

# Future Orientation of Narrative Information in European Half-Yearly Financial Reports

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## FUTURE ORIENTATION OF NARRATIVE INFORMATION IN EUROPEAN HALF-YEARLY FINANCIAL REPORTS

### PURPOSE OF THE STUDY

The purpose of the study is to reveal the common characteristics that connect companies with future-oriented reporting. The reporting practices of European companies regarding time orientation, amount of content and readability are also analyzed. The study is premised on the pioneering field of research combining content analysis, narrative information, and time orientation, pursuing to enable further investigation of the value relevance of future-oriented reporting.

### DATA

The sample involves 360 public companies listed on the STOXX Europe Total Market Index and domiciled in the European Union member states. The data consists of the narrative parts of the companies' half-yearly financial reports published in 2008 and 2009. Future orientation is measured as the proportion of future tense verbs from all verbs.

### RESULTS

The findings of the multivariate regression analysis show that the regional background (involving the legal system and culture) can be utilized to predict changes in the future orientation of reporting. Furthermore, higher proportion of equity and multinationality measured by foreign sales are positively associated with future-oriented reporting, whereas firm size is negatively related to future-oriented reporting. The variables of dividend yield and growth also appear to have some statistical significance.

### KEYWORDS

Future orientation, verb tenses, narrative reporting, financial disclosure, half-yearly financial report

## KERRONNALLISEN INFORMAATION TULEVAISUUSUUNTAUTUNEISUUS EUROOPPALAISISSA PUOLIVUOTISKATSAUKSISSA

### TUTKIELMAN TAVOITTEET

Tutkimuksen tavoitteena on selvittää, mitkä tekijät yhdistävät yrityksiä, joiden raportointi on tulevaisuuteen suuntautunutta. Lisäksi tutkimuksessa analysoidaan eurooppalaisten yritysten raportointikäytäntöjä yleisemmin koskien ajallista orientaatiota, sisällön määrää ja luettavuutta. Tutkimus perustuu urauurtavaan menetelmään, joka yhdistää sisältöanalyysin, kerronnallisen raportoinnin ja ajallisen orientaation, pyrkien raivaamaan tietä jatkotutkimukselle tulevaisuussuuntautuneen raportoinnin vaikutuksesta yrityksen arvoon markkinoilla.

### LÄHDEAINEISTO

Otos kattaa 360 STOXX Europe Total Market Index:iin kuuluvaa pörssiyhtiötä, joiden kotipaikka on jokin Euroopan Unionin jäsenvaltio. Aineisto koostuu yritysten puolivuotiskatsausten kerronnallisista osioista vuosilta 2008 ja 2009. Tulevaisuussuuntautuneisuutta mitataan tulevaisuusverbien osuudella kaikista verbeistä.

### TULOKSET

Monimuuttujaregressioanalyysin tulokset osoittavat, että alueellista taustaa, joka koostuu vallitsevasta oikeusjärjestelmästä ja kulttuurista voidaan käyttää raportoinnin tulevaisuussuuntautuneisuuden ennustamisessa. Lisäksi korkeampi oman pääoman osuus ja monikansallisuus mitattuna ulkomailta aikaansaadulla liikevaihdolla ovat positiivisesti yhteydessä raportoinnin tulevaisuussuuntautuneisuuteen, kun taas yrityksen koko liittyy negatiivisesti tulevaisuussuuntautuneeseen raportointiin. Myös osinkotuotto- ja kasvumuuttujilla havaitaan olevan tilastollista merkittävyyttä.

### AVAINSANAT

Tulevaisuussuuntautuneisuus, verbin aikamuodot, kerronnallinen raportointi, taloudellinen tiedonanto, puolivuotiskatsaus

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# 1. INTRODUCTION

## 1.1 Background and motivation

“Telling the future by looking at the past assumes that conditions remain constant. This is like driving a car by looking in the rear-view mirror,” concluded once Herb Brody, a former editor of MIT’s Technology Review. An analogy can easily be drawn to the difficulty investors face when pursuing to anticipate the future of a firm based on past-oriented financial statements. Forward-looking information is essential for the investors, as their decisions are largely determined by the future prospects of a company. Forecasting is, however, an intricate process, which is further impeded by the information asymmetry between investors and the company’s management.

Investor-oriented reporting became the central theme as the International Financial Reporting Standards (IFRS) took effect on January 1<sup>st</sup>, 2005. The aim of the new standards was to improve the financial statements’ quality, comparability, and transparency, which meant major changes to the reporting of European companies (Daske et al., 2008). It was expected that along with IFRS and the rapidly changing business environment, the reporting would adapt from the traditionally backward-looking and numerical information towards a more forward-looking and non-financial disclosure.

The harmonization of reporting practices continued in the European Union with the adoption of the Transparency Directive on January 20<sup>th</sup>, 2007, which set the minimum standards on periodic financial reporting for all issuers of securities. Despite the efforts towards comparable, high-quality, and transparent reporting, the financial disclosures still differ greatly across different countries and companies.

According to Beretta and Bozzolan (2008), future orientation is a focal part of high-quality reporting since forward-looking information enables analysts and other stakeholders to better predict future earnings. Furthermore, voluntary non-financial disclosure is needed to complement the reporting required under IFRS because it allows the management to effectively inform the investors about the success factors and trends surrounding individual

companies (FASB, 2001). Therefore reporting guidelines generally include clauses although very loose ones, concerning the disclosure of forward-looking information.

Since disclosing specific numerical forecasts of future events exposes companies to a litigation risk, future outlook is often discussed more vaguely in the narrative parts of companies' reporting. Furthermore, narrative reporting is less regulated than numerical information, leaving the company management with more room to maneuver. Therefore, narrative information is sometimes considered simply an outcome of a company's communication choices, portraying the company's communications strategy. Thus, despite the undeniable value and importance of future-oriented information to the investors, disclosing adequate forward-looking information is at the discretion of the company management. This leads to highly differentiated practices of disclosing future-oriented information across different companies.

Some initial studies concerning narrative reporting and linguistic information (see, e.g., Abrahamson and Amir, 1996; Tetlock et al., 2008; Davis et al., 2006; Sun, 2010) have focused on examining the positivity versus negativity of the conveyed message. They have found that the language can be utilized to forecast, for example, the company's future earnings and growth, and that the stock market reacts to the managers' tone. The strong evidence on the influence of narratives suggests that further research concerning reported narrative information is required. Time orientation of reporting is of particular interest since it is potentially value relevant but its impact has not been researched.

## **1.2 Objectives and contribution**

As the future orientation of reporting differs widely across companies from a single sentence to separate sections dedicated to forward-looking information, investors and analysts are left wondering why some companies are more eager to discuss the future outlook than others.

Hence, the objective of the research is to study the time orientation of firms' reporting and analyze characteristics of companies that have future-oriented reporting. The relationship between future orientation of reporting and different qualitative and quantitative attributes listed in Table 1 is examined in order to discover the common features that are shared by



companies with future-oriented reporting. In addition, the study aims to detect possible differences in the amount of content and readability of the data between countries and industries.

Table 1. Characteristics examined in this study

Regional background	Company structure	Company performance
Legal system Culture	Size Multinationality Equity ratio	Price-to-Book Growth Profitability Dividend yield

The main goal can be expressed through the following research question:

- Which characteristics explain the future orientation of a firm’s reporting?

This seminal study combining content analysis, narrative disclosure, and time orientation provides a novel perspective on companies’ reporting practices as it examines companies’ tendency to publish future-oriented information and identifies common features associated with future orientation of reporting. The research also sheds light on the content choices companies make regarding their financial disclosure and narrative reporting in particular. Furthermore, recognizing the varying time orientations can provide new insights on the companies’ communication strategies.

Lastly, determining the time orientation of different financial disclosures and distinguishing factors explaining future orientation of reporting will pave the way for further investigation on the market reactions towards differently time-oriented companies.

**1.3 Research methods and data**

The data consists of 720 half-yearly financial reports of 360 companies listed on the STOXX Europe Total Market Index and registered in the European Union member states. The narrative parts of the reports are analyzed for years 2008 and 2009.

Computer-assisted content analysis is being used in the study to reveal the time orientation in the narratives of companies’ half-yearly financial reports. The time orientation is studied by

examining the use of various verb tenses. Companies discuss their past performance and their future outlook using different verb tenses. The verbs will therefore be divided into mutually exclusive categories of past, present, and future tense. In addition to enabling the quantification of different verb tenses, content analysis allows for the investigation of the overall quantity and readability of the data.

Multivariate regression analysis is performed in order to examine the relationship between the firm-specific characteristics and future orientation of reporting. Through the analysis, the statistically significant relationships are detected and factors that can be used to predict the future orientation of a firm's reporting are identified.

## **1.4 Structure of the study**

The rest of the study is structured as follows. Chapter 2 introduces the legislative background of harmonized financial reporting, its objectives and requirements. Financial disclosure quality and evidence from the studies examining narrative disclosure are discussed in Chapter 3. Factors potentially affecting financial disclosure and time orientation of reporting are presented in Chapter 4, along with the hypotheses. Data gathering and research design are covered in Chapter 5. The results are illustrated in Chapter 6, followed by the discussion and analysis in Chapter 7. Finally, the conclusions and proposals for further research are presented in Chapter 8.

## **2. LEGISLATION ON HARMONIZED FINANCIAL REPORTING**

This chapter introduces harmonized reporting standards, which are considered to be one instigator of more future-oriented reporting. As the standards call for more investor-oriented reporting, they are also implicitly or directly promoting future orientation. Moreover, the comparability that these standards provide is essential for this study since harmonized reporting standards are a prerequisite for analyzing the differences in reporting practices across countries.

First, the emergence of International Financial Reporting Standards is described, after which the Transparency Directive and its regulations regarding narrative information and half-yearly financial reports in particular are discussed.

### **2.1 International Financial Reporting Standards (IFRS)**

International Financial Reporting Standards (IFRS) were issued as a part of the foundation of the European Community (EC) in 1957. The objective to internationalize and harmonize accounting systems was established at the time in order to create an economically equal ground for operations. During the 1990s, the business environment in Europe changed due to an increase in trade and foreign direct investments, which were driven by technological change, privatization, and de-regulation as well as companies' inclination towards a broad geographical presence of operations. (Haller, 2002.)

The increasing importance of equity markets, partly due to introduction of the euro and the globalization of capital markets, spurred the demand for internationally recognized financial information. This led the European multinationals to proactively adopt internationally accepted accounting standards, the IAS (International Accounting Standards) and U.S. GAAP (Generally Accepted Accounting Principles). As the group accounts had previously been highly neglected and individual accounts were mostly used to determine tax and dividend payments in many European countries, they now offered useful information for making investment decisions. (Haller, 2002; Barth et al., 2008.)

In order to avoid inefficiency in financial reporting, the legislators also had to act. Germany, Austria, France, Italy, and Belgium changed their national laws so that companies could base their financial statements on IAS or U.S. GAAP instead of national standards. This launched a process of convergence in the financial reporting standards in many countries. The IAS framework was issued by the International Accounting Standards Committee (IASC). The International Financial Reporting Standards were then issued by the International Accounting Standards Board (IASB), which is the successor body to the IASC. IFRS includes standards also issued by the former body, IASC, of which some have been modified by the IASB. (Haller, 2002; Barth et al., 2008.)

Although the IASB is a private-sector body, the European Commission (EC) has to approve the standards before they are made mandatory in the European Union. This way the EC can decline a standard if it does not comply with the set criteria. Three main criteria include that the standard 1) must not contradict EU's true and fair principle, 2) meets the requirements of understandability, relevance, reliability, and comparability, and 3) its adoption is in the European public's interest. (Armstrong et al., 2010.)

Evidently, a focal target in the formation of IFRS is investor orientation. Being a uniform accounting regime, IFRS are expected to increase the *comparability* and *transparency* of financial reporting around the world (Daske and Gebhardt 2006). Convergence benefits stemming from common standards include a lower cost of comparing firms across countries for investment purposes and European capital markets becoming more competitive in a global scale, adding to the liquidity of European companies. (Armstrong et al., 2010).

Restricting the variety of allowed accounting alternatives is expected to generate financial statements that reflect a company's economic position and performance more accurately. For example, earnings management should decrease when management's discretion over accounting amounts is constrained. (Barth et al, 2008.) The notion of fair value is central to the IFRS, which refers to companies reporting the values of their balance sheet items based on fair value instead of historical cost. Although companies may still choose between historical cost and fair value reporting, the IFRS require that the chosen method must be applied consistently. (Christensen and Nikolaev, 2009.)

Both the IASC and its successor body, the IASB, are pursuing a set of *high quality* financial reporting standards (Barth et al, 2008), which would lead to higher grade financial statements. Improved disclosure would lower the information asymmetry between a company and

investors, and the information risk, leading to a decreased cost of capital. (Armstrong et al, 2010.) As a whole, the IFRS framework is expected to be more investor-oriented and of a higher grade than local GAAPs (Haller, 2002).

The superior quality of the financial statements of companies that have adopted the IAS/IFRS has, however, been questioned. It has been hypothesized that the underlying reason for different domestic accounting standards might be regional differences. In this case, a company might not be able to portray its financial position and performance accurately if management discretion and the variety of accounting alternatives are limited. (Armstrong et al, 2010.)

The innate flexibility that a principles-based framework allows for firms could, in fact, increase the possibilities for earnings management. (Barth et al, 2008). Poor enforcement mechanisms and strong incentives for contradictory reporting could further deteriorate the quality of financial statements prepared under IFRS standards. These effects were detected in the case of four East Asian countries examined by Ball et al. (2003). Compliance issues have also been revealed elsewhere, calling the transparency of such reporting into question (Chatham, 2008). Therefore, consistent implementation and enforcement of standards is crucial for successful convergence of financial reporting (Daske et al., 2008).

The decision of the commission of the European Union to enforce the adoption of IFRS regarding consolidated financial statements of publicly listed companies starting on January 1<sup>st</sup>, 2005 marked the revolution of the internationalization of financial accounting in Europe. It was one of the largest changes that had happened in financial reporting in recent years (Armstrong et al., 2010). Later on, the Financial Accounting Standards Board has launched a comprehensive project to further merge the IFRS and U.S. standards, so further developments in this direction will follow. (Barth et al., 2008.)

## **2.2 Transparency directive**

In December 2004, the European Parliament and the European Council signed the Transparency Directive that set the minimum transparency requirements on periodic financial reporting for all securities issuers. As a part of a broader Financial Services Action Plan promoted by the European Commission, the directive aims to build trust among shareholders

by ensuring high-quality disclosure, as well as to lower the capital costs and provide discipline to the companies. (European Commission, 2004.) This way, the Directive advances a single European capital market by introducing new regulations into the securities law.

As the International Financial Reporting Standards concentrate on harmonizing accounting information, and consolidated accounts in particular, the Transparency Directive increases investor protection by regulating the timing of periodic reports and the composition of the report, including provisions concerning narrative information. According to the Directive, all issuers whose securities are traded on a regulated market will have to publish annual reports within four months after the financial year ends. In addition, more extensive half-yearly financial reports must be provided within two months after the end of the reporting period. Quarterly management statements are also required from those issuers who do not provide quarterly reports. (European Commission, 2004.)

Some member states have already established specific regulations concerning periodic and ongoing disclosure for securities issuers. Therefore, the aim of the Transparency Directive was not to raise existing requirements as such but to harmonize them. Moreover, the Directive's nature of imposing minimum requirements leaves the member states room to maneuver. The governments can choose to set national regulations more stringent than those imposed by the directive. (PricewaterhouseCoopers, The EU Transparency Directive, 2007.)

The Transparency Directive was published in the Official Journal of the European Union on December 31<sup>st</sup>, 2004 and it came into effect on January 20<sup>th</sup>, 2005, starting a 24-month implementation period. Thus, EU member states were obliged to write the Transparency Directive into their national laws by January 20<sup>th</sup>, 2007. (FSA Financial Services Authority, 2010.)

However, this does not mean that all member states adopted the reforms immediately and simultaneously. The member states could determine their local implementation dates independently and, furthermore, some countries did not obey the given time frame. (PricewaterhouseCoopers, The EU Transparency Directive, 2007.)

In the UK, the Financial Services Authority determined that a company would have to comply with the parts of the directive concerning periodic financial reporting only from the beginning of its next financial year if its financial year had already begun before January 20<sup>th</sup>, 2007 (FSA Financial Services Authority, 2010). Thereby, companies whose financial year began on

or after January 20<sup>th</sup>, 2007, needed to comply with the directive from such date onwards, while companies whose financial year had started, for example, on January 1<sup>st</sup>, 2007 would prepare their interim and annual financial reports according to the Transparency Directive as from January 1<sup>st</sup>, 2008. On the other hand, Belgium and Luxembourg did not meet the deadline and the Transparency Directive was written into the national law in Luxembourg as late as on January 11<sup>th</sup>, 2008.

Since this research focuses on the study of narrative disclosure on half-yearly financial reports, their requirements will be next discussed in more detail.

### **2.3 Half-yearly financial reports**

The Transparency Directive has ordered certain rules concerning half-yearly reports. Issuers of shares or debt securities must publish a financial report concerning the first six months of the financial year as soon as possible but within two months at the latest. The issuer is also responsible for keeping the reports available to the public for 5 consecutive years. The half-yearly financial report should include:

- 1) a condensed set of financial statements,
- 2) an interim management report and
- 3) a statement of assurance by the persons responsible within the issuer that the above mentioned items give a true and fair view of the company's position. (European Parliament and Council, Transparency Directive 2004/109/EC.)

If the issuer is obligated to prepare consolidated accounts, the financial statements must be prepared according to the international accounting standards applicable to interim reporting (IAS 34). If, however, consolidated financial statements are not required, the condensed financial statements must comprise at least a condensed balance sheet, a condensed income statement, and explanatory notes. (European Parliament and Council, Transparency Directive 2004/109/EC.)

The interim management report should contain at minimum 1) an indication of significant events that have occurred during the first half of the financial year and 2) their effect on the condensed financial statements as well as 3) a description of the principal risks and uncertainties for the second half of the financial year. Issuers of shares must also include

important related party transactions to the management report. If the half-yearly financial report has been subject to audit or review, the audit/review report shall be reduplicated in full. (European Parliament and Council, Transparency Directive 2004/109/EC.)

It must be noted that the Transparency Directive does not require the company to disclose forward-looking information apart from the principal risks and uncertainties. Member states have, however, set guidelines or requirements concerning forward-looking information. For example in Finland, the legislation provides that the firm's future prospects must be discussed in the interim reports, regardless of whether they have been modified. This was revealed in a interview with Minna Toiviainen and Jarmo Parkkonen from Finland's Financial Supervisory Authority.



### **3. NARRATIVE INFORMATION AND ITS ROLE IN FINANCIAL DISCLOSURE**

Financial disclosure refers to information provided by a firm, which includes, for example, financial statements and other regulatory reports. In addition, companies can publish voluntary information in the form of, e.g., management forecasts and press releases. Financial disclosure is essential for an efficient capital market, since it informs the stakeholders about the company's performance and future prospects. (Healy and Palepu, 2001.) In this study, the concepts financial disclosure and financial reporting are used interchangeably.

Narrative information signifies the textual and non-financial information that is provided alongside financial information. Narratives complement the financial information in formulating a comprehensive depiction of the company's business. (PriceWaterhouseCoopers, Corporate Reporting Definitions.)

#### **3.1 Importance and possibilities of narrative information**

With the emergence of the information society, the value of a business is increasingly tied to intangible assets and processes not traceable in the financial statements. As the quantified, backward-looking financial information cannot adequately illustrate the fundamentals of business any longer, the importance of qualitative, narrative, and forward-looking information has increased. (Beattie et al., 2004)

Qualitative information presented in a narrative form constitutes a considerable part of financial disclosure, yet it is often outside the scope of reporting standards. As discussed in Chapter 2, the harmonized regulation of reporting concerns accounting information, with only minimum standards set for qualitative information. Although the significance of narrative information is undeniable in the light of recent studies, regulating narratives is complicated because they consist of qualitative data that is subject to interpretations.

One of the most prominent initiatives acknowledging the importance of qualitative, narrative information is the Jenkins Report, published by the American Institute of Certified Public Accountants (AICPA) in 1994. The report promotes improved business reporting that would

be more relevant and useful for the investors as the institute recognizes the demand for more strategic, forward-looking, and non-financial information that would enable more accurate evaluation of the company performance. According to AICPA, the key elements of comprehensive financial disclosure are the following:

- 1) financial data (financial statements etc.),
- 2) operating data,
- 3) management analysis,
- 4) forward-looking information,
- 5) information about the management and shareholders, and background information including
- 6) objectives and strategies,
- 7) description of business and
- 8) industry structure.

(Beattie et al., 2004; Bloom, 1996.)

Evidently, the Jenkins Report emphasizes the importance of qualitative information and forward-looking information in particular. Only financial data of the above listed elements is purely quantifiable, and thereby, it can be directly regulated with ease. The other elements are more often narrative and governed by minimum requirements or left completely to firms' own discretion. Regardless, all these elements are of great substance to the investors and analysts, and they are thus potentially value relevant.

The combination of voluntariness and value relevance associated with narrative reporting provides companies with interesting opportunities. According to Llewellyn (1999), narratives can often be a more powerful instrument for convincing and persuading than calculations. People understand and process their daily lives through narratives, explaining and reasoning experiences first to themselves and then using storytelling to convince others. Although numbers have traditionally dominated the financial disclosure, narratives have a legitimate role in the corporate communications.

Companies consider annual and quarterly reports as tools for communicating to their stakeholders. Periodic reports are marketing-oriented devices emphasizing the company's objectives, strategies, and financial performance. Whereas the numerical information reported in the forms of balance sheets, income statements, and changes in the economic position are

scrutinized by the firm's auditors, the narrative information is a direct result of corporate communication choices. (Kohut and Segars, 1992.) As disclosing narrative information is mostly voluntary, it offers companies more room to maneuver and an opportunity to utilize different communications strategies.

### **3.2 Evidence concerning positive vs. negative narratives**

Previous research on narratives has been mainly interested in the negativity and positivity of information. Studies have found interesting evidence on the ability of the narratives to predict the future cash flows of a firm, and financial disclosure is also discovered to influence the firms' stock returns. These results are discussed next.

Abrahamson and Amir (1996) analyze the relationship between the negativity of the president's letter to shareholders and the performance measures based on accounting information in order to reveal whether the letter informs only about the past or can future successful and unsuccessful companies be discerned based on this narrative information. In addition, the research aims to explain how investors utilize narrative information together with the earnings numbers to value companies. As the Securities and Exchange Commission (SEC) has set no specific requirements or standards on the content of the president's letter, managers can choose to disclose information not included in the audited financial statements.

According to Abrahamson and Amir (1996), current president's letters can partially predict the future performance of a firm, as the negativity of the narration is associated with lower performance measures in the subsequent years. Evidence is also found that the investors use the president's letter to evaluate the quality of earnings. In other words, investors aspire to distinguish transitory earnings from permanent earnings components.

These findings emphasize the significance of narrative sections of annual reports that have been less examined by accounting researchers. Relevant information about the future of a firm is conveyed through narratives, rather than delivering simple statements of past performance. These results provide useful information to regulators when assessing stakeholders' needs for accounting information and potential adjustments to current disclosure requirements.

Demers and Vega (2008) switch focus to the quarterly earnings press releases. They examine if the “soft” narrative information in the management’s quarterly earnings press releases provides additional information to the company’s “hard” reported earnings news. The impact of narrative information disclosures on company’s abnormal stock market price and volatility incrementally over the hard earnings information is investigated through the analysis of over 20 000 corporate earnings announcements.

Demers and Vega (2008) find that the unexpected net optimism in managers’ language influences the announcement period abnormal returns and predicts post-earnings announcement drift, indicating that narrative information has incremental value over earnings announcements. In addition, the market reaction differs according to, for example, firm size. Market response is lower for large companies, which suggests that more information is distributed to the market concerning these companies, as the participants can at least partially anticipate the earnings announcement’s news.

Demers and Vega (2008) also discover that net optimism is priced more for high-tech firms and companies with high P/E ratios or lower quality accounting data. This suggests that soft data’s significance measured by market response depends on the characteristics of the hard information available to the market. If the hard information is perceived to be less informative, soft information becomes more valuable. Secondly, net optimism is priced more for stocks that are frequently followed by analysts and covered in the media. When the public scrutiny is high, the company must disclose more informative narrative information, leading to greater responses in the market.

Tetlock et al. (2008) investigate whether the positivity or negativity of narrative information can be used to predict individual company’s future cash flows and stock returns. Moving away from management’s disclosure, Tetlock et al. examine stories about individual S&P 500 firms from 1980 to 2004 published by Wall Street Journal and Dow Jones News Service.

Investors rely on the secondhand information they receive from three main sources: analysts’ forecasts, quantifiable public accounting variables, and narrative descriptions of firms’ current and future activities. Consistently with the later results by Kothari et al. (2009), Tetlock et al. (2008) hypothesize that the narratives could have incremental explanatory power for firms’ future cash flows and returns, if analyst and accounting variables are biased or insufficient.

The notable results by Tetlock et al. (2008) reveal that negative narratives incorporate negative information about firm's future earnings beyond the analysts' forecasts and historical accounting information. Thus, narratives add value instead of simply articulating the information conveyed through quantifiable financial data. Secondly, the stock market prices appear to respond to the negative information with a small delay. Furthermore, negative words in news stories discussing the firm fundamentals are more effective in predicting accounting earnings and stock returns than negative narrating in other stories. These results suggest that narrative media content can provide market with hard-to-quantify information on firm fundamentals.

Kothari et al. (2009) extend the research on narrative information, as they shed light on the varying impact of different information sources on the market. They examine the link between favorable and uncertainty-reducing content provided by different sources, and firm's cost of capital, return volatility, and analyst forecast error dispersion. The study is one of the first to find systematic evidence of the disclosure's effect on the capital market environment, and cost of capital in particular, using an exhaustive set (over 100 000) of print medium sources.

Kothari et al. (2009) argue that the disclosures differ because of the diverse incentives of management, analysts, and news reporters, which cause different levels of optimism and objectivity for example, and in terms of the credibility of the source from the capital market's point of view. For example, company management could be inclined to portray the business in a more positive light, whereas news reporters generally pursue an objective viewpoint and are less likely to have underlying motives regarding a specific company. Furthermore, the timeliness can vary across the sources as news stories published in the business press are often timelier than analysts' reports.

Kothari et al. (2009) find that positive or favorable disclosures decrease the firm's cost of capital, stock return volatility, and analysts' error dispersion significantly, whereas unfavorable disclosures increases the risk measures. When analyzing the impact of disclosures by source, Kothari et al. (2009) find that the market discounts the effect of management's communication. Positive statements do not change the company's cost of capital, indicating that these disclosures might not be credible. This evidence supports Abrahamson and Amir's (1996) finding. The focus of their study was solely on the use negative words because the president's letters appeared to be "sugar-coated" across the

sample. In addition, Kothari et al. (2009) find that negative disclosures increase the return volatility and analyst forecast dispersion, but surprisingly no evidence on cost of capital effects is found. This suggests that management's disclosure might not be timely.

Furthermore, Kothari et al. (2009) find that analysts' disclosures (positive and negative) are heavily discounted by the market. As a whole, analysts appear to be cautious because their disclosures are somewhat less positive in delivering positive information on firms and less negative in negative disclosures. According to Kothari et al., analysts have problems with credibility because they are seen to be reacting to market changes (i.e. being less timely), discounting their impact. Interestingly, both positive and negative disclosures by the business press have an impact on the cost of capital, stock return volatility, and analyst earnings forecast dispersion. This indicates that the disclosures by business press are more credible and timely than that of management and analysts. The press has less divergent incentives with the investors, translating into smaller agency costs.

Sun (2010) studies the ability of Management Discussion and Analysis (MD&A) disclosures to predict future firm performance in cases of disproportionate inventory increases. By analyzing over 500 manufacturing companies with disproportionate inventory increases, Sun finds that the favorability of explanations for changes in the inventory provided in the MD&A is positively associated with the firm's profitability and growth in the following years. By contrast, the profitability and sales growth of companies with unfavorable explanations are the lowest, while companies with no explanations fall in between regarding profitability and growth. These results propose that the favorability of inventory disclosures presented in the MD&A may assist investors in distinguishing disproportionate inventory increases and thereby the firm's future performance. Furthermore, the importance of narrative information as a communicative tool is highlighted, as additional, value relevant information may be conveyed through the narratives.

### **3.3 Evidence concerning future-oriented narratives**

Despite its potential value, future orientation of companies reporting has not been widely researched. Only some initial results concerning the future orientation of reporting have been reported.

In relation to the added value for investors, Francis and Schipper (1999) study the value and relevance of financial statements in general. They argue that publishing financial statements frequently increases their value, because the likelihood that other information sources could pre-empt financial statements is decreased. According to them, this also applies for future orientation, meaning that the greater the future orientation of financial reports, the smaller the probability that they will be hindered by additional information sources. In other words, this would signify that future-oriented financial reporting is more valuable to investors.

Beattie et al. (2004) present an analysis for examining the quality of narratives in annual reports using a small example of 11 companies from the food processing industry. Their study touches upon the future orientation of reporting as the amount of forward-looking information is measured among the dimensions of quality. When considering the main topics of particular value discussed in the voluntary parts of the annual report, forward-looking information represents only 6.6 percent of all topics discussed. The number of forward-looking text units relative to all text units of the same sample adds up to 13 percent. Most of this forward-looking information (93%) is non-quantitative in nature.

The small proportion of future-oriented information, discovered by Beattie et al. (2004), is surprising since forward-looking information is considered to be of great value to the investors and providing it more extensively has been promoted, for example, by the Financial Accounting Standards Board (FASB, 2001).

Kuusela's (2009) master's thesis on the future orientation of narrative information in annual reports around IFRS adoption in the UK is the main source of prior empirical results because it is one of the first studies combining content analysis, narrative information, and time orientation. The findings of her study indicate that the quantity of content in the financial reviews has increased while the readability has deteriorated. Surprisingly, future orientation seems to decrease with the IFRS adoption, which is revealed by regression analysis. According to Beattie et al. (2008), this may be due to a *normalization* process, or the gradual absorption of a novel concept into practice. They suggest that it may take time for companies to adjust to these new standards and regulations, and therefore, the effect of IFRS might be seen only further on in the future. In addition, it is not yet known how the recent financial crisis has influenced the reporting practices of companies. It can, however, be presumed that the financial crisis has particularly affected the future orientation of financial reporting. This is due to the uncertainties concerning the future, which have emerged after the drastic changes

in the market. In any event, the effect of the financial crisis can only be scrutinized after several years when the market conditions stabilized.

Of the explanatory variables tested in Kuusela's study (2009), profitability appears to affect both the quantity and the time orientation of the content. Good performers published a greater amount of content and are more future-oriented while firms with lower performance disclose less future-oriented information. In addition, growth in dividend yields and a firm's longer listing age appear to increase future orientation as expected. Furthermore, Kuusela (2009) finds that firm size correlates negatively with future orientation, meaning that larger companies would be less future-oriented. No clear reason for this is found, although it is suggested that this stems from the desire to reduce overreactions in the market that are related to publishing future projections.



## **4. FACTORS AFFECTING FINANCIAL REPORTING AND HYPOTHESES**

Accounting and financial reporting follow diverse patterns in different parts of the world. In addition to market forces that steer the reporting practices, factors relating to the regional background of an individual company can influence the reporting practices. Therefore, the impact of culture and the legal system must be considered. Culture is considered first, followed by the discussion on the influence of market forces and the legal system.

The hypotheses of this research are developed based on the studies discussed in this chapter and thus concern the influences of culture, market forces and the legal system. Previous studies have widely ignored the research of future-oriented reporting and little evidence exists of the factors associated directly with future orientation. Therefore, the hypotheses are formulated based on the conception that future orientation is a focal part of investor-oriented financial disclosure. The corresponding hypotheses are introduced at the end of each section.

### **4.1 Culture**

Hofstede (1984), who has developed the theory on cultural dimensions, defines culture as the “collective programming of the mind which distinguishes the members of one group or society from those of another.” Furthermore, culture is composed of the patterns of thought that people transfer reciprocally to each other, and it is reflected in the values, collective beliefs and other meanings that people attach to different aspects of life. By nature, cultures are extremely complex and cannot be explained by using simple terms. They are often concretized in the institutions and other tangible parts of society. Hofstede examines the values of the employees in 67 countries of a large multinational company to determine the common value dimensions that separate countries from each other.

Hofstede (1982) finds four underlying value dimensions that constitute a general structure of cultural systems. These dimensions are

- 1) individualism versus collectivism,
- 2) large versus small power distance,

- 3) strong versus weak uncertainty avoidance and
- 4) masculinity versus femininity.

Individualism versus collectivism reflects the level of interdependence a society preserves among individuals, i.e. how tightly knit the social framework in a society is. Large versus small power distance describes the degree of hierarchy accepted by the members of society. Strong versus weak uncertainty avoidance represents the degree of uncertainty and ambiguity the individuals find uncomfortable. Masculinity versus femininity depicts the society's preference between characteristics that are commonly acknowledged as masculine (achievement, assertiveness, material success etc.) or feminine (modesty, relationships, quality of life) and the differentiation of roles between men and women. (Hofstede, 1984.)

Building on Hofstede's (1982 and 1984) studies on cultural dimensions, Gray (1988) discusses accounting as a sub-culture and suggests that culture can explain accounting systems' development and differences between them. This way, the "culture of financial disclosure" would be affected by Hofstede's four cultural dimensions.

Gray (1988) outlines four accounting dimensions or "accounting values" that could be influenced:

- 1) professionalism versus statutory control,
- 2) uniformity versus flexibility,
- 3) conservatism versus optimism, and
- 4) secrecy versus transparency.

Professionalism stands for the use of professional judgment and self-regulation, whereas statutory control indicates a preference towards complying with prescriptive legal regulations. Uniformity signifies the utilization of uniform accounting principles over time and between companies as opposed to flexibility, which allows discretion according to the circumstances of individual companies. Conservatism represents a cautious and risk-averse approach towards measurement in order to cope with the uncertainty of the future, which is in contrast with optimistic and more risk-taking approach. Secrecy means preserving information confidential and restricting disclosure about the business beyond the immediate management and financiers as opposed to openness and transparency of information. (Gray, 1988.)

Gray (1988) hypothesizes that individualism would have a positive impact on financial disclosure as it can be associated with professionalism, flexibility and transparency. On the

contrary, uncertainty avoidance, and power distance would influence financial disclosure negatively since these values are likely to favor statutory control, uniformity, and secrecy.

Hofstede (1982) bundles countries together to form larger cultural areas based on their uniformity with regard to cultural dimensions. Gray (1988) places these cultural areas on the axis representing the above listed accounting values. In Figure 1, the countries represented in the sample of this study are bundled together according to Hofstede’s categorization and depicted in relation to Gray’s aspects of authority and enforcement.

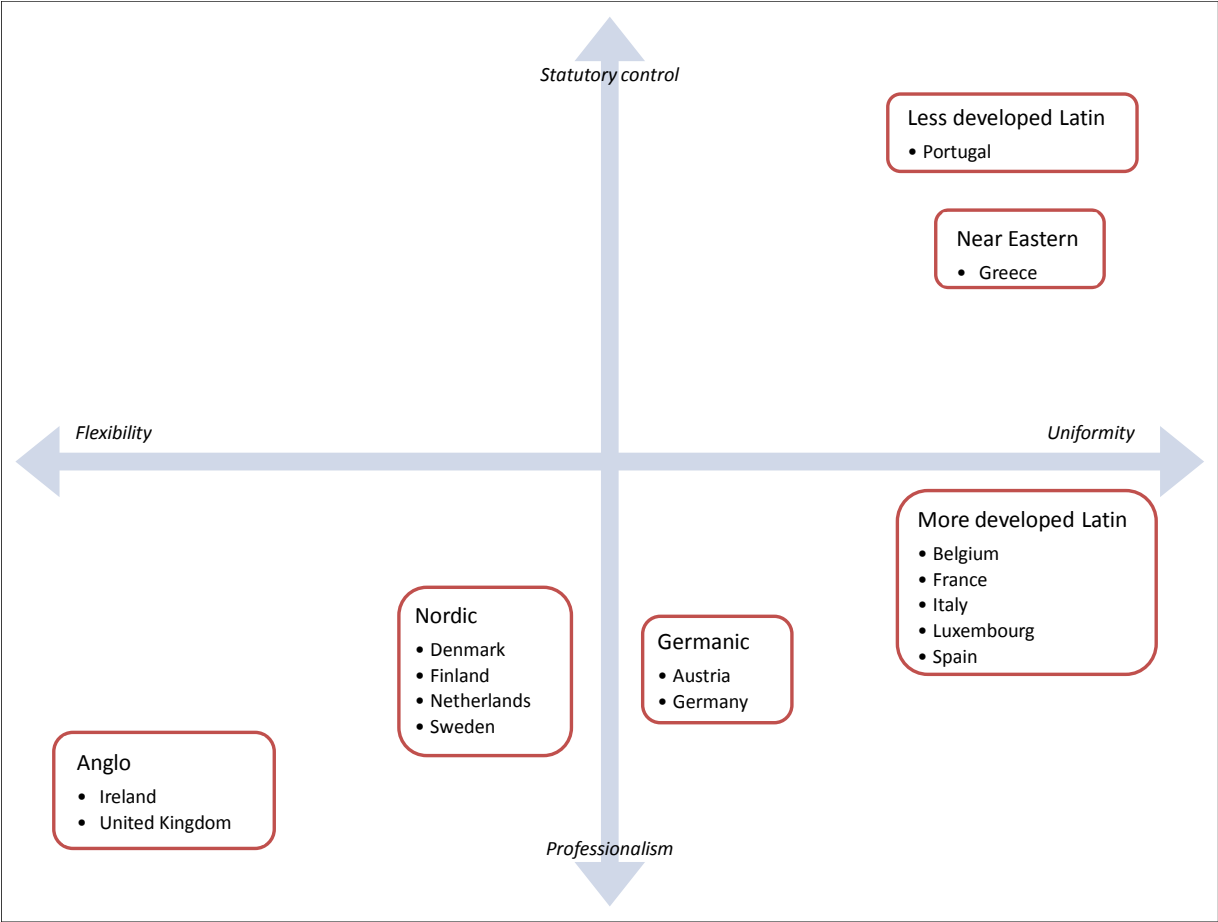


Figure 1. Country’s position regarding authority and enforcement (adapted from Gray, 1988)

It must be noted that these cultural areas and their positions have been drawn up over twenty years ago, and they might not hold anymore in today’s environment. Although the underlying culture may remain relatively stable, the accounting subculture is likely to have changed due to economic development for example. Figure 2 illustrates the sample countries based on their position concerning measurement and disclosure.

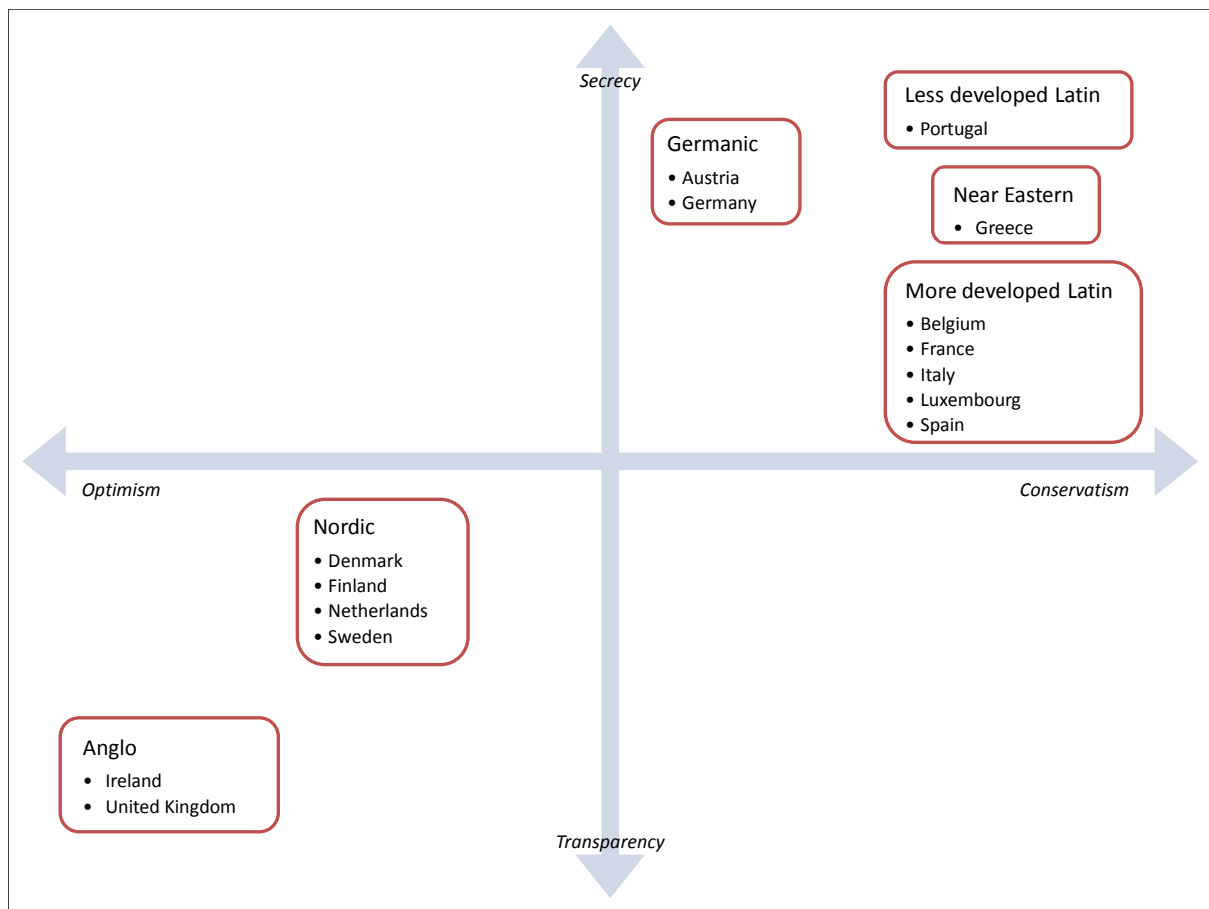


Figure 2. Country's position concerning measurement and disclosure (adapted from Gray, 1988)

Zarzeski (1996) researches the impact of culture on the financial disclosure in seven industrialized countries, taking also into account the possible effect of market forces. In addition, differences between local versus international companies are discussed with regard to the culture-disclosure relationship.

According to Zarzeski (1996), only the level of the cultural characteristic secrecy, which Gray (1988) hypothesized to have significance, is found to influence the financial disclosure of companies. Companies based in cultures with more individualism, masculinity, and less uncertainty avoidance are likely to disclose greater amounts of information. Zarzeski also discovers that international companies disclose more information than expected based on their local culture. This practice may be due to the international competition on scarce resources; companies need to present the quality of their operations in order to attract investors and find partners in a highly global market.

Overall Zarzeski's (1996) results suggest that culture does not have a significant effect on financial disclosure, especially when a company is operating internationally. More importantly, she finds the market forces to have more significant impact on the financial disclosure practices. The results by Jaggi and Low (2000) support Zarzeski's (1996) findings on the low impact of culture. Among other things, they examine the influence of cultural values on the financial disclosure of firms from different legal systems. They find that cultural values do not play an important role in the financial disclosure of firms from common law countries. For companies from code law countries, the evidence is mixed. The same results apply for multinationals, that is, culture's impact is insignificant in common law countries and mixed in code law countries.

Based on their findings, Jaggi and Low (2000) argue that culture may not have any direct effect on the financial disclosure of companies, but the impact is projected through the local legal systems. Gray (1988) recognizes the possible influence of both market forces and institutions, such as legal systems, as he does not provide evidence on the impact of culture, but simply creates a framework. Thereby, the market forces and the impact of the legal system will be discussed in the following sections.

Although Jaggi and Low (2000) claim culture to have no significant influence on financial disclosure, Zarzeski's (1996) results suggest that the secretiveness of a culture underlies the financial disclosure of companies. Therefore a hypothesis concerning the cultural background is included in the study. According to Gray's (1988) hypotheses, Germanic, Less developed Latin, Near Eastern and More developed Latin countries are more secretive, whereas Anglo and Nordic countries are more transparent. Consistent with Gray's (1988) assumptions, the first hypothesis is:

*H1: Companies domiciled in secretive cultures have less future-oriented reporting.*

## **4.2 Market forces**

Market forces are known to steer the operations of companies, and disclosure practices are no exception to this rule. In addition to regulatory incentives, firms provide information to the market based on their need of financing and the information demands of their stakeholders. The impact of market forces on financial disclosure can be distinguished by analyzing the

company-specific variables, such as size, profitability, and leverage, which illustrate the firm's relationship to other market participants.

When researching the influence of culture on the financial disclosure, Zarzeski (1996) discovers the market forces to have a greater importance. Higher level of foreign sales, lower debt ratio, and larger firm size are found to be associated with more comprehensive and investor-oriented disclosure. If a company has a large relative amount of foreign sales, it probably has more international operations, workforce, and capital. Sharing information with the investors becomes increasingly important in order to attain resources in this environment, and therefore the level of disclosure is higher. Lower debt ratio indicates a higher proportion of stock ownership, in which case a company is motivated to disclose more information. Companies with a small proportion of share capital have fewer shareholders to whom they are accountable for. Similarly to firms with foreign sales, the information demands are higher for larger firms as their operations are more complex and they are often reliant upon foreign resources. Larger firms usually also maintain a bigger investor relations function, which is able to produce sophisticated and timely reports. This way, also the firm's resources and ability to serve the investors affect the financial disclosure.

Iatridis's (2008) results concerning the company size are similar with those of Zarzeski (1996), as he studies the effect of financial attributes of UK firms on the accounting information provided in the financial statements. He finds that larger size, growth, and profitability are associated with frequent and high-quality accounting disclosure. The correlation between investor-oriented financial disclosure and increased profitability figures suggests that thorough disclosure, including sensitive accounting information about, e.g., risks, does not influence the firms' financial performance negatively. On the other hand this result could also be interpreted as an indication that financially solid performers tend to provide higher levels of disclosure, whereas under-performers are reluctant to report negative news in the fear of market dissatisfaction (Kasznik, 1999).

Furthermore, Iatridis (2008) reports an association also between increased leverage and more informative disclosure. He suggests that if a company pursues to raise external financing altogether (either funds in the capital or debt markets), more comprehensive disclosure will lower the risk level associated to the firm and this way decrease the costs as well as alleviate the process of collecting capital.

Based on Zarzeski's (1996) and Iatridis's (2008) results concerning lower debt ratio (or higher equity ratio), higher level of foreign sales, larger firm size and higher growth being associated with more comprehensive, high-quality, and investor-oriented disclosure, the second hypothesis can be written in the following form:

*H2: Higher proportion of equity and foreign sales, faster growth as well as larger firm size have an increasing influence on the future orientation of company's reporting.*

In their research regarding the President's Letter to Shareholders, Kohut and Segars (1992) find that companies with lower profitability measured by ROE are more forward-looking compared to companies with high profitability. Future orientation was measured by the relative amount of future references. Kohut and Segars reason that this may result from the effective communication strategies, which pursue to emphasize future opportunities over weak financial performance of the past in order to mitigate the negative market reaction.

While Kohut and Segars (1992) find that firms with lower profitability are more future-oriented, Iatridis (2008) claims that higher profitability is associated with superior disclosure quality. Although this evidence is slightly mixed, the third hypothesis is coherent with the results of Kohut and Segars (1992), as their results concern directly the future orientation of reporting:

*H3: Lower profitability has an increasing effect on the future orientation of company's reporting.*

In addition to the information pressures investors place on companies, the lack of information demand may also direct the financial disclosure choices of companies. Investors are interested in different aspects of the business when evaluating companies in different life cycle stages, e.g., growth companies and mature firms. When a company passes the phase of rapid growth in its life span, it is often reflected in its profit-sharing. Mature companies tend to distribute a large proportion of their earnings as dividends because less retained earnings are needed for financing growth. As these "cash flow companies" focus more on generating steady cash flows, the investors of these firms are looking for a stable and low-risk investment with regular payouts (Saarnio et al., 2000, pp. 78-79). Therefore, the investors of cash flow companies could be less concerned about the future prospects in comparison to the shareholders of growth companies, which could be reflected in the supply of information.

Moreover, a company's profit-sharing can be an indicator of the time orientation of its reporting, which brings about the fourth hypothesis:

*H5: Higher dividend yield is negatively associated with future orientation of reporting.*

The last hypothesis related to market forces is based on the functioning of the financial markets and basic theory of finance. The Price-to-Book ratio (P/B) reflects the expectations concerning future returns and growth that investors have towards the firm. These expectations and concerns place a higher information demand on the company, as investors are pursuing to determine whether the company will be able to create more value in the future. Thus, companies are expected to alleviate the information asymmetry by disclosing more information about the future outlook. Therefore the fifth hypothesis is constructed as follows:

*H5: Higher Price-to-Book ratio is positively associated with future-oriented reporting.*

The market forces are subject to the influence of large-scale economic fluctuations, and thereby, for example, an economic downturn may alter the information demands directed towards companies. The recent financial crisis spurred legislative reforms, but the volatile market situation itself is likely to have affected immediately both the supply and demand of financial disclosure.

The demand for accurate and timely financial information increases in turbulent market conditions. Regardless, as the future becomes more uncertain and difficult to predict, companies often tend to refrain from disclosing information about the future in the fear of causing drastic market reactions or even facing litigation.

Financial crisis may also increase the number of financial disclosures with a delay. Voluntary disclosure practices during a financial crisis have been studied at least by Singleton and Globerman (2002), who examine the financial disclosure of Japanese companies after the "Financial Bubble" burst in the end of the 1980s. Japan is a good example of a secretive culture, which, according to previous research (see, e.g., Gray 1988; Zarzeski, 1996), is associated with lower levels of financial disclosure. In earlier studies, it has already been suggested that the changing capital market environment will transform the traditional financial disclosure practices of firms. This appears to be true, at least for Japanese companies, who demonstrate increased levels of financial disclosure during the 1990s when controlling for firm size, equity market listing and industry. Singleton and Globerman (2002)



conclude that the financial disclosure of a traditionally secretive culture, such as Japan, is sensitive to the changing economic conditions.

The delayed impact of the financial crisis in increasing financial disclosure may appear to be less significant for the firms examined in this study, since the sample companies are domiciled in the European Union member states. The cultural values of the European countries often already promote a more investor-friendly disclosure, whereas the clashes between secretive Asian cultures and demand for transparency are greater. Furthermore, the potential shift is due to happen in a period of the next several years and is thus not fully evidenced in this study.

### **4.3 Legal system**

Legal system can have a direct or indirect effect on financial disclosure. Direct influences include, e.g., the development of accounting regulations, whereas legal protection rights assigned to investors or creditors represent indirect influences. Strong investor protection would persuade small-scale investors to enter the stock market, leading to a broader dispersion of ownership. At the same time, good protection of creditors would increase the borrowing capabilities and boost the amount of debt financing. As these stakeholder groups grow, they cause an increasing demand for information on the companies. Firms are then prone to disclose more information to meet the diverse needs of its investors and creditors. (Jaggi and Low, 2000.)

While the legislations of different countries are always unique, similarities can be found between certain countries. National legal systems are generally classified into two major categories: common and code (or civil) law systems. Common law originates from the law of England, and it is formulated principally through the judges' decisions. Thus, precedents of the courts' resolutions are the foundation of common law, whereas code law is based on the contributions of scholars, statutes, and specific codifications. Common law countries include the United Kingdom and the old British colonies, including the United States, Canada, Australia, India etc. (Jaggi and Low, 2000; La Porta et al., 1998.)

Code law is of Roman origin and the most widely spread around the world. It is further divided into three families: French-origin, German-origin, and Scandinavian-origin. The French and German code law traditions as well as the common law tradition have diffused around the world through a mixture of colonialism, conquest, and copying. (La Porta et al., 1998.)

The French Commercial Code was established under Napoleon in 1807 and dispersed first to Belgium, the Netherlands, Italy, and parts of Poland and Germany. Later it was spread through imperialism to different parts of Asia and Africa, as well as the French Caribbean Islands. The French law tradition has had a significant impact also on Luxembourg, Portugal, Spain, and Italy. (Glendon et al., 1994 in La Porta et al., 1998.) Therefore, the French law was also a major influence for the new nations of Latin America when they were released from Spanish or Portuguese rule. The German Commercial Code was less widely spread perhaps due to its late establishment in 1897. Nonetheless, it influenced especially the legislations in Austria, Czechoslovakia, Greece, Hungary, Italy, Switzerland, Yugoslavia, Japan, and Korea. (La Porta et al., 1998.)

The Scandinavian family is part of the code law tradition despite the fact that it is less influenced by the Roman law than the other two families. In some respects, the Scandinavian law is even seen to be closer to the common law. The Scandinavian laws share similarities, but they are distinct from others, therefore, they are considered separately. (La Porta et al., 1998.) The following Table 2 lists the countries included in the sample according to the prevailing legal tradition.

Table 2. Sample countries categorized according to the legal system

Common law	Code law		
	Scandinavian-origin	German-origin	French-origin
United Kingdom Ireland	Denmark Finland Sweden	Austria Germany Greece	Portugal Spain Italy France Luxembourg Belgium Netherlands

La Porta et al. (1998) find that the countries originating from the common law legal system have a substantially better investor protection measured by shareholder rights in comparison

to the countries with code law legal system and French-origin code law in particular. Law enforcement, on the other hand, is of the highest quality in Scandinavian and German code law countries. It is also strong in the common law countries, but the weakest in the countries belonging to the French code law family. Quality of accounting is the best in Scandinavia, followed closely by the common law countries. German code law countries place third, while the French family is also the weakest regarding the quality of accounting. These results indicate that overall an investor is most comprehensively protected in common law countries and most poorly under the French code law tradition, whereas the Scandinavian and German traditions fall somewhere in between.

Similarly, Jaggi and Low (2000) find that the legal system has a significant effect on the financial disclosure practices. They study 401 firms from six countries belonging to common and code law families. Companies from common law countries disclose financial information more extensively compared to firms from code law countries. This result is expected to derive from the greater information needs placed by a broad investor base and multiple creditors.

The existence of diverse commercial law traditions has led to doubts about the quality of different reporting standards. Of the local GAAPs that preceded the IAS and the IFRS, the German standards were accused of being low quality. This was the reasoning behind many German companies adopting internationally accepted reporting standards, such as the IAS and the U.S. GAAP, long before it was suggested by legislation. Due to the differences in reporting requirements between these national and international standards, abandoning German standards was seen as a significant commitment from the company's side towards greater and better disclosure. (Leuz and Verrecchia, 2000.)

Although the European Union has actively harmonized the legislation concerning financial disclosure, only minimum requirements have been set, e.g., for half-yearly financial reporting. This way, differences between countries still exist, as countries can decide to pass more stringent legislation. These choices are likely to be based on a country's law tradition. Also, the law enforcement level varies across the different legal systems. Therefore, the harmonization does not eliminate the impact of regional law tradition, albeit its significance is reduced.

Overall, Jaggi and Low (2000) state that firms from common law countries are associated with higher levels of financial disclosure in comparison to code law countries, and La Porta et al. (1998) conclude that the investor protection is the strongest in common law countries and

weakest in French code law countries, leaving Scandinavian and German-origin code law traditions in the middle. In line with the evidence, the last hypothesis is formulated as follows:

*H6: Legal system with better investor protection is positively related to the amount of future-oriented reporting.*

## **5. DATA GATHERING AND RESEARCH DESIGN**

### **5.1 Data gathering**

This empirical research is conducted by analyzing a sample of companies listed in the STOXX® Europe Total Market Index (TMI). Representing the European region as a whole, the index contains around 95 percent of the free float market capitalization of 18 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. As the number of components fluctuates and the index is reviewed on a quarterly basis, the index utilized in this study is from March 2010, consisting of 925 components. Since some companies have multiple classes of shares, the same company might be listed on the index several times. In total, 895 different companies were listed on the index in March, 2010. (Stoxx® Europe TMI, 2010.)

Harmonized reporting standards serve as a good foundation for studying reporting practices across countries. Although the Transparency Directive sets only the minimum requirements, it provides some coherence, enabling a better evaluation of the significance of other explanatory variables. As the harmonization of reporting standards under the Financial Services Action Plan, and more specifically the Transparency Directive, concerns only the member states of the European Union, Iceland, Norway, and Switzerland are eliminated from the sample, reducing the amount of firms to 828. Moreover, as discussed in Chapter 2.2., the Transparency Directive was added to the national legislations by January 20<sup>th</sup>, 2007, but the implementation schedules vary across countries. In order to allow for at least some comparability over time, the sample consists of half-yearly financial reports for years 2008 and 2009, although national differences in implementation and compliance exist.

In addition to this, the financial sector (i.e. banks, insurance companies, brokerage firms) is excluded from the sample. As their reporting requirements can differ from those of other firms, the content and level of their financial disclosure could be predominately dictated by these regulations (Singleton and Globerman, 2002). After removing the financial institutions based on their SIC codes, the number of firms in the sample was 663. From there on, the sample was selected on the basis of availability of data. First, companies with no half-yearly financial reports or press releases announcing half-yearly results to be found in English for

2008-2009 or reports that were copy-protected or had encrypted text were dropped from the sample. Second, companies that did not have the required general and financial information available in the Thomson One Banker databases were eliminated. After these measures, the final sample consisted of 360 companies, which is approximately 54 percent of the index's companies not operating in the financial sector that are based in EU member states.

Due to the selection process based on availability, the sample is not an absolute representation of the index. The distribution of index companies across different countries is illustrated in Table 3. For most countries, the sample represents the index well. Sweden has a slightly bigger representation, whereas the most weakly represented countries are the United Kingdom and Germany. Only 30 percent of German companies listed on the index qualified for the sample due to a wide-spread practice of copy-protection of financial reports.

Table 3. Representation of different countries on Stoxx Europe TMI and on the sample

Country	no of firms, Stoxx Europe TMI	% of firms, Stoxx Europe TMI	no of firms, sample	% of firms, sample	% -unit difference
United Kingdom	210	32 %	105	29 %	-3 %
France	97	15 %	49	14 %	-1 %
Germany	76	11 %	23	6 %	-5 %
Sweden	46	7 %	32	9 %	2 %
Italy	40	6 %	25	7 %	1 %
Netherlands	35	5 %	19	5 %	0 %
Spain	33	5 %	20	6 %	1 %
Finland	30	5 %	23	6 %	1 %
Belgium	20	3 %	11	3 %	0 %
Austria	19	3 %	14	4 %	1 %
Denmark	18	3 %	12	3 %	0 %
Greece	14	2 %	12	3 %	1 %
Ireland	12	2 %	7	2 %	0 %
Portugal	9	1 %	6	2 %	1 %
Luxembourg	4	1 %	2	1 %	0 %
TOTAL	663	100 %	360	100 %	

The firms belonging to the Stoxx Europe TMI have also been classified according to industry. Table 4 depicts the distribution of companies across different industries listed according to their SIC codes. The industries are more evenly represented than different countries, which indicates that different industries are efficiently dispersed around the sample countries.

Finance, Insurance and Real Estate, which in this case includes only firms operating in the Real Estate business, is the least represented industry.

Table 4. Representation of different industries on Stoxx Europe TMI

Industry classification (SIC)	no of firms, Stoxx Europe TMI	% of firms, Stoxx Europe TMI	no of firms, sample	% of firms, sample	%-unit difference
Manufacturing	285	43 %	155	43 %	0 %
Transportation, Communications, Electric, Gas & Sanitary Services	113	17 %	58	16 %	-1 %
Services	74	11 %	45	13 %	2 %
Retail Trade	51	8 %	21	6 %	-2 %
Mining	42	6 %	27	8 %	2 %
Finance, Insurance and Real Estate	39	6 %	11	3 %	-3 %
Construction	37	6 %	30	8 %	2 %
Wholesale Trade	21	3 %	12	3 %	0 %
Public Administration	1	0 %	1	0 %	0 %
TOTAL	663	100 %	360	100 %	

## 5.2 Data processing

After the half-yearly financial reports were retrieved from the companies' Internet sites, the PDF files needed to be converted into text files. Since the data handling process, called phrase tagging, works for only organized plain text, all figures, tables, captions, glossaries, page numbers, legends, and other similar items needed to be removed. In order to extract only the information content that depicts the company's choices concerning financial disclosure, the following items were eliminated from the half-yearly financial reports:

- Table of contents
- Shareholder information
- Contact information
- Financial statements
- Notes to financial statements, except for subsequent events after the balance sheet date and risk management
- Description of accounting principles
- Directors' Statement of responsibility/Disclaimer
- Safe Harbor statement/Statement regarding forward-looking information

- Audit report
- Contact information.

The items that were retained include for example:

- Titles
- Lists
- Corporate governance texts
- News
- Group profile
- Description of regulatory framework when it affects the business and not only reporting
- Subsequent events after the balance sheet date and risk management from financial statement notes.

Concerning the data gathering and processing, content analysis is a very labor-intensive method. Developing a solid coding system is extremely difficult, even for simple coding decisions. Furthermore, after creating a reliable coding system, coding each text element is time-consuming and therefore costly. (Abrahamson and Amir, 1996; Milne and Adler, 1999.) In order to analyze a large amount of data and avoid subjectivity in tagging, the data is processed by using a phrase tagger Machine Syntax software by a Finnish company Connexor Ltd. The software is provided by CSC – The IT Center for Science, which is a non-profit company administered by the Ministry of Education, Science and Culture that specializes in offering IT support and resources for academia, research institutes, and companies (CSC, The IT Center for Science).

Machine Syntax software is used in a UNIX-based operating environment. First, the text files were downloaded to CSC's database and processed by using a script. After the tagging had been performed, the text files were transferred back to the local computer. Then the whole data, consisting of 4 098 742 rows, was imported into Microsoft Office Access. Access was used due to the large amount of content since data mining and classification in Microsoft Office Excel would not have been a feasible option. Overall, the sample comprises of 142 025 sentences and 2 877 678 words. The number of words is smaller than the number of rows since each row contains a single text element, i.e. a word or a punctuation mark. Punctuation marks were eliminated when calculating the words.



The Machine Syntax software analyzes the text and places a tag for every word based on the word position, word form, and the functional dependency between different words in a sentence. By utilizing the syntax manual to interpret the meaning of different tags, the words can be categorized into, e.g., subjects, objects, verbs, nouns and so forth. In order to distinguish the time orientation of the content, the verb tenses and their occurrences are extracted from the data.

Verbs often occur in multiple-word combinations. Therefore, all individual verbs shall not be taken into account, but they must rather be considered as units consisting of possibly several sequential words. Thus the concept of a verb refers to a single verb or a verb unit that consists of several consecutive verbs (e.g., an auxiliary verb and a main verb). The tags by Machine Syntax software are categorized into mutually exclusive categories of past, present, and future tense. By extracting the occurrences of certain tags and tag combinations, the number of past, present, and future verbs can be calculated. From here onwards, these categories will be referred to as “Historical”, “Present” and “Future”. Since the focus of this study is the future orientation and the identification of future-oriented verbs, definition of the verbs in the “Future” category will be provided next.

### **5.2.1 Definition of category “Future”**

Defining future-oriented verbs is more complex than that of the other two categories. In its basic form, the future tense is comprised of a modal auxiliary verb and a main verb. English modal verbs include ‘can’, ‘will’, ‘shall’, ‘may’, ‘must’ and their preterits ‘could’, ‘would’, ‘should’ and ‘might’. In this study, all modal verbs are interpreted as being future-oriented. In addition, some verbs are recognized as being future-oriented even when they occur in present tense, since their meaning or the context in which they are used refers to the future. After thorough consideration, the following 45 verbs were classified as future-oriented:

*aim, anticipate, approach, aspire, assume, become, begin, believe, change, commence, construct, continue develop, down-grade, embark, emerge, endeavour, ensure, establish, estimate, expand, expect, forecast, foresee, head, hope, improve intend, introduce, launch, opt, plan, predict, prepare, proceed, project, pursue, schedule, seek, start, strive, target, try, upgrade, wish*

## 5.2.2 Reliability and validity of computerized phrase tagging

The reliability of the computerized tagging method was tested by comparing the results given by Machineese Syntax software to the manual classification and calculation of verbs on two half-yearly financial reports, Metso 2009 and Hochtief 2009. The manual calculation was performed separately by two people according to their knowledge and conception of the time orientation, after which the results were compared and discussed in order to reach consensus. The results from the manual and computerized phrase tagging are illustrated in Table 5. Connexor’s syntax manual assisted in classifying the verb combinations, but it did not provide a unanimous categorization regarding the time orientation of words. After the first test run of classifying Machineese Syntax phrase tags, the interpretation of certain syntaxes was refined in order to reach better accuracy. As depicted in Table 5, the numbers were significantly closer to the manual calculation in the second run of Machineese Syntax phrase tagging.

It must also be noted that when comparing the results from the first Machineese Syntax phrase tagging to manual calculation, two mistakes in the manual calculation were detected. Therefore, manual calculation evidently contains some random error, and it cannot be regarded as the definite truth.

Table 5. Comparison of results from computerized and manual phrase tagging

Company	verb tense	No of words, manual calculation	No of words, Machineese Syntax, 1st run	No of words, Machineese Syntax, 2nd run	No of words, difference	%-difference
Metso 2009	historical	239	302	245	6	2.5 %
	present	103	130	115	12	11.7 %
	future	71	57	72	1	1.4 %
	TOTAL	413	489	432	19	4.6 %
Hochtief 2009	historical	232	314	235	3	1.3 %
	present	97	126	117	20	20.6 %
	future	57	48	54	-3	-5.3 %
	TOTAL	386	488	406	20	5.2 %

Overall, Machineese Syntax software noticed more verbs than manual calculations. The differences in Historical and Future categories remain modest, whereas the Present category is somewhat over-represented. This is due to the software recognizing some additional words as verbs. For example, in the sentence “All these improvements contribute towards growth in our earnings figures,” both ‘contribute’ and ‘figures’ are tagged as verbs. Although this

systematic error cannot be eliminated, it has little influence on the results of this study since it does not directly skew the main target of interest, the future verbs.

In general, the ability of the study to measure time orientation through verb tenses, or the validity of the study, is good. It must be considered, however, that the time orientation cannot always be perceived simply by analyzing the verbs. For example, phrases “The outlook is positive due to the growing markets in Asia” and “The operations of the two units are combined next year” clearly refer to the future, but the verbs “is” and “are combined” indicate Present category. In these examples, the conception of the actual time orientation is constructed through the expressions “outlook” and “next year”, which imply the Future category. Since this research is conducted by analyzing the verbs, phrases similar to these examples would be misinterpreted. Thus, it can be concluded that future orientation may be slightly underrepresented in the sample in comparison to the actual reports, but the difference is minor.

### **5.3 Description of variables**

All variable definitions are presented at the end of this section in Table 6.

#### Dependent variable

The dependent variable used in the regression analysis is the proportion of future verbs of all verbs in the half-yearly financial reports reported as a percentage value.

#### Explanatory variables

The models examined in the regression analysis contain ten different explanatory variables. For convenience, the variables are organized into four categories of regional background, size, performance and structure.

#### *Regional background*

The variables concerning regional background include the *legal system* and *culture* in which the company is operating in.

Legal system signifies the historical origin of the national legislation of a certain country. As described in Chapter 4.3, the legal system may have a significant effect on the financial

disclosure of companies. The legal systems relevant in this study are common law, Scandinavian-origin code law, German-origin code law and French-origin code law. Because the legal system's order concerning the level of future orientation cannot be reliably authenticated beforehand, it is incorporated as a dummy variable. Therefore, the legal system is considered as four separate variables in the regression analysis: legal common, legal Scandinavian, legal German and legal French. In each category, the variable equals 1 if the company is domiciled in the corresponding legal system and 0 if the company is domiciled elsewhere.

The culture in which the company operates may indirectly affect the financial disclosure practices. Mixed evidence on the influence has been presented. However, as discussed in Chapter 4.1, according to Zarzeski (1996), at least the culture's tendency towards secretiveness instead of transparency would be of significance. Cultural areas of interest in this study consist Anglo, Nordic, German, Near Eastern, More developed Latin, and Less developed Latin culture areas. Similarly to legal system, the cultural background is examined as a dummy variable. Therefore, it is included as six separate variables in the regression analysis.

#### *Company structure*

Company structure is the second category included in the regression analysis and it comprises the size (*sales and market capitalization*), *multinationality* and the *equity ratio*.

Size is found to be associated with more frequent and better quality financial disclosure in many studies (see e.g. Iatridis, 2008). Furthermore, Beretta and Bozzolan (2008) state that future orientation is a focal part of high-quality financial disclosure. In addition to this, larger firms are more likely to be able to invest in and maintain bigger investor relations functions, which can provide more comprehensive information. In this study, size is measured by the amount of sales and the market capitalization of the firm. Sales is defined as the natural logarithm of the gross sales and other operating revenue less discounts, returns and allowances. Market capitalization is calculated as the natural logarithm of the market price on year end multiplied by the number of common shares outstanding.

Proportion of foreign sales is a proxy for the multinationality of a company, which is associated with complex operations and a broad investor base. Companies operating in the international environment and capital market must provide comprehensive financial

disclosure in order to attract investors and meet the needs of diverse stakeholders. (Meek et al., 1995.) Therefore, the financial disclosure of multinational companies may differ from those operating in the domestic market, which was also found by Iatridis (2008). The proportion of foreign sales is measured as sales generated from operations in foreign countries relative to the sales figure used as a size variable.

Equity ratio illustrates the proportion of equity of all assets of the company. Companies with more equity ownership could face more pressure from the investors to disclose more comprehensive financial information. Furthermore, Zarzeski (1996) finds that companies with lower debt ratio (and reversely a higher equity ratio) are associated with more investor-oriented disclosure.

### *Company performance*

Company performance is recognized in the regression analysis through four variables: *Price-to-Book*, *growth*, *profitability*, and *dividend yield*.

Price-to-Book ratio depicts the year-end market price relative to the book value per share. The ratio can be perceived as an indicator of the over- or undervaluation of a particular share. This way it reflects the expectations the investors have towards the company and may serve as a signal of the company's future performance. For example, investors of a firm with a high Price-to-Book ratio expect the firm to create more value in the future from their given assets. Price-to-Book ratios vary according to industry due to the differences in, e.g., the capital intensity of industries.

Growth is measured as the percentage change of sales from the year 2008 to 2009. Since growth requires financing, growth companies tend to publish more extensive financial information in order to attain funds in both debt and capital markets (Iatridis, 2008). Moreover, companies experiencing rapid growth are naturally oriented towards the future in their operations, which could be associated with publishing forward-looking information.

Return on Invested Capital or ROIC is used as a measure of profitability, depicting how efficiently a firm's capital is used for generating profits. Return on Invested Capital shows the capability of the firm's productive assets, leaving out items that are not supposed to contribute to earnings. Unlike Return on Equity, Return on Invested Capital also allows comparison across different capital structures. Significant relationships between profitability and financial disclosure have been found in previous studies. Companies with lower profitability might

tend to be more future-oriented in their communications instead of wallowing in the past losses. Supporting this hypothesis, Kohut and Segars (1992) state that lower profitability is associated with future orientation. No definitive conclusions can be made as Iatridis (2008) finds high profitability to be associated with higher quality and more comprehensive disclosure.

Dividend yield is the ratio of dividends per share to the market price on year end. Dividends are said to carry information content, meaning that dividend changes are interpreted as signals of a company's prospects. Because maintaining a high-dividend policy is costly without a future cash flow to support it, increasing dividends may be perceived as an indication of managers' confidence towards the future (Brealey et al., 2007, pp. 446). High dividend yield may also reveal information about the company's strategy. Saarnio et al. (2000, pp. 78-79) have defined a concept of "cash flow companies" for firms that generate stable cash flows with low risk, which attracts many investors. These companies are often operating in a market with little growth prospects, but which have solid sales and profitability. With limited growth opportunities, neither the companies nor the investors are concerned about the future. This way dividend yield could be associated with the future orientation of reporting.

Table 6. Definitions of regression analysis variables

Variable	Description	Measurement
<b>Dependent variable</b>		
FUTURE%	Future orientation of reporting	Number of future tense verbs or future-oriented verbs of all verbs appearing in the half-yearly financial reviews, percentage value
<b>Explanatory variables</b>		
LEGAL1	Common law legal system	Dummy variable, 1 for companies domiciled in common law countries, 0 for others
LEGAL2	Scandinavian-origin code law legal system	Dummy variable, 1 for companies domiciled in Scandinavian-origin code law countries, 0 for others
LEGAL3	German-origin code law legal system	Dummy variable, 1 for companies domiciled in German-origin code law countries, 0 for others
LEGAL4	French-origin code law legal system	Dummy variable, 1 for companies domiciled in French-origin code law countries, 0 for others
CULTURE1	Anglo culture	Dummy variable, 1 for companies operating in Anglo culture, 0 for others
CULTURE2	Nordic culture	Dummy variable, 1 for companies operating in Nordic culture, 0 for others
CULTURE3	German culture	Dummy variable, 1 for companies operating in German culture, 0 for others
CULTURE4	Near Eastern culture	Dummy variable, 1 for companies operating in Near Eastern culture, 0 for others
CULTURE5	Less developed Latin culture	Dummy variable, 1 for companies operating in Less developed Latin culture, 0 for others
CULTURE6	More developed Latin culture	Dummy variable, 1 for companies operating in More developed Latin culture, 0 for others
SALES	Size, option 1	Natural logarithm of sales at year end
MARKETCAP	Size, option 2	Natural logarithm of market capitalization at year end
PRICETOBOOK	Price-to-Book	Market price / Book value per share, denoted at year end
GROWTH	Growth rate	$[\text{Sales year } n - \text{sales year}(n-1)]/\text{sales}(n-1)$
ROIC	Profitability	$(\text{Net income before preferred dividends} + \text{interest expense on debt} - \text{interest capitalized}) / [(\text{total capital year } (n-1) + \text{short term debt} \& \text{ current portion of long term debt year } (n-1)) + (\text{total capital year } n + \text{short term debt} \& \text{ current portion of long term debt year } n)/2]$
DIVIDENDYIELD	Dividend policy	Dividends per share / market price, denoted at year end
FOREIGNSALES%	Multinationality	Sales from operations in foreign countries / sales, denoted at year end
EQUITYRATIO	Proportion of equity	Common equity / total assets

The table consists of the variables used in the OLS regression analysis along with their descriptions and ways of measuring them. The data has been collected from the databases of Thomson One Banker, mainly from Worldscope, except for FUTURE%, which has been collected from the companies' half-yearly financial reports in 2008-2009.

## 5.4 Research models

Linear multivariate regression analysis is utilized to examine the influence of multiple explanatory variables on one dependent variable. In this study, six different ordinary least square (OLS) regression models are formed in order to reveal the potential relationships of statistical significance between the future orientation of reporting and the explanatory variables. In all the models,  $\varepsilon$  represents the remainder term.

In the first three models, the legal system is considered together with all the other explanatory variables. The four different legal systems are included in the model as separate dummy variables.

(1)

$$FUTURE\% = \alpha_0 + \alpha_1LEGAL1_{it} + \alpha_2LEGAL2_{it} + \alpha_3LEGAL3_{it} + \alpha_4SALES_{it} \\ + \alpha_5ROIC_{it} + \alpha_6DIVIDENDYIELD_{it} + \alpha_7FOREIGNSALES\%_{it} + \varepsilon_{it}$$

(2)

$$FUTURE\% = \beta_0 + \beta_1LEGAL1_{it} + \beta_2LEGAL2_{it} + \beta_3LEGAL3_{it} \\ + \beta_4PRICETOBOK_{it} + \beta_5EQUITYRATIO_{it} + \varepsilon_{it}$$

(3)

$$FUTURE\% = \gamma_0 + \gamma_1LEGAL1_{it} + \gamma_2LEGAL2_{it} + \gamma_3LEGAL3_{it} + \gamma_4MARKETCAP_{it} \\ + \gamma_5GROWTH_{it} + \gamma_6DIVIDENDYIELD_{it} + \varepsilon_{it}$$

In the following models, six dummy variables representing culture replace the legal system dummy variables while the other variables remain unchanged. Since the categories of legal system and culture are partially overlapping, they capture partly the same phenomenon, for which these explanatory variables could not be examined together.

(4)

$$FUTURE\% = \delta_0 + \delta_1CULTURE1_{it} + \delta_2CULTURE2_{it} + \delta_3CULTURE3_{it} \\ + \delta_4CULTURE4_{it} + \delta_5CULTURE5_{it} + \delta_6SALES_{it} + \delta_7ROIC_{it} \\ + \delta_8DIVIDENDYIELD_{it} + \delta_9FOREIGNSALES\%_{it} + \varepsilon_{it}$$



(5)

$$\begin{aligned} FUTURE\% = & \zeta_0 + \zeta_1 CULTURE1_{it} + \zeta_2 CULTURE2_{it} + \zeta_3 CULTURE3_{it} \\ & + \zeta_4 CULTURE4_{it} + \zeta_5 CULTURE5_{it} + \zeta_6 PRICETOBOK_{it} \\ & + \zeta_7 EQUITYRATIO_{it} + \varepsilon_{it} \end{aligned}$$

(6)

$$\begin{aligned} FUTURE\% = & \eta_0 + \eta_1 CULTURE1_{it} + \eta_2 CULTURE2_{it} + \eta_3 CULTURE3_{it} \\ & + \eta_4 CULTURE4_{it} + \eta_5 CULTURE5_{it} + \eta_6 MARKETCAP_{it} \\ & + \eta_7 GROWTH_{it} + \eta_8 DIVIDENDYIELD_{it} + \varepsilon_{it} \end{aligned}$$

The last two models comprise the explanatory variables excluding the regional background variables of legal system and culture. This allows the separate assessment of the significance of variables representing market forces.

(7)

$$\begin{aligned} FUTURE\% = & \theta_0 + \theta_1 SALES_{it} + \theta_2 PRICETOBOK_{it} + \theta_3 ROIC_{it} \\ & + \theta_4 DIVIDENDYIELD_{it} + \varepsilon_{it} \end{aligned}$$

(8)

$$\begin{aligned} FUTURE\% = & \lambda_0 + \lambda_1 MARKETCAP_{it} + \lambda_2 GROWTH_{it} + \lambda_3 FOREIGNSALES\%_{it} \\ & + \lambda_4 EQUITYRATIO_{it} + \varepsilon_{it} \end{aligned}$$

## **6. EMPIRICAL RESULTS**

This chapter presents the results from the content analysis and multivariate regression analysis. First, the content analysis is discussed, which concentrates on the differences in the amount and time orientation of narrative information across years and countries. And then, the results for the regression analysis are presented.

### **6.1 Content analysis results**

The content analysis reveals that there are differences in the amount of narrative reporting across years and countries.

Table 7 depicts the reporting practices in 2008 and 2009 in terms of amount of narrative information and different time orientations of reporting. Overall, in the European Union member states, the amount of narrative information has increased from 2008 to 2009 by 7.5 - 8 percent when using the number of words and sentences as a measure. The number of historical verbs has increased the most (9.4%), followed closely by present tense verbs (9.1%), whereas the number of verbs describing the future has increased only by 7 percent. Thereby, the proportion of future orientation has decreased in the half-yearly financial reports from 2008 to 2009. This result could be due to the unstable business environment. As the future is highly uncertain, firms could be reluctant to disclose more forward-looking information.

When examining the minimum values of the future verbs, the lack of future orientation in some half-yearly financial reports becomes evident. Although the Transparency Directive obliges the companies to update the information regarding their future, some companies bypass the discussion on future prospects by statements such as “The future outlook remains unchanged” or “For information on the future outlook, please refer to the Annual Report 2008”. This way, they ostensibly meet the requirements while, in fact, not disclosing anything about the future.

Table 7. Descriptive statistics of the content analysis variables

		<b>Words</b>					
<b>Year</b>	<b>N</b>	<b>Mean</b>	<b>Change %</b>	<b>Std.dev.</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<b>2008</b>	360	3 842.8		2 969.3	3 007.0	533.0	23 320.0
<b>2009</b>	360	4 150.7	8.0 %	3 342.9	3 238.0	468.0	33 947.0

		<b>Sentences</b>					
<b>Year</b>	<b>N</b>	<b>Mean</b>	<b>Change %</b>	<b>Std.dev.</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<b>2008</b>	360	190.1		127.3	161.0	15.0	833.0
<b>2009</b>	360	204.4	7.5 %	135.9	169.0	22.0	1 103.0

		<b>Historical</b>					
<b>Year</b>	<b>N</b>	<b>Mean</b>	<b>Change %</b>	<b>Std.dev.</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<b>2008</b>	360	138.8		99.0	114.0	8.0	670.0
<b>2009</b>	360	151.9	9.4 %	110.0	121.5	13.0	1 027.0

		<b>Present</b>					
<b>Year</b>	<b>N</b>	<b>Mean</b>	<b>Change %</b>	<b>Std.dev.</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<b>2008</b>	360	87.9		70.4	69.0	5.0	419.0
<b>2009</b>	360	95.9	9.1 %	79.4	75.0	6.0	665.0

		<b>Future</b>					
<b>Year</b>	<b>N</b>	<b>Mean</b>	<b>Change %</b>	<b>Std.dev.</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<b>2008</b>	360	34.0		27.6	27.0	0.0	204.0
<b>2009</b>	360	36.3	7.0 %	30.1	28.5	0.0	229.0

		<b>Future %</b>					
<b>Year</b>	<b>N</b>	<b>Mean</b>	<b>Change %</b>	<b>Std.dev.</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<b>2008</b>	360	12.9 %		5.3 %	12.6 %	0.0 %	32.9 %
<b>2009</b>	360	12.5 %	-3.3 %	5.5 %	12.6 %	0.0 %	29.9 %

The table provides the frequency (N), mean, percentage change, standard deviation, median, minimum and maximum values of the variables. *Words* refers to the number of words in the half-yearly financial reports. *Sentences* represents the number of sentences in the half-yearly financial reports. *Historical* is the number of past tense verbs, *Present* is the number of present tense verbs and *Future* is the number of future tense verbs or verbs referring to the future. *Future %* is the percentage value of future tense verbs or verbs referring to the future of all verbs in the half-yearly financial reports.

Table 8 illustrates the number of words on half-yearly financial reports in different countries during 2008 and 2009. The trend has been towards increased reporting, as the number of words in firms' half-yearly financial reports has grown in most of the sample countries. The average number of words has dropped from 2008 to 2009 only in Sweden, Luxembourg, and

Portugal. The sample from Luxembourg, however, consists of only two companies. Therefore, it cannot be considered a reliable representation of the country's reporting practices, and the results should be interpreted with precaution.

The amount of reporting, measured by the number of words, differs highly between different countries. The firms in Greece, Sweden, and Luxembourg have the shortest reports (less than 3000 words on average), whereas Italian companies publish the longest reports of 9 000-10 000 words on average. Some Italian companies include in their reports particularly detailed segment reporting and abundant notes in their financial statements. The second highest amounts are reported in Germany, with significantly lower figures in comparison to Italy. The average number of words stays below 5000 in both years.

Table 8. Number of words on half-yearly financial reports of different countries during 2008-2009

Country	N	Mean		Std.Dev.		Median		Min		Max	
		2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
United Kingdom	105	3 561	4 010	2 206	2 508	3 130	3 203	673	724	16 569	16 710
Ireland	7	2 920	3 476	1 012	659	2 816	3 549	1 398	2 611	4 349	4 251
Denmark	12	2 907	3 158	1 072	1 486	2 910	3 043	659	622	4 565	6 252
Finland	23	3 388	3 696	1 114	1 356	3 269	3 523	1 279	1 409	5 700	7 077
Sweden	32	2 793	2 688	1 190	1 050	2 507	2 598	1 332	1 336	7 523	6 687
Austria	14	3 910	4 240	1 361	1 282	4 052	4 286	1 459	1 449	5 913	6 626
Germany	23	4 593	4 837	2 864	2 628	3 497	4 458	798	701	12 326	11 035
Greece	12	2 446	2 825	1 058	1 139	2 142	2 764	1 100	468	4 501	4 953
Portugal	6	4 587	2 866	2 682	2 246	5 012	2 314	997	724	7 780	6 383
Spain	20	3 529	3 723	3 711	3 406	2 306	2 549	709	912	16 317	14 049
Italy	25	9 443	10 357	5 320	7 245	9 250	7 633	2 820	2 575	23 320	33 947
France	49	3 690	3 826	2 843	2 710	2 624	3 098	591	513	11 872	12 341
Luxembourg	2	1 942	1 642	1 992	1 025	1 942	1 642	533	917	3 350	2 367
Belgium	11	2 590	3 002	1 154	1 684	2 778	3 178	662	682	3 955	5 647
Netherlands	19	2 623	3 216	1 197	1 367	2 557	2 970	742	977	5 849	6 130

Concerning the differences in the amount of reporting across industries, Table 9 depicts the number of words on half-yearly financial reports of different industries during 2008 and 2009. In comparison with country-based analysis, the trend towards increased reporting is even more explicit when examining the industries. When using simultaneously both the average and median number of words as a measure, the amount of reporting has not diminished in any of the industries. Only the average number of words in retail trade and the median in the service sector have declined from 2008 to 2009.

The number of words in half-yearly financial reports varies less across industries than countries. The industries of mining, transportation, communications, electric, gas and sanitary services as well as public administration appear to have the most wordy half-yearly financial reports. However, in this study, the public administration sector involves a single company, and thus the results concerning this industry should not be submitted to further analysis. Among the other two industries gaining the highest scores in the amount of reporting, the average number of words fluctuates between 4 000 to 6 000. The lowest number of words are reported in the industries of wholesale and retail trade, where the average number of words remains close to 3 000.

Table 9. Number of words on half-yearly financial reports of different industries during 2008-2009

Industry	N	Mean		Std.Dev.		Median		Min		Max	
		2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Mining	27	4 913	5 484	3 269	3 416	4 349	4 356	836	929	16 569	16 710
Construction	30	4 371	4 702	3 979	4 269	2 973	3 188	673	724	17 067	17 063
Manufacturing	155	3 349	3 606	2 304	2 513	2 792	3 098	659	468	18 308	22 846
Transportation, Communications, Electric, Gas & Sanitary Services	58	5 363	5 819	4 235	5 283	3 790	4 399	533	724	23 320	33 947
Wholesale Trade	12	2 719	3 070	1 442	1 436	2 464	2 563	662	1 155	6 005	5 755
Retail Trade	21	3 143	3 088	2 061	1 587	2 633	2 832	591	701	8 889	6 700
Finance, Insurance and Real Estate	11	3 960	4 415	2 801	2 784	3 091	3 697	2 028	2 097	11 872	12 341
Services	45	3 136	3 366	1 768	1 702	2 970	2 960	662	513	11 159	9 462
Public Administration	1	6 165	6 964	-	-	6 165	6 964	6 165	6 964	6 165	6 964

The number of sentences can also be used to measure the amount of disclosure. This measure, however, cannot be used as a reliable indicator in this study because the Machine Syntax software only recognizes sentences ending with a full stop. In the half-yearly financial reports, many sentences end with a colon to introduce a table, figure, etc. illustrating an idea. In addition, listings are often utilized in the half-yearly reports to highlight certain points or to clarify the message, and these are rarely closed with a full stop. Therefore, the number of sentences may appear to be low, even when the same amount of information is conveyed. Simultaneously, the average number of words in a sentence increases, which might be perceived as an indication of decreased readability. In fact, the contrary might have happened, since increased use of listings and tables generally improve readability.

The number of different verbs, future verbs in particular, is nonetheless the main target of interest in this study. The proportion of future verbs from all verbs in different countries is presented in Figure 3. The countries with the highest relative proportion of future verbs, and thus the most future-oriented in their reporting, are the United Kingdom, Ireland, and Denmark. The least future-oriented in their reporting are France, Portugal and Spain. In 9 out of the 15 countries, the proportion of future verbs has decreased. As mentioned earlier, this result may be due to the financial crisis, as the turbulent economic environment turns forecasting into an impracticable task. The increase in six of the countries was modest, as only in the Netherlands and Belgium the proportion of future verbs increased over 0.5 percentage units.

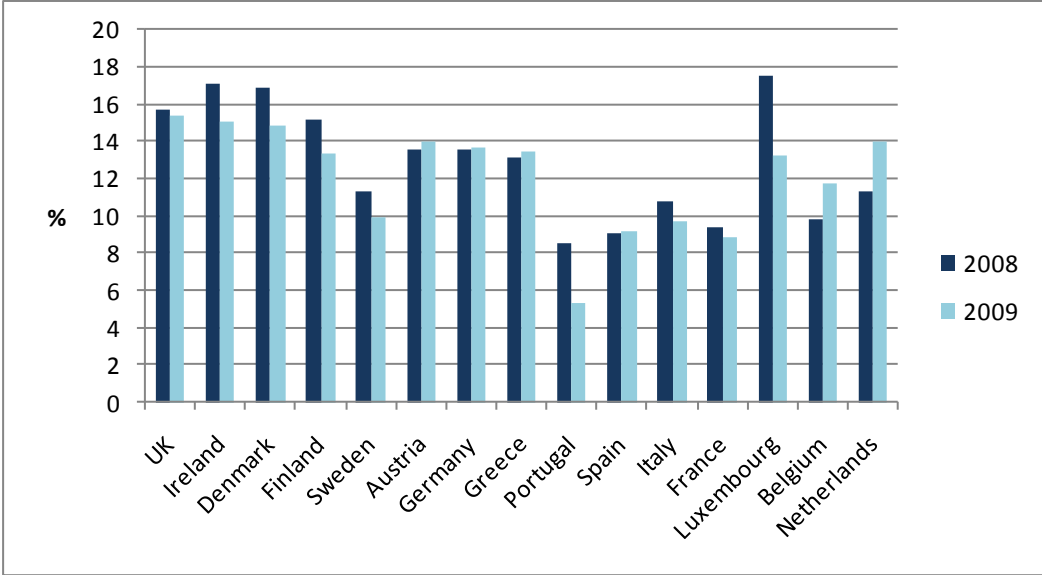


Figure 3. Proportion of future verbs from all verbs on half-yearly financial reports of different countries

The proportion of future verbs was also examined concerning different industries. Companies were classified according to industry using the primary SIC code provided in the Worldscope database in Thomson One Banker. The results of the future orientation of reporting in different industries are illustrated in Figure 4.

Reporting appears to be the most future-oriented in the mining industry and the least future-oriented in public administration. Only one company, however, is categorized into the public administration sector, and thus the result cannot be considered to be reliable. The second lowest proportion of future verbs was detected in the finance, insurance and real estate sector. Mining having the most future-oriented reporting may be due to the substantial risks

associated with the industry. On the other hand, public administration being the least future-oriented is expected because they are operating in less competitive financial markets.

Nonetheless, the result concerning finance, insurance and real estate sector is surprising. Since the firms operating in the financial sector are subject to additional requirements demanding more future-oriented information to be disclosed in a numerical form, they might be inclined to cut down the proportion of narrative, future-oriented information. In this study, companies qualifying for this category are real estate firms, since banks and insurance companies were excluded from the data. Furthermore, the technology-based industries (including manufacturing and transportation, communications, electric, gas & sanitary services) are unexpectedly ranked in the middle in terms of future orientation of reporting. High-technology companies are expected to rely more on voluntary narrative disclosure, as the discrepancy between reported information and value relevant information to the investor may be substantial in their business area (Francis and Schipper, 1999). The industry classification used in this study is, however, very generalized, and might not accurately depict the particular nature of high-technology companies' reporting. For example the transportation, communications, electric, gas & sanitary services industry includes on one hand railroads, which experience less disparity between value relevant and required information, and on the other hand telecommunications companies, which are model examples of high-technology.

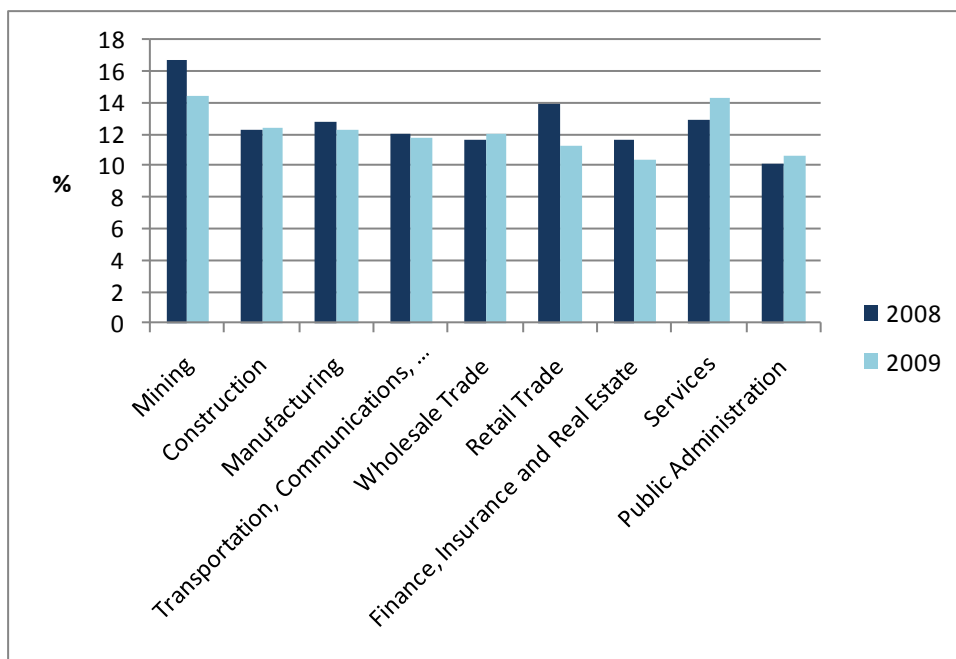


Figure 4. Proportion of future verbs from all verbs on half-yearly financial reports listed according to industry

## 6.2 Descriptive statistics for the regression analysis

The descriptive statistics of the variables used in the regression analysis are provided in Table 10. The number of observations is 720, except for Price-to-Book, as 7 observations outside the range of  $\pm 2$  standard deviations from the original mean were excluded from the sample. These abnormal values resulted from the negative or close to zero value of equity.

Although the regression analysis considers the legal system and culture as dummy variables, examining the correlations requires the variables to be illustrated in a linear form. Therefore in the descriptive statistics (Table 10) and the correlation matrix (Table 11) the legal system and culture variables are forced into a linear scale. Legal system is depicted on a range of one to four, value of one stands for common law, two for Scandinavian-origin code law, three for German-origin code law and four for French-origin code law. Culture is illustrated using a range of one to six for Anglo culture, Nordic culture, German culture, Near Eastern culture, Less developed Latin culture, and More developed Latin culture, respectively.



Table 10. Descriptive statistics of the regression analysis variables

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
Dependent variable						
FUTURE%	720	0.127	0.054	0.126	0.000	0.329
Explanatory variables						
LEGAL	720	2.558	1.267	3.000	1.000	4.000
CULTURE	720	3.097	2.063	2.000	1.000	6.000
SALES	720	8.251	1.577	8.128	3.940	12.650
MARKETCAP	720	7.812	1.323	7.596	5.025	11.812
PRICETOBOK	713	2.190	1.721	1.672	0.071	11.519
GROWTH	720	0.048	0.228	0.034	-0.860	2.084
ROIC	720	10.241	12.385	8.279	-59.693	99.036
DIVIDENDYIELD	720	3.443	2.640	3.171	0.000	21.086
FOREIGNSALES%	720	0.678	0.493	0.725	0.000	1.988
EQUITYRATIO	720	38.893	16.873	37.346	-6.166	95.797

The table provides the frequency (N), mean, standard deviation, median, minimum and maximum values of the dependent and explanatory variables. FUTURE% refers to the percentage of future tense verbs or future-oriented verbs of all verbs in the half-yearly financial reports. LEGAL and CULTURE refer to the prevailing legal system and culture in which a company is operating in. LEGAL is measured on a linear range of 1-4: 1 = common law, 2 = Scandinavian-origin code law, 3 = German-origin code law and 4 = French-origin code law. CULTURE is portrayed through a linear range of 1-6: 1 = Anglo culture, 2 = Nordic culture, 3 = German culture, 4 = Near Eastern culture, 5 = Less developed Latin culture and 6 = More developed Latin culture. SALES and MARKETCAP are natural logarithms of the figures. PRICETOBOK, GROWTH, ROIC and DIVIDENDYIELD are all self-explanatory. FOREIGNSALES% is the proportion of international sales of all sales and EQUITYRATIO is common equity divided by total assets.

### 6.3 Correlations

Correlation analysis allows the measurement of the linear association of two different variables without making a distinction between the explanatory and dependent variable (Blumberg et al., 2008, pp. 791). Correlation coefficient does not, however, show that a causal relationship exists between the explanatory and the dependent variable (Ghauri and Kronhaug, 2010, pp. 176). The correlations also reveal how the explanatory variables are related to each other, which is essential considering regression analysis. A prerequisite for the regression analysis is that the explanatory variables are not strongly correlated with each other.

The Pearson product moment correlation coefficient varies in a range of +1 to -1, illustrating the degree and direction of the relationship. The sign depicts the direction of the correlation;

an increase in the explanatory variable is related with an increase (+) or a decrease (-) in the dependent variable. The correlation can thus be positive or negative. A correlation coefficient close to +1 or -1 signifies a high correlation, whereas a value close to zero indicates the absence of a relationship. (Blumberg et al., 2008, pp. 792.)

The correlation coefficients of the variables used in this study are presented in Table 11. Pearson's product moment correlation coefficients are presented above the diagonal in the top-right corner and Spearman's rank correlation coefficients below the diagonal in the left-hand corner of the correlation matrix. In addition to the dependent variable of proportion of future-oriented verbs, the proportion of present verbs, proportion of past verbs and the total number of words are included in the correlation matrix as additional information. As mentioned in Chapter 6.2, legal system and culture are incorporated as linear variables in the correlation matrix.

The results illustrate that future orientation of reporting correlates (statistically significant at the five percent level or better) negatively with the variables of legal system (-0.407\*\*; -0.425\*\*) and culture (-0.420\*\*; -0.430\*\*). These results supports the hypotheses, as legal systems and cultures are placed in a descending order based on the level of investor protection and transparency. Moreover, legal system and culture correlate strongly with each other (0.899\*\*; 0.941\*\*), and therefore, they are considered separately in the regression analysis.

Contrary to what was expected, size correlates negatively with future orientation of reporting, which can be seen in the explanatory variables of sales (-0.194\*\*; -0.200\*\*) and market capitalization (-0.157\*\*; -0.177\*\*). However, positive correlation is discovered between future-oriented reporting and foreign sales (0.128\*\*; 0.124\*\*). As the foreign sales variable describes the multinationality of a company, one would assume that multinationality and firm size were related to each other. However, the results are mixed, as they show a negative correlation between sales and foreign sales (-0.077\*; -0.038) on the one hand and a positive correlation between market capitalization and foreign sales (0.196\*\*; 0.189\*\*) on the other. Initially, the number of employees and total assets were used as control variables for size. The correlation between the control variables and future orientation of reporting is consistent with the correlation results regarding sales and market capitalization, adding to the reliability of the correlation between size and future orientation of reporting. Therefore, foreign sales, a variable of multinationality, may not be valid.

In line with the hypotheses, future orientation of reporting is positively correlated with growth (0.095\*; 0.101\*\*) and the equity ratio (0.120\*\*; 0.129\*\*) on a statistically significant level. In addition, future-oriented reporting correlates negatively with dividend yield (-0.089\*; -0.098\*\*), which was assumed based on the hypotheses. Unlike expected, no statistically significant correlation is found between future orientation of reporting and Price-to-Book. Furthermore, only a weak association is discovered between future orientation of reporting and profitability, which is measured by the Return on Invested Capital. The association is positive, which is contrary to the hypothesis.

With regard to the number of words, larger size, as measured by sales (0.197\*\*; 0.179\*\*) and market capitalization (0.324\*\*; 0.290\*\*), is associated with more elaborate narrative reporting. In addition, higher percentage of equity capital correlates negatively with the number of words (-0.214\*\*; -0.200\*\*). This result is unexpected, as larger shareholder ownership is usually related to more comprehensive and investor-friendly reporting. More words, however, do not always indicate investor-oriented reporting, as the actual message may be hidden in the exuberant description. Therefore, fewer words with more precise and useful information may be more investor-oriented.

Similar to future-oriented reporting, present-oriented reporting is statistically significantly and negatively correlated with size, measured by sales (-0.297\*\*; -0.289) and market capitalization (-0.203\*\*; -0.200\*\*). In addition, present orientation of reporting is positively associated with growth (0.108\*\*; 0.125\*\*), which is expected based on the hypothesis. However, multinationality, represented by the proportion of foreign sales, correlates negatively with present orientation of reporting (-0.145\*\*; -0.132\*\*), which is opposite to the relationship with future orientation. Therefore, the evidence concerning foreign sales and multinationality is slightly mixed.

As expected, based on the results concerning future- and present-oriented reporting, historical orientation of reporting is statistically significantly and positively correlated with legal system (0.181\*\*; 0.197\*\*), culture (0.153\*\*; 0.207\*\*), sales (0.337\*\*; 0.336\*\*) and market capitalization (0.241\*\*; 0.238\*\*). Presumably, negative correlation is detected between past orientation of reporting and growth (-0.133\*\*; -0.139\*\*).

Table 11. Correlation matrix

	FUTURE %	PRESENT %	HISTORICAL %	WORDS	LEGAL	CULTURE	SALES	MARKET CAP	PRICE- TO-BOOK	GROWTH	ROIC	DIVIDEND YIELD	FOREIGN SALES%	EQUITY RATIO
FUTURE%		0.118 **	-0.538 **	0.005	-0.407 **	-0.420 **	-0.194 **	-0.157 **	0.009	0.095 *	0.056	-0.089 *	0.128 **	0.120 **
PRESENT%	0.151 **		-0.901 **	0.068	-0.004	0.036	-0.297 **	-0.203 **	0.101 **	0.108 **	0.059	0.035	-0.145 **	-0.018
HISTORICAL%	-0.531 **	-0.899 **		-0.060	0.181 **	0.153 **	0.337 **	0.241 **	-0.090 *	-0.133 **	-0.075 *	0.010	0.067	-0.037
WORDS	0.068	0.069	-0.074 *		0.144 **	0.192 **	0.197 **	0.324 **	-0.031	0.028	-0.047	0.063	0.062	-0.214 **
LEGAL	-0.425 **	-0.041	0.197 **	0.028		0.899 **	0.105 **	0.160 **	-0.074 *	-0.137 **	-0.127 **	0.068	-0.049	-0.153 **
CULTURE	-0.430 **	-0.054	0.207 **	0.051	0.941 **		0.080 *	0.176 **	-0.074 *	-0.110 **	-0.116 **	0.066	-0.081 *	-0.140 **
SALES	-0.200 **	-0.289 **	0.336 **	0.179 **	0.136 **	0.154 **		0.641 **	-0.128 **	-0.054	-0.056	0.060	-0.077 *	-0.315 **
MARKETCAP	-0.177 **	-0.200 **	0.238 **	0.290 **	0.198 **	0.203 **	0.628 **		0.216 **	0.035	0.057	-0.023	0.196 **	-0.083 *
PRICETOBOOK	0.014	0.055	-0.063	-0.015	-0.047	-0.071	-0.117 **	0.300 **		0.082 *	0.512 **	-0.044	0.031	-0.050
GROWTH	0.101 **	0.125 **	-0.139 **	0.018	-0.171 **	-0.174 **	-0.077 *	-0.003	0.157 **		0.227 **	0.118 **	0.043	-0.065
ROIC	0.078 *	0.017	-0.059	-0.098 **	-0.135 **	-0.145 **	-0.051	0.080 *	0.518 **	0.345 **		0.281 **	0.030	0.132 **
DIVIDENDYIELD	-0.098 **	-0.007	0.039	0.012	0.076 *	0.069	0.068	-0.018	-0.046	0.162 **	0.278 **		-0.106 **	-0.131 **
FOREIGNSALES%	0.124 **	-0.132 **	0.074 *	0.073 *	-0.066	-0.132 **	-0.038	0.189 **	0.080 *	0.039	0.081 *	-0.090 *		0.075 *
EQUITYRATIO	0.129 **	-0.041	-0.030	-0.200 **	-0.159 **	-0.143 **	-0.292 **	-0.088 *	-0.085 *	-0.098 **	0.080 *	-0.149 **	0.091 *	

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The Pearson's product moment correlation coefficients are placed above the diagonal and Spearman's rank correlation coefficients below the diagonal. FUTURE%, PRESENT% and HISTORICAL% refer to the number of future, present and past verbs from all verbs in the half-yearly financial reports in 2008-2009. WORDS represents the absolute number of words in the half-yearly financial reports in 2008-2009. LEGAL and CULTURE refer to the prevailing legal system and culture in which a company is operating in. LEGAL is measured on a range of 1-4: 1 = common law, 2 = Scandinavian-origin code law, 3 = German-origin code law and 4 = French-origin code law. CULTURE is portrayed through a range of 1-6: 1 = Anglo culture, 2 = Nordic culture, 3 = German culture, 4 = Near Eastern culture, 5 = Less developed Latin culture and 6 = More developed Latin culture. SALES and MARKETCAP are natural logarithms of the figures. PRICETOBOOK, GROWTH, ROIC and DIVIDENDYIELD are all self-explanatory. FOREIGNSALES% is the proportion of international sales of all sales and EQUITYRATIO is common equity divided by total assets. The number of observations is 720, except for PRICETOBOOK 713. \*\* p<0.01, \* p<0.05.

## 6.4 Regression analysis results

A linear multivariate regression analysis is performed in this study in order to examine the relationships between several explanatory variables and one dependent variable, the proportion of future verbs. In this study, the proportion of future tense verbs or future-oriented verbs is indicative of the future orientation of reporting.

The objective is to analyze which factors are associated with future-oriented reporting in European companies. As dummy variables consisting of multiple categories are included in the regressions, one dummy variable in each category is excluded in order to avoid the “dummy variable trap”. Regression results with legal system and culture presented as linear variables are illustrated in Appendix 2.

The regression models presented in Table 12 are not directly formulated from the six hypotheses, but they are rather constructed as a more multifaceted way of examining the relationships based on the results of the correlation matrix (Table 11). In addition to legal system and culture dummy variables, the regression analysis comprises eight different explanatory variables.

The p-values describe the levels of statistical significance, which is emphasized by denoting two asterisks (\*\*) for significance level of 1 percent or better and one asterisk (\*) for a level of 5 percent or better.  $R^2$ , or the coefficient of determination, measures the predictive power of the model, revealing the proportion of the dependent variable’s variation that can be explained by the model. The values of  $R^2$  vary between zero and one. The adjusted  $R^2$  also takes into account the number of explanatory variables used in a particular model.

The first three models examine the legal system variable together with other explanatory variables. Models four to six are otherwise identical to the first three models, but legal system is replaced by culture. Since the correlation between legal system and culture is very strong (0.899\*\*; 0.941\*\*), these variables cannot be analyzed simultaneously. The last two models, seven and eight, employ the eight explanatory variables without the dummy variables, legal system and culture.

In the first regression model, the adjusted  $R^2$  obtains a value 0.207 with an F-value of 27.86 ( $p < 0.01$ ), which indicates that this model can statistically significantly estimate 20.7% of the changes in the future orientation of reporting. Individual variables reaching the one percent

level of statistical significance in this model are the legal system, size and multinationality (measured by foreign sales).

In the second model, the adjusted  $R^2$  decreases to 0.182 (F-value 32.73,  $p < 0.01$ ), as only the legal system and proportion of equity have statistically significant explanatory power. The third model has an adjusted  $R^2$  of 0.192 and an F-value of 29.51 ( $p < 0.01$ ). Legal system dummies, size indicator market capitalization and dividend yield reach statistically significant levels of predictive power.

The fourth model is similar to the first model, but as culture is substituted for legal system, the adjusted  $R^2$  increases to 0.217 (F-value 23.13,  $p < 0.01$ ), which is slightly higher than the  $R^2$  of the first regression model. Size indicator sales and culture dummy variables excluding culture category 5 (less developed Latin culture) are statistically significant at the one percent level.

The fifth model has an adjusted  $R^2$  of 0.199 (F-value 26.21,  $p < 0.01$ ), which is higher than that of its counterpart, the second model. However, only culture dummy variables excluding culture category 5 (less developed Latin culture) reach a level of statistical significance in the fifth model. In the sixth model, the adjusted  $R^2$  increases to 0.208 (F-value of 24.58 ( $p < 0.01$ ), which is again higher in comparison to the similar regression model number three. All dummy variables depicting culture as well as size indicator market capitalization attain a level of statistical significance of five percent or better.

The last two models eliminate the legal system and culture dummies, and examine the other explanatory variables in isolation. The seventh model has an adjusted  $R^2$  of 0.049 (F-value 10.20,  $p < 0.01$ ), where the individual variables of sales, ROIC and dividend yield are statistically significant at one percent level. The adjusted  $R^2$  of the eighth model is 0.065 (F-value 13.39,  $p < 0.01$ ) with all the variables, market capitalization, growth, foreign sales and equity ratio, attaining a one percent level of statistical significance.

According to the adjusted  $R^2$  values of all the regression models, the fourth model appears to be the best estimator of changes in the future orientation of reporting, with the adjusted  $R^2$  of 0.217. Thereby, culture, size indicator sales, profitability indicator ROIC, dividend yield, and multinationality indicator foreign sales account for 21.7% of the variation in future orientation of reporting. However, only four culture dummies and the size indicator sales reach a level of statistical significance in this model.

Concerning the qualitative variables, the first three regression models provide statistically significant and consistent evidence supporting the assumption that legal system influences the future orientation of reporting (models 1-3:  $<0.0001$ ). When analyzing the connection between culture and future orientation of reporting, the results are less reliable. Although the classification of countries based on the predominant culture is close to the categorization according to the legal system, all culture categories are not able to reach a level of statistical significance due to their smaller size. For example, the fifth culture category, less developed Latin culture, consists in this study of only six companies from Portugal, and therefore, the dummy variable can hardly be statistically significant. By contrast, there are only four different legal system categories represented in the study, and the companies are more evenly distributed across these categories. Despite the partial lack of statistical significance of culture dummy variables, the results concerning culture's effect on future orientation of reporting are consistent in all three regression models.

Of the other explanatory variables, size is particularly reliable in predicting variations in future orientation of reporting, since both size indicators, sales and market capitalization, are consistently statistically significant at the one percent level across all six regression models where incorporated (model 1: sales  $<0.0001$ , model 3: market capitalization 0.003, model 4: sales 0.0001, model 6: market capitalization 0.004, model 7: sales  $<0.0001$ , model 8: market capitalization  $<0.0001$ ). Surprisingly, however, the results regarding size are contrary to what was initially anticipated. Companies with lower sales and smaller market capitalization appear to be more future-oriented in their reporting, as future orientation diminishes when company size is increased.

According to the correlation matrix presented in Chapter 6.3, Price-to-Book and ROIC are not associated with future orientation of reporting. The regression results confirm that Price-to-Book is statistically insignificant in all three models, whereas the ROIC is statistically significant only in one of the three models (model 7: 0.008). Nevertheless, the coefficient sign of ROIC differs from the predicted.

Multinationality and proportion of equity appear to have some explanatory power, as both variables have a statistically significant and positive influence on future orientation of reporting in two models out of three (foreign sales model 1: 0.003 and model 8:  $<0.0001$ , equity ratio model 2: 0.048 and model 8: 0.006). Dividend yield proves to be a statistically significant predictor of future orientation of reporting in two models out of five (model 3:

0.045, model 7: 0.003), whereas sales growth has a statistically significant and positive effect on future orientation of reporting in only one model out of three (model 8: 0.005).



Table 12. Regression results

Variable	Model 1			Model 2			Model 3		
	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values
INTERCEPT	0.137	12.36	<.0001	0.093	16.64	<.0001	0.138	11.53	<.0001
LEGAL1	0.050	11.13 **	<.0001	0.055	12.00 **	<.0001	0.052	11.49 **	<.0001
LEGAL2	0.038	6.87 **	<.0001	0.027	5.18 **	<.0001	0.026	5.06 **	<.0001
LEGAL3	0.036	6.35 **	<.0001	0.036	6.15 **	<.0001	0.034	5.99 **	<.0001
CULTURE1									
CULTURE2									
CULTURE3									
CULTURE4									
CULTURE5									
SALES	-0.005	-4.15 **	<.0001						
MARKETCAP							-0.004	-3.02 **	0.003
PRICETOBOOK				-0.001	-0.64	0.525			
GROWTH							0.010	1.24	0.215
ROIC	0.000	0.20	0.842						
DIVIDENDYIELD	-0.001	-1.31	0.189				-0.001	-2.01 *	0.045
FOREIGNSALES%	0.012	2.97 **	0.003						
EQUITYRATIO				0.000	1.98 *	0.048			
Observations	720			713			720		
R <sup>2</sup>	0.215			0.188			0.199		
R <sup>2</sup> adjusted	0.207			0.182			0.192		
F-value	27.86			32.73			29.51		
Durbin-Watson	1.967			1.954			1.980		

The variables used are defined in Table 6. \*\* Statistically significant at level 0.01; \* Statistically significant at level 0.05

Table 12. (continued)

Variable	Model 4			Model 5			Model 6		
	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values
INTERCEPT	0.134	12.02	<.0001	0.090	15.74	<.0001	0.134	11.00	<.0001
LEGAL1									
LEGAL2									
LEGAL3									
CULTURE1	0.054	11.33 **	<.0001	0.058	12.25 **	<.0001	0.055	11.57 **	<.0001
CULTURE2	0.036	7.05 **	<.0001	0.031	6.11 **	<.0001	0.029	5.76 **	<.0001
CULTURE3	0.039	6.00 **	<.0001	0.040	6.08 **	<.0001	0.039	5.99 **	<.0001
CULTURE4	0.037	3.54 **	0.0004	0.037	3.51 **	0.001	0.032	3.05 **	0.002
CULTURE5	-0.026	-1.85	0.065	-0.024	-1.62	0.106	-0.028	-1.98 *	0.048
SALES	-0.005	-3.88 **	0.0001						
MARKETCAP							-0.004	-2.88 **	0.004
PRICETOBOOK				-0.001	-0.54	0.587			
GROWTH							0.011	1.30	0.193
ROIC	0.000	0.24	0.812						
DIVIDENDYIELD	-0.001	-1.37	0.17				-0.001	-1.92	0.056
FOREIGNSALES%	0.007	1.90	0.06						
EQUITYRATIO				0.000	1.84	0.066			
Observations	720			713			720		
R <sup>2</sup>	0.227			0.207			0.217		
R <sup>2</sup> adjusted	0.217			0.199			0.208		
F-value	23.13			26.21			24.58		
Durbin-Watson	1.965			1.954			1.974		

The variables used are defined in Table 6. \*\* Statistically significant at level 0.01; \* Statistically significant at level 0.05

Table 12. (continued)

Variable	Model 7			Model 8		
	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values
INTERCEPT	0.190	16.53	<.0001	0.160	12.45	<.0001
LEGAL1						
LEGAL2						
LEGAL3						
CULTURE1						
CULTURE2						
CULTURE3						
CULTURE4						
CULTURE5						
SALES	-0.007	-5.17**	<.0001			
MARKETCAP				-0.007	-4.93**	<.0001
PRICETOBOOK	-0.003	-1.89	0.059			
GROWTH				0.024	2.81**	0.005
ROIC	0.001	2.68**	0.008			
DIVIDENDYIELD	-0.002	-3.02**	0.003			
FOREIGNSALES%				0.017	4.09**	<.0001
EQUITYRATIO				0.000	2.74**	0.006
Observations	713			720		
R <sup>2</sup>	0.055			0.070		
R <sup>2</sup> adjusted	0.049			0.065		
F-value	10.20			13.39		
Durbin-Watson	1.859			1.866		

The variables used are defined in Table 6. \*\* Statistically significant at level 0.01; \* Statistically significant at level 0.05

## 6.5 Limitations of the regression analysis

In order to evaluate the results of the regression analysis, certain limitations must be considered. As mentioned earlier in Chapter 6.4, one of the fundamentals of linear regression analysis is that the explanatory variables do not correlate with each other. Based on the correlation matrix in Table 11, statistically significant relationships exist between different explanatory variables. Thus, the potential multicollinearity is measured by analyzing the Variance Inflation Factors (VIF) of the explanatory variables used in the models. The VIF reveals if several variables are explaining the same phenomenon in the regression model. If the the VIF is 1, no collinearity exists between the variables, whereas a value greater than five generally indicates a problem of multicollinearity. In this study, the VIFs of the explanatory

variables in all the eight regression models remain slightly above one, the highest VIF is 1.55. Therefore, no signs of multicollinearity that could affect the regression results are detected in this study.

When performing OLS regression analysis, the possible issue of heteroscedasticity also needs to be examined. Heteroscedasticity refers to a situation where the variance of the residual term is not constant, which can distort the results. White's test was utilized to detect potential heteroscedasticity, and the p-values of the regression models shown in Table 12 were between 0.064 and 0.702, rejecting the null hypothesis of heteroscedasticity. Hence, heteroscedasticity should not be an issue in these regression models. When utilizing the linear variables for the legal system and culture (see Appendix 2), however, some heteroscedasticity was discovered in models one and four. Therefore, the results from these regressions should be interpreted cautiously.

Autocorrelation suggests that time series data correlates with itself, which may skew the regression results. The Durbin-Watson d-test is performed to rule out the possibility of serial correlation. The d-value of approximately two in the Durbin-Watson test indicates that no serial correlation exists in the regression model. In all the six regression models, the values are below 2, ranging from d-value of 1.859 to 1.980. Therefore, it can be concluded that autocorrelation does not influence the regression results.

## 7. DISCUSSION AND ANALYSIS

In this chapter, the results from the content analysis and regression analysis presented in the previous chapter will be discussed in more detail. Concerning the regression analysis, all six hypotheses are considered and connected to the wider theoretical background.

Two hypotheses were constructed concerning the regional background of a company. H1 assumes that legal system with better investor protection is positively related to the amount of future-oriented reporting. Earlier results (see, e.g., Jaggi and Low, 2000; La Porta et al., 1998) have discovered that investor protection was better and financial disclosure was more extensive in common law countries. Companies were categorized based on their home country into common law and Scandinavian-origin, German-origin and French-origin code law systems. Because of its qualitative nature, the legal system was applied as a dummy variable.

The regression analysis revealed that the legal system can be utilized to predict the future orientation of a company's reporting. In other words, companies from common law countries are more future-oriented than companies from code law, in particular French-origin, countries. As expected, companies from Scandinavian-origin and German-origin code law countries are placed somewhere in between. The results suggest that German-origin code law companies would have slightly more future-oriented reporting of the two. This result shows that although efforts have been made to harmonize and improve the quality of the financial disclosure in the European Union, the regional background and the prevailing legal system may still affect the choices companies make with regard to reporting.

Secondly, H2 expects that companies domiciled in secretive cultures have less future-oriented reporting. Culture is examined by using Gray's (1988) assumptions on Germanic, Less developed Latin, Near Eastern and More developed Latin countries being more secretive and thus less future-oriented in their reporting.

According to the regression results, culture appears to be able to estimate future orientation of reporting, but the legal system and culture correlate strongly with each other. Hence, these two variables can partly be explaining the same phenomenon and it may be questioned, which one actually predicts the future orientation of reporting. In this study, the sample companies are dispersed across six cultural areas, and thereby the samples representing individual

cultural backgrounds turn out to be relatively small. On the contrary, only four legal systems are represented in the study, and the samples of each legal system are thus larger, yielding more reliable results. That is, the individual legal system variables are statistically more significant (level of one percent level or better) than those representing cultural background, although the overall explanatory power of the regression models considering culture may be higher. Furthermore, previous research (see, e.g., Jaggi and Low, 2000; Zarzeski, 1996), has found mixed evidence on the significance of culture. Therefore, in this study, the legal system is considered to be a more reliable predictor of future orientation of reporting, and H1 is accepted. Although culture, and its secretiveness in particular, may in fact influence the future orientation of a company's reporting H2 is rejected.

Four hypotheses relate to the influence of market forces. H3 presumes that a higher proportion of equity and foreign sales, faster growth, and larger firm size are positively associated with future orientation of company's reporting. Several studies (see, e.g., Zarzeski, 1996; Iatridis, 2008) have found a relationship between these factors and investor-oriented, comprehensive and high-quality disclosure, in which forward-looking information is considered to play a focal part.

This study confirms that higher proportion of equity and foreign sales are both statistically significantly and positively associated with future-oriented reporting. A company with a higher proportion of equity financing is more dependent on its shareholders and may feel more accountable to its investors than a company relying mostly on debt and internal financing. Therefore, these companies could be inclined to disclose more investor-oriented information. Furthermore, the reporting requirements for international companies operating in many markets may be more elaborate.

Concerning growth, some evidence of a positive relationship with future orientation of reporting is found. As the future earnings of growth companies are highly uncertain, forward-looking information becomes increasingly important. Therefore, on the one hand, investors of growth companies could demand a transparent information flow more aggressively in exchange for the risk they are taking through the investments. On the other hand, companies in the growth stage may also be inclined to disclose more future-oriented information on their own initiative in quest of much needed investors.

Size and future orientation are not positively related, but contrary to the hypothesis, larger firms appear to be, in fact, more past-oriented. Size is measured by sales and market

capitalization and the variables have consistently a significant negative relationship with future orientation of reporting. In general, the results relating to firm-specific characteristics can be rationalized through the market forces, or the information demand directed towards companies. One would expect that the broad investor bases of large companies would more often call for sophisticated and high-quality disclosure, including forecasts and other forward-looking information.

The surprising result concerning size, however, could be explained through the supply of information. Since big investor relations departments and abundant budgets allow large companies to gather and distribute substantial amounts of information, they might be tempted to disclose everything that is available in the name of comprehensive disclosure. Furthermore, the past reporting period's operations and events may be explicated separately for multiple business lines and segments in order to enhance transparency and thus quality, adding to the amount of past-oriented information.

Thus, equating future-oriented reporting with investor-oriented, high-quality and comprehensive reporting is perhaps misguided when considering firm size, as the notion of quality and comprehensiveness may in fact steer large companies towards disclosing a lower proportion of forward-looking information. The absolute amount of future-oriented disclosure may be substantial for large companies, but it simply does not hold out against the extensive disclosure concerning past and current operations.

This finding foregrounds an interesting issue concerning investor orientation. Although a lengthy half-yearly financial report with detailed information may meet the definition of comprehensiveness and even some aspects of quality, is it in fact investor-oriented? More words do not necessarily imply better disclosure for the audience, since the readability is likely to suffer, and distinguishing the important message becomes increasingly harder. Perhaps the fundamental purpose of disclosing information to the investors has gone missing. Thereby, companies should focus more on specifying the needs of the investors and making efforts towards meeting that particular demand.

With regard to H3, the hypothesis is accepted for the proportion of equity and foreign sales because statistically significant relationships were detected between these variables and future orientation of reporting. Weak evidence supporting the hypothesis is also found in the relationship between growth and future orientation of reporting. However, the portion of the

hypothesis concerning size is rejected, and the opposite is confirmed, as larger size is found to be associated with past-oriented reporting.

In line with the findings of Kohut and Segars (1992), H4 suggests that lower profitability is related to higher future orientation of reporting. According to the regression results, profitability measured by the ROIC has a statistically significant relationship with future-oriented reporting in only one of the three models where it was applied. Moreover, the relationship was positive when detected, which is coherent with Iatridis's (2008) findings on profitability and frequent and high-quality accounting disclosure. Therefore, the relationship between future orientation and profitability is left unsolved and H4 is rejected.

H5 proposes that a higher dividend yield is negatively associated with future orientation of reporting. The hypothesis is based on the underlying assumption that high dividend yield is characteristic of a "cash flow company" that is not particularly seeking future growth, but rather generates steady earnings and attracts investors with low risk and regular payouts. A negative association prevails between dividend yield and future orientation of reporting, and the results are statistically significant in two out of three models. Hence, H5 is accepted, as some evidence is found of dividend yield having predictive power concerning the future orientation of reporting.

The last hypothesis, H6, supposes that higher Price-to-Book ratio is positively related to future orientation of reporting. High P/B reflects high risk and growth prospects associated to the firm, and thus the companies are pressured to inform the investors of the future outlook. The regression results demonstrate negative, but statistically insignificant relationship between Price-to-Book and future orientation of reporting, whereupon H6 is rejected.

In general, the coefficients of the quantitative variables and their significance remain relatively constant regardless of the inclusion of the qualitative variables relating to the regional background, legal system, and culture. Thus, based on this study, the market forces have an important influence on the future orientation of reporting in European companies.



## **8. CONCLUSIONS**

This final chapter summarizes the empirical findings of this study and discusses some interesting implications for further research.

### **8.1 Summary of findings**

This study examines the future orientation and content of European companies' narrative reporting by creating a measuring system based on the verb tenses companies use in their financial disclosures. The objective of the study is to identify the characteristics that can explain the future orientation of companies' narrative reporting. Furthermore, based on the common characteristics, the firms' underlying motives for providing this type of voluntary information are analyzed.

The results from the 720 half-yearly financial reports gathered from 2008 and 2009 reveal that the regional background of a company explains the future orientation of narrative reporting. The regional background involves the aspects of legal system and predominant culture. Both of these features appear to be related to future orientation of narrative reporting, but more robust evidence is found supporting the influence of the legal system.

The most important findings of this study relate to the common characteristics recognized across Europe. Firm size, the proportion of equity, and multinationality, as measured by foreign sales are found to be statistically significant estimators of time orientation of narrative reporting among European companies. Higher percentage of equity and multinationality increase future orientation, while size has a decreasing effect. In addition, growth and dividend yield appear to have at least some explanatory power concerning future orientation of narrative reporting.

While the above-mentioned quantifiable characteristics are verified to predict the future orientation of narrative reporting, they also give indications of the firm's position in the capital markets. Thereby, the evidence suggests that possible underlying reason for the variation in the future orientation of reporting are the capital markets that impose diverse

disclosure pressures on different companies. In addition, the companies' internal ability to provide future-oriented disclosure varies for example based on available resources.

## **8.2 Limitations and considerations for further study**

As a preliminary study, this research is subject to several limitations that should be considered when evaluating the reliability of the results.

Categorizing narrative information according to its time orientation is subjective, but also the computerized data handling affects the process. As discussed in Chapter 5.2.2 the computerized phrase tagging misinterprets some nouns as present tense verbs, skewing the amount of present orientation. However, present orientation is not the primary target of interest in this study, and the impact of the distortion on the research results is thus smaller.

As the phrase tagging is performed based on the recognition of verbs, expressions referring to the future are ignored, which suggests that future orientation of reporting might be slightly higher in reality. Furthermore, the list of verbs that are considered to be future-oriented even in the present tense is not exhaustive, although it covers the most common verbs. Thus, the subsequent studies could further develop the categorization of the words.

Classifying and examining the time orientation of companies' narrative reporting leads the way for many different areas to be investigated. As this study contained a sample of large companies listed on the STOXX Europe Total Market Index, the same characteristics might not explain future orientation of reporting in small and medium-sized companies. Applying the same research design to a sample including also smaller companies would be useful for detecting possible differences in explanatory power.

The sample of this study is also limited regarding the region. The study involves only companies domiciled in the European Union member states and cannot be directly generalized to apply to other parts of the world. The research design requires the sample companies to have a harmonized legislation, and thus the study should be reproduced for example in the United States, where the market is large, yet homogenous in terms of regulation.

This research takes into account only some characteristics that could potentially explain future orientation of reporting. For a more comprehensive insight, other characteristics, such as the ownership structure of a company should be considered, as they could potentially explain future orientation of reporting.

By identifying characteristics explaining future orientation of narrative reporting, this study initiates the research on companies' motives for publishing voluntary future-oriented information and ultimately the exploration of the value relevance of future-oriented information. Future-oriented message conveying, e.g., positive or negative information is likely to carry incremental value, and authenticating the value of future-oriented reporting by analyzing, for example, the bid-ask spreads would be of interest to bodies setting reporting standards, analysts, and investors evaluating firms as well as companies designing their financial disclosure.

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# APPENDICES

## Appendix 1. The sample companies

Company name	Country	SIC code	Company name	Country	SIC code
A.P. Moller-Maersk A/S	DK	4412	The Berkeley Group Holdings plc	GB	1522
A2A SpA	IT	4939	BG Group plc	GB	1311
Aalberts Industries N.V.	NL	3498	BHP Billiton plc	GB	1011
Abengoa SA	ES	1629	BIC SA	FR	3951
Accor SA	FR	7011	Bilfinger Berger AG	DE	1542
Acerinox SA	ES	3312	BMW AG	DE	3711
ACS, Actividades de Construccion y Servicios, SA	ES	1521	Bodycote plc	GB	3398
ADP, Aeroports de Paris SA	FR	4581	Boliden AB	SE	1021
Aegis Group plc	GB	7311	Bollore SA	FR	4491
Aggreko plc	GB	7359	Koninklijke Boskalis Westminster N.V.	NL	1629
Air France - KLM	FR	4512	Bourbon SA	FR	1389
L'Air Liquide SA	FR	2813	Bouygues SA	FR	1611
Akzo Nobel N.V.	NL	2812	Bovis Homes Group plc	GB	1521
Alapis SA	GR	2834	BP plc	GB	2911
Alcatel Lucent SA	FR	3661	Brisa - Auto Estradas de Portugal SA	PT	4111
Amec plc	GB	1389	British Airways plc	GB	4512
Amer Sports Oyj	FI	3949	British American Tobacco plc	GB	2111
Andritz AG	AT	3554	British Sky Broadcasting Group plc	GB	4833
Anglo American plc	GB	1099	Bulgari SpA	IT	3911
Ansaldo STS SpA	IT	1629	Bunzl plc	GB	5113
Antena 3 de Television SA	ES	4833	Bureau Veritas SA	FR	9651
Antofagasta plc	GB	1021	Buzzi Unicem SpA	IT	3241
Arcadis N.V.	NL	8711	Bwin Interactive Entertainment AG	AT	7999
Arkema SA	FR	2869	Cap Gemini SA	FR	7373
Arnoldo Mondadori Editore SpA	IT	2731	The Capita Group plc	GB	8741
Arriva plc	GB	4111	Cargotec Oyj	FI	3537
ASM International N.V.	NL	3559	Carillion plc	GB	1531
ASML Holding N.V.	NL	3559	Carnival plc	GB	4481
Assa Abloy AB	SE	7699	Castellum AB	SE	6512
Associated British Foods plc	GB	2063	Centrica plc	GB	4939
Astrazeneca plc	GB	2834	CGG Veritas, Compagnie Generale de Geophysique-Veritas, SA	FR	1382
Atlantia SpA	IT	4785	Charter International plc	GB	3548
Atlas Copco AB	SE	3563	Chemring Group plc	GB	3812
Atos Origin SA	FR	7373	Compania Espanola de Petroleos SA (CEPSA)	ES	5171
Autogrill SpA	IT	5812	CIMPOR, Cimentos de Portugal, SGPS, SA	PT	3241
Autonomy Corporation plc	GB	7372	Cobham plc	GB	3728
Aveva Group plc	GB	7379	Coca-Cola Hellenic Bottling Company SA	GR	2086
Axfood AB	SE	5411	Cofinimmo SA	BE	6798
Babcock International Group plc	GB	8744	Colt Group SA	GB	4813
BAE Systems plc	GB	3728	Compass Group plc	GB	5812
Koninklijke BAM Groep NV	NL	1531	Conwert Immobilien Invest SE	AT	6552
Barratt Developments plc	GB	1522	Cookson Group plc	GB	3255
Bayer AG	DE	2834			
BBA Aviation plc	GB	4581			
Befimmo SCA/CVA	BE	6798			
Beiersdorf AG	DE	2844			
Bekaert SA/NV	BE	3496			
Belgacom SA	BE	4813			
Bellway plc	GB	1521			
Benetton Group SpA	IT	2331			

CRH plc	IE	3241	Getinge AB	SE	3842
Crucell N.V.	NL	8731	GlaxoSmithKline plc	GB	2834
CSM NV	NL	2041	GN Store Nord AS	DK	3669
D/S Norden A/S	DK	4412	Grifols SA	ES	2835
Daily Mail & General Trust plc	GB	2711	Acciona SA	ES	1611
Daimler AG	DE	3711	Guyenne et Gascogne SA	FR	5411
Dana Petroleum plc	GB	1311	Havas	FR	7331
Danisco A/S	DK	2899	Hays plc	GB	7361
Danone SA	FR	2023	HeidelbergCement AG	DE	3241
Davide Campari Milano SpA	IT	2085	Heidelberger Druckmaschinen AG	DE	3555
D'ieteren N.V./SA	BE	5012	Hellenic Petroleum SA	GR	2911
Dimension Data Holdings plc	GB	5045	Hennes & Mauritz AB	SE	2331
Douglas Holding AG	DE	5999	Hera SpA	IT	4939
Dragon Oil plc	IE	1311	Hexagon AB	SE	3823
Drax Group plc	GB	4911	Hikma Pharmaceuticals plc	GB	2834
DS Smith plc	GB	2653	Hochtief AG	DE	1611
Easyjet	GB	4512	Holmen AB	SE	2621
EDF Electricite de France SA	FR	4911	Huhtamaki Oyj	FI	2671
EDF Energies Nouvelles SA	FR	4911	Iberdrola Renovables SA	ES	4911
Eiffage SA	FR	1541	Iberia, Lineas Aereas de Espana SA	ES	4512
Electrolux AB	SE	3631	Imerys SA	FR	1459
Elekta AB	SE	3845	Imperial Tobacco Group plc	GB	2111
Elisa Oyj	FI	4899	Impregilo SpA	IT	1542
Ellaktor SA	GR	1611	Imtech N.V.	NL	7373
Enagas SA	ES	4923	Inchcape plc	GB	5511
Endesa SA	ES	4931	Indra Sistemas SA	ES	7373
Enel SpA	IT	4931	Ingenico - Compagnie Industrielle et Financiere D'Ingenierie SA	FR	3578
Eni SpA	IT	2911	Inmarsat plc	GB	4899
Eramet SA	FR	1061	Intercell AG	AT	2833
ERG SpA	IT	2911	International Power plc	GB	4911
L.M. Ericsson AB	SE	3661	Interserve plc	GB	1611
Eurasian Natural Resources Corporation plc	GB	1099	Intertek Group	GB	8734
EVN Energieversorgung Niederösterreich AG	AT	4939	Intralot SA - Integrated Lottery Systems & Services	GR	7999
EVS Broadcast Equipment SA	BE	3663	Ipsen SA	FR	2834
Fabege AB	SE	6512	Ipsos SA	FR	8732
Fastweb SpA	IT	4813	Jeronimo Martins SGPS/SA	PT	5411
Fiat SpA	IT	3711	JM AB	SE	1522
Fidessa Group plc	GB	7372	Jumbo SA	GR	5945
Fielmann AG	DE	5995	K?S AG	DE	1474
Filtrona plc	GB	2671	Kazakhmys plc	GB	1021
Finmeccanica SpA	IT	3721	Kerry Group plc	IE	2099
FLSmidth & Company A/S	DK	3531	Kesko Oyj	FI	5411
Flughafen Wien AG	AT	4581	Kier Group plc	GB	1541
Fomento de Construcciones y Contratas SA	ES	1629	Kingfisher plc	GB	5211
Forth Ports plc	GB	4491	Kingspan Group plc	IE	2493
Fourlis Holding SA	GR	5064	Klepierre SA	FR	6798
France Telecom SA	FR	4813	Kone Oyj	FI	3534
Fraport AG	DE	4581	Konecranes Oyj	FI	3536
Fugro N.V.	NL	8713	Koninklijke DSM N.V.	NL	2821
Galp Energia SGPS, SA	PT	1311	Koninklijke KPN N.V.	NL	4813
Gamesa Corporation Tecnologica SA	ES	3511	Kungsleden AB	SE	6512
Gemalto N.V.	FR	4899	Laird plc	GB	5065
Geox SpA	IT	3143	Legrand SA	FR	3613
Gestevisión Telecinco SA	ES	7319	Logica plc	GB	7371
			Lonmin plc	GB	1099

L'Oreal SA	FR	2844	Poyry Oyj	FI	8711
Lottomatica SpA	IT	7999	Premier Foods plc	GB	2099
LE Lundbergforetagen AB	SE	2621	Prysmian SpA	IT	3357
Lundin Petroleum AB	SE	1311	Puma AG	DE	3021
Mayr-Mehnhof Karton AG	AT	2631	Punch Taverns plc	GB	5813
Meda AB	SE	2834	PV Crystalox Solar plc	GB	3674
Meggitt plc	GB	3724	PZ Cussons plc	GB	2841
Mercialys SA	FR	6798	Q-Cells SE	DE	3674
Merck KGaA	DE	2834	Ramirent Oyj	FI	3548
Metro AG	DE	5411	Randgold Resources Limited	GB	1041
Metso Oyj	FI	3541	Randstad Holding N.V.	NL	7363
Michael Page International plc	GB	7361	Reckitt Benckiser Group plc	GB	2841
Compagnie Generale des Etablissements Michelin SA	FR	3011	Redrow plc	GB	1521
Micro Focus International plc	GB	7372	Regus plc	GB	7389
Millennium & Copthorne Hotels plc	GB	7011	Renault SA	FR	5012
Mitchells & Butlers plc	GB	5813	Rexam plc	GB	3411
The Morgan Crucible Company	GB	3624	Rheinmetall AG	DE	3592
WM Morrison Supermarkets plc	GB	5411	Rio Tinto plc	GB	1041
Motor Oil (Hellas) Corinth Refineries SA	GR	2911	Rockwool International A/S	DK	3296
MTU Aero Engines Holdings AG	DE	3724	Rolls Royce Group plc	GB	3724
Mytilineos Holdings SA	GR	1021	Rotork plc	GB	3593
National Express Group plc	GB	4111	Royal Dutch Shell plc	GB	2911
National Grid plc	GB	4911	RPS Group plc	GB	7389
NCC AB	SE	1521	RTL Group SA	LU	4833
Neopost SA	FR	4215	RWE AG	DE	4939
Neste Oil Oyj	FI	2911	Saab AB	SE	3721
WH Smith plc	GB	5943	The Sage Group plc	GB	7372
Nexity SA	FR	6531	Compagnie de Saint-Gobain SA	FR	5032
NKT Holding A/S	DK	3357	Saipem SpA	IT	1629
Nobia AB	SE	2434	Sandvik AB	SE	3541
Nokia Oyj	FI	3663	Sanofi-Aventis SA	FR	2834
Nokian Renkaat Oyj	FI	3011	Sanoma Oyj	FI	2731
Novo Nordisk A/S	DK	2834	SAP AG	DE	7372
Novozymes A/S	DK	2869	SAS AB	SE	4512
Nutreco Holding N.V.	NL	2048	Savills plc	GB	6531
Obrascon Huarte Lain SA	ES	1611	SBM Offshore N.V.	NL	8711
Osterreichische Post AG	AT	4311	Scania AB	SE	3715
Omega Pharma NV	BE	5122	Schneider Electric SA	FR	3613
OMV AG	AT	1311	SEB SA	FR	3634
Greek Organisation of Football Prognostics SA - OPAP SA	GR	7999	Seco Tools AB	SE	3541
Orion Oyj	FI	2834	Serco Group plc	GB	8744
East Asiatic Company Ltd A/S	DK	2023	SES SA	LU	4899
Hellenic Telecommunications Organization SA - OTE SA	GR	4813	Shaftesbury plc	GB	6798
Outokumpu Oyj	FI	3312	Shire plc	GB	2834
Outotec Oyj	FI	1481	SIG plc	GB	5033
PA Resources AB	SE	1311	Skanska AB	SE	1622
Paddy Power plc	IE	7999	SKF AB	SE	3562
Partygaming plc	GB	7999	Smith & Nephew plc	GB	3842
Pearson plc	GB	2711	Smurfit Kappa Group plc	IE	2653
Pernod Ricard SA	FR	2085	Snam Rete Gas SpA	IT	4923
Petrofac Limited	GB	1623	Sodexo SA	FR	5812
Peugeot SA	FR	3714	Solvay SA	BE	2821
Pirelli & C. SpA	IT	3011	Sonae - SGPS, SA	PT	5411
			Southern Cross Healthcare Group plc	GB	8361
			Spirax-Sarco Engineering plc	GB	3491
			Axel Springer AG	DE	2711
			STMicroelectronics S.R.L.	IT	3674

Stockmann Oyj	FI	5311
Strabag SE	AT	1611
Svenska Cellulosa AB	SE	2676
Symrise AG	DE	2844
Tecnicas Reunidas SA	ES	1389
Tele2 AB	SE	4813
Telefonica SA	ES	4813
Telekom Austria AG	AT	4822
TeliaSonera AB	SE	4899
Transmissione Elettricita Rete Nazionale SpA - Terna SpA	IT	4939
Tessengerlo Chemie SA/N.V.	BE	2819
Thales SA	FR	3728
The Davis Service Group plc	GB	7218
Tieto Oyj	FI	7371
Titan Cement Company SA	GR	3241
TNT N.V.	NL	4513
Travis Perkins plc	GB	5211
Trelleborg AB	SE	2891
UCB SA/N.V.	BE	2834
Ultra Electronics Holdings plc	GB	3812
Umicore SA/N.V.	BE	3339
United Business Media Limited	GB	2721
United Drug plc	IE	5122
United Internet AG	DE	7379
UPM-Kymmene Oyj	FI	2621
Uponor Oyj	FI	3084
Valeo SA	FR	3714
Vallourec SA	FR	3317
Veolia Environnement SA	FR	4952
Verbund AG (Osterreichische Elektrizitatzwirtschafts)	AT	4911
Vestas Wind Systems A/S	DK	3511
Vicat SA	FR	1422
Victrex plc	GB	2821
Vinci SA	FR	1622
Viscofan SA	ES	2013
Vivendi SA	FR	4953
Voestalpine AG	AT	3312
Koninklijke Vopak N.V.	NL	8742
Wartsila Oyj	FI	3519
JD Wetherspoon plc	GB	5813
Wienerberger AG	AT	3259
William Demant Holding A/S	DK	3845
Wolseley plc	GB	5074
Wolters Kluwer NV	NL	2721
WPP plc	GB	7311
Xstrata plc	GB	1021
YIT Oyj	FI	1521
Zeltia SA	ES	2879
Zon Multimedia - Servicos de Telecomunicacoes e Multimedia, SGPS SA	PT	4841

## Appendix 2. Regression results with linear variables of legal system and culture

Variable	Model 1			Model 2			Model 3		
	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values
INTERCEPT	0.205	18.91	<.0001	0.163	22.68	<.0001	0.205	17.99	<.0001
LEGAL	-0.016	-11.25 **	<.0001	-0.017	-11.38 **	<.0001	-0.016	-10.89 **	<.0001
CULTURE									
SALES	-0.005	-4.23 **	<.0001						
MARKETCAP							-0.004	-2.92 **	0.004
PRICETOBOK				-0.001	-0.49	0.621			
GROWTH							0.013	1.61	0.109
ROIC	0.000	0.28	0.779						
DIVIDENDYIELD	-0.001	-1.35	0.178				-0.001	-2.12 *	0.034
FOREIGNSALES%	0.010	2.74 **	0.006						
EQUITYRATIO				0.000	1.87	0.062			
Observations	720			713			720		
R <sup>2</sup>	0.201			0.170			0.182		
R <sup>2</sup> adjusted	0.195			0.166			0.177		
F-value	35.83			48.22			39.74		
Durbin-Watson	1.959			1.969			1.995		

Variable	Model 4			Model 5			Model 6		
	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values
INTERCEPT	0.200	18.74	<.0001	0.153	23.51	<.0001	0.193	17.21	<.0001
LEGAL									
CULTURE	-0.010	-11.73 **	<.0001	-0.011	-11.89 **	<.0001	-0.010	-11.34 **	<.0001
SALES	-0.005	-4.55 **	<.0001						
MARKETCAP							-0.004	-2.70 **	0.007
PRICETOBOOK				-0.001	-0.52	0.603			
GROWTH							0.015	1.88	0.061
ROIC	0.000	0.37	0.709						
DIVIDENDYIELD	-0.001	-1.41	0.160				-0.002	-2.15 *	0.03
FOREIGNSALES%	0.009	2.32 *	0.020						
EQUITYRATIO				0.00	2.01 *	0.04			
Observations	720			713			720		
R <sup>2</sup>	0.211			0.181			0.192		
R <sup>2</sup> adjusted	0.206			0.178			0.187		
F-value	38.19			52.26			42.34		
Durbin-Watson	1.990			1.992			2.019		

Variable	Model 7			Model 8		
	Coefficient	t-statistics	p-values	Coefficient	t-statistics	p-values
INTERCEPT	0.190	16.53	<.0001	0.160	12.45	<.0001
LEGAL CULTURE						
SALES	-0.007	-5.17 **	<.0001			
MARKETCAP				-0.007	-4.93 **	<.0001
PRICETOBOOK	-0.003	-1.89	0.059			
GROWTH				0.024	2.81 **	0.005
ROIC	0.001	2.68 **	0.008			
DIVIDENDYIELD	-0.002	-3.02 **	0.003			
FOREIGNSALES%				0.017	4.09 **	<.0001
EQUITYRATIO				0.000	2.74 **	0.006
Observations	713			720		
R <sup>2</sup>	0.055			0.070		
R <sup>2</sup> adjusted	0.049			0.065		
F-value	10.20			13.39		
Durbin-Watson	1.859			1.866		