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Financial Reporting Frequency and its Impact on the Stock Market – The Case of Switzerland

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Financial Reporting Frequency and its Impact on the Stock Market – The Case of Switzerland

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Abstract

This paper examines the characteristics of firms that voluntarily provide interim financial reports. Based on a sample of Swiss companies, where semi-annual reports became mandatory in 1997, I document that before interim reports became mandatory, analyst coverage, i.e. analysts' demand for disclosure, affected the management decision on the regularity of interim reporting significantly. Higher information asymmetry, measured by the percentage of intangibles in the firm, increases the supply of interim reports. However, companies that provide more regular interim reports do not face less uncertainty among analysts, i.e. the standard deviation among analyst forecasts is not decreasing with reporting frequency. Further analyses reveal that analyst forecasts become significantly more accurate for firms with more regular interim reports. Finally, the results indicate that, voluntary interim reporters face significant negative abnormal returns around earnings announcement, when they report a profit, which fails to meet expectations. This underlines the importance of careful communication and earnings expectations guidance.

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Financial Reporting Frequency and its Impact on the Stock Market – The Case of Switzerland

Abstract

This paper examines the characteristics of firms that voluntarily provide interim financial reports. Based on a sample of Swiss companies, where semi-annual reports became mandatory in 1997, I document that before interim reports became mandatory, analyst coverage, i.e. analysts' demand for disclosure, affected the management decision on the regularity of interim reporting significantly. Higher information asymmetry, measured by the percentage of intangibles in the firm, increases the supply of interim reports. However, companies that provide more regular interim reports do not face less uncertainty among analysts, i.e. the standard deviation among analyst forecasts is not decreasing with reporting frequency. Further analyses reveal that analyst forecasts become significantly more accurate for firms with more regular interim reports. Finally, the results indicate that, voluntary interim reporters face significant negative abnormal returns around earnings announcement, when they report a profit, which fails to meet expectations. This underlines the importance of careful communication and earnings expectations guidance.

Keywords: Voluntary Disclosure, Interim Reporting Frequency, Forecast Accuracy, Financial Reporting, Earnings Response Coefficient, Regulation

1 Introduction

The extent to which listed companies should provide interim reports is a "hot" issue in discussions on disclosure requirements. Robert Elliott remarked that "the annual and quarterly reporting regime is not only on its way to becoming less and less useful, it is on its way to becoming a dinosaur, an organism that has outlived its environment"², pointing at a potential real-time economic communication through the Internet. Gan (1999) discussed the necessity of quarterly reporting at the Kuala Lumpur Stock Exchange, where listed companies have had a mandatory requirement to provide quarterly reports since July 31st 1999. Along with new rules for transparency, the European Union (EU) recently debated about mandatory detailed quarterly reports, including profit and loss data. The proposals were refused, but companies in the EU are now required to provide qualitative quarterly reports, that describe the firm's business trends and outlook (see Tassel (2003) for a discussion). The main critique on mandatory quarterly reporting from a practical point of view are the disproportionate costs associated to higher reporting frequency, which according to opponents, are not compensated by potential benefits (especially for smaller firms). Financial market regulation in Switzerland changed during the last 10 years and will certainly be impacted by the regulation environment of the European Union³. Companies listed in Switzerland were not required to provide interim reports until 1997, when mandatory semi-annual reporting was introduced for the Main Segment of the Swiss Stock Exchange (SWX)⁴. In 2001 this was also applied to SWX Local Caps.

This study is motivated by the increasing interest in higher reporting frequency among Europe and other countries. It aims to provide additional insights on the costs and benefits of more frequent financial disclosure. Against the background of the regulation development in Switzerland, I examine 1) firm characteristics associated with higher reporting frequency, 2) the effect of voluntary interim reporting on analyst forecast accuracy, and 3) the difference in firms' earnings response coefficients depending on whether firms provide additional interim reports or not. With respect to the development of the interim disclosure regulation in Switzerland, I investigate two periods (1996-

² Cited by Butler et al. (2005:1).

³ Reutter & Maizar (2004) discuss the impact of the regulation in the EU on Swiss companies.

⁴ Until 2004 SWX distinguished the following segments: Main Segment (25 million minimum capital requirements, 25 million free float market capitalization), SWX Local Caps (2,5 million minimum capital requirement, 5 million free float market capitalization), Investment companies, Real estate

1998 and 2001-2003) for characteristics of firms that voluntarily provide additional interim reports. In line with previous research on disclosure level, I provide evidence, that high information asymmetry motivates firms to voluntarily provide interim reports. Surprisingly, I find no relationship between disclosure frequency and analysts' uncertainty, which indicates, that analysts weigh and interpret public information differently, which results in an unchanged dispersion among individual forecasts even in the case of higher disclosure. The association between reporting frequency and firm size is decreasing, and contrary to other research in this field, I find no evidence for associations between reporting frequency, and leverage, or profitability.

Further analysis indicates, that in the recent period, analyst forecasts are more accurate for voluntary reporters over the fiscal year, and more frequently pessimistic at year-end (resulting in positive earnings surprises at the annual announcement date).

Finally, I investigate differences in earnings response coefficients (ERCs) for voluntary and mandatory reporters. The results suggest that in the earlier period (1996-1998), voluntary reporters experienced extreme asymmetric stock market responses to earnings surprises, which is not generally the case today. However, when controlling for profit and loss firms, I document that voluntary reporters face an extreme negative stock market reaction if they report an expected profit, but fail to meet expectations. This suggests the importance of very sensitive earnings expectations guidance. For mandatory reporters, the stock market does not react to earnings surprises of profitable firms. For loss firms in this group, the ERC is small but significant.

The paper is organized as follows. Previous research in the area of reporting frequency and voluntary disclosure is reviewed in Section 2. Section 3 provides an overview of the development of the financial reporting frequency in Switzerland. Hypotheses related to differences in reporting frequency among firms are developed in Section 4, where also the methodology for testing those hypotheses is provided. The sample is described in Section 5, along with its descriptive statistics. Finally, the results of all tests are reported in Section 6, followed by the conclusion drawn in Section 7.

2 Prior Research

Although the research on reporting frequency, its characteristics and effects is relatively sparse, the broad area of corporate disclosure has been widely studied. Healy & Palepu (2001:406) divide corporate disclosure into 1) disclosure through regulated financial reports, 2) firms' voluntary disclosure (management forecasts, conference calls, etc.) and 3) disclosure about the firm through information intermediaries (financial analysts, press, etc.). The disclosure through interim reports falls into the first category if they are required by regulation, or into the second category if provided voluntarily. The first question arising is: why should companies provide financial reports at all? The demand for financial disclosure is certainly caused by information asymmetries and the arising agency conflicts between managers and investors (Healy & Palepu (2001) and Leftwich *et al.* (1981)). Van Buskirk (2005) examines the relationship between disclosure frequency and the level of information asymmetry as well as the stock price informativeness by examining the monthly sales reporting in the U.S. retail sector (the frequency of sales data information differs among firms). He concludes that higher disclosure frequency does not reduce information asymmetry. This directly leads to the benefits supposed to arise from higher reporting frequency: Interim reporting lowers agency costs, since investors can monitor the management better (Yee (2004)). Early research in the area of reporting frequency provided by Green & Segall (1967) examines the forecasting value of interim reports by constructing different predictors for the annual EPS based on the first quarter interim figures and comparing them to predictors based on the previous year EPS only. They find no significant difference in those predictors and conclude that first quarter results have no forecasting value for the annual EPS. Brown & Niederhoffer (1968), however, reinvestigate this issue by considering additional information, namely second, third-, and fourth-quarter results and by constructing additional predictors based on those figures. They conclude that interim reports are useful for forecasting annual EPS. Recent studies also provide evidence that analysts and investors receive more timely information and are able to predict the future value of the firm better. Also Brown & Rozeff (1979) provide evidence for the usefulness and importance of interim reports on analyst revisions and the improvement of their earnings forecasts of the same year. From this point of view, information is incorporated into stock prices more frequently, which leads to an increase in

stock market efficiency (see Yee (2004), Butler *et al.* (2005)⁵). Therefore, it can be expected that the level of interim information reduces uncertainty in the market and consequently the absolute value of the earnings surprise at the announcement date decreases. Shores (1990) examines the association between the level of interim information and the stock returns around the annual announcement of the firm. He defines the level of interim information not as the reporting frequency, but as "information that alters investors' beliefs about attributes that cause securities to be of value and that is publicly available prior to the announcement of annual earnings". He documents, that interim reports preempt information content of annual earnings. Moreover, McNichols & Manegold (1983) who examine the impact of interim reporting on the return variability around annual announcement dates, conclude that interim reporting preempt information of annual reports.

Other evidence on benefits of increased disclosure has shown that higher disclosure frequency improves liquidity by reducing information asymmetries among traders (Leuz & Verrecchia (2000), Yee (2004)). Moreover, Botosan 1997 documents lower cost of capital as the consequence of higher reporting frequency.

However, increasing financial disclosure levels is not only accompanied by benefits. As already mentioned, opponents argue, that those benefits do not outweigh the subsequent costs. First of all, administrative costs are associated with an increase in corporate reports and additional investments in accounting systems (the so called "out-of-the-pocket-costs" mentioned by Leftwich *et al.* (1981)). Others argue that the reliability of information may be sacrificed in exchange to timeliness: "The result may well be that the quarterly information generated based on estimation may not represent the true and fair view of a company's financial situation. [...] [R]egulators need to ensure, through strict enforcement and fines, that the quarterly information provided to investors is not only timely but also reasonably reliable" (Gan (1999)). Sang & Kiong (2003: 5) add: "The unreliability is attributed to seasonality, randomness, and accounting estimates and judgements needed to prepare short period statements" (see also Leftwich *et al.* (1981)). Other studies argue that higher reporting frequency does not enhance the disclosure level itself at all, for several reasons: Gigler & Hemmer (1998) note, that more frequent interim reports simply reduce other voluntary disclosures

⁵ Butler *et al.* (2005) test the effect of disclosure on timeliness and show that annual earnings information is impounded into prices more quickly for firms that report quarterly compared to firms that report semi-annually. They explain that "reporting frequency is expected to affect intra-period timeliness

that may have been better (more precise) indicators for the firm's value. This is also argued by Butler *et al.* (2005), who document that the switch to mandatory quarterly reporting in the US in 1970 did not improve the timeliness of accounting information. Gigler & Hemmer (1998) conclude that less frequent mandatory reporting is better than requiring higher mandatory reporting frequency. Informational efficiency of stock prices decreases with an increase of required reporting frequency, since "mandated disclosures can make it optimal to eliminate the manager's voluntary disclosure" (Gigler & Hemmer (1998: 121)). Yee (2004) goes even further and argues that increased reporting frequency forces firms to provide more information not only to investors, but also to competitors, which reduces information asymmetry among competitive firms and affects the competition itself (see also Leftwich *et al.* (1981)).

Regarding the effect of increased reporting frequency on analyst expenditure on information, Yee (2004) notes that on the one hand, through reduced information asymmetry, costs for information access decreases, on the other hand, more frequent information provoke additional analysts and information intermediaries to follow the firm, which, overall, increases social costs. I suggest that providing additional interim reports is one instrument to guide earnings expectations during the year. Hutton (2005) examines the firm characteristics associated with guidance, and documents the characteristics of guided versus unguided analyst forecasts. She finds a stronger stock price reaction to earnings announcements for forecasts errors that contain unguided forecasts. In terms of firm characteristics associated to guidance, she investigates the impact of the level of growth opportunities (B/M ratio), institutional ownership, analyst coverage, value relevance of earnings, predictability of earnings, demand for external financing, and complexity of the firm (measured by the numbers of segments, and ratio of intangibles to assets). Van Buskirk (2005) documents a smaller stock market response to quarterly earnings announcements for firms that provide more frequent revenue disclosures, suggesting that higher disclosure levels leave less of the earnings announcement unexpected.

directly because as interim earnings reports become more frequent, the information in annual earnings is anticipated sooner".

3 Regulation of Financial Reporting in Switzerland

The Swiss Stock Exchange (SWX) is a self-regulatory organization, setting rules and regulations concerning the stock market activities in Switzerland, which before becoming effective must be approved by the Swiss Federal Banking Commission (SFBC), Switzerland's supervisor for stock exchanges and securities dealers. In the following, the development of the requirements on interim reporting will be presented. In order to give some insight into the development of transparency, the primary steps regarding the enforcement will be mentioned as well. Refer to Table 1 for an overview of the most important rule changes⁶.

[Insert Table 1 here]

In January 1996, the Admission Board⁷ implemented completely revised listing rules. The revision's primary purposes were the improvement of transparency and investors' protection, resulting in the first rules of Ad-hoc-Publicity in Switzerland and the introduction of precise disclosure requirements⁸. From the time of the implementation of those new listing rules, the position of the Admission Board became much stronger, as it could apply sanctions against issuers in case of violations of the listing rules. Moreover, issuers in the Main Segment were required to publish half-yearly interim reports starting with the fiscal year beginning at or after July 1st 1997.

In 2000 the SWX partly revised its listing rules again, with a new monitoring strategy entering into force on June 1st 2000. The main motivations for this revision were the harmonization process with reporting rules of the European Union on the one hand, and the revision of the requirements of accounting standards on the other hand. Further, as of January 1st 2000, auditing bodies of listed firms had to be registered with the Admission Board. The SWX verified the financial reports based on the auditors certification, and in addition, selected financial reports by sampling method for comprehensive examination. For the fiscal year 1999, annual reports and the adjacent interim reports were controlled by the Admission Board for the first time. In case of any validation of the financial reporting regulations, the SWX imposes sanctions within four different areas: Ad-hoc-publicity, Accounting, Reporting Requirements, and Corporate Governance. However, in its

⁶ See Butler et al. (2005) and Leftwich et al. (1981) for the history of the regulation of financial reporting frequency in the US.

⁷ The Admission Board is responsible for securities admission, and supervision of listed companies.

⁸ See for example Stäheli (1995), a commentary on the revision of the Swiss listing rules.

Communiqué in May 2001, the Admission Board clarified, that it was not the infliction of sanctions that was primarily relevant, but rather than the correction of the identified shortcomings. Based on this statement, publishing pronounced sanctions was not its primary focus in the beginning. In November 2002, however, the Admission Board announced to expand its controls as of January 2003, in order to ensure enforcement of the reporting regulations. Upcoming violations were then intended to be published. Indeed, the number of published sanctions against issuers went up from 1, 2, and 8 in the years 2000, 2001, and 2002, respectively to 14 published sanctions in 2003. This higher number was mostly due to sanctions imposed concerning the accounting choices of the issuers. With respect to interim reporting, a revision entered into force on January 1st 2001, when the transparency requirements hold for the Main Segment became compulsive for issuers of the SWX Local Caps segment. In particular, Local Caps had to provide 6-months interim financial reports for the fiscal year beginning on January 1st 2001⁹. Until January 2003, the minimum content requirement for the interim financial reports was Swiss GAAP ARR (Accounting and Reporting Regulations) 12, also for issuers, who applied IFRS or US-GAAP in their annual report. As of January 2003, all issuers had to apply the same accounting standard as used in their annual reports¹⁰. For the fiscal year beginning in or after January 2005, issuers in the Main Segment must apply either IFRS or US GAAP as accounting standard¹¹. Interim reports must apply the same accounting principles as of beginning of 2006.

Today, 22% of issuers contained in the Swiss Performance Index (SPI), the main overall market index in Switzerland, publish quarterly interim reports.

4 Research Design

Firm characteristics associated with higher reporting frequency

The sample consisting of Swiss companies represents a good dataset for testing for certain firm characteristics associated with the management's decision to provide interim reports more frequently than mandatory. I examine whether the decision to provide additional interim reports is

9 Admission Board Communiqué No. 11/2000, "New supplementary rules for the listing on the segment SWX Local Caps".

10 Admission Board Communiqué No. 12/2002, "Application of accounting standards in interim financial reports".

11 For Local Caps, Real Estate Companies, and Investment Companies, Swiss GAAP ARR remains permissible (Directive

associated with the following firm characteristics: analyst coverage, analysts uncertainty, and ownership structure (variables expected to determine the demand for interim reports), leverage and size (which proxy for agency costs in the firm), the level of intangible assets (proxy for information asymmetry), productivity, and the fact that a firm meets or beats earnings estimates (which reflects the guidance activity of a firm). In general, reporting frequency is expected to be increasing with agency costs and information asymmetry between management and investors in order to counter the severity of the adverse selection problem. In order to identify the characteristics associated with voluntary interim reporting, I conduct a LOGIT-analysis for the two subperiods 1996 to 1998 and 2001 to 2003. For both periods, I model the probability of higher than mandatory reporting frequency. That is, for the earlier period, the probability of at least one interim report is modeled, whereas for the latter period the probability of more than one interim report is modeled. In the following, the firm characteristics examined in the logistic regression are described. Moreover, an intuition of the expected association between those characteristics and the reporting frequency is given. The source of the variables used as well as the expected sign of the association between the variables and reporting frequency is described in Table 2.

[Insert Table 2 about here]

Analyst Coverage

Empirical research has shown that higher analyst coverage has a positive impact on a firm's market value (see for example Chung & Jo (1996)), suggesting that the management has incentives to increase analyst following, if possible. Healy *et al.* (1999) document that firms with an increase in analyst ratings of disclosure, experience an increase in analyst following up to the same level as their industry peers. A model by Bhushan (1989), described by Lang & Lundholm (1996), models the effect of an increased disclosure on supply and demand of analyst reports. Increased disclosure leads to lower costs of the information-gathering process for the analysts, which results in higher analyst reports supply¹². Analyst reports can then be expected to be more valuable to investors, because they include more information when disclosure increases. Hence, investors' demand for

on Requirements for Financial Reporting).

¹² Lang & Lundholm (1996) show that a firm's disclosure policy determines the analyst following and the forecast characteristics. They suggest, that "firm-provided information is not a substitute for analyst services" (Lang & Lundholm (1996: 468)), higher reporting frequency reduces the effort of

analyst reports can be expected to increase as well. In contrast, Lang & Lundholm (1996) argue, that on the demand-side, higher disclosure leads to less demand for analyst reports, because investors receive more information by the firm themselves, which results in decreasing analyst coverage for firms with higher reporting frequency. Another causation is given by Hutton (2005), who claims that analysts demand information regarding upcoming events in order to provide accurate forecasts, since they depend on their track records. If the management does not provide the demanded information level, analysts may simply drop coverage, which implies that in order to maintain their coverage, firms must provide a certain level of disclosure¹³. The net effect of higher disclosure on the demand of analyst reports remains uncertain.

The arguments above suggest that the sign of the association between reporting frequency and analyst following can be either positive or negative. Therefore, the following null hypothesis is stated: The firm's analyst coverage is not associated with the decision to provide voluntary interim reports.

Analyst forecast dispersion

On the first sight, voluntary interim disclosure is expected to reduce uncertainty among investors and analysts, since more publicly available information reduces the uncertainty of future earnings. Lang & Lundholm (1996), however, suggest that the effect of disclosure on forecast dispersion is uncertain, if the differences in forecasts are not only due to differences in information sets, but also due to differences in forecasting models. If analysts place different weights on public information in their forecasting models or if they differ in the interpretation of that information, an increase in disclosure might result in higher or unchanged dispersion among individual analyst forecasts. Therefore, I test the following null hypothesis: The standard deviation of analyst forecasts prior to the annual announcement date is not associated to the management's decision on reporting frequency.

Ownership

Bushee (2001) provides evidence for the short-term focus of institutions as a result of frequent performance evaluations of fund managers. The short term focus of institutional investors is likely to

company analysis and is therefore expected to increase the analyst coverage (see also Butler et al. (2005)).

¹³ Hutton (2005) argues against the background of earnings guidance in terms of reviewing analyst earnings models. However, I suggest the argument

increase the probability of higher reporting frequency for firms with higher institutional ownership. Indeed, Bushee & Noe (2000) show that firms with higher disclosure levels have greater institutional ownership¹⁴. Therefore, the percentage of institutional ownership is expected to be positively associated with a firm's reporting frequency. On the other hand, reporting frequency is expected to decrease with insider holdings, since insiders do not demand public disclosure.

Leverage

Financial leverage is positively related to the firm's agency costs and hence increases the monitoring costs. Those monitoring costs can be reduced by an increase in disclosure. Firms with higher financial leverage therefore have greater benefits from higher reporting frequency (see Leftwich *et al.* (1981), and Butler *et al.* (2005)). This suggests that the firm's financial leverage is positively associated with its reporting frequency.

Size

I include firms' market capitalization in order to control for size. Larger firms are likely to provide higher disclosure levels for several reasons. On the one hand, if one assumes larger firms to be more complex, a higher disclosure level can be expected, suggesting that firms provide more information if forecasting is more difficult. Further, disclosure costs can be expected to be decreasing with firm size, causing increased disclosure levels for larger firms (see Lang & Lundholm (1993) for a discussion on the relation between firm size and disclosure). Certainly, the firm's size proxies for other factors, such as cross-listing, which makes it difficult to separate its effect on reporting frequency. Leftwich *et al.* (1981) control for size in order to control for agency costs associated with a higher percentage of capital held by outsiders. Larger firms are expected to have more outside capital.

I expect the firm size to be positively associated to the firm's reporting frequency.

Intangible Assets

I aimed to proxy the analysts' difficulty of forecasting the business by R&D expenditures of the firm. However, since the data on R&D expenditures was not available for the majority of the sample

holds for interim reporting, too, if it is not mandatory.

¹⁴ In their study, disclosure level is measured by the disclosure ranking of the Association for Investment Management and Research (AIMR).

firms, I use the percentage of intangibles to total assets as a proxy for higher forecasting difficulty.

The higher the forecasting difficulty, the higher the information asymmetry and the higher the incentive to provide more frequent reporting than mandatory. Hutton (2005) notes that the proportion of intangible assets may proxy stock-for-stock acquisition strategies which itself increase the management's incentives to avoid negative earnings surprises. Therefore, firms with higher proportions of intangibles have greater incentives to guide earnings forecasts, in order to avoid extreme stock price declines resulting from negative earnings surprises.

Hence, I expect that the level of intangible assets is positively related to the firm's reporting frequency.

Firm performance

Although researchers generally agree on the existence of a relationship between disclosure and performance, according to Lang & Lundholm (1993), empirical evidence on the association between performance and disclosure level is mixed. Evidence on higher probability of bad news disclosures as well as higher disclosure frequency in cases of good news is available.

Van Buskirk (2005) finds a significant positive relation between productivity and discretionary disclosure frequency. Butler *et al.* (2005) support this finding, by documenting a significant positive association between interim reporting frequency and performance. However, other research shows an increase in disclosure level for bad performing firms, explaining it as the incentive to reduce risk of litigation (see for example Skinner (1994))¹⁵. Since the direction of the relationship can not be predicted, the following null hypothesis is stated: The management's decision on reporting frequency does not depend on the firm's performance.

Meeting and beating earnings expectations

Higher reporting frequency reduces the information asymmetry, and therefore the gap between market expectations of earnings and actual earnings decreases, since the management can influence expectations by providing more information on future prospects. There is extensive evidence on incentives of benchmark beating in general and expectations meeting/beating in specific. For example, Skinner & Sloan (1999) document that firms that do not fulfill market

¹⁵ I assume that the frequency of interim reporting is equally important as the level of disclosure and suggest that characteristics related to disclosure level do also determine the frequency of information disclosed.

expectations are heavily punished by the market¹⁶. I expect that firms which publish additional interim reports will be meeting/beating earnings expectations with higher probability.

Cross listing

Since there are companies in Switzerland listed in the US as well, I introduce a dummy variable on cross-listing, which controls for the fact that firms must conform stronger listing requirements if listed in the US.

The association between reporting frequency and forecast accuracy

It is often alleged that in order to meet market expectations, managers and analysts are involved in expectations management, or the so-called earnings-guidance game. There is extensive evidence on the change of the earnings surprise distribution over the years. Brown (2000) documents the shift from slightly negative earnings surprises in 1984-1990 to zero surprises in 1991-1993 to slightly positive earnings surprises in 1984-1990. Matsumoto (2002) shows that over the period from 1985 to 1997 the percentage of positive (or zero) earnings surprises rises from 41% to 70%. In order to meet or beat analyst forecasts, either actual earnings number can be managed upwards, or the expectations itself can be guided to a beatable level. It is often claimed that financial analysts issue systematically optimistic earnings forecast in the beginning of the fiscal year and then "walk down" their estimates to a beatable level at the announcement date (Richardson *et al.* (2004: 888)). Bartov *et al.* (2002) provide evidence on downward expectations management by documenting fewer negative earnings surprises for forecasts issued late compared to forecasts issued early in the quarter¹⁷. If analysts walk down their earnings estimates during the year or quarter, this is certainly associated with costs, as negative forecast revisions are associated with negative stock market reactions around the revision date. Analysts use interim reports to improve their forecasts, which increases the forecast accuracy¹⁸. Therefore firms that provide voluntary disclosure in terms of higher reporting frequency have lower costs attributed to walking down analysts' expectations than firms that report only twice a year or even less.

¹⁶ The asymmetric response is also documented by Lopez & Rees (2001), Abarbanell & Lehavy (2002), and Kinney *et al.* (2000).

¹⁷ See for example Richardson *et al.* (2004), and Burgstahler & Eames (2004) for other studies that detect expectations management by tracking the forecast error over the forecast horizon, in order to document a shift from analyst optimism to pessimism.

¹⁸ Baldwin (1984) examines the forecast accuracy before and after the implementation of segment reporting in the US in 1971 and finds a significant

Voluntary reporting is expected to be positively associated with forecast accuracy. I examine the development of forecast accuracy for voluntary and mandatory reporters during the fiscal year by defining forecast accuracy as

$$accuracy = FA_{itm} = \left| \frac{EPS_{it}^{actual} - EPS_{itm}^{forecast}}{P_{it}} \right|$$

Where i is the firm index, t (m) designates the year (month), EPS_{it}^{actual} is the actual reported EPS at the annual announcement date, $EPS_{itm}^{forecast}$ is the analyst consensus forecast available in I/B/E/S, and P is the fiscal year end stock price.

The effect of reporting frequency on the earnings response coefficient (ERC)

The last part of the analysis examines the question whether the information content of annual earnings is affected by the reporting frequency of the firm. The question asked is, whether the financial community revises its expectations based on earnings surprises, and whether the reporting frequency of the firm is considered. The following basic regression model is estimated as a benchmark model and run for the two subperiods:

$$CAR_{it} = \alpha + \beta SURP_{it} + \varepsilon \quad (1)$$

$$\text{with } CAR_{it} = \sum_{t=-1}^2 [r_t - r_t^{size}]$$

Where i is the firm index, t designates the year, $SURP$ is the Earnings Surprise (as defined in Table 2),

$r_t - r_t^{size}$ is the size adjusted daily excess return, which is based on the appropriate equal weighted quintile size portfolio, and CAR is the cumulative abnormal return of the event window from -1 to +2 days around the annual announcement date.

Previous research found significant differences in earnings response coefficients (ERCs) for firms with negative earnings surprises versus those firms that beat/meet expectations, indicating a differential market response to the sign of the earnings surprise per se¹⁹. In order to test for this

increase of forecast accuracy which was most pronounced for multisegment firms that did not provide segment reporting prior to the requirement.

19 See for example Lopez & Rees (2001).

relationship, I further estimate the following regression:

$$CAR_{it} = \alpha + \beta_1 dummyBME_{it} + \beta_2 SURP_{it} + \beta_3 dummyBME_{it} \times SURP_{it} + \varepsilon \quad (2)$$

Where *dummyBME* is 1 for $SURP \geq 0$ and 0 for $SURP < 0$.

For both regressions it will be tested whether the explanation power of the model increases by building subgroups based on reporting frequency. The regressions are therefore estimated for voluntary reporters and mandatory reporters separately.

If firms only provide mandatory reports, less information should be incorporated into prices and hence, the stock price reaction to earnings surprises can be expected to be higher. Therefore, it can be expected that the ERC is greater for mandatory reporters. However, firms that provide additional interim reports on a voluntary basis, provide more information on future prospects of the firm, which should result in less uncertainty in the market. Earnings are expected to be closer to expectations, which implicates that IF earnings surprises happen, the stock market reacts more pronounced. From this point of view, it can be expected that the ERC is greater for firms that provide additional voluntary interim reports. For this reason, I state the following null hypothesis: The ERC is not different for mandatory and voluntary reporters.

Lopez & Rees (2001) refer to the findings by Hayn (1995) who documented an insignificant relationship between earnings surprises and returns for loss firms. They therefore subdivide their sample into loss and profit firms in order to test whether their results are driven by loss firms. I will provide the analysis for profit versus loss firms for the period 2001 to 2003 only, because the 90s sample contains only 11 firm years with a loss.

5 Sample and Descriptive Statistics

The sample period is divided into two subperiods in order to reflect changes in regulation. As discussed above, until 1996, firms were only required to report once a year. As of 1997, firms in the Main Segment were required to report at least semi-annually, in 2001 this was also required for firms in the Local Segment.

Sample Selection

Van Buskirk (2005: 6) remarks that the difficulty in studying disclosure frequency lies in "identifying a sample where firms exhibit cross-sectional or inter-temporal variation in reporting frequency, but where there are not other significant differences in their reporting practices or information environment". Against the background of the development of reporting regulation in Switzerland, using a sample of Swiss firms is particularly interesting, since it allows to analyze which firms provide more interim reports than mandatory, and what effects (in terms of forecast accuracy and value-relevance of earnings) arise from higher financial reporting frequency.

In order to test for the hypothesis developed above, the following data are required:

- Data on Reporting Frequency
- Financial Statement Data
- Analyst Data

Regarding the frequency of interim reporting, data on Swiss companies are not available on I/B/E/S on a reliable basis. Moreover, neither the Swiss exchange nor as to my knowledge, any other data-provider in Switzerland collects data on interim report dates or reporting frequency in Switzerland. The Swiss Stock Guide²⁰ does provide the frequency of interim reporting of Swiss Companies, although this data is not collected electronically within a historical database. It can be obtained from the annual booklet manually. In order to check the reliability of the interim frequency collected from this guide, I also collect data on the frequency of interim reporting of Swiss companies through the Power Plus Pro Tool of Reuters, which allows single Time Series Requests on Companies Financial Reports and returns the period end dates for which financial (annual or interim) reports were available. I compare those two datasets for every firm year in the sample and clean the dataset by obtaining additional information from the respective firm websites. The resulting reporting frequency sample contains 1446 firm-years for the sample period 1996 to 1998 and 2001 to 2003 combined. I impose the following selection criteria:

- The analyst consensus forecast and actual reported EPS are available on I/B/E/S (stand-alone dataset of 723 firm-years for the two subperiods combined).
- Data on market capitalization, debt-to-equity, return on equity, total assets and intangibles are available on Datastream (which includes data from the Thomson Financial Worldscope

Database) (standalone dataset of 1054 firm-years for the two subperiods combined).

Data on the ownership structure, i.e. the institutional holdings, are (as to my knowledge) not available on a historical basis for Swiss firms. Therefore, I collect the institutional ownership holdings for the fiscal year 2004 through the Reuters Equity Research Company View, and assume that no extreme variations have taken place over the last three years. However, I could not test the hypothesis on institutional holdings for the earlier period²¹.

Finally, since the analyses of the forecast accuracy path and the earnings response coefficients are relying on the variable SURP, it is winsorized at the 99 and 1 percentile²². Table 3 summarizes the effect of merging the above mentioned datasets on the size of the underlying sample within every year. The final sample contains 601 firm years.

[Insert Table 3 about here]

Descriptive Statistics of Sample and Subsamples

Table 4 shows the number of firm years in each industry, available in the sample for the two periods of interest combined. Moreover, it documents the number of firms in the years 1996, 1998, and 2002, (that is before and after the introduction of mandatory interim reports in the Main Segment, and following the application of mandatory reporting in the Local Segment), and the expected reporting frequency for each industry in those years. It is evident from this Table that even before 1997, pharmaceutical firms, metal producers and metal product manufacturers and textile firms provided more than one interim report. After the introduction of interim reporting, the majority of those firms increased the interim reporting frequency.

[Insert Table 4 about here]

In 2002, the highest expected reporting frequency is given in the pharmaceutical sector. Table 5 provides the percentage of firms that report only once a year (e.g. final), semi-annually, three time a year or quarterly. As expected, the percentage of firms with zero interim reports decreased from 42% in 1996 to 11% in 1998, where firms in the Main Segment had to publish mandatory interim

20 The Swiss Stock Guide is published on an annual basis and contains detailed information on Swiss companies.

21 In order to compare the two subperiods, I made all analyses for the later period with and without the variable "institutional holdings". The results on other variables were not affected by including the institutional holdings.

22 The winsorization has no effect on the outcome of the logistic regression.

reports. After 2001 the firms reporting quarterly increased from 26% to 36%.

[Insert Table 5 about here]

Table 6 provides descriptive statistics for the sample period 1996 to 1998, split based on the reporting frequency of the firms²⁵. In this period the sample contains 139 firm years of mandatory reporters, and 119 firm years of voluntary reporters.

High reporters had a significantly higher number of estimates (NUMEST), which indicates, that either firms that provide more voluntary disclosure are more attractive to analysts, or a higher analyst following produces higher demand for disclosure (average number of estimates is 12 for voluntary reporters compared to 9 for mandatory reporters).

However, there is no sign for a better information environment in terms of lower standard deviation of analyst forecasts (STDEV) prior to the annual announcement date. Median and mean standard deviation in analyst forecasts right before the announcement date are insignificantly higher for voluntary reporters. While 57% of mandatory reporters have met or beaten analyst forecasts, 62% of voluntary reporters met or beat expectations (dummyBME).

[Insert Table 6 about here]

It is also evident from the Table that voluntary reporters are on average larger firms (SIZE) and with higher leverage (LEVERAGE). Moreover, voluntary reporters have significantly more intangible assets (%INTANGIBLES) (on average 5% compared to 2%, difference significant at the 10% level), and a significantly higher percentage of firms are cross-listed in the US (dummyUS).

Table 7 provides descriptive statistics for the sample period 2001 to 2003, again split based on the reporting frequency, where the left side of the Table contains firms with only one interim report as mandatory (224 firm years) and the right side shows firm characteristics for companies with two or more interim reports (115 firm years). Again, voluntary reporters have significantly more analyst following (average NUMEST 13 compared to 7, with a 1% significance of difference in means). STDEV is slightly lower, although not significant, for voluntary reporters. In this period, 45% (51%) of mandatory reporters (voluntary reporters) met/beat expectations. The earnings surprise (SURP) is significantly different on the 5% level for the two subsamples. Voluntary reporters have a positive average surprise (0,01), whereas mandatory reporters experience a negative surprise (-0,03) on

average. Moreover, it is interesting to note, that the distribution of earnings surprises is wider for mandatory reporters than for voluntary reporters, that is, the standard deviation of earnings surprises among mandatory reporters is larger (0,13 compared to 0,11). This indicates that firms with additional reports are more able to report results closer to expectations, i.e. investors that receive more information from companies are better guided.

Finally, voluntary reporters are significantly larger and have an average proportion of 22% institutional investors, compared to 18% for mandatory reporters (difference significant at 1% level). While voluntary reporters have on average 11% intangibles, mandatory reporters hold 6% intangibles (difference significant at 1% level).

[Insert Table 7 about here]

Pearson Correlation

Table 8 and 9 report the Pearson correlations among the variables described above for the periods 1996-1998 and 2001-2003. The simple correlation coefficient between reporting frequency (FREQ) and number of estimates (NUMEST) is 0,18 for the earlier period and 0,35 for the latter period (both statistically significant at the 1% level), which shows that the relationship between level of disclosure and analyst following became much stronger during the past 10 years. The simple correlation coefficient between reporting frequency and earnings surprise is not different from zero for the earlier period, but positive (0,11) for the latter period.

The correlation between reporting frequency and market value of the firm is around zero for the 90s period, but strongly positive (0,26) for the 00s period, which indicates that firm size did not play a role for the firms decision on reporting frequency, but is an important factor now.

[Insert Table 8 & 9 about here]

Characteristics positively correlated with reporting frequency in both periods are the level of intangible assets (0,32 and 0,27), and the cross-listing in the US (0,34 and 0,40).

The institutional ownership, which was not available for the earlier period for this study, plays a moderate role for the interim reporting decision today, indicated by a correlation of 0,14 between reporting frequency and institutional ownership. Moreover, it determines the analyst coverage of the firm, shown by the simple correlation coefficient of 0,32 between number of estimates and the

fraction of institutional investors²³. The percentage of Insiders, is not important with regard to reporting frequency, but does affect the analyst coverage significantly (-0,30). For both periods, the analyst coverage is positively associated with leverage, which indicates that higher leverage increases the monitoring costs for the firm, which results in an increased demand of analyst reports.

Overall the univariate analysis suggests that the firm characteristics described in Section 4 became increasingly important with respect to the managements' decision on reporting frequency. While in the earlier period, only demand for disclosure (proxied by analyst coverage), and information asymmetry (with respect to forecasting difficulties for higher levels of intangibles) determined the supply of interim reports, in the later period, size and forecast guidance activity (in order to produce positive earnings surprises) became also important. The association between interim disclosure and institutional ownership could only be investigated for the later period, for which it was positive as expected.

6 Results

Firm characteristics associated with higher reporting frequency Table 10 Panel A and B provide the results for the LOGIT analysis modeling the probability of voluntary interim reporting in the periods 1996 to 1998 and 2001 to 2003²⁴. As described above, the logistic regression is estimated 1) for the earlier period, modeling the probability of semi-annual reporting, and 2) for the later period, modeling the probability of quarterly reporting.

It is evident from Panel A that prior to the introduction of mandatory interim reports, the decision to publish interim reports was significantly related to the level of analyst coverage. However, it is interesting to note, that the firm size (proxied by log market capitalization) did not play an important role. Since the variables numest and market capitalization are highly correlated (evident Table 8), I also run two separate logistic regressions, where I include those two variables separately with

23 According to Bhushan (1989) higher institutional ownership increases the demand of analyst reports if analyst services are too costly for small investors. On the other hand, he argues, that increasing holdings of institutional investor might decrease the demand for analyst reports, because institutions apply in-house analyses, namely buy-side analysts. My results suggest an increased demand with higher institutional holdings.

24 The variable dummyUS, which was motivated by the hypothesis, that the reporting frequency of a firm is influenced by a cross-listing in the US, did not improve the fit statistics of the logistic regression and was therefore skipped for this analysis. The same holds for the variable %INSIDERS.

keeping the other variables in the model. When dropping logNUMEST, the coefficient on logMARKETCAP is still insignificant. On the other hand, the coefficient on logNUMEST is still significantly positive related to reporting frequency (also 1% level) after dropping logMARKETCAP from the model. The fit statistics (max-rescaled R2 and AIC) are best for the model containing both variables.

In 1996, voluntary reporters were more likely those firms that beat or met analyst forecasts, which supports the hypothesis that providing interim reports reduces information asymmetry between analysts and management. Uncertainty among analysts however is not affected by the firm's disclosure frequency.

[Insert Table 10 about here]

The estimated coefficients of LEVERAGE, ROE, and %INTANGIBLES are significant only at the 10% level. The variable %INTANGIBLES as a proxy for information asymmetry has a very high positive coefficient (9.91). Firms reporting more frequent are more profitable (ROE). Apparently, the level of reporting frequency is not determined by firm characteristics during the time of the adoption of interim reporting in the Main Segment. The factor affecting the reporting decision after the transition period (i.e. the decision to provide more than one interim report, documented in Column 4 of Table 10) is the percentage of intangibles only.

For the period 2001 to 2003, the variable consistently related to reporting frequency is %INTANGIBLES. The association between SIZE and frequency is decreasing and only significant in 2001. Very surprising is the result regarding the relationship between reporting frequency and the earnings surprise of a firm. The coefficient on the dummy variable dummyBME was close to zero in 2001, significantly positive (1.44, significant at 1% level) in 2002, and significantly negative (-0.91, significant at 10% level) in 2003. This indicates that voluntary reporters are those firms who met/beat expectations in 2002, but failed to meet forecasts as an earnings target in 2003²⁵.

The effect of voluntary interim reporting on forecast characteristics

Figure 1 displays the development of forecast accuracy over the fiscal year for the two subsamples (voluntary and mandatory reporters) in the two periods. For the 90s period, forecast accuracy

25 I also test for the relationship between 1) the size of the earnings surprise and reporting frequency, and 2) the surprise itself and the reporting frequency. However, those two variables do not lead to any significant coefficients and do not improve the fit statistics of the logistic regression.

increases slightly over the year for both reporting groups, the difference in means for the two subsamples is not significant, indicating that voluntary interim reporting had no effect on accuracy in this period. For the recent period, however, the graphs confirm the expected increasing accuracy over the year, and show that forecast accuracy is higher for firms that provide voluntary interim reporting²⁶. The difference in means is significant for 11 months prior to the annual announcement date²⁷.

Empirical studies on analyst forecasts have provided evidence on long-term optimistic forecasts, which is confirmed by the expectation paths shown in Figure 2 for both sample periods²⁸. However, it is striking that the forecast optimism is much more pronounced for the recent period and ends in pessimism (i.e. a positive earnings surprises) only for voluntary reporters. For voluntary reporters, the results are in line with evidence from Richardson *et al.* (1999), who document decreasing forecast optimism over the forecast horizon and final pessimism.

Finally, the comparison of the expectation paths for voluntary versus mandatory reporters indicates, that forecasts are less optimistic over the forecast horizon, when firms provide additional interim reports. This supports the hypothesis that voluntary reporters have less costs associated with "walking down" analyst forecasts.

[Insert Figure 1 & 2 about here]

Earnings response coefficient

The final analysis examines whether the market reacts differently to earnings surprises of mandatory versus voluntary reporters, i.e. whether the information content of earnings depends on the reporting frequency of the firm. Table 11 Panel A presents the results for the benchmark regression for the two subperiods 1996 to 1998 and 2001 to 2003 (regression (1)). The relationship between unexpected earnings and cumulative abnormal returns is low (0.102) but significantly positive for the latter period with an adjusted R^2 of 1.92%, but not different from zero for the earlier

26 Assuming that voluntary interim disclosure is an instrument for analyst guidance, this result is in line with evidence provided by Hutton (2005). Based on survey data from the National Investor Relations Institute prior to the introduction of Regulation Fair disclosure, she compares guided versus unguided analyst forecasts, where guided forecasts were related to firms that indicated in the survey to have reviewed analyst earnings models. She found that "guided quarterly forecasts are more accurate (lower mean squared error), but persistently pessimistic".

27 The difference in means is significant at the 1% level for 11, 10, 3, 2, and 1 months prior to the announcement date, and significant at the 5% level for the months -9 to -4.

period (adjusted R^2 of 0.17%). This suggests that the information content of annual earnings increased over time.

[Insert Table 11 about here]

Panel B displays the results for reporting frequency subsamples. It shows a significant relationship between earnings surprises and returns for mandatory reporters in both periods, but no such relationship for voluntary reporters. A puzzling point is that the ERC is negative (-0.384) for mandatory reporters in the 90s, and positive (as typical in related research) for mandatory reporters in 00s²⁹. As evident from Table 12 Panel B, the extension of the model (regression (2) on page 10) has an enormous impact on the adjusted R^2 for the subsamples (mandatory versus voluntary reporters) in the 90s, whereas it does not improve the fit statistic for 00s (Panel A).

In the earlier period, the earnings surprise was much more informative for voluntary reporters, with the puzzling negative sign for the ERC when firms meet or beat analyst forecasts.

In the recent period, the earnings surprise is more informative for mandatory reporters³⁰, whereas it is not informative at all for voluntary reporters. This result could suggest that in today's information environment investors do not look at analyst forecasts when firms provide more interim reports.

[Insert Table 12 about here]

Surprisingly, with respect to profit versus loss firms, I find the opposite from Hayn 1995 for my sample: Table 13 Panel A shows that in the later period the association between returns and unexpected earnings is zero for profitable firms (adj. R^2 is zero), and significantly positive for loss firms (with an adj. R^2 of 12%)³¹. Further analysis (documented in Panel B) shows, that within profit firms, only voluntary reporters have a significant ERC, which is 8.533 for firms that miss expectations, and 0.847 for firms that meet or beat forecasts (adj. R^2 =12%).

On the other hand, within loss firms, only mandatory reporters have a significant ERC, which does not differ for the sign of the earnings surprise.

28 The expectations paths show the development of the forecast errors (as defined in Table 2) over the fiscal year.

29 The ERC is still negative (although only significant on the 10% level), when the variable CAR is also winsorized.

30 If one can assume voluntary disclosure to be a good proxy for earnings guidance, this result is consistent with Hutton (2005), who documents a stronger ERC for no guidance firms for the period 1998 to 2000.

31 I also looked at the ERCs for profit versus loss firms, estimating the benchmark model (regression (1)) for the two subgroups. However, for both subgroups I find no significant ERC, the adjusted R2 are essentially zero.

[Insert Table 13 about here]

The findings indicate that even if a firm publishes a profit, for a voluntary reporter the market punishes the firm extremely if actual EPS lie below expectations. The market slightly rewards voluntary reporters if they are profitable and able to meet or exceed expectations. This finding supports the hypothesis, that the market feels better guided if firms provide voluntary interim reports, and suggests that the guided market expects the firm not to boost expectations. It further shows how important a good earnings guidance becomes when firms voluntarily communicate between mandatory report dates.

7 Summary and Conclusion

This paper examines the characteristics of Swiss firms that voluntarily provide interim reports. Even before mandatory interim reporting was introduced in Switzerland, more than half of the sample firms (58%) provided at least a half-year report. At the end of the sample period (in 2003), 39% of the sample firms provide more than the mandatory semi-annual interim report. With logistic analysis I provide evidence that prior to the introduction of mandatory interim disclosure, the main determinant of voluntary interim reporting was the level of analyst following. Higher reporting frequency was positively related to analyst coverage. The direction of this effect is open on first sight. It might either be that increased disclosure resulted in lower costs associated to the analysts' information-gathering process, which increased the coverage of the firm. Or, that higher analyst coverage produced higher demand for interim reports, which must be provided by the firm, in order to keep the level of coverage. Further analysis (not shown in this paper) was performed in order to detect the direction of the effect. Implementing a granger causality test using two lags of reporting frequency and analyst coverage, I can reject the null hypothesis that the reporting frequency does not Granger cause an increase in analyst coverage. This results therefore suggests that providing voluntary interim reports increased the analyst following of a firm.

In the recent period, I find no association between analyst following and reporting frequency. This result suggests that, on the one hand, higher disclosure decreases the costs of supplying analyst reports (increasing supply of analyst reports), while on the other hand demand decreases, since a

larger part of investors analyzes the information themselves (decreasing demand for analyst reports).

Prior and subsequent to the revision of listing rules in 1997, voluntary interim reporting was associated to the percentage of intangibles in the firm, suggesting that the management of those firms has higher incentives to provide guidance to expectations. This relationship holds for the recent period (2001-2003) as well.

Both, univariate and multivariate analysis reveal no association between frequency of reporting, and uncertainty among analysts. That is, the standard deviation of forecasts is not affected by the management's decision to provide interim reports. However, further analysis indicates that with respect to forecast accuracy, which measures the absolute deviation of the actual EPS from the consensus EPS forecast, in the recent period firms benefit from providing additional interim reports. Voluntary reporters experience significantly better forecast accuracy from analysts, and hence, face less costs in the expectations guidance activities during the year.

For the recent period, evidence on the development of the forecast errors over the fiscal year is in line with existent research in this field. Analysts issue systematically optimistic forecasts at the beginning of the year and subsequently walk down their estimates. For voluntary reporters, the expectation path results in positive earnings surprises at the earnings announcement date. Consequently, the stock market reaction to earnings surprises was investigated, in order to examine whether the management of voluntary reporters has higher incentives to meet/beat expectations at the annual announcement date. For the earlier period, the results indicate, that voluntary reporters faced a stronger stock market response to unexpected earnings, than mandatory reporters. For an average voluntary reporter, a positive earnings surprise of 0,1% resulted in a negative CAR of -0,06%, whereas a negative surprise of -0,1% produced a negative CAR of -0,14%³². For the later period, the stock market reaction was most pronounced for profitable voluntary reporters. On average, a firm, that provided additional reports, published a profit, but experienced a negative earnings surprise of -0,1% experience a negative CAR of -0.85%. For a

³² In the early period, the median stock price was 162 CHF. For this price, an earnings surprise of 0,1% results from a difference between actual and forecasted EPS of 0,162 CHF.

positive surprise of 0,1%, the firm faced a positive CAR of 0,085%³³. This underlines the importance of sensitive market communications, since for firms with more frequent interim disclosure, the market reacts significantly stronger to deviations from analyst expectations.

A topic not addressed in this paper is the impact of interim reports' quality on the information content of annual earnings. The Swiss sample seems suitable to investigate this issue, as companies adopt different accounting standards for their interim reports, and were even allowed to use other standards than in their annual reports until 2003.

³³ In the later period, the median stock price was 115 CHF. For this price, an earnings surprise of 0,1% results from a difference between actual and forecasted EPS of 0,115 CHF.

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Table 1: SWX Rules regarding interim reporting and enforcement of transparency

January 24, 1996	Listing Rules entry into force.
July 1, 1997	Issuers in the Main Segment and investment companies have to report semi-annually. (Issuers of the SWX New Market segment had to publish quarterly. However, as those firms are not in the sample, I will not need to control for that.)
June 1, 2000	Auditing bodies must be registered with the Admission board. ("Directive on Enforcement of Financial Reporting Regulations and the Registration of Auditing Bodies")
January 1, 2001	The new transparency requirements for firms listed in the Local Caps Segment are equivalent to those of the Main Segment, with respect to interim reporting, 6-months interim reports have to be provided. (Communiqué "New supplementary rules for the listing on the segment SWX Local Caps") (At that time, barriers to listing in the Local segment were: 2 years of duration, CHF 2.5 million equity capital, CHF 10 million minimum capitalization (for the entire category), at least 15% distribution of equity securities. (See footnote 4 for today's requirements).)
May 13, 2001	Issuers who have not expressly opted to apply some other accounting standard (e.g. IFRS or US GAAP) in their interim financial reports have to apply the minimum content requirements of Swiss GAAP ARR 12 (Accounting and Reporting Regulations). (Communiqué "Key issues and cases in 2000 of the panel of experts for financial reporting issues")
January 1, 2003	The Admission Board expands its controls and intends to publish all upcoming violations of the financial reporting regulations. (Communiqué "Practice with regard to enforcement of financial reporting regulations")
January 1, 2003	Up to this time issuers, had to apply Swiss GAAP ARR 12 in their interim financial reports, provided that no specific reference was made to IAS 34 or US GAAP, even if they applied IFRS or US GAAP to their annual reports. However, for all interim financial reports as of the financial year beginning on or after January 1st

2003, it became mandatory to apply the same accounting standard as used in their annual financial statements. (Communiqué "Application of accounting standards in interim financial reports")

January 1, 2005 Issuers in the Main Segment must, as of the financial year commencing on or after 1 January 2005, apply either IFRS or US GAAP as their accounting standard. (Swiss GAAP ARR is still permissible in the following segments: SWX Local Caps, Real Estate Companies, Investment Companies.) ("Directive on Requirements for Financial Reporting") Moreover, for issuers in the Main Segment, interim financial reports must be published in accordance with either IAS 34 ("Interim financial reporting") or US GAAP (especially APB opinion No. 28 "Interim Financial Reporting" of the FASB) for the first time in 2006.

Notes: This table provides a summary on the development of rules at the Swiss Stock Exchange (SWX) regarding corporate financial transparency and interim reporting requirements.

Table 2: Variable Definition and its expected association with reporting frequency

<i>VARIBALE</i>	<i>DESCRIPTION</i>	<i>EXPECTED SIGN</i>
Analyst Coverage	(<i>NUMEST</i>) Number of estimates on EPS for the fiscal year end, available on the I/B/E/S Database.	+/-
Analyst forecast dispersion	(<i>STDEV</i>) Standard deviation of analyst forecasts one month prior to the reporting date, available on the I/B/E/S Database.	+/-
Ownership	(<i>%INSTITUTIONS</i>) Percentage shares outstanding held by institutions, available from Reuters/Equity Research/Company Views/Ownership (<i>%INSIDERS</i>) Percentage of shares outstanding held by insiders and stakeholders, available from Reuters/Equity Research/Company Views/Ownership.	+ -
Leverage	(<i>LEVERAGE</i>) Ratio of debt-to-equity available on Worldscope (Data Item WC08231).	+
Size	(<i>MARKETCAP</i>) Market capitalization, that is, market price at year end times common shares outstanding available on Worldscope (Data Item WC08001).	+
Percentage of Intangible Assets	(<i>%INTANGIBLES</i>) Ratio of Intangible assets and Total Assets. Intangible assets are available on Worldscope and represent the assets without a physical existence (Data Item WC02649). Total Assets are also available on Worldscope (Data Item WC02999).	+
Profitability	(<i>ROE</i>) Profitability Ratio available on Datastream (Account Item 1506), calculated as Net Income before Preferred Dividends minus Preferred Divided Requirement, divided by last year's common equity	?
Meeting and beating earnings expectations	(<i>dummyBME</i>) Dummy variable, which equals one for a positive or zero earnings surprise, and zero for a negative earnings surprise. Earnings surprise (<i>SURP</i>) is defined as the forecast error (<i>FE</i>) right before the annual announcement date. <i>FE</i> is defined as $error = FE_{itm} = EP_{Sactual\ it} - EP_{Sforecast\ itm} P_t$ with FE_{itm} = Forecast Error of firm <i>i</i> in month <i>m</i> for fiscal year <i>t</i> , $EP_{Sactual\ it}$ = actual annual EPS available on I/B/E/S, $EP_{Sforecast\ itm}$ = Analyst Consensus Forecast in month <i>m</i> , and P_t = Fiscal year-end Stock Price.	+
Cross listing	(<i>dummyUS</i>) Dummy variable, which equals one if the company is listed in the US.	+

Table 3: Sample Selection

	Reporting Frequency ^a	I/B/E/S Database	Worldscope	Reuters ^b	Industry ^c	Sample (merge of databases)
1996	218	104	151			79
1997	226	108	165			90
1998	232	107	176			93
2001	255	130	207			116
2002	258	137	206			122
2003	257	137	149			101
Total	1446	723	1054	191	213	601

Notes: This table provides the number of firm-years available on the respective database for the firm years analyzed.

^a The Column "Reporting Frequency" contains the firm years collected from the Swiss Stock Guide and adjusted with Reuters Database.

^b The Column "Reuters" contains the number of firms for which ownership data (institutional and insider holdings) are available as of end 2004. Those data are not available on a historical basis.

^c The Column "Industry" contains the static dataset of industry data on Thomson Datastream.

Table 4: Number of firm years by industry and expected reporting frequency

SIC	Industry	Total	1996	frequency	1998	frequency	2002	frequency
16	apparel	5	1	0.0	1	4.0	1	1.0
25	chemicals	37	4	0.5	5	1.4	8	2.1
28	construction	25	3	0.7	4	0.5	5	2.2
31	diversified	23	4	0.5	4	1.0	4	2.0
34	drugs, cosmetics & healthcare	36	3	2.0	5	2.2	8	2.9
37	electrical	18	3	0.3	3	0.7	3	1.0
40	electronics	28	3	1.3	4	1.0	6	2.0
43	financial	112	15	0.5	17	1.1	26	1.9
46	food	29	4	0.8	5	1.0	5	2.2
49	machinery & equipment	95	11	0.8	14	1.2	19	1.5
52	metal producers	7	1	2.0	1	1.0	2	1.0
55	metal product manufacturers	23	4	1.5	4	1.8	4	1.8
61	paper	6	1	1.0	1	1.0	1	4.0
64	printing & publishing	10	1	0.0	1	0.0	2	1.0
67	recreation	9	2	0.5	2	1.0	1	1.0
70	retailers	15	2	0.5	2	0.5	3	1.0
73	textiles	6	1	2.0	1	4.0	1	4.0
79	transportation	11	1	1.0	2	1.0	2	2.5
82	utilities	9	1	0.0	2	1.0	2	2.5
85	miscellaneous	97	14	0.9	15	1.3	19	2.2
Total		601	79		93		122	

Notes: This table provides the number of firm years available within every industry. SIC is the two-digit numeric code assigned to the respective industry group. Additionally, for every year, the average reporting frequency within each industry is provided.

Table 5: Reporting frequency by year

date	N	final	one	two	three	quarterly
1996	79	42%	46%	8%	1%	4%
1997	90	32%	57%	4%	3%	3%
1998	93	11%	74%	4%	2%	9%
2001	116	0%	70%	3%	1%	26%
2002	122	0%	66%	2%	0%	31%
2003	101	0%	61%	3%	0%	36%

This Table indicates the number of firms that provide zero, one, two, three, or quarterly interim reports in the year of the sample period.

Table 6: Descriptive sample statistics for the period 1996 to 1998

	<i>Firms with mandatory reporting level (N=139)</i>					<i>Firms with additional voluntary interim reports (N=119)</i>					
Variable	Min	Mean	Med	Max	StdDev	Min	Mean	Med	Max	StdDev	
Numest	1.00	8.84	6.00	49.00	8.23	1.00	11.63	10.00	32.00	7.77	***
StDev	0.00	0.18	0.07	2.07	0.34	0.00	0.17	0.06	3.77	0.43	
DummyBME	0.00	0.57	1.00	1.00	0.50	0.00	0.62	1.00	1.00	0.49	
Surp	-0.15	0.00	0.00	0.07	0.02	-0.08	0.00	0.00	0.04	0.02	
MarketCap	24'525	6'832'405	570'184	163'024'336	24'186'838	11'201	11'557'151	857'945	185'913'504	33'018'281	
Leverage	0.00	95.55	46.55	1204.02	176.16	1.29	132.30	61.21	1537.33	260.00	
ROE	-45.43	14.04	11.73	126.42	17.23	-17.04	14.28	12.92	64.79	13.32	
%Intangibles	0.00	0.03	0.01	0.29	0.06	0.00	0.05	0.01	0.40	0.08	**
dummy US	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	1.00	0.16	*
CAR	-0.07	0.00	0.00	0.09	0.34	-0.13	0.00	0.00	0.10	0.04	

Notes: See table 2 for the description of the variables.

*** means different at the 1% significance level

** means different at the 5% significance level

* means different at the 10% significance level

Table 7: Descriptive sample statistics for the period 2001 to 2003

	<i>Firms with one interim report (N=220)</i>					<i>Firms with more than one interim report (N=113)</i>					
Variable	Min	Mean	Med	Max	StdDev	Min	Mean	Med	Max	StdDev	
Numest	1.00	6.65	5.00	40.00	6.71	1.00	12.58	9.00	43.00	11.00	***
StdDev	0.00	0.26	0.11	4.23	0.45	0.00	0.23	0.09	2.17	0.39	
DummyBME	0.00	0.45	0.00	1.00	0.50	0.00	0.51	1.00	1.00	0.50	
Surp	-0.89	-0.03	0.00	0.31	0.13	-0.56	0.01	0.00	0.98	0.11	**
MarketCap	7'700	2'997'035	434'895	112'898'000	12'243'190	15'283	13'549'739	1'303'146	139'056'176	31'308'596	***
Leverage	-484.41	121.96	58.01	4591.78	372.49	0.00	146.97	37.94	2248.89	381.00	
ROE	-255.74	5.20	8.17	1210.77	87.47	-	1.72	6.83	57.77	36.14	
%Intangibles	0.00	0.06	0.02	0.40	0.08	0.00	0.11	0.08	0.45	0.10	***
dummy US	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	1.00	0.40	***
% Insiders	0.00	28.91	24.56	79.90	23.67	0.04	28.23	22.30	71.45	23.78	
% Institutions	0.11	17.79	16.96	59.71	14.18	0.05	21.86	21.61	57.02	12.81	***
CAR	-0.27	0.01	0.01	0.30	0.06	-1.13	0.00	0.00	0.24	0.13	

Notes: See table 2 for the description of the variables.

*** means different at the 1% significance level

** means different at the 5% significance level

* means different at the 10% significance level

Table 8: Correlation 1996 to 1998

	FREQ	NUMEST	STDEV	dummyBME	SURP	MARKETCAP	LEVERAGE	ROE	%INTANGIBLES	dummyUS	CAR
FREQ	1.00										
NUMEST	0.18 (0.00)	1.00									
STDEV	-0.06 (0.36)	0.04 (0.50)	1.00								
dummyBME	-0.09 (0.14)	-0.04 (0.51)	-0.06 (0.35)	1.00							
SURP	-0.08 (0.21)	-0.07 (0.27)	-0.33 ($<.0001$)	0.53 ($<.0001$)	1.00						
MARKETCAP	0.05 (0.44)	0.62 ($<.0001$)	-0.03 (0.65)	-0.07 (0.24)	-0.05 (0.44)	1.00					
LEVERAGE	-0.02 (0.78)	0.11 (0.07)	0.13 (0.03)	-0.16 (0.01)	-0.16 (0.01)	0.21 (0.00)	1.00				
ROE	0.06 (0.32)	-0.08 (0.20)	-0.23 (0.00)	0.02 (0.74)	0.16 (0.01)	0.02 (0.71)	-0.16 (0.01)	1.00			
%INTANGIBLES	0.31 ($<.0001$)	0.21 (0.00)	0.03 (0.61)	-0.12 (0.06)	-0.08 (0.19)	0.22 (0.00)	-0.08 (0.22)	0.07 (0.23)	1.00		
dummyUS	0.34 ($<.0001$)	0.11 (0.08)	-0.03 (0.66)	-0.06 (0.369)	-0.01 (0.84)	0.02 (0.80)	-0.02 (0.76)	-0.15 (0.02)	0.43 ($<.0001$)	1.00	
CAR	-0.03 (0.60)	-0.09 (0.17)	-0.06 (0.31)	0.00 (0.99)	-0.08 (0.23)	-0.08 (0.20)	0.02 (0.70)	-0.04 (0.49)	0.05 (0.40)	-0.05 (0.45)	1.00

Notes: P-values are quoted in parentheses. See table 2 for the description of the variables.

Table 9: Correlation 2001 to 2003

	FREQ	NUMEST	STDEV	Dummy- BME	SURP	MARKET- CAP	LEVE- RAGE	ROE	%INTAN- GIBLES	Dummy- US	CAR	%INSI- DERS	%INSTI- TUTIONS
FREQ	1.00												
NUMEST	0.35 (<.0001)	1.00											
STDEV	-0.03 (0.60)	0.02 (0.70)	1.00										
dummyBME	0.06 (0.30)	-0.01 (0.85)	0.02 (0.72)	1.00									
SURP	0.12 (0.03)	0.05 (0.34)	-0.01 (0.79)	0.34 (<.0001)	1.00								
MARKETCAP	0.26 (<.0001)	0.71 (<.0001)	-0.06 (0.29)	0.06 (0.24)	0.03 (0.54)	1.00							
LEVERAGE	0.04 (0.42)	0.19 (0.00)	0.08 (0.16)	-0.04 (0.51)	-0.03 (0.63)	0.20 (0.00)	1.00						
ROE	-0.02 (0.69)	0.03 (0.54)	-0.12 (0.03)	0.13 (0.02)	0.29 (<.0001)	0.03 (0.58)	-0.05 (0.41)	1.00					
%INTANGIBLES	0.27 (<.0001)	0.27 (<.0001)	-0.03 (0.55)	0.01 (0.80)	0.08 (0.14)	0.17 (0.00)	-0.05 (0.37)	-0.02 (0.70)	1.00				
dummyUS	0.40 (<.0001)	0.54 (<.0001)	0.01 (0.90)	-0.07 (0.23)	0.02 (0.65)	0.43 (<.0001)	0.23 (<.0001)	0.00 (0.94)	0.05 (0.34)	1.00			
CAR	-0.07 (0.19)	-0.03 (0.53)	0.01 (0.91)	0.10 (0.08)	0.15 (0.01)	-0.03 (0.55)	-0.04 (0.48)	-0.01 (0.91)	-0.01 (0.90)	-0.06 (0.25)	1.00		
%INSIDERS	-0.03 (0.60)	-0.30 (<.0001)	-0.01 (0.88)	0.12 (0.03)	0.03 (0.59)	-0.18 (0.00)	0.05 (0.38)	0.11 (0.04)	-0.27 (<.0001)	-0.12 (0.04)	-0.03 (0.64)	1.00	
%INSTITUTIONS	0.14 (0.01)	0.32 (<.0001)	0.04 (0.51)	-0.03 (0.53)	0.04 (0.46)	0.07 (0.24)	-0.08 (0.13)	-0.01 (0.87)	0.36 (<.0001)	0.07 (0.22)	0.09 (0.10)	-0.59 (<.0001)	1.00

Notes: P-values are quoted in parentheses. See table 2 for the description of the variables.

Table 10: Logistic regressions

Panel A: Subperiod 1996 to 1997				
	more than zero 1996	more than zero 1997	more than zero 1998	more than one 1998
Intercept	-0,21	-0,47	-1,04	-2,09
logNUMEST	1,22 ***	0,73 **	0,16	0,1
STDEV	1,64	-1,85	-0,94	-2,82
dummyBME	1,47 **	0,18	-0,72	-0,37
logMARKETCAP	-0,34	-0,04	0,23	0,07
LEVERAGE	0,004 *	0,003	0,004	-0,01
ROE	0,07 *	0,01	0,01	-0,01
%INTANGIBLES	9,91 *	4,18	3,01	7,19 *
AIC	93,54	114,64	72,941	85,33
max-rescaled R^2	0,3496	0,1992	0,1334	0,1648
N 0	31	29	10	78
N 1	42	60	82	14

Panel B: Subperiod 2001 to 2003					
	More than one 2001		More than one 2002		More than one 2003
Intercept	-6.33	***	-6.43	**	-2.36
logNUMEST	-0.34		0.09		0.37
STDEV	-0.57		-0.69		0.46
dummyBME	0.01		1.44	***	-0.91 *
logMARKETCAP	0.45	**	0.30		0.10
LEVERAGE	-0.00		0.002		0.001
ROE	-0.02		-0.01	*	-0.00
%INTANGIBLES	5.15	**	8.53	***	4.86 *
AIC	140.87		137.8		134.89
max-rescaled R_2	0.1686		0.3491		0.1903
N 0	81		80		59
N 1	33		41		39

Column one, two and three in Panel A model the probability of at least one interim report, column four models the probability of more than one interim report in 1998. In Panel B the probability of publishing more than one interim report is modeled. See table 2 for the description of the variables.

*** significant at the 1% level

* significant at the 10% level

** significant at the 5% level

Figure 1: Development of forecast accuracy over the fiscal period

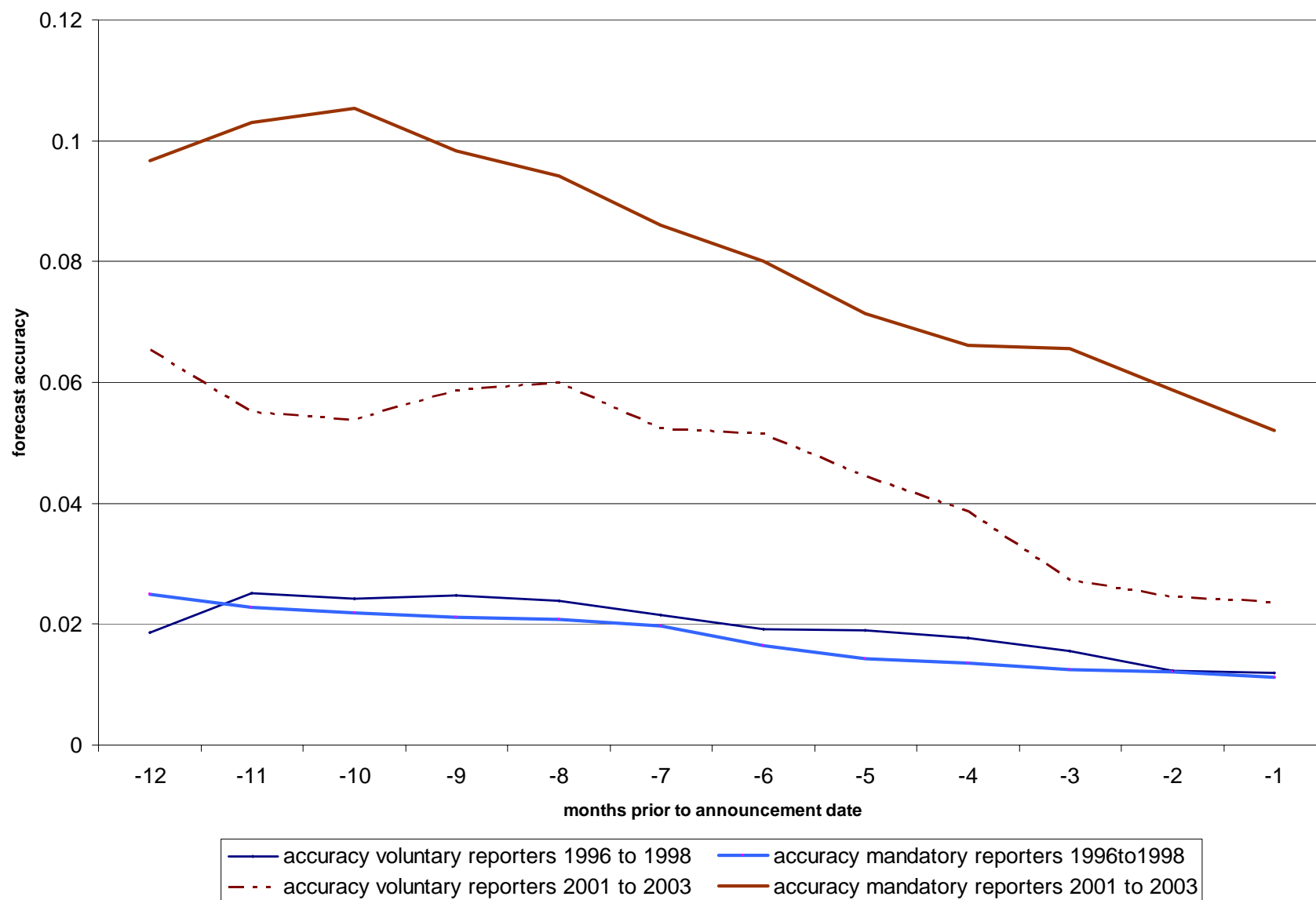


Figure 2: Development of forecast error over the fiscal period

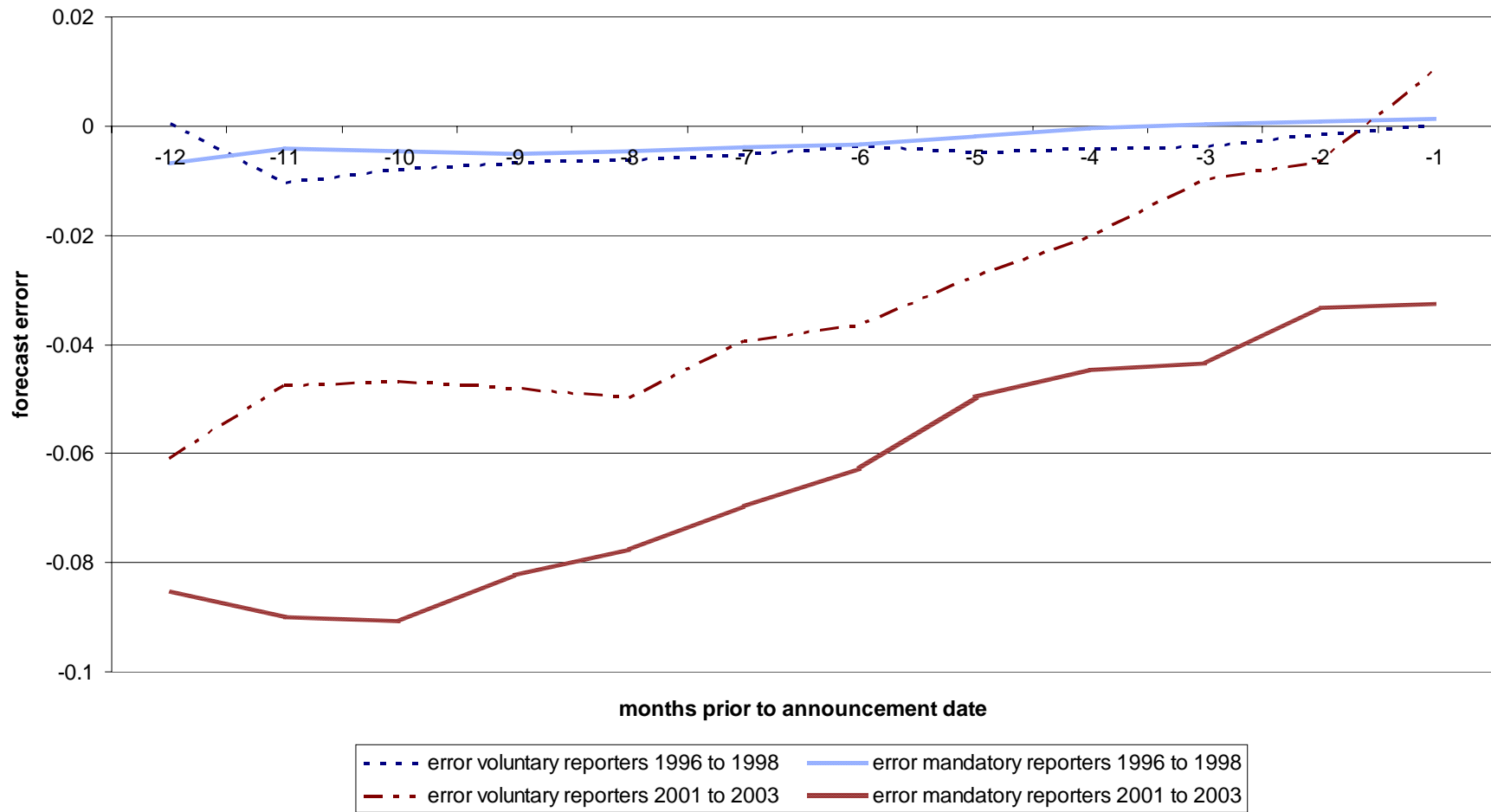


Table 11: Regression results for the benchmark model

Panel A: Whole samples

	1996 to 1998 (N= 258)	2001 to 2003 (N=333)
intercept	0.006**	0.008
SURP	-0.172	0.102***
adj. R_2	0.17%	1.92%

Panel B: Subsamples based on reporting frequency

	mandatory reporters (N=139)	voluntary reporters (N=119)	mandatory reporters (N=220)	voluntary reporters (N=113)
intercept	0.008**	0.002	0.013***	-0.002
SURP	-0.384**	0.342	0.11***	0.105
adj. R_2	3.31%	0.46%	4.90%	0.10%

Panel A shows the results of the benchmark model (1) for the period 1996-1998 and 2001-2003. In Panel B, the sample is divided into mandatory and voluntary reporters for both periods. See table 2 for the description of the variables.

*** significant at the 1% level
 ** significant at the 5% level
 * significant at the 10% level

Table 12: Regression results for the model including the sign of the earnings surprise

Panel A: Whole samples				
	1996 to 1998		2001 to 2003	
Intercept	0.005		0.002	
SURP	-0.266		0.084	
dummyBME	0.003		0.011	
dummyBME*SURP	-0.126		0.002	
adj. R^2	0.10%		1.55%	
Panel B: Subsamples based on reporting frequency				
	mandatory reporters	voluntary reporters	mandatory reporters	voluntary reporters
Intercept	0.007	0.009	0.012*	-0.02
SURP	-0.65**	1.374**	0.104***	0.039
dummyBME	-0.002	0.002	0.001	0.032
dummyBME*SURP	0.384	-1.964***	-0.022	0.049
adj. R^2	4.60%	4.51%	3.37%	0.09%

Panel A shows the results of regression (2) for the whole sample and both periods. In Panel B, the sample is divided into mandatory and voluntary reporters. See table 2 for the description of the variables.

* significant at the 10% level

** significant at the 5% level

*** significant at the 1% level

Table 13: Regression results for loss and profit firms (period 2001 to 2003 only)

Panel A: Whole sample				
	profit firms (N=261)		loss firms (N=72)	
Intercept	0.001		0.021*	
SURP	0.281		0.125***	
dummyBME	0.014		-0.019	
dummyBME*SURP	-0.262		-0.011	
adj. R^2	-0.06%		11.98%	
Panel B: Subsamples based on reporting frequency				
	mandatory reporters (N=171)	voluntary reporters (N=90)	mandatory reporters (N=49)	voluntary reporters (N=23)
Intercept	0.004	0.052*	0.03**	-0.01
SURP	-0.14	8.533***	0.148***	-0.004
dummyBME	0.012	-0.047	-0.021	-0.007
dummyBME*SURP	0.069	-7.686***	0.203	0.11
adj. R^2	-1.01%	11.72%	19.19%	-0.31%

This table provides results for regression (2), for the latter period only. In Panel A, the sample is divided into profit and loss firms. In Panel B, those subsamples are further divided into mandatory, and voluntary reporters. See table 2 for the description of the variables.

* significant at the 10% level

** significant at the 5% level

*** significant at the 1% level