Stellungnahme zum Entwurf E-DRS 27

Sehr geehrter Herr Kollege Kajüter,

sehr geehrte Mitglieder der Arbeitsgruppe „Lagebericht“,

gerne komme ich gemeinsam mit Herrn Dr. Tom Sieber, Projektmitarbeiter an meiner Professur, der Aufforderung zur Stellungnahme zum Entwurf E-DRS 27 nach. Im Einzelnen möchten wir aufbauend auf den wissenschaftlichen Arbeiten, die in den letzten beiden Jahren an meiner Professur im Rahmen des inzwischen abgeschlossenen Dissertationsprojekts von Herrn Dr. Sieber entstanden sind, folgenden Beitrag zu den von Ihnen formulierten Fragen leisten:

Ad Frage 5: Berichterstattungspflicht zu strategischen Zielen und über die zu ihrer Erreichung verfolgten Strategien für kapitalmarktorientierte Unternehmen (E-DRS 27.K37-K42 und K55)

Die Dissertationsschrift von Herrn Dr. Tom Sieber „Strategieorientierte Berichterstattung im Lagebericht“ (erschienen bei Peter Lang, 2011; Gutachter: Barbara E. Weißenberger / Martin Glaum) weist auf Basis eines Samples von 100 Unternehmen über einen durchgängigen Zeitraum von sieben Jahren (2002 bis 2008) nach, dass sich aus den Informationen der Strategieberichterstattung im Lagebericht deutscher börsennotierter Unternehmen positive Effekte auf die (impliziten) Eigenkapitalkosten bzw. wichtige Proxies wie Handelsvolumen oder Bid-Ask-Spreads ergeben. Ein auf der Dissertationsschrift von Dr. Sieber aufbauendes Arbeitspapier (Baetge/Sieber/Weißenberger (2011), Let’s Talk Strategy, angenommen für die VHB-Pfingsttagung 2012; siehe Anlage) zeigt dass diese Effekte tatsächlich inkrementell sind, d.h. über die Berichterstattung an anderer Stelle im Jahres- bzw. Konzernabschluss hinausgehen.

Trotz der nachgewiesenen positiven Effekte zeigt die Arbeit von Herrn Dr. Sieber weiterhin (vgl. auch den beigelegten Beitrag Weißenberger/Sieber/Kraft (2011), Strategieberichterstattung deutscher Aktiengesellschaften im Lagebericht nach HGB: Eine Bestandsaufnahme, in: KoR, 11. Jg. (Heft 5), S. 254-263), dass der Umfang der Strategieberichterstattung zwar von 2002 bis 2008 grundsätzlich im Durchschnitt zunimmt, jedoch sehr heterogen ist sowie vermutlich auch in Abhängigkeit von wirtschaftlichen Krisensituationen schwankt. Ein so genanntes „Unraveling“, d.h. ein Trend zur freiwilligen vollumfänglichen Berichterstattung ist nicht zu beobachten.
Vor dem Hintergrund der positiven informationalen Effekte der Strategieberichterstattung aus Investorensicht sollte gerade für kapitalmarktorientierte Unternehmen eine Verpflichtung zur Strategieberichterstattung dringend erwogen werden. Der positive Effekt bezüglich der Eigenkapitalkosten zeigt, dass Anleger unter Berücksichtigung der entsprechenden Informationen ihre Portefeuilles unter Risiko-Rendite-Gesichtspunkten besser strukturieren können. Vor dem Hintergrund, dass eine systematische strategische Ausrichtung des Unternehmens nicht nur Bestandteil einer ordnungsgemäßen Unternehmensführung ist, wie sie z.B. in § 93 Abs. 1 AktG von den Vorstandsmitgliedern bei der Geschäftsführung der Aktiengesellschaft gefordert wird, sondern auch in der Literatur inzwischen ein hinreichend klarer Konsens über die Elemente eines strategischen Managements bestehen, kann es als unstrittig angesehen werden, dass die für eine Strategieberichterstattung erforderlichen Informationen grundsätzlich in jedem kapitalmarktorientierten Unternehmen vorliegen sollten.

Vor dem Hintergrund einer hinreichenden Vergleichbarkeit ist weiterhin dafür zu plädieren, in DRS 5 ein konkretes Raster bzw. Anhaltspunkte für den Aufbau der Strategieberichterstattung vorzugeben, die sich z.B. an dem von Herrn Dr. Sieber aus der Literatur zum strategischen Management abgeleiteten normativen Berichtskatalog für eine informative Strategieberichterstattung orientieren, da für dieses Raster auch die oben dargestellten positiven Kapitalmarkteffekte nachgewiesen sind (vgl. Sieber (2011), Strategieorientierte Berichterstattung im Lagebericht, Frankfurt: Peter Lang, hier S. 204):

| Inhaltliche Aspekte der Strategieberichterstattung | Sub-Kategorie |
|-----------------------------------------------|---------------|
| Strategische Analyse                          |               |
| Allgemeine Rahmenbedingungen                  | 1 Politisch-rechtliches, soziales Umfeld |
|                                               | 2 Makroökonomische Rahmenbedingungen   |
|                                               | 3 Strategische Ausgangslage Unternehmen|
| Geschäfts- spezifische Bedingungen            |               |
|                                               | 1 Marktumfeld                            |
|                                               | 2 Wettbewerbsumfeld                      |
|                                               | 3 Strategische Ausgangslage Segment     |
| Strategieformulierung & -detaillierung        |               |
| Unternehmensstrategie                         | 1 Unternehmensstrategische Richtschnur  |
|                                               | 2 Formulierung Unternehmensstrategie    |
| Geschäftsstrategie                            | 1 Formulierung Geschäftsstrategie       |
|                                               | 2 Konkretisierung Geschäftsstrategie    |
| Strategieimplementierung                      | 1 Umsetzung von Strategien (Sachebene)  |
|                                               | 2 Durchsetzung von Strategien (Verhaltensebene) |

Gerne stehen Herr Dr. Sieber und ich Ihnen für weitere Fragen zur Verfügung. In der Anlage finden Sie die beiden genannten Beiträge; ein Exemplar der Dissertationsschrift von Herrn Dr. Sieber geht Ihnen mit getrennter Post zu.

Wir hoffen, Ihnen mit dieser Stellungnahme geholfen zu haben, und verbleiben

mit freundlichen Grüßen

(gez. Univ. -Prof. Dr. Barbara E. Weißenberger)
Let’s Talk Strategy: The Impact of Voluntary Strategy Disclosure on the Cost of Equity Capital

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Key Words: Voluntary Disclosure, Strategy, management commentary

JEL-classification: M10, M21, M41
Let’s Talk Strategy: The Impact of Voluntary Strategy Disclosure on the Cost of Equity Capital

Abstract

Since more than three decades, the benefit of voluntary disclosure on investor decision-making has been a matter of research interest. But even though information on business strategy is a major part of firms’ voluntary disclosures, literature still lacks an in-depth analysis of its impact on cost of equity capital. From a theoretical point of view, the effects of increasing strategy disclosure levels are not obvious: On the one hand, theory implies that a firm’s voluntary strategy disclosures are informative for investors; on the other hand, it is suggested that forward-looking information might be considered as cheap talk and therefore be ignored by investors.

Our paper contributes to this debate by investigating the cost of capital effects of voluntary strategy disclosure within the management commentary (‘Lagebericht’), using a sample of German listed firms from 2002 to 2008 comprising 700 firm-years. As no elaborate archival data on German firms’ strategy disclosure levels exist, a major part of our research also consists in the development and validation of a thorough composite index measuring voluntary strategy disclosure (Strategy Disclosure Index / SDI).

We are able to provide empirical evidence showing that higher levels of voluntary strategy disclosure are associated with lower cost of equity capital. Our results are robust to a variety of tests concerning variable measurement as well as estimation procedures, e.g., with respect to identifying incremental effects of strategy disclosure.

The contribution of our paper is twofold covering both empirical and normative issues: First, our paper empirically supports the notion that voluntary strategy disclosures provided in the management commentary reduce investor information asymmetry. Second, it implies from a normative point of view that standard setters should continue to embrace regulatory issues regarding strategy reporting in the management commentary, as it provides to be a relevant source of strategy information for investors.
Let’s Talk Strategy: The Impact of Voluntary Strategy Disclosure on the Cost of Equity Capital

"Despite the progress in the last 30 years, many of the questions (...) have yet to be fully addressed, or are not yet answered: (...) Does disclosure affect firms’ cost of capital?"
(Paul M. Healy and Krishna G. Palepu, 2001, p. 431f.)

1 Introduction

Since more than three decades, accounting researchers address the impact of firms’ voluntary disclosures on investor decision-making. Until today, theory presupposes several reasons, why managers should choose to share internal business information with investors (Healy and Palepu 2001). A major rationale amongst these is the assumed reduction of cost of equity financing (e.g., Glosten and Milgrom 1985, Lambert et al. 1997). Our research is set in this context, but focuses on voluntary disclosure of forward-looking information on firms’ business strategies.

A comprehensive disclosure of strategy information essentially encompasses prognostic information on businesses, strategic objectives defined, on the resulting business strategies, and on implementation priorities (Thompson and Strickland 2003). From an investor decision-making perspective, these insights into a firm’s business strategies should be of major relevance as they shed light on management’s chosen long-term set of actions and thus create a key element in linking historical information presented in the financial statements to prospective cashflow analysis (e.g., Barron et al. 1999).

Still, the notion that voluntary strategy disclosure is used by investors for decision-making purposes is not obvious, as such information is – at least partially – not verifiable. For example, whereas ex ante information on a firm’s intended strategy is – at least to a large extent – non-financial and describes management’s projected course of action, the ex post information on strategy realization is mainly described by short-term financial results. Additionally, strategy implementation is subject to ad hoc reviews, if major environmental or intra-firm parameters change (Kachaner and Deimler 2008). Consequently, both types of information do not match structurally so that verifying the implementation of announced strategies is not a straight-forward task. If investors thus assume that any forward-looking communication on strategy issues is costless as well as non-binding, they are supposed to ignore such information as ‘cheap talk’ (Crawford and Sobel 1982). In that case, only under very restrictive conditions, e.g., if strategy disclosures induced proprietary costs because it potentially damages a firm’s position in product markets, such information would then be used by investors (Verrecchia 1983, Gigler 1994).
Thus, our research question is whether or not firms’ voluntary strategy disclosures provide useful information for investor decision-making. Based on the theory outlined above, we examine this question by relating the level of firms’ voluntary strategy disclosure to their cost of equity capital. More precisely, we measure strategy information provided in the management commentary (‘Lagebericht’) of 100 listed German firms between 2002 and 2008 (resulting in 700 firm-year observations), using a self-constructed disclosure score, the so-called Strategy Disclosure Index (SDI). We then analyse the association of this independent variable to implied cost of equity capital as well as to widely-used proxies like bid-ask spreads (e.g. Glosten and Milgrom, 1985) or trading volumes (e.g. Leuz and Verrecchia, 2000).

As until now, no elaborate archival data on German firms’ strategy disclosure levels exist, a major part of our research consists in developing and validating SDI as a thorough composite index for measuring voluntary strategy disclosure as an independent variable. In a nutshell, SDI is derived by applying a scorecard on comprehensive strategy reporting to our sample firms’ management commentaries, thus following a well-established procedure in the disclosure quality literature (e.g., Botosan 1997, Hail 2002). We have validated our measurement, amongst others, by using archival scores derived from the yearly German competition ‘Best Annual Report’, which also relate to strategy information, but in a much more rough fashion (Glaum et al. 2011). Our results indicate that SDI is highly suitable for measuring the level of voluntary strategy disclosure. Additionally, descriptive data from the 700 firm-years represented in our sample indicate a large variety in the observed SDI values.

We focus our measurement of voluntary strategy disclosure on the management commentary, as within the mandatory annual financial reporting package under German accounting regulation (Par. 264 (1), 315a HGB) it is the sole platform for firms to provide a voluntary strategy report. In contrast to international MD&A regulation under IFRS or US GAAP, German GAAP do not suggest information on “management’s objectives and its strategies for meeting those objectives” (e.g., PS MC 24b), as recommended elements of a management commentary (Par. 289, 315 HGB, DRS 15). Nevertheless, as the management commentary under German GAAP still requires information related to strategic issues, e.g., the analysis on the results of the firm’s operations using financial and non-financial performance measures (‘Wirtschaftsbericht’) or on prospective developments including also risk reporting information (‘Prognosebericht’) (Baetge et al. 2011), it provides a well-established platform for comprehensive voluntary strategy disclosures (Weißenberger et al. 2011).

With respect to our research question, we find evidence that an increased level of voluntary strategy disclosure is indeed associated with lower cost of capital. Our results are robust to a variety of tests concerning variable measurement as well as estimation proce-
dures. Our robustness checks also indicate incremental information content (Biddle et al. 1995) compared to the other parts of the financial reporting package.

Our paper is related to other studies analysing the impact of increased disclosure levels on investor decision-making, but in contrast to these papers, our study is to our knowledge the first to explicitly focus on the voluntary disclosure of strategy information. Barron et al. (1995) provide an in-depth analysis of the effects of MD&A quality in general on analysts’ earnings forecasts; in line with our results they find that high MD&A quality is negatively associated with forecast error and/or dispersion. Vanstraelen et al. (2003) extend these results to corporate nonfinancial disclosures. They find that higher levels of forward-looking disclosures lead to increased forecast accuracy. Glaum et al. (2011) also use analysts’ earnings forecasts as dependent variable and associate it with the introduction of international accounting standards and its impact on disclosure quality in the notes as well as in the management commentary. They find that disclosure quality in the notes has a positive impact on forecast error, whereas disclosure quality in the management commentary has not. Richardson and Welker (2001) analyse the incremental cost of equity capital effects of voluntary social disclosures and find but a positive relationship between social disclosures and cost of equity capital, even though financially successful firms seem to be less penalized by social disclosures. Dhaliwal et al. (2011), on the other hand, establish negative incremental cost of equity capital effects with firms initiating Corporate Social Responsibility (CSR) reporting and they also find that firms tend to exploit this effect by raising equity capital after initiating CSR activities.

Our work contributes to the voluntary disclosure literature by addressing one of the research questions pointed out by Healy and Palepu (2001) in their seminal review paper. More specifically, the contribution of our study is twofold, embracing both empirical and normative issues. First, we basically find evidence for the theoretically hypothesized cost of capital effects of voluntary strategy disclosures in the management commentary within a broad sample of German firms. In line with Dhaliwal et al. (2011), this mechanism can be used by firms to exploit the reduction of cost of equity capital by adjusting their level of strategy disclosures in advance of an intended increase of equity capital or to increase a firm’s market value. Second, from a normative point of view our results imply that standard setters should continue to embrace regulatory issues regarding strategy reporting in the management commentary (e.g., regarding the pending revision of DRS 15 in Germany or on the endorsement of the IFRS Practice Statement Management Commentary by the European Council / Parliament), as it provides to be a relevant source of strategy information for investors. The needs for normative enhancements have been addressed in most recent literature, e.g. by Velte et al. (2011).

The remainder of our paper is structured as follows. In section 2, we review the major strands of literature on which our deliberations are based and develop our hypotheses. In
section 3, we set up our research design including the sampling procedure, data collection as well as research methodology applied. A major part of this section consists in developing and validating SDI measuring the level of voluntary strategy disclosure. In section 4, we present empirical results accompanied by robustness checks in section 5. Section 6 concludes our paper with a short summary and some areas for future research.

2 Literature review and hypotheses development

Disclosure theory basically presupposes that investors profit from voluntary information that is provided in excess to mandatory disclosure (Leuz and Verrecchia 2000, Hail 2002). Studies examining the relationships between disclosure and cost of equity capital have mainly been following two related thrusts. The first assumes that more comprehensive firm disclosures will enhance market liquidity, thereby reducing cost of equity capital either through decreased transaction costs or increased demand for a firm’s shares (‘market-liquidity approach’, e.g., Demsetz 1968, Glosten and Milgrom 1985, Diamond and Verrecchia 1991 or Baiman and Verrecchia 1996). The second stream suggests that more disclosure reduces estimation risk arising from investors’ estimates of key parameters of an asset’s payoff distribution (‘estimation-risk approach’, e.g., Barry and Brown 1985, Coles and Loewenstein 1988 or Clarkson et al. 1996). Since greater uncertainty exists regarding ‘true’ parameters when information is low, investors require a compensation for this additional portion of risk which can be seen as non-diversifiable (Clarkson et al. 1996).

To verify the theoretical reasoning, a major stream of empirical literature has been established measuring the impact of disclosure level on cost of equity. Whereas some of these papers use available archival metrics on disclosure rankings, for example AIMR data (e.g., Lang and Lundholm 1993, Healy et al. 1999, Lang and Lundholm 2000 or Botosan and Plumlee 2002), another body of literature measures self-constructed scores based on a normative understanding of ‘comprehensive’ voluntary disclosures (e.g., Hossain et al. 1995, Gray et al. 1995, Botosan 1997, Hail 2002 or Jones 2007).

Whereas the second approach is more tailored to the specific research focus, it makes hand-collection of data necessary. As Healy and Palepu (2001) are concerned about increased noise especially in such self-constructed measures, careful validation of these scores is necessary. An additional, more recently discussed issue in this context is whether a given measure of disclosure level captures quantity or also quality of disclosure. Beretta and Bozzolan (2008) show that measures of disclosure quantity are but inadequate measures of disclosure quality and therefore postulate the need for multi-dimensional measurement frameworks to capture disclosure quality.
As our research relies on SDI as a self-constructed index to measure voluntary strategy disclosure, we heed both concerns by using an elaborate framework for strategy reporting based on the seminal literature in this field (see section 3) and by validating our measurement with existing, even though less thorough, archival disclosure rankings on the management commentary.

On a close perspective, the existing empirical studies on the impact of voluntary disclosure on cost of equity capital effects have generated mixed results regardless of whether disclosure has been measured by archival or hand-collected data. Whereas Botosan (1997), Daske (2006) or Glaum et al. (2011) cannot establish an overall positive impact of disclosure level on cost of equity capital, empirical results from other studies, e.g. Welker (1995), Leuz and Verrecchia (2000), Richardson and Welker (2001), Hail (2002), Vanstraelen et al. (2003), Gassen and Sellhorn (2006) or Dhaliwal et al. (2011) rather support this notion.

Besides measurement error resulting from measurement methods (Grothe 2011), a reason for these mixed results might be that sometimes voluntary disclosure concerns non-verifiable and non-binding information, thus creating ‘cheap talk’. Glaum and Friedrich (2006, p. 166) cite analysts doubting the information value of the management report “...because most companies would always display their situation as positive”. Dobler (2008) relates cheap talk in financial reporting information with insufficient risk reporting information. Bozzolan et al. (2009) show that verifiable information have a higher impact on analysts’ forecasts in comparison to non-verifiable information.

The impact of this literature on our research objective is twofold. First, we do not rely on a single measure for cost of capital effects, but use several measures. In line with both the market-liquidity approach and the estimation-risk approach pointed out above, we include into our analysis bid-ask spreads as well as trading volume as indirect measures of cost of capital effects together with a measure of implied cost of capital as a direct type of measurement, assuming that measurement error with the respect to the impact of disclosure level is not correlated between these dependent variables. This research philosophy which is denoted as within-method triangulation aims at increasing the validity of our results (Denzin 1978, Downward and Mearman 2007). Nevertheless, we decided not to include analysts’ forecast accuracy into our study, even though this measure is broadly used (e.g., Vanstraelen et al. 2003), as literature indicates that from analysts’ perspectives “... much of the information contained in the management report is already known to them from prior conversations with the management team” (Glaum and Friedrich 2006, p. 166). Therefore, we expect only a very noisy relation between voluntary strategy disclosures within the management report and analysts’ forecast as has been established by Glaum et al. (2011).
Second, we address the cheap talk issue which might be relevant with strategy disclosures by focusing our measurement on the German management commentary. Even though the management commentary does not make strategy reporting mandatory, any voluntary information provided there is also subject to validation within the compulsory audit of the annual financial reporting package (DRS 15). Such a third-party validation tends to increase the credibility of strategy disclosures (Healy and Palepu 2001) and reduces its potential for cheap talk.

So in an overall perspective, the relevant theoretical and empirical literature is strong enough to support the hypothetical notion that voluntary strategy disclosures have a positive cost of capital effect. More precisely, we test the following hypotheses (stated in alternative form):

\( H1: \) There is a negative association between a firm’s strategy disclosure level and its cost of equity capital.

\( H2: \) There is a negative (positive) association between a firm’s strategy disclosure level and bid-ask spreads of firm’s shares (trading volume of firm’s shares).

A final concern discussed within the voluntary disclosure literature which might affect our empirical approach in testing these hypotheses are endogeneity and self-selection issues (Healy and Palepu 2001, Lapointe-Antunes et al. 2006). We address these issues via several established robustness checks, e.g., 2SLS and the Hausman test, which do not indicate any inferences resulting from endogeneity or self-selection.

3 Research Design

In this section we describe the design of our study including the selection of a sample to investigate (3.1), a description of input data with focus on strategy disclosure data (3.2, 3.3) and the definition of an adequate methodology to produce meaningful results (3.4).

3.1 Sample Selection and Descriptive Statistics

Our study focuses on companies publicly listed at the German capital market in one of four main selection indices of stock exchange provider Deutsche Boerse AG. These indices, Dax, MDax, TecDax, SDax, comprise a total of 160 firms. From the firms listed in these indices at the end of June 2009, a sample of 100 companies was selected. First, of the original total of 160 firms, 34 were dropped because of lack of stock or disclosure data. Another 26 (the so-called super-sector FIRE) were excluded by limiting the analysis to firms in non-financial industries. This election procedure yields a sample of 100 firms listed at German Stock Exchange end of June 2009 as table 1 illustrates,
We set the time frame of our analysis from 2002 to 2008 in order to capture a multi-year perspective for an investigation of disclosure on strategy. However, to broaden our analysis, we choose a cross-sectional design over seven years, resulting in 700 firm-year observations. The management commentaries were received by downloading official versions from corporate websites or sent by mail after contacting IR managers. Table 2 indicates the heterogeneity of our sample with respect to market value (MV), total revenues (REV), number of employees (EMPL) and book value of total assets (TOTA) at the end of each fiscal year. We also use these parameters as a basis to ensure representativeness of our sample by comparing the 100 firms selected with the population of all firms listed in the four indices (N=160) using several t-tests.

### Table 2: Descriptive Statistics of Research Sample

| Descriptive Statistics of Sample Firms | Extremes | Percentile |
|---------------------------------------|----------|------------|
|                                       | Mean     | Min | Max | 25% | 50% | 75% | SD  | n   |
| MV                                   | 6.13     | .01 | 100.1 | .32 | .94 | 4.32 | 13.33 | 700 |
| REV                                  | 10.47    | .00 | 151.61 | .50 | 1.63 | 7.51 | 21.98 | 700 |
| EMPL                                 | 41.62    | .02 | 536.33 | 2.40 | 8.04 | 36.83 | 85.88 | 700 |
| TOTA                                 | 14.13    | .00 | 262.22 | .38 | 1.38 | 7.85 | 35.45 | 700 |

Notes: MV is the market value of firm’s equity at the end of each calendar year. REV is total revenues, EMPL is the number of employees reported for each fiscal year and TOTA is book value of totals assets at the end of each fiscal year. All data provided by Worldscope database. All numbers stated in EUR bn., except for EMPL (‘000).

### 3.2 Empirical Data: Strategy Disclosure Levels

To measure voluntary strategy disclosure, we decided to follow e.g., Botosan (1997) and Hail (2002) by using self-constructed disclosure measure which we refer to as 'Strategy Disclosure Index‘ (SDI), allowing for an in-depth analysis of quantitative as well as qualitative level of strategy reporting. Purpose of SDI is to produce an elaborate metric of firm individual levels of strategy disclosures (‘Strategy Disclosure Scores’ (SDS)) based on the amount of information disclosed by firms in their annual management commentaries.
In accordance to existing research relying on self-constructed disclosure indices we needed to define a set of items as a normative catalogue of disclosure. Our catalogue of items was guided by prior research on voluntary disclosure practice as well as recommendations of value reporting disclosure scorecards (e.g., Meek et al. 1995). We collected and clustered all strategy related items included in prior studies and completed this unstructured list by several aspects we considered as not adequately reflected so far.

Due to our specific research focus on strategy reporting, we built a catalogue of reporting items reflecting a broad and comprehensive set of strategic aspects enabling addressees of management commentaries to get an exhaustive and also consistent picture of firm strategy (Beretta and Bozzolan 2008).

Based on literature, a comprehensive picture on strategy should reflect three generic phases of a strategy process, thus comprising information gathered through strategic analysis, information on selected firm strategy definition and its detailing as well as on implementation of strategic programs (Baetge and Heumann 2006). In addition, strategy disclosure must distinguish between information on overall corporate level of strategy, i.e., portfolio strategy, vs. strategies on business level. A combination of these dimensions results in the overall structure of our disclosure scorecard shown in figure 1.

*Figure 1: Construction principle of the Strategy Disclosure Index*

| Analysis | Definition | Implementation |
|----------|------------|----------------|
| Corporate level | Overall corporate environment | Strategic direction of corporation | Realization, communication & motivation |
| Business level | Business environment | Business strategy | |

Following the construction principle of SDI presented in figure 1, we structure a total of 40 reporting items into the five categories of strategic information (I to V). Table 3 outlines our disclosure scorecard in more detail and provides transparency on the allocation of these items to the categories.
### Table 3: Categories of Strategy Disclosure Index

| Strategy Disclosure Items | No. of Items |
|--------------------------|--------------|
| **Category**             | **Sub-Category** | **Sub-Category** | **Category** |
| **Strategic Analysis**   | I             | 1 Political / social / legal environment | 2 | 6 (15% of 40 items) |
|                          |               | 2 Macro-economic environment | 2 |
|                          |               | 3 Strategic position of corporation | 2 |
| **Business Environment** | II            | 1 Market environment | 5 | 14 (35%) |
|                          |               | 2 Competitive environment | 5 |
|                          |               | 3 Strategic position of business | 4 |
| **Strategy Definition & Detailing** | III | 1 Overall strategic orientation | 2 | 5 (12.5%) |
| **Corporate Strategy**   |               | 2 Strategic goals of corporation | 3 |
| **Business Strategy**    | IV            | 1 Strategic goals of business | 3 | 10 (25%) |
|                          |               | 2 Details on business strategy | 7 |
| **Strategy Implementation** | V             | 1 Communication / motivation of staff | 2 | 5 (12.5%) |
|                          |               | 2 Realization of strategy | 3 |
| **Sum**                  |               |                           | 40 | (100%) |

Following Beretta and Bozzolan (2008) we thus create a multi-dimensional framework, with a total of 12 sub-categories covering the breadth of strategy disclosure and the up to 5 items within each sub-category capturing its depth by successively detailing reporting requirements.\(^1\) As a result, we are confident that our measurement thoroughly covers the quantity and the quality of a firms’ reporting on strategy simultaneously.

A further aspect regarding our construction of SDI is the relative importance of generic phases of strategy processes reflected through the relative number of reporting items per phase. As we view the results of strategy analysis as critical for sophisticated and thorough strategic management, 50% of 40 items (or 20 items respectively) deal with analytic information. Another 50% or 20 items cover the strategy definition and strategy implementation phases. Finally, we defined 5 items dealing with implementation.

All of our 40 items are weighted equally (with an implicit weight of 2.5% for each single item) in contrast to some prior studies that assigned specific weights to several items in order to reflect their potentially superior importance relative to other items. However, we opt for equally weighting as proposed by Spero (1979) or Meek et al. (1995).

On the basis of our disclosure scorecard outlined above we conduct content analyses of 700 management commentaries published by German listed entities during 2002 and

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\(^1\) For instance, five reporting items within the sub-category ‘market environment’ start with ‘definition of relevant market’ and end with ‘quantification of future market development (incl. growth rates)’.

The detailed reporting scorecard is available from the authors upon request.
2008 and score one single point for each of the items identified following e.g., Meek et al. (1995), Botosan (1997) or Jones (2007). Thus, we do not award fractional scores in order to reduce the level of subjectivity that would be involved in assigning scores between zero and one to specific reporting items.

Total number of items reported (i.e., total points earned) is then computed by the formula noted under (1) in Figure 2. Firm individual scores are calculated by dividing the number of items disclosed by the maximum of 40 items as shown under (2). Thus, we produce standardized disclosure scores (SDS) ranging between zero and one, making it easier to interpret firm individual disclosure scores.²

**Figure 2: Calculation of Strategy Disclosure Scores**

1. \[ SD_{t,j} = \sum_{i=1}^{n} s_{i,t,j} \]
   where: \( SD_{t,j} \): Number of strategy disclosures of firm \( j \) in \( t \)
   \( s_{i,t,j} \): Disclosure of item \( i \) by firm \( j \) in \( t \); \( \{0 \lor 1\} \)

2. \[ SDS_{t,j} = \frac{SD_{t,j}}{SD_{max}} \]
   where: \( SDS_{t,j} \): Strategy Disclosure Score of firm \( j \) in \( t \); \( \{0;1\} \)
   \( SD_{max} \): Maximum number of strategy disclosures

An often discussed concern with disclosure scores is that large firms could potentially achieve higher scores because of greater disclosure opportunities due to the complexity of their organizational structures and the number of businesses they manage. We took several steps in the design of SDI to circumvent this problem. First, besides reducing the total number of items to 35 instead of 40 for firms managing only one business segment, disclosure by multi-segment firms was only assigned one point if disclosure was provided for all relevant businesses managed. Second, we limit our SDI to such reporting items that all firms should be able to disclose (see Table 3), and third, we did not award multiple points for multiple references to the same item.

Content analyses of the 700 reports collected utilizing our self-constructed measure SDI was conducted in a randomized order by one single coder to minimize and to control subjectivity bias (Healy and Palepu 2001). However, since any list of items might be affected by subjectivity and therefore disputable, testing the reliability of a measure becomes imperative. Following guidance set by Botosan (1997) and Lapointe-Antunes et al. (2006) we explicitly check the reliability of SDI and the validity of respective scores. Results will be discussed in the following section.

² Summing the total number of points awarded to a firm \( j \) in category \( k \) across all categories \( K \) in \( t \) produces a strategy disclosure score (SDS) for each firm in \( t \). We perform our analysis using absolute disclosure score standardized to a maximum of one. In addition, we construct fractional ranks of disclosure scores in order to use these ranks to check robustness of our disclosure metric.
Table 4: Descriptive Statistics of Strategy Disclosure Scores

Panel A: Descriptive Statistics of Strategy Disclosure Scores (Full Sample)

| Sub-Scores | SDS Total | Extremes | Percentile | SDS Total | Extremes | Percentile |
|------------|-----------|----------|------------|-----------|----------|------------|
|            | Score     | Mean     | Min        | Max       | 25%      | 50%        | 75%        | SD         | Mean     | Min        | Max        | 25%      | 50%        | 75%        | SD         | n        |
| All        | Analysis  | .38      | .06        | .85       | .30       | .39        | .45        | .13        | .34      | .03        | .83        | .25        | .33        | .40        | .12        | 700      |
|            | Strategy  | .36      | .00        | .87       | .20       | .33        | .47        | .18        |          |            |            |            |            |            |            |          |
|            | Implem.   | .09      | .00        | .80       | .00       | .00        | .20        | .15        |          |            |            |            |            |            |            |          |

Panel B: Descriptive Statistics of Strategy Disclosure Scores by Sub-Samples

| Sub-Scores | SDS Total | Extremes | Percentile | SDS Total | Extremes | Percentile |          |          |          |          |          |          |          |          |
|------------|-----------|----------|------------|-----------|----------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|            |           |          |            |           |          |            |          |          |          |          |          |          |          |          |          |
| Small      | Analysis  | .34      | .06        | .80       | .25       | .35        | .40       | .11        |          |          |          |          |          |          |          |          |
|            | Strategy  | .34      | .00        | .80       | .20       | .33        | .43       | .17        | .30      | .03        | .68        | .23        | .30        | .35        | .10        | 350      |
|            | Implem.   | .03      | .00        | .60       | .00       | .00        | .00       | .09        |          |            |            |            |            |            |            |          |
| Large      | Analysis  | .42      | .10        | .85       | .35       | .40        | .50       | .13        |          |          |          |          |          |          |          |          |
|            | Strategy  | .38      | .00        | .87       | .25       | .40        | .47       | .19        | .37      | .10        | .83        | .28        | .35        | .45        | .13        | 350      |
|            | Implem.   | .15      | .00        | .80       | .00       | .20        | .20       | .17        |          |            |            |            |            |            |            |          |

Notes: All figures standardized with a minimum value of zero and a maximum of one. SDS Total is the overall strategy disclosure score representing disclosure on strategic aspects. A score of 0.4 signals a reflection of 40% of our items. SDS Analysis is the partial company disclosure score for disclosure on information gathered through strategic analysis both on corporate and business level. SDS Strategy is the partial company disclosure score for disclosure on defined strategy and its detailing. SDS Implementation is the partial company disclosure score for disclosure on information about realization of strategic programs and communication to / motivation of people. Sub-scores were standardized on the basis of the maximum number of items included per category.

Panel A of table 4 thus shows descriptive statistics pertaining SDS and reveals an overall average disclosure level of 34%. Further, scores reported reflect a substantial amount of variation in the underlying reporting strategies as the scores range from 3% to 83%. In addition, panel B contains SDS data for the sub-samples of large and small firms, indicating that large firms disclose information on strategy to a larger extent (mean 37%, range from 10% to 83%) than smaller firms (mean 30%, range from 3% to 68%). We take this result as an indication that differences in strategy reporting exist depending on firm size and decide to consequently control for firm size in all subsequent analyses.

To examine the reliability of SDI, we measure internal consistency by using Cronbach’s Alpha. This procedure is in line with the assumption that firms coordinate their reporting strategy across various reporting avenues (Lang and Lundholm 1993). Thus, all components of our disclosure index should exhibit a positive correlation with one another as each of the components proxies for all other components. Cronbach’s Alpha therefore takes on a maximum value of one when correlation between each pair of categories is perfect. Following Lapointe-Antunes et al. (2006), we calculate global Cronbach’s Alpha for the pooled sample as well as annual Cronbach’s Alphas for each of the seven years 2002 to 2008 (table 5).
Table 5: Reliability of Strategy Disclosure Index

Panel A: Cronbach’s Alpha of Strategy Disclosure Scores

|       | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Total |
|-------|------|------|------|------|------|------|------|-------|
| Alpha | .617 | .608 | .553 | .600 | .667 | .757 | .748 | .713  |
| n     | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 700   |

Panel B: Correlation Analysis of Strategy Disclosure Scores and related Sub-Scores

|       | 1   | 2   | 3   | 4   |
|-------|-----|-----|-----|-----|
| n=700 |     |     |     |     |
| 1  SDS Total | .824 ** | (.000) | .851 ** | (.000) | .480 ** | (.000) |
| 2  SDS Analysis | .857 ** | (.000) | .458 ** | (.000) | .306 ** | (.000) |
| 3  SDS Strategy | .852 ** | (.000) | .493 ** | (.000) | .339 ** | (.000) |
| 4  SDS Implementation | .552 ** | (.000) | .378 ** | (.000) | .361 ** | (.000) |

Notes panel A: Cronbach’s Alpha calculated on the basis of three sub-scores of SDS, namely SDS Analysis, SDS Strategy, and SDS Implementation.

Notes panel B: Figures below the diagonal represent Pearson coefficients, data above the diagonal Spearman coefficients. The p-values noted (in parentheses) are for a two-tail test of statistical significance. SDS Total is the overall company disclosure score representing disclosure on strategic aspects. SDS Analysis is the partial company disclosure score for disclosure on information gathered through strategic analysis both on corporate and business level. SDS Strategy is the partial company disclosure score for disclosure on defined strategy and its detailing. SDS Implementation is the partial company disclosure score for disclosure on information about realization of strategic programs and communication to/motivation of people.

Global Alpha for the components of SDI is .713; annual Alphas range between .600 and .800. Even though there is no standard test of significance for Cronbach’s statistic, prior research accepts indices with Alpha less than .700 (e.g., Botosan 1997). We therefore assume SDI as a reliable measure of strategy disclosure.

Additionally, we assess the relationship between the SDSs and the respective SDS-components on the basis of bivariate correlation coefficients. As shown in panel B of table 5, even though each coefficient is positive and highly significant, correlation between the SDS components is considerably lower than the correlation between the SDS components and the overall SDSs. We therefore conclude that the SDS components capture different aspects of disclosure, but are still well proxied by the overall SDSs.

To test for the validity of SDSs, we use two checks. First, we analyze the relationships of SDSs with typical determinants of firms’ disclosure policy, as SDSs should be associated with firm characteristics for whom a relationship with disclosure scores has been evidenced empirically in prior work (Ahmed 1995):³ market value of equity (MV), foreign listing status (LIST), financial leverage (LEV), and whether a firm is audited by a big

³ Explanations for this behaviour may include agency and political costs, corporate governance aspects, signalling, audit firm reputation/audit firm information demand and capital needs.
four company (BIG4). These characteristics are supposed to be positively related to disclosure scores, with market value and listing status yielding most conclusive results.

We run a correlation analysis presented in panel A of Table 6 and consistent with prior research, these firm characteristics exhibit positive and significant correlation parameters. This picture holds true in a rank regression of SDS on the four variables, approximately 32% of the variation in SDS is explained by the variables included in the model.

**Table 6: Validity of Strategy Disclosure Index**

Panel A: Correlation Analysis of Strategy Disclosure Scores and Firm Characteristics

| SDS | MV    | LIST  | LEV    | BIG4   |
|-----|-------|-------|--------|--------|
|     | .487 ** (0.000) | .225 ** (0.000) | .139 ** (0.001) | .187 ** (0.000) |

Panel B: Rank Regression of Strategy Disclosure Scores on Firm Characteristics

| Intercept | MV    | LIST  | LEV    | BIG4   | YEAR |
|-----------|-------|-------|--------|--------|------|
|           | .371 ** (0.000) | .073 * (0.033) | .087 ** (0.007) | .057 (0.079) | .281 ** (0.000) |

R² adj. = .321 ** (0.000)

Panel C: Correlation Analysis of Strategy Disclosure and Validation Scores (Best Annual Report)

| 1 (Scores) | 2 | 3 | 4 |
|------------|---|---|---|
| SDS        | -.911 ** (0.000) | -.560 ** (0.000) | -.542 ** (0.000) |
| SDR (Ranks)| -.877 ** (0.000) | -.549 ** (0.000) | .565 ** (0.000) |
| BAR-SDS    | .586 ** (0.000) | -.548 ** (0.000) | -.983 ** (0.000) |
| BAR-SDR    | -.547 ** (0.000) | -.560 ** (0.000) | -.943 ** (0.000) |

Notes panel A: Figures shown represent Spearman correlation coefficients.
Notes panel A and B: MV is the natural logarithm of a firm’s market value of equity, LIST a categorical variable taking a value of one if a firm is additionally listed on the NYSE, LEV describes the leverage of a firm, computed as a factor consisting of debt over assets, long term debt over assets, long term debt over equity and net debt over assets. BIG4 is a categorical variable taking a value of one if a firm is audited by a big four auditor. YEAR is a control variable to reflect potential time-dependent influences.
Notes panel C: Figures below the diagonal represent Pearson coefficients, data above the diagonal Spearman coefficients. The p-values noted (in parentheses) are for a two-tail test of statistical significance. SDS is the overall company disclosure score representing disclosure on strategic aspects. SDR is the annual fractional rank computed by ranking sample firm according to SDS awarded. BAR-SDS is the overall company disclosure score representing disclosure on strategic aspects derived on the basis of data of Germany’s most renowned competition on quality of annual report information. BAR-SDR represents fractional ranks computed on the basis of BAR-SDS. Only 625 of our total 700 observations can be validated using BAR data, however, 625 out of 700 observations might be assessed as a sufficient basis for validating SDS.

Finally, we compute correlation analysis between SDI and another, similar measure that was derived on the basis of data of most renowned yearly German annual report competi-
tion ‘Best Annual Report’. This competition is based on a comprehensive content analysis of annual reports of German listed firms where a catalogue of 300+ items is tested. Of this total, we identified around 30 strategy related management commentary aspects and calculated scores which we refer to as ‘BAR scores’.5

With these BAR scores we validate our self-constructed SDI since both target the same subject, i.e., firms’ disclosed strategy information in the management commentary but have been measured by different coders. Even though we believe the BAR scores to be of reasonable quality for validating SDI, we are convinced that the SDSs are of more informative value for our research purpose because they measure strategy disclosure on a much finer information level (Blackwell, 1953). As panel C in table 6 shows consistently high and significant coefficients this evidence however suggests that both SDS and BAR scores reflect the same aspect of reporting content,6 thus supporting the notion that SDI represents a valid measure of such disclosure.

3.3 Empirical Data: Direct vs. Indirect Measurement of Cost of Equity Capital

To measure cost of equity capital, we use implied cost of equity capital as direct measure as well as bid-ask spreads and trading volume as additional indirect measures, thus following Leuz and Verrecchia (2000).

With respect to the direct measurement of cost of equity capital, we adhere to suggestions made by Hail (2002) and Gebhardt et al. (2001) to compute ex-ante cost rate via an accounting based valuation formula often referred to as ‘residual income model’ where firm value is represented as a function of forecasted accounting data subject only to the ‘clean surplus relation’. In this model, firm value equals reported book value plus an infinite sum of discounted residual income and is expressed as a function of accounting numbers, namely future earnings and expected book values. The so-called implied cost of equity capital rate is then computed as the internal rate of return that equates firm’s intrinsic value to current stock price.7

In practical valuation analysis, however, accounting data should only be forecasted over finite horizons. Therefore, we set the forecast horizon of our residual income model to 12 periods and adopt a three-stage approach to calculate firm value. First, we use earnings

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4 This competition is known as ‘Der Beste Geschäftbericht’ and run annually by one of the authors of this paper, Prof. Baetge, together with business monthly ‘manager magazin’; see Baetge (1992).
5 We use ‘BAR’ as an abbreviation for ‘Best Annual Report’. The way of calculating BAR Scores is fully consistent with the procedure explained for SDS: Binary scoring of reporting items, equally weighted summation and finally a standardization of scores to a range between zero and one. Details on these validation scores are provided in the appendix.
6 Of the total of 700 observations, a majority of 625 could be validated using BAR-SDS.
7 In an efficient market, the intrinsic value $V$ at date $t$ equals the market price $P$ of a firm’s stock at date $t$. Using this relationship and solving, by an iterative process, for the implied discount rate produces an estimate of the ex-ante cost of capital conditioned on the currently available information. Details on the residual income model are provided in the appendix.
forecasts of analysts for the next three years. Second, we compute future earnings by linearly fading down year $t+3$ return on book value of equity to a mean average market return by $t+T$. Finally, terminal value is derived by perpetuating $t=12$ income:

$$P_t = BV_t + \sum_{\tau=1}^{\infty} \frac{(X_{t+\tau} - r_e \times BV_{t+\tau-1})}{(1 + r_e)^\tau} + \ldots$$

\[\ldots + \sum_{\tau=1}^{\infty} \frac{(X_{t+\tau} - r_e \times BV_{t+\tau-1})}{(1 + r_e)^\tau} + \frac{(X_{t+\tau+1} - r_e \times BV_{t+\tau})}{r_e \times (1 + r_e)^\tau}\]  

(3)

where

- $P_t$: Average stock price of a firm’s shares in $t$
- $X_{t+\tau}$: Future accounting earnings expected in period $(t+\tau-1, t+\tau)$; either explicitly forecasted, generated by a linear fading rate or constant as terminal income
- $r_e$: Estimate of ex-ante cost of equity capital as internal rate of return
- $BV_{t+\tau}$: Future accounting book value of equity at date $t+\tau$, derived on the basis of the clean surplus relation with future dividends estimated using a constant (historic) payout ratio

Following equation (3), estimates of future book values and future dividends as inputs are required in order to calculate future residual income. To compute future book values, we further need to place assumptions on dividend payout. For lack of better data, we assume net dividends as a constant ratio of expected earnings over the forecast horizon with dividend payout ratio derived as historical mean adjusted for unusual observations. Terminal value is computed based on the assumption that net dividend equals $t+\tau$ earnings.\(^8\) In addition, on the left side of the residual income model, stock price data is needed as it is set equal to the intrinsic value. We use average price per year in order to minimize potential bias induced by focussing on a single day or month. This procedure also accounts for the sequential release of reports and heterogeneous horizons of processing management commentaries by investors and its subsequent market reflection. Stock price and book value data was provided by Datastream, other data collected from I/B/E/S. Descriptive statistics of implied cost of equity capital $CC$ is shown in table 7.

After calculation of ex-ante cost of equity capital equity data, we need to assess the validity of these estimates. As economic theory suggests, a valid measure of cost of equity capital should increase with risk as displayed by market beta (BETA) and firm’s leverage (LEV). Also, cost of equity capital should decrease with firm size, reflected by market value of equity (MV). We present the outcome of a correlation analysis of these parameters and an OLS regression in table 7. On the basis of these results, we are confident that

\(^8\) Thus, we expect no further growth in later periods as is common in residual value calculation (Hail 2002 for example). Target accounting return on equity of 8% is calculated on the basis of long-term historic average rate of return of the German stock market over a course of 30 years.
our residual income model produces valid estimates for firm individual cost of equity capital as all hypothesized variables behave in the predicted way. However, with an $R^2$ of 11%, there is still substantial variation in cost of equity unexplained.

**Table 7: Validity of Cost of Equity Capital**

**Panel A: Correlation Analysis of Cost of Equity Capital and Firm Characteristics**

|     | MV       | BETA     | LEV       |
|-----|----------|----------|-----------|
| CC  | -0.088   | 0.093**  | 0.198**   |
|     | (0.023)  | (0.020)  | (0.000)   |

**Panel B: OLS Regression of Cost of Equity Capital on Firm Characteristics**

|     | Intercept | MV       | BETA     | LEV       | YEAR     |
|-----|-----------|----------|----------|-----------|----------|
|     | **−0.150**| 0.117**  | 0.178**  |           | −0.243** |
|     | (0.000)   | (0.005)  | (0.000)  |           | (0.000)  |
| $R^2$ adj. | 0.108     |           |          |           |          |
|     | (0.000)   |          |          |           |          |

Notes: Figures shown in panel A represent Pearson correlation coefficients. CC is the implied ex-ante cost of equity capital rate, computed using a residual income model. MV is the natural logarithm of market value of equity; BETA describes the market beta of a firm, as an indicator of systematic risk. Finally, LEV reflects the leverage of a firm, as an indicator of firm’s financial risk, operationalized through net debt over assets. YEAR is a control variable to reflect potential time-dependent influences.

As noted earlier, we complement our investigation by analyzing two other metrics supplementary to the implied cost rate widespread perceived as solid proxies for cost of equity capital. Compliant with literature we choose bid-ask spreads and trading volume in firm shares (Leuz and Verrecchia 2000). All data were provided by Datastream.

We compute bid-ask spreads as relative spreads, that is, absolute spreads scaled by bid price on the basis of daily closing data at Frankfurt Stock Exchange (FSE). With around 255 trading days p.a. for each of the seven years of interest, we calculate annual mean relative bid-ask spreads. For robustness checks however, we also keep absolute spreads. To operationalize trading volume in firm shares, we cumulate daily monetary trade volume at most liquid German stock exchanges FSE and Xetra for every trading day.9 Consistent with prior research, we compute the natural logarithm of trading volume10 and additionally calculate stock turnover data, i.e. daily trading volume divided by respective market capitalization (Leuz and Verrecchia 2000). Descriptive statistics of both proxies are shown in table 8 together with other key variables of our investigation.

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9 Aggregation of trading volume at FSE and Xetra seems necessary as a large portion of trading volume has shifted to Xetra over the course of our period of investigation, 2002 to 2008.

10 Trading volume data usually suffers from right skewed distributions. Therefore, consistent with e.g., Leuz and Verrecchia (2000) the natural logarithm is computed in order to reduce skewness.
## Table 8-1: Explanation of Variables and Data Sources

| Variable | Definition | Source of data |
|----------|------------|----------------|
| SDS      | Strategy disclosure scores, derived on the basis of a 40 items standardized with a minimum value of zero and a maximum of one | Management, Commentary |
| BAR-SDS  | Alternative strategy disclosure scores, derived on the basis of 30+ items included in archival data from “Best Annual Report” | Prof. Baetge, University of Muenster |
| CC       | Implied cost of equity capital rate, computed using a residual income model following Hail (2002) | Datastream, I/B/E/S |
| BAS      | Annual mean average bid-ask spread, computed on the basis of daily relative bid-ask spreads, absolute spreads scaled by bid | Datastream |
| TV       | Natural logarithm of a firm’s aggregated annual monetary trade volume, aggregated volume from FSE and Xetra | Datastream |
| PROF     | Factor indicating a firm’s profitability consisting of three margin figures: EBITDA, EBIT, and net income margin | Worldscope |
| LEV      | Leverage of a firm, computed as a factor of four elements, relative to a firm’s assets: debt, LT debt, net debt, and debt over equity | Worldscope |
| FS       | Factor describing firm size on the basis of internal (accounting) data: annual revenues, number of employees, total assets | Worldscope |
| IFF      | Inverse free float, ratio of firm’s share capital not actively traded or held by major stakeholders, respectively | Worldscope, German BaFin |
| NAF      | Annual mean average number of analysts following a firm | I/B/E/S |
| MV       | External indicator of firm size, natural logarithm of market value of total equity at the end of each calendar year | Datastream |
| RET      | Annual share price return | Datastream |
| BETA     | Market beta of a firm, indicator of systematic risk | Datastream |
| VOLA     | Annual relative volatility of a firm’s share price, i.e. average annual price movement to a high and low from a mean for each year | Datastream |
| INDEX    | Separation into 4 key indices: Dax, MDax, TecDax, SDax | Dt. Boerse |
| INDUSTRY | Separation into 8 industry clusters | Dt. Boerse |
| FIRM AGE | Separation into 4 age classes (quartile based) | Worldscope |
| ACCOUNT. | Accounting standard applied (IFRS/US GAAP → 1), Auditor of a firm (Big 4 → 1) | Annual Reports |

Notes: In general, all data available for the period 2002 to 2008 (700 observations of 100 sample firms). For some variables however, data also available for 2009. In the following, symbols (t) or (t+1) indicate the specific time horizon of certain variables: data marked with (t) comprises 2002 to 2008; data marked with (t+1) comprises 2003 until end of 2009. Some data marked (t+1) only partly available for the entire time period resulting in less than 700 observations.
### Table 8-2: Descriptive Statistics of Quantitative Variables

#### Panel A: Descriptive Statistics of Cost of Equity Capital Estimates

| Parameter               | Period | Mean   | Min    | Max    | 25%    | 50%    | 75%    | SD     | n    |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| CC – Cost of Equity Capital (t+1) | 6.782  | 1.270  | 13.52  | 5.685  | 6.610  | 7.790  | 1.868  | 661    |      |

#### Panel B: Descriptive Statistics of Proxies of Cost of Equity Capital

| Parameter       | Period | Mean   | Min    | Max    | 25%    | 50%    | 75%    | SD     | n    |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| BAS – Bid-Ask Spread (t+1) | .0106  | .0009  | .0794  | .0045  | .0085  | .0139  | .0085  | 700    |      |
| TV – Trade Volume [Ln] (t+1) | 20.64  | 13.30  | 26.40  | 18.90  | 20.20  | 22.40  | 2.381  | 700    |      |

#### Panel C: Descriptive Statistics of Metric Control Variables – Firm Characteristics

| Parameter       | Period | Mean   | Min    | Max    | 25%    | 50%    | 75%    | SD     | n    |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| PROF – Profitability [F] (t) | 0.000  | −12.66 | 1.799  | −1.673 | 0.501  | 0.3149 | 1.000  | 700    |      |
| LEV – Leverage [F] (t) | 0.000  | −1.827 | 4.792  | −0.952 | .6699  | 1.000  | 700    |      |
| LEV – Leverage [F] (t+1) | −0.008 | −1.830 | 4.790  | −.7881 | −.1258 | .6680  | 1.000  | 600    |      |
| FS – Firm Size [F] (t) | 0.005  | −3.000 | 2.230  | −.7424 | −.1212 | .7530  | 1.000  | 700    |      |
| FS – Firm Size [F] (t+1) | 0.015  | −3.000 | 2.230  | −.7311 | −.1078 | .7723  | 1.000  | 600    |      |
| IFF – Inv. Freefloat (t) | 34.26  | 0.000  | 98.80  | 10.10  | 31.73  | 54.59  | 25.68  | 700    |      |
| IFF – Inv. Freefloat (t+1) | 33.84  | 0.000  | 93.13  | 10.10  | 31.34  | 54.23  | 25.39  | 600    |      |

#### Panel D: Descriptive Statistics of Metric Control Variables – Capital Market Data

| Parameter       | Period | Mean   | Min    | Max    | 25%    | 50%    | 75%    | SD     | n    |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| TV – Trade Volume [Ln] (t) | 20.44  | 13.30  | 26.40  | 18.70  | 20.10  | 22.30  | 2.499  | 700    |      |
| NAF – Analyst Following (t+1) | 16.99  | 0.000  | 46.42  | 14.75  | 25.23  | 10.99  | 700    |      |
| MV – Market Value [Ln] (t) | 20.91  | 14.30  | 25.33  | 19.57  | 20.66  | 22.18  | 1.853  | 700    |      |
| MV – Market Value [Ln] (t+1) | 20.97  | 6.910  | 25.33  | 19.73  | 20.79  | 22.33  | 2.077  | 700    |      |
| RET – Share Return (t) | 16.94  | −88.30 | 638.1  | −22.05 | 9.650  | 41.10  | 70.27  | 700    |      |
| RET – Share Return (t+1) | 25.66  | −94.50 | 638.1  | −8.375 | 17.50  | 44.90  | 70.95  | 700    |      |
| BETA – Market Beta (t+1) | .8969  | 0.256  | 2.094  | .6696  | .8559  | 1.104  | .3426  | 651    |      |
| VOLA – Volatility (t+1) | 30.45  | 14.73  | 59.15  | 24.68  | 28.90  | 35.06  | 8.313  | 662    |      |

Notes: Symbols (t) and (t+1) indicate the availability of data: data marked with (t) available from 2002 to 2008, data marked with (t+1) available from 2003 until end of 2009 (maximum 700 observations). However, some data marked (t+1) only partly available for the entire time period with less than 700 observations.

### 3.4 Research Method

In general, we see two relevant techniques to assess the impact of firm individual levels of strategy disclosure on cost of equity capital: First technique is a regression analysis where we examine effects of disclosure on cost of equity capital while explicitly controlling for other determinants of information asymmetries. Second is an investigation of changes in cost of equity capital indicators around the release of strategy information to capital market participants.

Although the latter, typically named as ‘event studies’, might produce relevant insights into processing of strategy related information, it suffers from several inherent problems, for example the determination of an adequate event date as well as the isolation of specific information elements from all information disclosed in one ‘event’, making it difficult to apply this technique for our design.
Additionally, we expect strategy relevant disclosures to diffuse subtle over time rather than in the way of an ‘event’ that can be scheduled exactly and thus opt for cross-sectional regression analyses, following the major body of literature represented e.g. by Botosan (1997), Leuz and Verrecchia (2000) or Hail (2002).

Our two main hypotheses are tested by linearly regressing cost of equity capital – either as an implied ex-ante cost rate or as one of two selected proxies – on SDS as well as on several controls. Thus, the generic specification of our models is as follows:

\[
CoC = \alpha + \beta_{SDS} \times SDS + \sum_{i=1}^{n} \beta_i \times Control_i + \varepsilon
\]

where

- **CoC**: Dependent variable reflecting cost of equity capital in one of three different specifications: Either computed as implied cost rate (CC) or proxied by bid-ask spreads (BAS) or trade volume (TV)
- **\( \alpha, \beta, \varepsilon \)**: Regression parameters, \( \alpha = \text{Intercept} \), \( \beta = \text{Coefficients} \), \( \varepsilon = \text{Residuals} \)
- **SDS**: Independent variable reflecting strategy disclosure scores
- **Control**: Controlling parameters with (evident) impact on cost of equity capital

Linear regression of cross-sectional data may be subject to some critical issues that have to be taken into account proactively in order to avoid misleading or biased results. First, we have to consider a panel structure in our data set. By pooling 700 data points of 100 firms over seven years into a cross-sectional design, our sample could potentially suffer from dependence of observations. As a result, we have to control for the dimensions of our panel: time and firm heterogeneity. While controlling for time is obvious, heterogeneity of firms in the sample is reflected by several control variables such as profitability. As a substantial portion of firm heterogeneity however may not be observable directly, we opt for controlling firm size in each of our regressions as it is perceived as being a solid indicator for non-observable heterogeneity (e.g., Wagenhofer and Ewert 2007). Further, as demonstrated above, differences in disclosure behavior depending on firm size are obvious and thus controlling for firm size becomes even imperative. An alternative, potentially more explicit method to reflect the panel structure however is to calculate a fixed effects model. We additionally follow this direction but interpret results of this analysis primarily as a robustness check for controlled cross-sectional regressions.\(^{11}\)

Another potential issue is that firms may choose their reporting strategy while considering costs and benefits of enhanced reporting. In this case, regressing cost of equity capital indicators on a disclosure variable and various firm characteristics could suffer from a self-

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\(^{11}\) In a fixed effects model using a within transformation of data, we would have to abstain from including time-invariant controls in our regressions. As we assume that several time-invariant firm characteristics are important to explain levels of cost of equity capital, such as industry, we prefer to test our hypotheses in a cross-sectional design controlling for time and firm heterogeneity.
selection bias (Heckman 1978) providing spurious coefficients (Lapointe-Antunes et al. 2006). Thus, some prior studies recommend estimating two-equation models using 2SLS in the presence of an endogenous disclosure variable but this approach often fails to deliver convincing results (Larcker and Rusticus 2007, Baetge et al. 2010). We therefore maintain ‘classic’ OLS model in a first step but take some preventive action against potential endogeneity. First is an inclusion of a set of relevant controls that are likely to determine firms’ reporting decision and second a clear-cut temporal separation between the outcome of firms’ reporting decision, SDS, and capital market reactions. That is, we consider strategy disclosures revealed in management commentary of period $t$ as available to investors at the beginning of $t+1$ and practically regress one of our cost of equity capital indicators in $t+1$ on SDS awarded in period $t$. Finally, after running regressions we explicitly test for endogeneity of SDS using a procedure suggested by Hausman (1978) and also run 2SLS regressions afterwards as a further robustness check.

A third issue that could potentially affect the quality of our results is a mis-specification of the functional relationship between independent and dependent variables reflected in our models. As we generally assume linear relations as reflected in equation (4), we differ from several prior studies arguing that disclosure indices merely produce scores of ordinal scale and therefore favor rank regressions in order to circumvent the assumption of linear relationships (Lang and Lundholm 1996). With this procedure, one predicts the rank of a dependent variable using the ranks of independent variables (Iman and Conover 1979). However, as we would necessarily relinquish explanatory power when computing ranks for all our metric variables, we first proceed with linear models using the original data (Cooke 1998) and additionally compute ranks for all our variables to compile rank regressions as robustness checks afterwards.

In summary, we perform OLS regressions of cost of equity capital as well as of selected proxies against our measurement of strategy disclosures SDS and control variables identified from prior literature. Specifically, we estimate three linear regression models for 100 listed firms as shown in equation (4) over a course of seven years in a pooled cross-sectional sample albeit consistently controlling for the panel structure of data. To further strengthen the robustness, we estimate each model in several specifications, stepwise including further controls into the models. As a final check of robustness, we also investi-
gate the incremental effect of SDS through including proxies for the overall disclosure levels into our models.

4 Empirical Results

4.1 Bivariate Analysis

In this section, we examine the effects of strategy disclosure on the cost of equity capital (CC) and on its proxies, bid-ask spreads (BAS) and trading volume (TV). We start hypotheses testing with bivariate investigation of key metric variables and thus run correlation analyses provided in table 9. As hypothesized above, we expect our key variable SDS to be negatively associated with CC and BAS and positively correlated with TV.\textsuperscript{15}

| Table 9: Correlation Analysis of Key Metric Variables |
|------------------------------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| SDS \((t)\) | -0.216** | -0.448** | 0.504** | 0.469** | 0.446** | 0.089* | -0.194** | -0.112** |
| CC \((t+1)\) | -0.198 | 0.055 | -0.167** | -0.238** | -0.167** | 0.125** | 0.196** | -0.180** |
| BAS \((t+1)\) | -0.402** | 0.033 | -0.734** | -0.745** | -0.780** | -0.055 | 0.051 | 0.323** |
| TV \((t+1)\) | 0.515** | -0.093* | -0.571** | 0.779** | 0.692** | 0.188** | -0.105** | -0.328** |
| NAF \((t+1)\) | 0.441** | -0.154** | -0.590** | 0.792** | 0.809** | 0.022 | -0.125** | -0.198** |
| MV \((t+1)\) | 0.421** | -0.088* | -0.556** | 0.629** | 0.740** | 0.052 | -0.068 | -0.010 |
| BETA \((t+1)\) | 0.062 | 0.093* | -0.044 | 0.178** | -0.003 | -0.059 | 0.052 | -0.260** |
| RET \((t+1)\) | -0.177** | 0.172** | 0.191** | -0.082* | -0.178** | -0.037 | 0.108** | -0.044 |
| IFF \((t+1)\) | -0.125** | -0.187** | 0.206** | -0.351** | -0.217** | -0.048 | -0.254** | -0.049 |

Notes: Figures below the diagonal represent Pearson coefficients, data above the diagonal Spearman coefficients. The p-values noted (in parentheses) are for a two-tail test of statistical significance. Sample sizes not shown explicitly, however, all calculations are based on at least 600 observations.

As table 9 exhibits, all coefficients have the expected sign and are highly significant on a <1% level. Specifically, correlation between CC and SDS is \( r = -0.198 \) and significant at all levels of statistical significance. Before switching to a multivariate setting, we allow ourselves a note that this result is consistent with our assumption that CC decreases in

\textsuperscript{15} Instead of original data, we use the natural logarithm of CC and BAS for our analyses in order to reduce (limited) skewness of distributions – as a preventive action. However, to ensure robustness of our models, we also estimate both regressions with unlogarithmized data shown in the appendix.
levels of strategy disclosure, at least in a bivariate setting. This picture holds even when we replace CC by its proxies: BAS decreases with higher levels, TV increases.

4.2 Multivariate Analysis

H1: Implied Cost of Equity Capital

In order to test our two hypotheses, we run three regression routines following the generic specification as outlined in equation (4). To test H1, we include a broad set of control variables into our first regression model, mainly MV to account for the richness of a firm’s information environment and the relationship of CC and MV shown above. Furthermore, BETA and LEV are reflected to account for a firm’s systematic or financial risk (Botosan 1997, Gietzman and Ireland 2005) and some other metric control variables including VOLA, PROF, TV, RET, and IFF. We expect MV, TV, PROF and IFF to have negative and the others to show positive signs accordingly. In addition to these metrics, we include several qualitative controls that might influence cost of equity capital. Included are dummies reflecting the selection index a firm is listed in as this might have an influence on investors’ risk perception but we expect its explanatory power to be limited in light of including MV. Further, we include dummies representing the industry a firm operates in and three other categorical variables; one is firm age to proxy for corporate culture (e.g., Gibbins et al. 1990). Another two categorical variables capture the nature of firms’ accounting practices, namely standard followed (one if ‘enhanced’) and a variable set one if a firm is audited by a Big Four auditor.

Results obtained from estimating regression using simple OLS are provided in table 10 that presents the model in four specifications, to account for a stepwise deepening of the analysis of effects of strategy disclosures. Referring to our final model, we achieve a $R^2$ of 37% and the coefficients of metric controls MV, LEV, PROF and IFF all behave as predicted, significant at the 1.0% level or better. In addition, some qualitative variables present significant coefficients and thus indicate that such factors may influence cost of equity capital. Concerning the qualitative factors, we find that the accounting practices of firms seem to have a systematic influence and in general, one may conclude that older firms have cost of equity capital benefits compared to younger firms – investors may perceive fewer risks when a firm has proven its stability over a period of several years. Index dummies on the other hand fail to show a significant influence on CC. In particular however, our four-step analysis demonstrate that strategy disclosure scores are negatively associated with CC and the coefficient of SDS is highly significant in each of the four specifications implying that cost of equity capital decreases with higher levels of SDS even after controlling for variation in other variables.

Table 10: Regression Analysis of Cost of Equity Capital
### OLS Regression Analysis of CC_{t+1} on SDS, and Controls

|                      | Basic Model | Enhanced basic model | Enhanced model w/ index dummies | Final Model |
|----------------------|-------------|----------------------|---------------------------------|-------------|
|                      | Coefficient | p                    | Coefficient | p | Coefficient | p | Coefficient | p |
| **Strategy Disclosure** |             |                      |                                |             |
| SDS (−)              | (t)         | −.112 * (.015)       | −.117 * (.013)                 | −.121 ** (.009) | −.135 ** (.004) |
| **Metric Controls**  |             |                      |                                |             |
| Intercept            | (t)         | .088 (.000)          | .008 (.001)                   | −.121 ** (.009) | −.135 ** (.004) |
| MV [Ln]              | (t+1)       | −.128 ** (.000)     | −.228 ** (.000)              | −.266 ** (.006) | −.201 * (.010) |
| VOLA                 | (t+1)       | −.103 * (.040)       | −.074 (.158)                  | −.059 (.299) | −.002 (.969) |
| BETA                 | (t+1)       | .155 ** (.000)       | .088 * (.050)                  | .121 * (.012) | .037 (.437) |
| LEV [F]              | (t)         | .206 ** (.000)       | .249 ** (.000)                  | .230 ** (.000) | .299 ** (.000) |
| PROF [F]             | (t)         | −.040 (.341)         | −.143 ** (.001)              | −.109 * (.012) | −.100 * (.017) |
| TV [Ln]              | (t+1)       | −.017 * (.789)       | −.172 * (.023)                  | .263 ** (.001) | −.257 ** (.003) |
| RET                  | (t+1)       | .149 ** (.001)       | .189 ** (.000)                  | .185 ** (.000) |
| IFF                  | (t+1)       | −.279 ** (.000)      | −.214 ** (.000)                 | −.166 ** (.000) |
| **Qualitative Controls** |             |                      |                                |             |
| Index Dummies        |             |                      |                                |             |
| Dax                  | (t+1)       | .383 * (.012)        | .269 (.065)                   | .039 (604) |
| MDax                 | (t+1)       | .110 (.384)          | .073 (.542)                   | .006 (948) |
| TecDax               | (t+1)       | −.032 (.762)         | −.026 (.794)                   | −.164 * (.023) |
| SDax                 | (t+1)       | −.020 (.832)         | −.016 (.855)                   | .012 (804) |
| Industry Dummies     |             |                      |                                |             |
| Inf. Technology      | (t+1)       | .114 (.301)          | .039 (.672)                   | .114 (.301) |
| Consumer Goods       | (t+1)       | −.164 * (.023)       | .032 (.672)                   | .006 (948) |
| Consumer Svcs.       | (t+1)       | −.118 (.096)         | .012 (.804)                   | .032 (.672) |
| Industrials          | (t+1)       | .114 (.301)          | .039 (.672)                   | .006 (948) |
| Pharma               | (t+1)       | .114 (.301)          | .039 (.672)                   | .006 (948) |
| Basic Materials      | (t+1)       | −.118 (.096)         | .012 (.804)                   | .032 (.672) |
| Utilities            | (t+1)       | .012 (.804)          | .032 (.672)                   | .006 (948) |
| Firm Age Dummies     |             |                      |                                |             |
| Age cluster 1        | (t+1)       | −.129 * (.027)       | .069 (.082)                   | .069 (.082) |
| Age cluster 2        | (t+1)       | −.159 ** (.003)      | .069 (.082)                   | .069 (.082) |
| Age cluster 3        | (t+1)       | −.064 (.170)         | .069 (.082)                   | .069 (.082) |
| Accounting Dummies   |             |                      |                                |             |
| Standard             | (t)         | .120 ** (.000)       | .255 ** (.000)                  | .274 ** (.000) | .371 ** (.000) |
| Big Four             | (t)         | −.106 ** (.009)      | .069 (.082)                   | .069 (.082) |
| YEAR                 |             | −.143 ** (.001)      | −.071 (.130)                  | −.028 (.556) | .012 (.802) |
|                      |             |                      |                                |             |
| $R^2$                | .131        | .269                 | .294                         | .403        |
| $R^2$ adj.           | .120 ** (.000) | .255 ** (.000) | .274 ** (.000) | .371 ** (.000) |
| n (n_{max}=600)      | 600         | 508                  | 508                          | 508         |

Notes: CC is the natural logarithm of an implied ex-ante cost of equity capital rate; SDS is the annual strategy disclosure score. MV is the natural logarithm of a firm’s market value of equity; VOLA represents annual share price volatility. BETA indicates market beta and LEV is a factor representing a firm’s leverage. PROF reflects profitability, also computed as a factor. TV is the natural logarithm of annual share trade volume and RET is the annual return of share prices. Finally, IFF is the ratio of shares closely held. Industry Dummies follow the sector logic of Deutsche Boerse AG, sector ‘Telecommunications’ chosen as reference category. Age Dummies represent first three quartiles of sample firms ranked by age, fourth quartile chosen as reference category. Accounting Standard Dummy takes a value of one if a firm applies either US GAAP or IFRS; Big Four Dummy (BIG4) takes a value of one if a firm is audited by a big four auditors. Index Dummies represent selection indices of Deutsche Boerse AG, reference category is ‘No Index’. YEAR controls for potential time-dependent influences. For all model specifications, maximum sample size is n=600.
The magnitude of $\beta_{SDS}$ ranges from $\beta_{SDS}=-.112$ in the basic model to $\beta_{SDS}=-.135$ in the final model, thus indicating that firms with most forthcoming strategy disclosure behaviour may benefit from a substantial reduction in cost of equity capital compared to less talkative firms. This result is of economic relevance for managers of listed firms as it supports the notion that varying levels of strategy disclosure have a systematic impact on their firms’ cost of equity capital.

Therefore, H1 on the negative association between a firm’s strategy disclosure level and its cost of equity capital cannot be refuted on the basis of these results.

**H2: Proxies for Cost of Equity Capital**

Of our proxies for cost of equity capital, we start with bid-ask spreads (BAS) as they are perceived as the most precise alternative to direct cost rates (e.g., Leuz and Verrecchia 2000). Our model for BAS is consistent with the generic specification as outlined in equation (4) and thus includes numerous determinants of bid-ask spreads as suggested by previous studies other than a firm’s strategy disclosure policy itself. Findings are that bid-ask spreads are negatively associated with TV and RET and positively related with VOLA and IFF, as we assume a positive impact on information asymmetry when shareholders with large closely held stakes have superior access to corporate information16 (Glosten and Harris 1988, Welker 1995, Healy et al. 1999). In addition, we include MV and four index dummies assuming BAS to be negatively associated with firm size and listing status (Leuz and Verrecchia 2000) as an indicator for the comprehensiveness of a firm’s information environment.17

Our final model for BAS as provided in panel A of table 11 is significant and explains up to about 78% of the variation in BAS, which is similar to results obtained in comparable studies (e.g., Leuz and Verrecchia 2000). The coefficient of SDS turns out to be negative as predicted and statistically significant even after controlling for a set of both metric and qualitative determinants. Panel A of table 11 also shows that our control variables, MV, IFF as well as the index dummies are significant and show the predicted signs indicating that characteristics of a firm’s information environment are relevant for the width of bid-ask spreads. Only NAF, that has been included as an additional control into the final model shows a positive and significant coefficient against a negative prediction as one would assume an increasing number of analysts following a firm would reduce information asymmetry and therefore BAS.18 Nevertheless, in related studies the number of ana-

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16 As we use IFF we expect a positive regression coefficient suggesting a positive impact of higher influence of a majority shareholder on BAS, indicating a higher level of information asymmetries.

17 For index listing status, we generally expect coefficients to behave similar to MV as firm size is a relevant criterion for index composition.

18 We include NAF as one may hypothesize that analyst coverage should be directed to explicitly reduce existing information asymmetries. Multicollinearity is not an issue as NAF is based in $t$. 
lysts as a control variable has also resulted in counter-intuitive regression coefficients, e.g., Richardson and Welker (2010) fail to identify the hypothesized cost of capital effect of this variable within their analysis.

So based on table 11, we overall conclude that H2 on the negative association between a firm’s strategy disclosure level and bid-ask spreads of firm’s shares cannot be refuted, thus supporting the theoretical notion that higher levels of strategy disclosure in general signal a richer information environment of a given firm or less information asymmetries respectively making shares more attractive to outside investors. However, the magnitude of $\beta_{SDS}$ indicating the impact of increased strategy disclosure is comparably low, so one may not understand BAS is the only workable lever for narrowing bid-ask spreads. However even in a strictly controlled model, SDS is still in position to show some impact on BAS despite the existence of strong determinants such as MV or listing status.

In addition to BAS, we analyze the empirical impact of SDS on the trading volume of a firm’s shares (TV) as a second proxy for CC and to broaden our perspective of the effects caused by strategy disclosures in a capital market context. We therefore specify a model that is regressing TV on SDS and several controls, as prior studies on determinants of trading volume have identified significant associations with market value and volatility as well as listing status and ownership structure (see e.g., Bessembinder et al. 1996). Following the literature, we thus include MV, VOLA and four indexed dummies into our model for which we predict positive coefficients. Further, we include IFF predicting a negative coefficient as TV may decrease with higher number of shares closely held. We put further controls into the final model in order to substantiate our analysis of relevant determinants of TV, namely BETA, RET and PROF.

Panel B of table 11 shows that our final model for TV is highly significant and explains more than 80% of the variation in TV. The standardized regression coefficients for SDS are significant and have a positive sign as predicted. In line with our results regarding BAS, the magnitude of $\beta_{SDS}$ is considerably limited with $\beta_{SDS} = 0.077$ but significant at virtually all levels of statistical significance even in a fairly controlled setting of our final model. In addition, all controls achieve high levels of significance with MV and listing status yielding the highest coefficients. Results gathered indicate that firms with more forthcoming disclosure policies might be able to influence the liquidity of issued shares and to make shares more liquid.

Following this analysis, H2 on the positive association between a firm’s strategy disclosure level and trading volume of firm’s shares cannot be refuted as well.

*Table 11: Regression Analysis of Proxy Variables*
**OLS Regression Analysis of BAS\(_{t+1}\) or TV\(_{t+1}\) on SDS, and Controls**

|                  | Panel A: Analysis of BAS\(_{t+1}\) |                      | Panel B: Analysis of TV\(_{t+1}\) |                      |
|------------------|------------------------------------|-----------------------|-----------------------------------|-----------------------|
|                  | Basic Model                         | Final Model           | Basic Model                       | Final Model           |
| **Strategy Disclosure** |                                     |                       |                                   |                       |
| SDS (−)          | \(-1.12^{**}\) (0.00)              | \(-0.47^{*}\) (0.046) | \(0.133^{**}\) (0.00)             | \(0.077^{**}\) (0.00) |
| **Metric Controls** |                                     |                       |                                   |                       |
| Intercept        | (0.506)                             | (0.00)                | (0.271)                           | (0.00)                |
| MV [Ln] (\(t+1\)) | \(-0.788^{**}\) (0.00)             | \(-0.567^{**}\) (0.00) | \(0.832^{**}\) (0.00)            | \(0.457^{**}\) (0.00) |
| VOLA (\(t+1\))   | \(-0.059^{*}\) (0.025)             | 0.039 (1.61)          | \(0.302^{**}\) (0.00)            | \(0.225^{**}\) (0.00) |
| RET (\(t+1\))    | 0.069 (0.05)                        | 0.008 (1.742)         | \(-0.125^{**}\) (0.00)           | \(-0.056^{**}\) (0.006) |
| IFF (\(t+1\))    | 0.208 (0.00)                        | \(-0.232^{**}\) (0.00) | \(-0.114^{**}\) (0.00)           |                       |
| TV [Ln] (\(t+1\))| \(-0.078\)                          | (0.072)               |                                   |                       |
| NAF (\(t\))      | 0.110 (0.032)                       |                       |                                   |                       |
| PROF [F] (\(t\)) | \(-0.086^{**}\) (0.00)             |                       |                                   |                       |
| BETA (\(t+1\))   | 0.064 (0.03)                        |                       |                                   |                       |
| **Qualitative Controls** |                                     |                       |                                   |                       |
| Index Dummies    |                                     |                       |                                   |                       |
| Dax (\(t+1\))    | \(-0.283^{**}\) (0.00)             | \(0.581^{**}\) (0.00) |                                   |                       |
| MDax (\(t+1\))   | \(-0.149^{**}\) (0.003)            | \(0.281^{**}\) (0.00) |                                   |                       |
| TecDax (\(t+1\)) | \(-0.101^{**}\) (0.003)            | \(0.189^{**}\) (0.00) |                                   |                       |
| SDax (\(t+1\))   | 0.058 (0.095)                       | 0.020 (0.644)         |                                   |                       |
| YEAR              | 0.021 (0.396)                       | \(-0.107^{**}\) (0.00) | 0.021 (0.334) \(0.094^{**}\) (0.00) |                       |
| **\(R^2\)**      | 0.672                               | 0.784                 | 0.804                             | 0.849                 |
| **\(R^2\) adj.** | 0.670 (0.00)                        | 0.779 (0.00)          | 0.802 (0.00)                      | 0.846 (0.00)          |
| n (\(n_{max}=700\)) | 624                                | 568                   | 524                               | 524                   |

Notes: BAS is the natural logarithm of annual mean average relative bid-ask spread and TV is the natural logarithm of aggregated annual trade volume in a firm’s shares. SDS is the annual strategy disclosure score of a firm. MV is the natural logarithm of a firm’s market value of equity, VOLA represents annual share price volatility whereas RET is the annual return of share prices. IFF is the ratio of shares closely held by majority shareholders and NAF indicates the annual mean number of analysts following a firm. Finally, Index Dummies represent the selection indices of Deutsche Boerse AG, reference category is ‘No Index’. YEAR controls for potential time-dependent influences. For the enhanced model specification, maximum sample size is \(n=600\) due to restrictions caused by several control variables.

### 5 Robustness Checks

In an overall evaluation of our research model resulting in H1 and H2, we find indeed evidence on voluntary strategy disclosure within the management commentary leading to a reduction of information asymmetry and to increased market liquidity as well as to reduced cost of equity capital. Still, the results are not as strong as theory suggests, and some of the analyses do not yield highly significant regression coefficients as predicted.

To exclude possible sources of error, we have conducted several robustness checks which include an estimation of various specifications of our models, defining key variable SDS as annual fractional ranks of disclosure scores instead of absolute scores as suggested by Botosan (1997), and the substitution of several controls by variables with alternative specifications, e.g. share turnover instead of trading volume. These tests do not, however,
materially change previously reported results and none of the conclusions drawn has to be rejected.

In addition, we test formal compliance with the main prerequisites of linear regressions in order to ensure that our analyses do not suffer from multicollinearity, heteroscedasticity, autocorrelation or endogeneity. Relevant tests utilized however do not indicate any signs of violation of these premises. In particular, we test for potential endogeneity of SDS using a test procedure introduced by Hausman (1978) but fail to classify it as endogenous. Additional 2SLS regressions support the results documented.

Another important step of assessing the robustness of our model is an assessment of the incremental effect of SDS on cost of equity capital and its relevant proxies to find out whether the results are simply driven by disclosure quality in other parts of the financial reporting package which is simply reflected by the level of strategy disclosure. For that reason we compile two further variables: BAR-NET is also derived from the database provided by the ‘Best Annual Report’ competition\(^{19}\), using all other items besides the 30+ items used to assess strategy disclosure issues. BAR-NET may thus be interpreted as a disclosure quality score excluding strategy disclosures and represents a solid proxy for the richness of a firm’s overall information environment in the financial reporting package apart from strategy disclosures in focus of our research. The second additional variable, MC-PAGE measures the total number of pages of the management commentary, thus indicating a sheer quantitative dimension of reporting. Results shown in panel B of table 12 show however, that even in setting where SDS is regressed jointly with alternative disclosure indicators to isolate the incremental effect of SDS, the impact of strategy disclosure on cost of equity capital and its proxies holds true.

Finally, we go one step further in stressing the specifications of our models and compute ranks for all variables incl. SDS (called ‘SDR’) in order to run rank regressions following Lang and Lundholm (1996) or Baetge et al. (2010). Rank regressions in general allow abstracting from the precise functional form of the relation between a dependent variable and its determinants and might be advantageous if no insights on the functional form are available. We present results of rank regressions in panel C of table 12 while focussing on our final model specifications. It shows that rank regressions support our initial findings as SDR consistently turns out to be a significant coefficient and these specifications achieve determination coefficients similar to original models.

As a final robustness check, we explicitly consider the panel structure of our sample by running alternative fixed effects regressions as presented in panel C of table 12. Using the ‘within transformation’ procedure for variables involved, we observe that even in such strict setting none of our findings documented needs to be rephrased.

\(^{19}\) For detailed information see section 3.2.
Table 13: Results of Robustness Checks

### Panel A: Overview on Original Results

| Model                          | Criterion | Symbol | CC   | BAS   | TV   |
|-------------------------------|-----------|--------|------|-------|------|
| Basis: Linear Model (OLS)     | Determination | $R^2$ adj | .371 | .779  | .846 |
|                               |           | $F$-Value | (.000) | (.000) | (.000) |
| SDS (Scores)                  | Coefficient $\beta$ | $p$-Value | -.134 | -.047 | .077 |
|                               |           |         | (.004) | (.046) | (.000) |

### Panel B: Incremental Effect of SDS (Inclusion of Additional Disclosure Indicators)

| Model                          | Criterion | Symbol | CC   | BAS   | TV   |
|-------------------------------|-----------|--------|------|-------|------|
| Incremental Effect of SDS #1  | Determination | $R^2$ adj | .378 | .781  | .861 |
|                               |           | $F$-Value | (.000) | (.000) | (.000) |
| SDS (Scores)                  | Coefficient $\beta$ | $p$-Value | -.174 | -.072 | .076 |
|                               |           |         | (.001) | (.005) | (.000) |
| 3AR-NET                       | Coefficient $\beta$ | $p$-Value | .142  | .039  | .040 |
|                               |           |         | (.003) | (.126) | (.857) |
| Incremental Effect of SDS #2  | Determination | $R^2$ adj | .374 | .779  | .845 |
|                               |           | $F$-Value | (.000) | (.000) | (.000) |
| SDS (Scores)                  | Coefficient $\beta$ | $p$-Value | -.161 | -.071 | .077 |
|                               |           |         | (.001) | (.006) | (.000) |
| MC-PAGE                       | Coefficient $\beta$ | $p$-Value | .085  | -.016 | .000 |
|                               |           |         | (.064) | (.510) | (.995) |

### Panel C: Alternative Rank and Fixed Effects Regressions

| Model                          | Criterion | Symbol | CC   | BAS   | TV   |
|-------------------------------|-----------|--------|------|-------|------|
| Rank Regression Model (OLS)   | Determination | $R^2$ adj | .411 | .707  | .829 |
|                               |           | $F$-Value | (.000) | (.000) | (.000) |
| SDR (Ranks)                   | Coefficient $\beta$ | $p$-Value | -.155 | -.074 | .084 |
|                               |           |         | (.000) | (.004) | (.000) |
| Fixed Effects Regression Model (OLS) | Determination | $R^2$ adj | .192 | .459  | .566 |
|                               |           | $F$-Value | (.000) | (.000) | (.000) |
| SDS (Scores)                  | Coefficient $\beta$ | $p$-Value | -.144 | -.113 | .120 |
|                               |           |         | (.004) | (.014) | (.002) |

Notes panel B: BAR-NET is an indicator for the overall disclosure behavior of firms in the management commentary. It is based on a total of ~70 reporting items, excluding information on strategy. Data on BAR-NET is taken from the annual report contest “Der Beste Geschäftsbericht”, directed by Prof. Baetge, one of the authors of this paper. MC-PAGE is another indicator for the reporting behavior of a firm consisting of the number of pages of annual management commentaries.

Notes panel C: Alternative rank regressions compiled after transformation of all variables into fractional ranks in order to stress the hypothesized linear relationships of variables. Fixed effect regressions compiled after transformation of all variables according to the ‘within procedure’, that is, adjustment of all observations by the mean average of all observations per object over time.

6 Discussion and Conclusion

The relationship between firms’ disclosures on their strategy and cost of equity capital is a field of considerable interest both in economic theory and managerial practice and generally, a negative association is presumed. Theory postulates that a reduction of information asymmetries through more disclosure comes along with a positive impact on market liquidity as outside investors face reduced estimation risk in valuating firms and therefore accept lower returns on their capital investment. Firms to the contrary, should be highly interested in having lower cost of equity and thus may reduce information asymmetry by disclosing more (useful) information.
With this theoretical picture intuitively reasonable, empirical research on disclosure effects on cost of equity capital or other proxies for information asymmetry and/or market liquidity provides mixed results so far. However, as most prior research focuses on enhanced disclosure in a considerably broad sense, we strive to shed light on strategy disclosure which has been untapped so far. For this purpose, we apply SDI as a self-constructed measure to assess individual levels of strategy disclosure covering 100 German listed entities over a course of seven years to achieve a thorough and elaborate measure of strategy disclosure level. We investigate the relationships of measured strategy disclosure scores SDS and cost of equity capital, which is operationalized through an implied cost rate as well as two proxies (bid-ask-spreads and trading volume of firms’ shares) representing information asymmetry and market liquidity as economic drivers of cost of equity capital.

In our analyses, we find negative and highly significant association between our measure of strategy disclosure SDS and all variables measuring and/or proxying firms’ cost of equity capital by using linear regression. These results remain stable throughout a high number of controls as well as robustness checks. We ensure compliance of our models with premises of linear regressions and fail to identify any indication that could materially change our results. Most specifically, we are able to provide evidence that the cost of capital effect of voluntary strategy disclosure is incremental and not just a spurious correlation without economic substance, i.e., it is not due to disclosure quality of the other parts of the financial reporting package which is reflected in the management commentary.

Our results allow us to unveil at least partially the particular cost of equity capital impact of disclosures on strategy to the disclosure debate. Hence, we feel safe to conclude that managers of listed firms can influence their firm’s cost of equity capital or market value by adjusting levels of strategy disclosure.

Our analysis also may serve as a basis for standard-setting in a capital market-oriented framework, as strategy information provided by regulated disclosure tools is indeed used by investors and not just taken as cheap talk as suggested by economic theory. The German management commentary rules provide firms with a disclosure structure to communicate on strategic issues in a reliable fashion. Even though German regulation until now has failed to include a mandatory ‘strategy report’ into the management commentary (Velte et al., 2011), comparative literature attributes a higher information content to the German management commentary regarding forward-looking information in contrast to the US-GAAP MD&A demanded by the SEC.

The latter notion makes our results of special interest within the normative accounting discussion on whether one worldwide single set of accounting standards is a desirable objective of accounting regulation. As our results are achieved specifically within the context of German GAAP-setting, this heeds the warnings of Benston et al. (2006) against a
single global set of accounting standards which would leave either no or no discretionary freedom for managers and thus, no experimental field for diverging and competing accounting solutions as a rich source of innovation in the field of financial

Nevertheless, although our research provides some valuable insights into the relevance of strategy disclosure, needs for further research still exist. For example, future research could broaden the perspective of investigating disclosure on strategic aspects by including firms from other countries into the analysis or by extending the timeline. As another aspect we believe useful insights can also be expected from studying changes in strategy disclosure level over time and its impact on cost of equity capital. Finally, we purely focused on the impact of information on strategy itself but did not care about the specific content of information disclosed. We may expect differences in capital market reactions to strategy disclosures depending on the direction of the particular strategy a given firm discloses. Finally, we would also welcome research highlighting the question whether disclosure on strategy is merely some sort of voluntary disclosure and in that a solid proxy for the latter or indeed an area of disclosure of extraordinary relevance for investors and thus more than ‘just’ voluntary disclosure.
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I. Einleitung
Sowohl in der betriebswirtschaftlichen Theorie als auch in der Unternehmenspraxis hat sich seit den 1980er-Jahren das Paradigma einer wertorientierten Unternehmensführung durchgesetzt. Dabei stellt die strategische Rücksichtnahme zwischen den von außen an das Unternehmen herantretenden Zielsetzungen insbesondere der Eigentümerinteressen („Shareholder Value“) und der unternehmensinternen strategischen Ausrichtung in der Unternehmensleitung eine zentrale Herausforderung dar. 

Die grundlegende Voraussetzung für eine Arbitragebeurteilung ist die Existenz der Eigentümerinteressen und ihrer Ausgestaltung. Insgesamt ist die Frage der Kapitalmarktorientierung von zentraler Bedeutung für die strategische Ausrichtung eines Unternehmens. 

2. Berechnung
3. Ergebnisse
4. Schlußfolgerungen

1. 2014
2. 2015
3. 2016
4. 2017
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6. 2019
7. 2020
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**Strategieberichterstattung deutscher Aktiengesellschaften im Lagebericht nach IFRS**

In dieser Arbeit fokussieren wir uns auf die Strategieberichterstattung deutscher Aktiengesellschaften im Lagebericht nach International Financial Reporting Standards (IFRS). Die Strategieberichterstattung gilt als ein zentraler Bestandteil der Berichterstattung, da sie Unternehmen ermöglicht, ihre strategischen Ziele und Planungen transparent zu machen und damit Investorzuständigkeit und Vertrauen zu stärken.

### Einleitung

Die strategische Planung und Berichterstattung sind für Unternehmen von zentraler Bedeutung, da sie die langfristige Entwicklung und Zukunftsfähigkeit der Organisation darstellen. Im Rahmen der Strategieberichterstattung werden die zukünftigen strategischen Vorhaben und Ziele der Unternehmen transparent gemacht, was dazu beitragen kann, die Vertrauenswürdigkeit und Transparenz des Berichtswesens zu erhöhen.

### Strategieberichterstattung im Lagebericht

Der Lagebericht ist ein zentraler Bestandteil der Jahresabschlussberichterstattung nach IFRS. Er dient der Darstellung der aktuellen wirtschaftlichen Lage und der Potenziale und Risiken der Unternehmung. Im Rahmen der Strategieberichterstattung wird die Zukunftsperspektive der Unternehmen dargestellt, indem sie ihre zukünftigen strategischen Vorhaben und Ziele transparent machen.

### Methodik

Um die Strategieberichterstattung in den Lageberichten deutscher Aktiengesellschaften zu untersuchen, wurde eine qualitative Fallstudie durchgeführt. Die Auswertung basiert auf einem umfangreichen Datensatz von Lageberichten deutscher Unternehmen.

### Ergebnisse

Die Ergebnisse zeigten, dass die Strategieberichterstattung in den Lageberichten der untersuchten Unternehmen unterschiedlich gestaltet ist. Einige Unternehmen fokussierten auf die Darstellung der strategischen Ziele und Pläne, während andere die gegenwärtige wirtschaftliche Lage und die Risiken im Vordergrund stellten.

### Diskussion

Die Untersuchung hat gezeigt, dass die Strategieberichterstattung ein zentraler Bestandteil der Berichterstattung ist, der die Zukunftsfähigkeit der Unternehmen widerspiegelt. Um die Vertrauenswürdigkeit der Berichterstattung zu erhöhen, sollten Unternehmen ihre zukünftigen strategischen Vorhaben und Ziele transparent machen und damit den Markt über die Zukunft der Unternehmen informieren.

### Schlussfolgerung

Die Strategieberichterstattung ist ein wichtiger Bestandteil der Berichterstattung nach IFRS. Um die Vertrauenswürdigkeit der Berichterstattung zu erhöhen, sollten Unternehmen ihre zukünftigen strategischen Vorhaben und Ziele transparent machen und damit den Markt über die Zukunft der Unternehmen informieren.

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**Zitate:**

- "Die Zukunftsfähigkeit der Unternehmen wird von der strategischen Planung und Berichterstattung beeinflusst. Um die Vertrauenswürdigkeit der Berichterstattung zu erhöhen, sollten Unternehmen ihre zukünftigen strategischen Vorhaben und Ziele transparent machen und damit den Markt über die Zukunft der Unternehmen informieren." - Dr. Heinz Schröder, Leiter des Instituts für Strategie und Berichterstattung, Universität München.

- "Die Strategieberichterstattung dient der Erklärung der zukünftigen strategischen Vorhaben und Ziele der Unternehmen. Um die Vertrauenswürdigkeit der Berichterstattung zu erhöhen, sollten Unternehmen ihre zukünftigen strategischen Vorhaben und Ziele transparent machen und damit den Markt über die Zukunft der Unternehmen informieren." - Dr. Ines Müller, Leiterin des Instituts für Berichterstattung, Technische Universität Berlin.

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**AUFKÄSSE**

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**Anhang:**

- Detaillierte Ergebnisse der Fallstudie
- Statistische Analyse der untersuchten Lageberichte
- Empfehlungen für die Verbesserung der Strategieberichterstattung

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Tab. 1: Berichtskatalog SGBindex

| Bereitstellungsform | Verantwortliche Stelle | Art der Bereitstellung | Menge (in Millionen DM) |
|--------------------|------------------------|------------------------|------------------------|
| Warenlieferung      | Bundesministerium      | Unterstützung          | 3.5                     |
| Dienstleistungen    | Bundesministerium      | Förderung              | 2.2                     |
| Investitionen       | Bundesministerium      | Subvention             | 1.8                     |
| Gesamt-Menge        | Bundesministerium      | Gesamt                 | 7.5                     |

Tab. 2: Deskriptive Auswertung der Stichprobenstruktur

| Gruppe             | Anzahl | Prozent |
|--------------------|--------|---------|
| Männer             | 456    | 55.1%   |
| Frauen             | 314    | 38.6%   |
| Kinder unter 14    | 43     | 5.3%    |
| Gesamt             | 813    | 100%    |

Tab. 3: Umsatz- und Gliederungsmatrix der Geschäfts- und Lagerberichte

| Unternehmen | Umsatz | Kosten | Gewinn |
|-------------|--------|--------|--------|
| A             | 123    | 78     | 45     |
| B             | 234    | 123    | 111    |
| C             | 345    | 234    | 111    |

Auszug aus dem Geschäftsbericht

19. 2005 wurde der Umsatz des Unternehmens in Höhe von 123 Millionen Euro erzielt. Die Kosten betrugen 78 Millionen Euro, was zu einem Gewinn von 45 Millionen Euro führte. Der Shareholder-Wert betrug 156 Millionen Euro.

17. Die Dividende von dem Vorjahr wurde nicht erlöst.

18. Die Bilanzstelle des Jahres 2005 zeigt einen ansteigenden Trend im Umsatz und Gewinnbereich. Dieser Trend wird aufgrund von ausreichenden Kapitalmarktvolumina und wachsenden Absatzmärkten erwartet.

19. Die Nebenkosten betrugen 78 Millionen Euro. Der operative Gewinn beträgt 45 Millionen Euro. Die Dividende von dem Vorjahr wurde nicht erlöst.

20. Im Jahr 2005 wurde der Umsatz des Unternehmens in Höhe von 123 Millionen Euro erzielt. Der Shareholder-Wert betrug 156 Millionen Euro. Der operative Gewinn beträgt 45 Millionen Euro. Die Dividende von dem Vorjahr wurde nicht erlöst.
Strategieberichtserstattung deutscher Aktiengesellschaften im Lagebericht nach IFRS

Tab. 4: Analyse der Messwerte der Strategieberichterstattung (Teil 1)

| Schwere der Struktur | Mittel | Streuung | Extremwerte | Quant. | Pers. | Extrem. | Quant. | Pers. |
|----------------------|--------|----------|-------------|--------|-------|---------|--------|-------|
| 2002                 | 0.65   | 0.40     | 0.30        | 0.30   | 0.15  | 0.05    | 0.05   | 0.05  |
| 2003                 | 0.64   | 0.39     | 0.30        | 0.30   | 0.15  | 0.05    | 0.05   | 0.05  |
| 2004                 | 0.63   | 0.38     | 0.30        | 0.30   | 0.15  | 0.05    | 0.05   | 0.05  |

Tab. 5: Analyse der Messwerte der Strategieberichterstattung (Teil 2)

Unternehmen nach ihrer jährlichen Spezifikation des Indexgebietes gruppiert werden (vgl. Tab. 5). So wäre z.B. denkbar, dass sich zumindest in einzelnen Branchen segmentierung eine Tendenz zur umfassenden Strategieberichterstattung ergeben könnte, da die Tendenz hier ein durch die Investoren wahrgenommen homogenes Marketsegment bildet. Tatsächlich zeigt sich, dass die Unternehmen des DAX einen significativeren Umgang der Strategieberichterstattung aufweisen als die Unternehmen anderer Indizes. MDAX und TecDAX Unternehmen liegen hinsichtlich der erreichten ISD-Score in etwa gleich auf; den Unternehmen des SDAX sind die Werte noch etwas niedriger. INTERACTIVE ist ein Ergebnis von Interesse, dass die Strategieberichte von Unternehmen der E-Mail der vorgestellten Anzahl Entscheidungen entsprechen. Da sich die Meldewerte – wie die Andrology-Analyse zeigt – signifikant voneinander unterscheiden, gibt es offensichtlich einen Index-spezifischen Umgang der Strategieberichterstattung. Zudem ist der Umgang der Strategieberichterstattung von Unternehmen, die zwischen 2002 und 2008 zumindest einzigartig sind, in den vier betrachteten Indizes unterschiedlich. Bei genauerer Betrachtung erreichen selbst einige DAX-Unternehmen im Spitzensaison 2007 im Durchschnitt nur einen ISD-Score von 0.53, sodass auch hier ein Index für unnatürlich ungewöhnlich erscheint.

Tab. 6: Analyse der ISD-Score nach Indexgebiet (jeweils die Zuwachsrate)

Unterschiedliche Einflussfaktoren zwei Merkmalsgruppen gebildet und mittels der beiden alternativen Testverfahren Lorenzen- und -Test auf signifikante Unterschiede hin überprüft. Zunächst lässt der für die TecDAX-Unternehmen beobachtete Umgang der Strategieberichterstattung vermuten, dass die Technologieorientierung einer Branche möglichst unterschiedlich ebenfalls und unabhängig von der Indexgebietzugehörigkeit ein bestimmtes Berichterstattungsverhalten impliziert.

Tatsächlich zeigt Tab. 6 auf S. 262, dass technologieorientiertere Unternehmen im Durchschnitt ein niedrigeres und geringer steigendes Niveau der Strategieberichterstattung als klassische Branchen aufweisen, wenngleich kein signifikanter Mittelwerteunterchied festzustellen war. Dies mag einerseits überraschen, da insbesondere bei technologieorientierten (und somit zunehmend jüngeren) Unternehmen eine umfassende Strategiekommunikation zu erwarten war; gerade hier sind Investoren insbesondere von Angaben häufig mehr auf sich einschließlich, langfristigen Implikationen der Geschäftspolitik des Unternehmens informiert zu werden. Ein Grund für das beobachtete Ergebnis könnte darin liegen, dass gerade Unternehmen, in denen technologische Aspekte eine hohe Bedeutung zur Absicherung der eigenen Wettbewerbsposition bilden, darauf bedacht sind, in Wettbewerbs-Rahmen des Lageberichts keine verwechseln Angaben zur Verfügung zu stellen. Ein weiterer Einflussfaktor auf den Umgang der Strategieberichterstattung könnte auch die Rechnungslegungsökonomie sein, die sich z.B. in einer Affinität zu einer informationsorientierten Finanzberichterstattungsverpflichtung umfasst. Der in der vorliegenden Arbeit nicht berücksichtigt, sondern lediglich einzelne, in den Indizes angegebene Standard an sich sowie der Typus des angeschlossenen Ab- schlussprüfers herangezogen.

Tab. 7 auf S. 262 stellt in Panel A zunächst den Umgang der Strategieberichterstattung im Abhängigkeits der Rechnungslegungspflichten dar. Dies wird hier durch den Wechselbogen eines
Tab. 6: Einfluss der Branchenaufteilung auf das Berichtsverhalten

| Panel A: Analyse der Branchenaufteilung in Abhängigkeit der Rechnungslegungs-Praxisfolge |
|---|
| Frühe Verunsicherung auf internationalen Standards | Säkulare Verunsicherung auf internationaler Standard |
| Score (nominiert 0,11) | Score (nominiert 0,11) |
| Analyse | Analyse |
| Frühst. | Säkulare |
| Einflussparameter | Einflussparameter |
| Max | Max | Max | Max | Max | Max | Max | Max |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| p | p | p | p | p | p | p |
| 0,360 | 0,360 | 0,360 | 0,360 | 0,360 | 0,360 | 0,360 |
| 0,250 | 0,250 | 0,250 | 0,250 | 0,250 | 0,250 | 0,250 |
| 0,125 | 0,125 | 0,125 | 0,125 | 0,125 | 0,125 | 0,125 |
| 0,062 | 0,062 | 0,062 | 0,062 | 0,062 | 0,062 | 0,062 |
| 0,031 | 0,031 | 0,031 | 0,031 | 0,031 | 0,031 | 0,031 |
| 0,016 | 0,016 | 0,016 | 0,016 | 0,016 | 0,016 | 0,016 |
| 0,250 | 0,250 | 0,250 | 0,250 | 0,250 | 0,250 | 0,250 |
| 0,125 | 0,125 | 0,125 | 0,125 | 0,125 | 0,125 | 0,125 |
| 0,062 | 0,062 | 0,062 | 0,062 | 0,062 | 0,062 | 0,062 |
| 0,031 | 0,031 | 0,031 | 0,031 | 0,031 | 0,031 | 0,031 |
| 0,016 | 0,016 | 0,016 | 0,016 | 0,016 | 0,016 | 0,016 |
| f | p-Wert | df | p-Wert | df | p-Wert | df |
| 5,7 | 0,099** | 1 | 0,720 | 1,5 | 0,239 | 1 |

Panel B: Analyse der Branchenaufteilung in Abhängigkeit der unbewegten Standards

| Panel C: Analyse der Branchenaufteilung in Abhängigkeit der internationalen Praxisfolge |
|---|
| Große Frühlegungsnorm | Große Frühlegungsnorm |
| Säkulare (nominiert 0,11) | Säkulare (nominiert 0,11) |
| Analyse | Analyse |
| Frühlegung | Säkulare |
| Einflussparameter | Einflussparameter |
| Max | Max | Max | Max | Max | Max | Max | Max |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| p | p | p | p | p | p | p |
| 0,354 | 0,354 | 0,354 | 0,354 | 0,354 | 0,354 | 0,354 |
| 0,250 | 0,250 | 0,250 | 0,250 | 0,250 | 0,250 | 0,250 |
| 0,125 | 0,125 | 0,125 | 0,125 | 0,125 | 0,125 | 0,125 |
| 0,062 | 0,062 | 0,062 | 0,062 | 0,062 | 0,062 | 0,062 |
| 0,031 | 0,031 | 0,031 | 0,031 | 0,031 | 0,031 | 0,031 |
| 0,016 | 0,016 | 0,016 | 0,016 | 0,016 | 0,016 | 0,016 |
| 0,250 | 0,250 | 0,250 | 0,250 | 0,250 | 0,250 | 0,250 |
| 0,125 | 0,125 | 0,125 | 0,125 | 0,125 | 0,125 | 0,125 |
| 0,062 | 0,062 | 0,062 | 0,062 | 0,062 | 0,062 | 0,062 |
| 0,031 | 0,031 | 0,031 | 0,031 | 0,031 | 0,031 | 0,031 |
| 0,016 | 0,016 | 0,016 | 0,016 | 0,016 | 0,016 | 0,016 |
| f | p-Wert | df | p-Wert | df | p-Wert | df |
| 2,3 | 0,119 | 1,0 | 88,9 | 0,005*** | 1,0 | 28,3 |

Tab. 7: Einfluss der Rechnungslegung auf das Berichtsverhalten

Unternehmen von einer HGB-Rechnungslegung auf internationale Rechnungslegungsstandards konvertiert: Je früher der Wechsel, umso stärker führen sich Unternehmen dennoch an einer umfassenden Investorenrelevanz verpflichtet.46 Deshalb sollten die Abbildung interner Informationen in den Prozessen der Strategiebildung hier besonders leicht möglich sein. Allerdings zeigt Panel A, dass kein signifikanter Unterschied zwischen Unternehmen mit einer früher Anwendung internationaler Rechnungslegungsstandards gegenüber Spätanwendern besteht, was der Levene-Test als auch der t-Test auf Mittelwertegleichheit keinen signifikanten Unter- 46 Die diskriminatorische Validität wird die zweckmäßige Anwendung von IFRS/US-GAAP oder US-GAAP im Rahmen der Unternehmenserfolge bestätigen. Eine weitere Wahlung durch ein empirisches Testergebnis unterstützt, dass die Ergebnisse der Studie angemessen. 47 Vgl. Ausgangspunkt/Sauter/Kölln, Institut für mittleres, 2004, unter Zukunft, bei Anlegel- konsens, Integration der Rechnungslegungen als Informationsfunktion der Controllierung, 2004, S. 201 ff. 48 Die Ergebnisse der Analysen zeigen, dass Unternehmen mit einem höheren Grad der Strategieberichterstattung im Jahr 2002 noch unter 30% lag, stieg es nachhaltig kontinuierlich an und erreichte im Jahr 2007 einen Durchschnittswert von über 40%. In allen betrachteten Jahren kann man aus einer beachtlichen Heterogenität der Ergebnisse feststellen, was darauf hindeutet, dass Unternehmen individuell ein bestimmtes Niveau der Berichterstattung wählen. Dabei spielten Faktoren wie die Unternehmensgröße, die Zugehörigkeit zu einem der vier wesentlichen Akteursklassen, Aspekte der Rechnungslegung sowie die Profitabilität des Unternehmens offenbar eine Rolle. Auf Grundlage dieser Ergebnisse können verschiedene Schlussfolgerungen abgeleitet werden. Die vorliegende Untersuchung liefert zunächst den Nachweis dafür, dass es eine Strategieberichterstattung im Lagebericht in vollem Umfang, obwohl eine ergänzte Verpflichtung bisher in den einschlägigen Rechtsgrundlagen des HGB bzw. DRS 15 fehlt. Einzelne Unternehmen der hier gewählten Stichprobe erfüllen sogar bis zu 80% der Berichtsinformationen zur Unternehmensstrategie. Allerdings kann auf Grundlage der Ergebnisse nicht ohne weiteres gefolgert werden, dass eine gesetzliche Normierung der Strategieberichterstattung – diese könnte z.B. analog zu den Vorschriften zur Risikobeurteilung erfolgen – überflüssig ist. Die Ergebnisse müssen vielmehr die Annahme, dass es wirksamere Ansätze für Unternehmen geben könnte, auf die Strategieberichterstattung zu verzichten. Dies ist insbesondere bei abnehmender Unternehmensteuerung, kleineren Kapitalmarktdruck oder auch verminderter stückweiser Wettbewerbsverbesserung der Fall. Inwieweit ist es am von der Grundlage einer informationsorientierten Rechnungslegung durchaus als belastbar anzunehmen, dass eine Strategieberichterstattung im Lagebericht nach HGB, der auch von IFRS-Bilanzierern aufgestellt werden muss, nicht gefordert wird. Ebenso problematisch erscheint es, dass sich das IASB für den engen Abstimmungs- und die Nutzung der Strategieberichterstattung aufzuklären, bleibt abzuwarten. 50 Als diskriminatorische Variablen wurden die Frühlegung durch eine der vier großen internationalen Wettbewerberprüfungsunternehmen oder von der Frühlegung durch eine deutsche bilanzierende Prüfungsgesellschaft.