδευση και Δια Βίου Μάθηση» και συγχρηματοδοτείται από την Ευρωπαϊκή Ένωση (Ευρωπαϊκό Κοινωνικό Ταμείο) και από εθνικούς πόρους.

Key Concepts

- Financial statement analysis tasks are undertaken with a forward looking decision in mind - summarizing the analysis with an explicit forecast.
- Who needs forecasts?
  - Managers need forecasts to formulate business plans and provide performance targets.
  - Analysts need forecasts to help communicate their views of the firm's prospects to investors.
  - Bankers and debt market participants need forecasts to assess the likelihood of loan repayment.
- The forecast is usefully summarized in the form of an estimate of the firm's value - a single summary statistic.
- Prospective analysis includes to tasks:
  - Forecasting - a way of summarizing what has been learned through business strategy analysis, accounting analysis, and financial analysis.
  - Valuation of the firm.

Overall Structure of the Forecast

- The best way to forecast future performance is to do it comprehensively, producing not only an earnings forecast, but also a forecast of cash flows and the balance sheet.
- A comprehensive approach involves many forecasts, but in most cases they are all linked to the behavior of a few key ‘‘drivers’’.
  - For any firm, sales and profit margin forecasts are the main key drivers.
- Often, working capital accounts, investment in plant and most major expenses should track the growth in sales closely.
  - These linkages can avoid internal inconsistencies and unrealistic implicit assumptions.
- In most cases, the growth prospects, profitability, and investment and financing needs of the firm are more readily framed in terms of accrual-based sales, operating earnings, assets, and liabilities.
  - These amounts can then be converted to cash flow measures by adjusting for the effects of non-cash expenses and expenditures for working capital and plant..

A Practical Framework for Forecasting

- The most practical approach to forecasting a company's financial statements is to focus on projecting "condensed" financial statements.
  - The condensed Balance Sheet consists of:
    - i) net operating working capital, ii) net non-current operating assets, iii) investment assets, iv) debt, and v) equity.
      - Assumptions about investment in working capital and non-current assets, and how we finance these assets, results in a Balance Sheet at the end of the forecasting period.
  - The condensed Income Statement consists of :
    - i) sales, ii) net operating profit after tax (NOPAT), iii) net investment profit after tax (NIPAT), iv) interest expense after tax, and v) net profit.
      - Assumptions about how we use the average assets available during the period and run the firm's operations will lead to the Income Statement for the forecasting period.

Forecasting ROE

- ROE is the product of management's (1) operating, (2) non-operating investment, and (3) financing decisions.
- Thus, the forecasting task should follow the same process:
  - Operating items
    - The first assumption is about next-period sales and, then, about NOPAT margin.
  - Non-operating investment items
    - Assumptions should be made about the ratio of investment assets to sales and the return on investment assets.
  - Financing items
    - Assumptions should be made for the ratio of debt to capital and the average interest rate (after tax) that the firm will pay on its debt.

Information for Forecasting

- The three levels of analysis that precede prospective analysis - strategy, accounting, and financial analysis - can lead to informed decisions about expected performance, especially in the short and medium term.
- The primary goal of financial analysis is to understand the historical relationship between a firm's financial performance and economic factors (macroeconomic environment, industry and strategy, and accounting decisions).
  - What the effect will be of anticipated changes in relevant economic factors on the firm's future performance and financial position, conditional on the historical relationships?

Steps of the Forecasting Process

- Step 1: Predict changes in environmental and firm-specific factors
  - How macroeconomic conditions and industry competitiveness will change in future years and how the firm may respond to such changes (H&M)?
    - From a macroeconomic analysis. How will the economic situation in H&M's geographic segments develop?
    - From industry and business strategy analysis. Will slow growth in the industry motivate apparel retailers to intensify price competition with each other? Is it expected that new discount retailers or general merchandise retailers will enter the lower-priced segment of the apparel retail industry, thereby increasing competition in H&M's primary segment? Will H&M's brand recognition and strong advertising campaigns help the firm to preserve customer loyalty and avoid price competition? Or will the firm's recent increase in inventory markdowns persist into next year? Will H&M's bargaining power over its suppliers decrease if its need for production flexibility, which is inherent to the fast fashion strategy, requires the retailer to develop longer term and more integrated relationships with its suppliers? How will the average labor costs in production countries develop in the near future? What will be the effect of consumers' increased demand for ethical and sustainable clothing on the costs of outsourced production? How long will H&M maintain its policy of outsourcing all production to independent suppliers? Will H&M be able to successfully replicate its strategy in emerging markets? What will be the near-term importance of H&M's higher-priced brands? What will be the performance consequences of H&M's foreign currency risk exposure?
    - From accounting analysis. Are there any aspects of H&M's accounting that suggest past earnings and assets are misstated, or expenses or liabilities are misstated? If so, what are the implications for future accounting statements?

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- Step 2: Assess the relationship between step 1 factors and financial performance
  - How future changes of the relevant economic factors will translate into financial performance trends?
    - This second step strongly builds on the financial analysis. In particular, observations on how sensitive Hennes & Mauritz's past ratios have been to variations in, for example, economic growth, price competition and input prices can help the analyst to learn what will happen to the firm's ratios if the anticipated changes crystallize.
    - The financial analysis of H&M helps to understand questions that include the following: What were the sources of H&M's superior performance in 2010? Which economic factors caused the firm's profitability to decrease in 2011 (and by how much)? Are these factors and their performance effects permanent or transitory? Is there any detectable longer term pattern in H&M's past performance? If so, are there any reasons why this trend is likely to continue or change?

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- Step 3: Forecast condensed financial statements
  - Based on the outcomes of steps 1 and 2, one can produce forecasts of the line items in the firm's condensed financial statements, most particularly of the operating statement items.

    - For Hennes & Mauritz the key challenge in building forecasts is to predict whether the firm will be able to maintain its superior margins and turnover and grow its sales at the same rate at which it expands its store network or whether competition, the economic downturn, or increasing input prices will lead to a further decline in operating performance.

    - Forecasts of non-operating investment performance and financing structure typically rely less on business strategy information and build strongly on firm-specific information about investment and financing plans as well as historical trends in these measures.

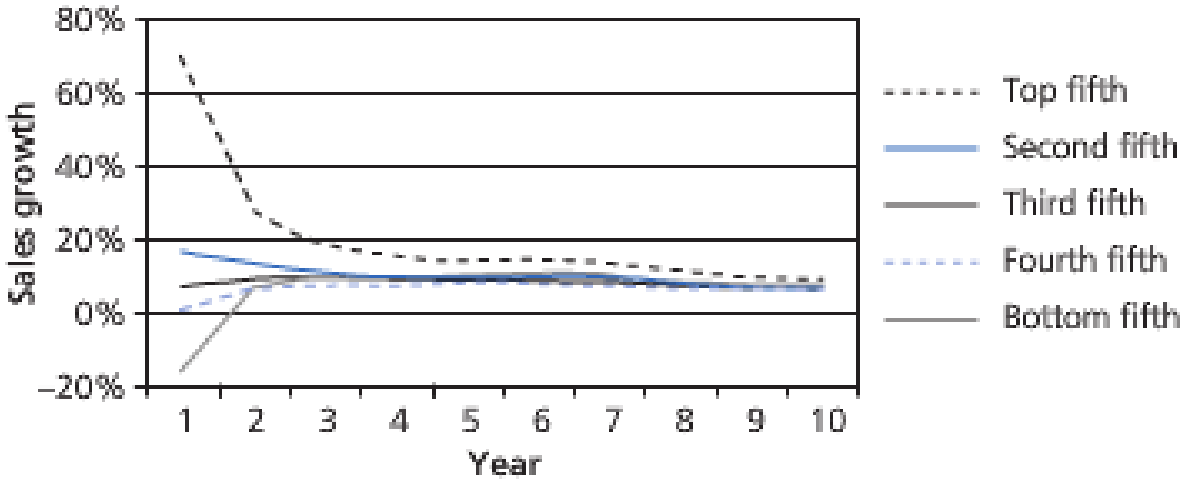
Performance Behavior: A Starting Point

- The previously described forecasting framework implicitly assumes that sufficient information is available; however, quite often such information is not or not sufficiently obtainable.
- Therefore, every forecast has, at least implicitly, an initial benchmark or point of departure - some notion of how a particular ratio would be expected to behave in the absence of detailed information.
- As a general rule, the lower the quality and richness of the available information, the more emphasis one ultimately places on the initial benchmark.
  - Research demonstrates that some such benchmarks for earnings are almost as accurate as the forecasts of professional security analysts, who have access to a rich information set.
- Large departures from the benchmark could be justified only in cases where the firm's situation is clearly and undeniably unusual.

Sales Growth Behavior

- Sales growth rates tend to be ‘‘mean-reverting’’:
  - firms with above-average or below-average rates of sales growth tend to revert over time to a ‘‘normal’’ level (6% - 9%) within 3 to 10 years.

FIGURE 6.1 Behavior of sales growth for European firms over time, 1992–2011



  - One explanation for the pattern of sales growth is that as industries and companies mature, their growth rate slows down due to demand saturation and intra-industry competition.
  - Therefore, even when a firm is growing rapidly at present, it is generally unrealistic to extrapolate the current high growth indefinitely.
  - Of course, how quickly a firm’s growth rate reverts to the average depends on the characteristics of its industry and its own competitive position within an industry.

Earnings Behavior

- Earnings have been shown on average to follow a process that can be approximated by a “random walk” or “random walk with drift.”
  - Thus the prior year’s earnings figure is a good starting point in considering future earnings potential.
  - Even a simple random walk forecast – one that predicts next year’s earnings will be equal to last year’s earnings – is surprisingly useful.
  - For a random walk with drift, the best forecast of tomorrow's price is today's price plus a drift term.
- The implication of the evidence is that, in beginning to contemplate future earnings possibilities, a useful number to start with is last year’s earnings;
  - the average level of earnings over several prior years is not useful.
- Long-term trends in earnings tend to be sustained on average, and so they are also worthy of consideration.
  - If quarterly or semi-annual data are also included, then some consideration should usually be given to any departures from the long-run trend that occurred in the most recent quarter or half year.
  - For most firms, these most recent changes tend to be partially repeated in subsequent quarters or half years.

Returns on Equity Behavior

- Given that prior earnings serves as a useful benchmark for future earnings, one might expect the same to be true of rates of return on investment (ROE).
- That, however, is not the case for two reasons.
  - Even though the average firm tends to sustain the current earnings level, this is not true of firms with unusual levels of ROE. Firms with abnormally high (low) ROE tend to experience earnings declines (increases).
  - Firms with higher ROEs tend to expand their investment bases more quickly than others, which causes the denominator of the ROE to increase.
    - Of course, if firms could earn returns on the new investments that match the returns on the old ones, then the level of ROE would be maintained.
    - Firms with higher ROEs tend to find that, as time goes by, their earnings growth does not keep pace with growth in their investment base, and ROE ultimately falls.

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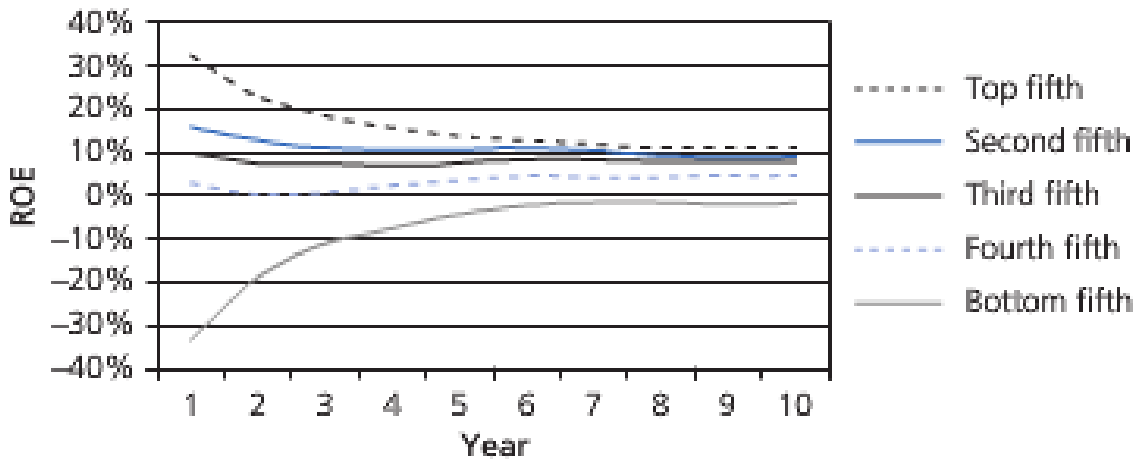
- The resulting behavior of ROE and other measures of return on investment is characterized as ‘‘mean-reverting’’:
  - firms with above-average or below-average rates of return tend to revert over time to a ‘‘normal’’ level (8% - 10%) within no more than 10 years

FIGURE 6.2 Behavior of ROE for European firms over time, 1992–2011



  - The above pattern is not a coincidence; it is exactly what the economics of competition would predict.
  - The tendency of high ROEs to fall is a reflection of high profitability attracting competition; the tendency of low ROEs to rise reflects the mobility of capital away from unproductive ventures toward more profitable ones.
  - Despite the general tendencies, there are some firms whose ROEs may remain above or below normal levels for long periods of time. In some cases the phenomenon reflects the strength of a sustainable competitive advantage (e.g., Wal-Mart), but in other cases it is purely an artifact of conservative accounting methods (pharmaceutical firms).

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Chapter 6: Prospective analysis: forecasting - Palepu, Healy & Peek

Decomposing Profitability: Alternative Approach (2)

- An alternative approach computes ROE as ultimately being equal to:

  ROE = Return on Business Assets (ROBA) + Spread * Net financial leverage

  - *Return on business assets* is a measure of how profitably a company is able to deploy its operating and investment assets to generate profits.
  - *Spread* is the incremental economic effect from introducing debt into the capital structure.
  - *Financial leverage* is the ratio of debt to equity.
- To separate the effect on profitability of a firm's investments from its operating activities the ROBA can be split up:

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

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

$$= \text{Return on operating assets} \times \frac{\text{Operating assets}}{\text{Business assets}} + \text{Return on investment assets} \times \frac{\text{Investment assets}}{\text{Business assets}}$$

- Finally, return on operating assets can be further decomposed into NOPAT margin and operating asset turnover as follows:

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

The Behavior of Components of ROE

- ROEs and profit margins are linked as follows:
  - ROE = (NOPAT margin × Operating asset turnover) × (Operating assets / Business assets) + Return on Investment assets (Investment assets / Business assets) + Spread × Financial leverage
- Thus, the primary components of ROE are: NOPAT margin, operating asset turnover, return on investment assets, spread, and financial leverage.
- Some major conclusions are the following:
  - Operating asset turnover tends to be rather stable, in part because it is so much a function of the technology of the industry. The only exception to this is the set of firms with very high asset turnover, which tends to decline somewhat over time before stabilizing.
  - Net financial leverage also tends to be stable, simply because management policies on capital structure aren't often changed.
  - NOPAT margin and spread stand out as the most variable component of ROE; if the forces of competition drive abnormal ROEs toward more normal levels, the change is most likely to arrive in the form of changes in profit margins and the spread. The change in spread is itself driven by changes in NOPAT margin, because the cost of borrowing is likely to remain stable if leverage remains stable.

Interesting Conclusions

- Profit margins (like ROE) tend to be driven by competition to normal levels over time.
- Normal is determined by the technology employed within an industry and the corporate strategy pursued by the firm.
- In a fully competitive equilibrium profit margins should remain high for firms that must operate with a low turnover.
- A reasonable point of departure should consider more than just the most recent observations.
- One should also consider whether a rate of return or margin is above or below a normal level.
- In contrast to rates of return and margins, asset turnover, financial leverage and net interest rate remain relatively constant over time. A reasonable point of departure is the current period level.
- It is important to keep in mind that a knowledge of average behavior will not fit all firms well.
  - The art of financial statements analysis requires not only knowing what the ‘‘normal’’ patterns are but also having expertise in identifying those firms that will not follow the norm.

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- Forecasting Assumptions
- (we utilize the example of Hennes & Mauritz)

Background: Macroeconomic

- In the first half of 2012, the European economy was still in an economic downturn.
  - Following the worldwide credit crisis and the associated economic slowdown, several European countries started to experience difficulties repaying their huge debts.
- The necessary drastic government budget cuts reduced consumers' income.
- Also, the significant uncertainty about the consequences of one of the countries defaulting impaired consumer confidence and deepened the economic slowdown.
- The Directorate-General forecast that annual Private Consumption growth in the EU would be 0.4% and 1.1% for 2012 and 2013, respectively.
- http://www.oecd-ilibrary.org/docserver/download/3009141ec012.pdf?expires=1425478230&id=id&accname=guest&checksum=0017DBCF33ED16816031965917D9CAB0
- http://www.indexmundi.com/facts/greece/household-final-consumption-expenditure

TABLE 6.1 Realized and expected economic growth rates

	2010	*2011e*	*2012e*	*2013e*
European Union	1.0%	0.4%	0.4%	1.1%
Weighted average of H&M's European markets	1.5%	0.8%	0.9%	1.3%
Weighted average of H&M's World markets	1.7%	1.2%	1.2%	1.6%

Source: European Economic Forecast Autumn 2011 – Directorate-General for Economic and Financial Affairs.

Background: Industry Growth

- The apparel retail industry is a cyclical industry.
- http://www.investopedia.com/terms/c/cyclical_industry.asp
- http://www.investopedia.com/articles/00/082800.asp
  - Because consumers tend to delay their purchases of apparel during periods of economic uncertainty, apparel retailers' sales typically vary with economic cycles.
- As a result, the apparel industry realized and predicted near-term industry growth rates are moderate to low, though slightly higher than the economy-wide growth rates.
- In line with the cyclicality of the apparel retail industry, future industry growth rates are expected to follow the decline in private consumption.

TABLE 6.2 Realized and expected industry growth rates

	2010	2011e	2012e	2013e
Annual growth rate	3.5%	3.4%	2.7%	2.9%

Source: Marketline.

Sales Growth

- A good starting point for developing a forecast of short-term sales growth is management's outlook.
  - Management typically provides guidance about future sales and margins in the Management Report section (annual report), in interim reports, press releases, or analyst conferences.
  - The analyst's task is to critically challenge the assumptions underlying management's expectations, using information about macro-economic, industry and firm-specific factors.
- At the 2011 annual report H&M's management expected that the firm would grow its store network by approximately 275 stores in 2012 and by 10% to 15% in the immediate years thereafter (China, UK and US).

TABLE 6.3 Expected growth in H&M's store network

	2010	2011	2012e	2013e	2014e
Growth rate	11.0%	12.1%	11.1%	12.0%	12.0%
Number of stores added during the year	218	266	275	330	369
Number of stores at the end of the year	2,206	2,472	2,747	3,077	3,446
Average number of stores	2,097.0	2,339.0	2,609.5	2,912.0	3,261.5

Sales Growth (cont.)

- Apart from the number of stores is, the other sales driver, which certainly is more challenging to predict, is the amount of sales per store.
  - H&M's sales per store has been gradually declining from SEK54.4 million per store in 2009 to SEK47.0 million per store in 2011.
- The key factors affect H&M's sales per store are the following:
  - Foreign currency exchange rate changes.
  - In 2010 and 2011, the exchange rates of most currencies in which H&M transacted depreciated against the Swedish Krona. The sales average change in the local currency (SEK) was -6.86% in 2010 and -5.48% in 2011.
  - Changes in consumer demand and inventory markdowns.
  - In 2010 and 2011 the economic downturn negatively affected consumer demand in many of H&M's geographic segments, while the inventories turnover decreased during these years and the retailer also needed to mark down its inventories more frequently.
  - Changes in H&M's store portfolio.
  - Because store productivity varies across markets and H&M is continuously expanding its store network, changes in the composition of H&M's store network unavoidably lead to changes in the retailer's average store productivity.

Impact of Key Factors on H&M's Average Store Productivity

TABLE 6.4 Decomposition of changes in H&M's store productivity

	2009	2010	2011
Sales (in SEK millions)	101,393	108,483	109,999
Average number of stores	1,863	2097	2105
Sales per store (in SEK millions)	54.42	51.73	47.03
Percentage change in sales per store, consisting of:		−4.95%	−9.09%
– the effect of currency exchange rate changes		−6.86%	−5.48%
– the effect of changes in H&M's store portfolio		−0.06%	−0.24%
– the effect of changes in consumer demand and inventory markdowns		+2.11%	−3.59%

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- The next step in forecasting sales growth is to assess the persistence of each of the effects in future years.
- The following considerations are particularly important:
  - Foreign currency exchange rate changes. Much research suggests that exchange rates between currencies can be reasonably modelled as a random walk, implying that the current exchange rate is the best possible estimate of next year's exchange rate. It may be reasonable, however, to expect that the Swedish Krona will depreciate against, for example, the euro as soon as the Eurozone economies start to recover.
  - Changes in consumer demand and inventory markdowns. For 2012 the expectation is that economic growth in the European Union will be close to its level in 2011. Given the cyclical nature of the apparel retail industry, it is reasonable to expect that consumer demand will not pick up until 2013.
  - Changes in H&M's store portfolio. Without detailed information, it is reasonable to assume that the 2011 change in sales per store that is due to the change in H&M's store portfolio is a permanent change.

Assumptions for H&M's Sales Growth Forecasts

- In the near term H&M will maintain high growth, backed by its brand equity and ability to enter new markets.
- However, it is reasonable to assume that H&M will not be immune to the long-run forces of competition and mean reversion due to moderate growth in the apparel retail industry and the market entrance of new discount retailers.

TABLE 6.5 Expected sales growth for H&M

	2011	2012e	2013e	2014e
(Expected) effect on sales per store of:				
– currency exchange rate changes	−5.48%	−5.48%	−5.48%	−5.48%
– changes in H&M's store portfolio	−0.24%	−0.24%	−0.24%	−0.24%
– changes in consumer demand and inventory markdowns	−3.59%	−3.59%	−1.80%	0.00%
(a) Total (expected) effect on sales per store	−9.09%	−9.09%	−7.40%	−5.71%
(b) Sales per store in 2010 (in SEK millions)	51.73	51.73	51.73	51.73
+ (Expected) change in sales per store (a × b)	−4.70	−4.70	−3.83	−2.95
= (Expected) sales per store	47.03	47.03	47.90	48.78
× (Expected) average number of stores (from Table 6.3)	2,339.0	2,609.5	2,912.0	3,261.5
= (Expected) sales	109,999	122,725	139,485	159,096
Implied sales growth rate		11.6%	13.7%	14.1%

NOPAT Margins

- In 2011, H&M's NOPAT margin decreased to 15.0%, after an increase from 16.9% to18.1% in 2010.
- The key factors affect H&M's NOPAT margins are the following:
  - Input prices. In 2009 cotton suppliers cut capacity and cotton price increased from 61 US cents/ pound to 96 cents in 2010 and 161 cents in 2011.
    - It is estimated that a 10% increase in the average cotton price reduces the firm's NOPAT margin by close to 0.2%. Hence, the 57% cotton price increase in 2010 presumably led to a 1.15% decrease in NOPAT margin, whereas the following 68% price increase in 2011 caused an additional 1.35% decrease in NOPAT margin.
  - Inventory markdowns. In January 2012, H&M's management indicated that the net effect of inventory markdowns on the firm's gross margin for the fourth quarter of 2011 had been 0.6%
    - Because inventory markdowns occurred less frequently in the first three-quarters of the year, it is assumed that the average effect of such markdowns was 0.3% or 0.2% after tax.
  - SG&A cost stickiness. In general, SG&A expenses can not be adjusted quickly to sales or store productivity changes.
  - Net effect of SG&A cost savings and margin investments. It is assumed that the portions of the NOPAT decrease that cannot be explained by the above three economic factors can be attributed to the net effect of SG&A cost savings and margin investments (such as design and quality).

Impact of Key Factors on H&M's NOPAT Margin

TABLE 6.6 Decomposition of changes in H&M's NOPAT margin

	2009	2010	2011
Sales (in SEK millions)	101,393	108,483	109,999
NOPAT (in SEK millions)	17,157.7	19,657.9	16,542.3
NOPAT margin	16.9%	18.1%	15.0%
Annual percentage change in NOPAT margin, consisting of:		+1.20%	−3.10%
– the effect of input prices		−1.15%	−1.35%
– the effect of inventory markdowns		−0.00%	−0.20%
– the effect of SG&A cost stickiness		+0.60%	−1.90%
– the net effect of SG&A cost savings and margin investments		+1.75%	+0.35%

Assumptions for H&M's NOPAT Margin

- For the following years, the following considerations are particularly important:
  - Input prices. In 2012 the average cotton price begun to decrease (99 US cents). Thus, it is expected that from 2013 cotton prices will reach their 2009 level.
  - Inventory markdowns. H&M's management expects further inventory markdowns during 2012. We assume that the NOPAT margin effect of inventory markdowns will remain at 0.2% in 2012, but will be zero in 2013 and beyond.
  - SG&A cost stickiness. Because we predict that store productivity will only slowly revert to a higher level, we also expect that the cost stickiness effect will persist.
  - Net effect of SG&A cost savings and margin investments. H&M is committed to keeping tight control of SG&A costs and announced margin investments in quality and design.

TABLE 6.7 Expected NOPAT margins for H&M

	2011	2012e	2013e	2014e
NOPAT margin in 2010	18.1%	18.1%	18.1%	18.1%
(Expected) effect on NOPAT margin of:				
– input prices	−1.35%	0.00%	+1.15%	+1.15%
– inventory markdowns	−0.20%	−0.20%	+0.00%	+0.00%
– SG&A cost stickiness	−1.90%	−1.90%	−1.70%	−1.50%
– SG&A cost savings and margin investments	+0.35%	+0.35%	+0.35%	+0.35%
= (Expected) NOPAT margin	15.0%	16.4%	17.9%	18.1%

Working Capital to Sales

- The ratios varied marginally during the prior four years and their 2011 values were close to the five-year averages. Therefore, it is reasonable to assume that for the forecasting period days' receivables and days' payables will remain constant at 7 and 34 days.
- In 2011, H&M's days' inventories increased from its 2010 level of 97.3 days to 103.9 days (the average was 87.8 days). Since H&M invests in quality improvements and store refurbishments, we predict that during the next three years the ratio will gradually revert to a level of 90 days.

TABLE 6.8 Working capital-to-sales forecasts for H&M

	2011	2012e	2013e	2014e
(a) Days' receivables	7.5	7.5	7.5	7.5
(b) Days' inventories	103.9	100.0	95.0	90.0
(c) Days' payables	34.0	34.0	34.0	34.0
Receivables to sales [(a)/365]		2.1%	2.1%	2.1%
Inventories to sales [0.4 × (b)/365]		11.0%	10.4%	9.9%
Payables to sales [−0.4 × (c)/365]		−3.7%	−3.7%	−3.7%
Operating cash to sales		8.0%	8.0%	8.0%
Net other current assets/liabilities to sales		−7.3%	−7.3%	−7.3%
Working capital to sales		10.1%	9.5%	9.0%

Non-current Assets to Sales

- The forecasts of net non-current operating assets to sales are closely linked with the previously described forecasts of H&M's store productivity.
  - Specifically, under an assumption that the investment in net non-current operating assets per store will remain constant in the next few years, store productivity (sales per store) and net non-current operating to sales will follow the same trend.
  - Between 2009 and 2011 net non-current operating assets per store gradually decreased from SEK32.6 million per store to SEK28.5 million per store. Much of this decrease can, however, be ascribed to the appreciation of the Swedish Krona during this period.
  - Because we have no clear expectation about the future exchange rates of the Swedish Krona, we assume that the non-current operating investment per store will remain constant at SEK28.5 million per store between 2012 and 2014.

TABLE 6.9 Net non-current operating assets-to-sales forecasts for H&M

	2011	*2012e*	*2013e*	*2014e*
(a) Net non-current operating assets per store	SEK28.5m	SEK28.5m	SEK28.5m	SEK28.5m
(b) Sales per store (see Table 6.5)	47.03	47.03	47.90	48.78
Net non-current operating assets to sales [(a)/(b)]	60.7%	60.7%	59.5%	58.4%

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- Non-operating investments
  - At the end of fiscal year 2011 H&M had a substantial amount of excess cash (non-operating investments).
  - Assuming that the company needs a cash balance of 8% of sales to finance its daily operations, excess cash amounted to close to 13% percent of business assets (or 11% of sales).
  - In the long run when, as we assumed previously, H&M's growth opportunities will gradually decline, the company will likely redistribute the amount of excess cash to its shareholders, either through share repurchases or dividends.
  - Thus, we assume that the investment assets-to-sales ratio will remain steady between 2012 and 2014, at its current level of 11.9% and then gradually decrease, in line with the firm's growth decline. We further assume that the (after-tax) return on investment assets remains constant at 2.8%, which is close to the European average.
- Capital structure
  - Between 2008 and 2011 H&M's debt-to-capital ratio ranged from 0.53 to 0.55. Given the low variance in leverage and without any concrete information that management plans to change the firm's capital structure, we assume that the debt-to-capital ratio will be 52.6% throughout the forecasting period.
  - Because at the end of 2011 the yield curve was steep, indicating that investors expected that market interest rates would increase in the medium term, we let H&M's after-tax interest rate gradually increase from 2.3% in 2012 to 3.5% in 2017.

From Assumptions to Forecasts

- The previous analysis leads to the conclusion that in the near and medium term it is likely that H&M can defy the forces of competition and, at least temporarily, earn substantial abnormal profits.
- A reasonable assumption for the period following the forecasting period is that a portion of the firm's abnormal profits will be competed away and the performance of the firm will revert towards the mean (general trend).
- Our strategic analysis led to an expectation of significant sales growth, primarily because of H&M's store network expansion and the presumed absence of negative exchange rate effects.
- In making longer-term forecasts, (years 2 to 10), we have relied on our analysis of the firm and its prospects as well as the time-series behavior of various performance ratios.
- Given our assumptions of increased store productivity, H&M will be able to slightly increase its sales growth rate to 14,1% in years 2 and 3. Thereafter, sales growth will gradually decline as the effect of competition gets stronger.
- We assume a pattern of moderately increasing (decreasing input prices and inventory markdowns) and then declining NOPAT margins over time.

TABLE 6.10 Forecasting assumptions for Hennes & Mauritz

Forecast year	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*
Sales growth rate	11.6%	13.7%	14.1%	12.0%	10.0%	8.0%	6.0%	4.0%	3.0%	3.0%
NOPAT margin	16.4%	17.9%	18.1%	18.0%	17.0%	16.0%	15.0%	14.0%	13.0%	13.0%
Net working capital/ sales	10.1%	9.5%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
Net non-current operating assets/ sales	60.7%	59.5%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%	58.4%
Investment assets/sales	12.0%	12.0%	12.0%	10.0%	9.0%	8.0%	7.0%	6.0%	5.0%	5.0%
After tax return on investment assets	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
After tax cost of net debt	2.3%	2.5%	2.7%	2.9%	3.1%	3.3%	3.5%	3.5%	3.5%	3.5%
Debt to capital	52.6%	52.6%	52.6%	52.6%	52.6%	52.6%	52.6%	52.6%	52.6%	52.6%

In addition to these assumptions, we also assume that sales will continue to grow at 3.0 percent in 2022 and all the balance sheet ratios remain constant, to compute the beginning balance sheet for 2022 and cash flows for 2021.

No Title

Fiscal year	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*
Beginning balance sheet (SEK millions)										
Beginning net working capital	12,377.9	12,395.2	13,251.1	14,318.6	16,036.9	17,640.6	19,051.8	20,194.9	21,002.7	21,632.8
+ Beginning net non-current operating assets	68,981.5	74,494.1	82,993.6	92,912.1	104,061.5	114,467.7	123,625.1	131,042.6	136,284.3	140,372.8
+ Beginning investment assets	13,085.1	14,727.0	16,738.2	19,091.5	17,818.8	17,640.6	16,934.9	15,707.2	14,001.8	12,018.2
= **Business assets**	**94,444.5**	**101,616.3**	**112,982.9**	**126,322.2**	**137,917.1**	**149,748.8**	**159,611.8**	**166,944.7**	**171,288.8**	**174,023.8**
Debt	49,695.8	53,469.5	59,450.5	66,469.5	72,570.6	78,796.3	83,986.2	87,844.6	90,130.5	91,569.6
+ Group equity	44,748.7	48,146.8	53,532.4	59,852.7	65,346.5	70,952.5	75,625.7	79,100.0	81,158.3	82,454.2
= **Capital**	**94,444.5**	**101,616.3**	**112,982.9**	**126,322.2**	**137,917.1**	**149,748.8**	**159,611.8**	**166,944.7**	**171,288.8**	**174,023.8**
Income statement (SEK millions)										
Sales	122,725.0	139,485.0	159,096.0	178,187.5	196,006.3	211,686.8	224,388.0	233,363.5	240,364.4	247,575.3
Net operating profit after tax	20,126.9	24,967.8	28,796.4	32,073.8	33,321.1	33,869.9	33,658.2	32,670.9	31,247.4	32,184.8
+ Net investment profit after tax	414.0	470.5	536.7	500.9	495.9	476.1	441.6	393.6	337.9	348.0
= **Net business profit after tax**	**20,540.9**	**25,438.4**	**29,333.1**	**32,574.7**	**33,817.0**	**34,346.0**	**34,099.8**	**33,064.5**	**31,585.2**	**32,532.8**
– Net interest expense after tax	–1,155.7	–1,336.7	–1,605.2	–2,060.6	–2,394.8	–2,757.9	–2,939.5	–3,074.6	–3,154.6	–3,204.9
= **Net profit**	**19,385.2**	**24,101.6**	**27,727.9**	**30,514.1**	**31,422.1**	**31,588.1**	**31,160.2**	**29,989.9**	**28,430.7**	**29,327.8**
Return on business assets	21.7%	25.0%	26.0%	25.8%	24.5%	22.9%	21.4%	19.8%	18.4%	18.7%
ROE	43.3%	50.1%	51.8%	51.0%	48.1%	44.5%	41.2%	37.9%	35.0%	35.6%
BV of equity growth rate	1.3%	7.6%	11.2%	11.8%	9.2%	8.6%	6.6%	4.6%	2.6%	1.6%

Sensitivity Analysis

- The projections discussed thus far represent nothing more than an estimation of a most likely scenario for H&M.
- Managers and analysts are typically interested in a broader range of possibilities.
  - For example, what if rising labor costs in H&M's production countries lead to a substantial increase in cost of sales, or, what if H&M's investments in product quality and design pay off significantly and store productivity grows at a faster rate than assumed in the above forecasts?
- There is no limit to the number of possible scenarios that can be considered. One systematic approach to sensitivity analysis is to start with the key assumptions underlying a set of forecasts and then examine the sensitivity to the assumptions with greatest uncertainty in a given situation.
  - For example, if a company has experienced a variable pattern of gross margins in the past, it is important to make projections using a range of margins. Alternatively, if a company has announced a significant change in its expansion strategy, asset utilization assumptions might be more uncertain.
- In determining where to invest one's time in performing sensitivity analysis, it is therefore important to consider historical patterns of performance, changes in industry conditions, and changes in a company's competitive strategy.

Seasonality and interim forecasts

- Thus far we have concerned ourselves with annual forecasts. However, traditionally for security analysts in the US and increasingly for security analysts in Europe, forecasting is very much a quarterly exercise.
- Forecasting quarter by quarter raises a new set of questions.
  - How important is seasonality? What is a useful point of departure for interim forecasts – the most recent quarter's performance? The comparable quarter of the prior year? Some combination of the two? How should quarterly data be used in producing an annual forecast?
- Seasonality is a more important phenomenon in sales and earnings behavior than one might guess.
  - It is present for more than just the retail sector firms that benefit from holiday sales. Seasonality also results from weather related phenomena, new product introduction patterns, and other factors.
- Analysis of the time-series behavior of earnings for US firms suggests that at least some seasonality is present in nearly every major industry.
  - In fact the evidence suggests that, in forecasting earnings, if one had to choose only one quarter's performance as a point of departure, it would be the comparable quarter of the prior year, not the most recent quarter.

Forecasting models

- Research has produced models that forecast sales, earnings, or EPS, based solely on prior quarters' observations.
  - The models are useful for helping those unfamiliar with the behavior of earnings data to understand how it tends to evolve through time.
  - Such an understanding can provide useful general background, a point of departure in forecasting that can be adjusted to reflect details not revealed in the history of earnings, or a ‘‘reasonableness’’ check on a detailed forecast.
- One model of the earnings process that fits well across a variety of industries is the so-called Foster model.
- Using Qt to denote earnings (or EPS) for quarter t, and E(Qt) as its expected value, the Foster model predicts that:
- $E(Qt) = Qt-4 + \delta + \varphi(Qt-1 - Qt-5)$
  - Thus, a reasonable forecast of earnings for quarter t includes the following elements:
    - The earnings of the comparable quarter of the prior year (Qt-4).
    - A long-run trend in year-to-year quarterly earnings increases (δ).
    - A fraction (φ) of the year-to-year increase in quarterly earnings experienced most recently (Qt-1 - Qt -5).

Concluding Comments

- Forecasting is the first step in prospective analysis of firm performance.
- Preliminary business strategy, accounting, and financial analysis should form the basis for many assumptions used in forecasting.
- Forecasts should be comprehensive and include key elements of the financial statements.
- When forecasting, the time series behavior of various statistics should be kept in mind.

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