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ABSTRACT

Many earnings forecasts studies are conducted for the Anglo-Saxon countries, but to date very few have focused on continental Europe. This paper examines whether there is a relationship between discretionary accounting and the accuracy of long-run forecasts of annual earnings voluntarily disclosed by managers in the directors’ report, which is a mandatory chapter of the annual report in the Netherlands. Long-run forecasts mean forecasts made at least seven months before year-end. First, we discuss the rationale for management’s incentive to improve the accuracy of earnings forecasts voluntarily disclosed (in the directors’ report). We then provide some information with respect to the institutional background in the Netherlands. Afterwards we conduct empirical tests to determine whether qualitative earnings forecasts provide additional information on future performance over and above the information from auto-regressive models i.e. reported EPS on t-1 and EPS on t-1 after the correction for discretionary accounting and also whether there is support for the hypothesized relationship between discretionary accounting and qualitative management forecast accuracy. Our empirical results indicate that qualitative earnings forecasts provide a statistically significant better prediction of the actual earnings than reported EPS on t-1 and EPS on t-1 after the correction for discretionary accounting and that there is a relationship between high pre-discretionary forecast errors and the adoption of discretionary accounting. After adopting discretionary accounting, the forecast errors are reduced. Overall, the study shows that management has an incentive to engage in discretionary accounting to improve the accuracy of the disclosed qualitative earnings forecasts in their directors’ reports. However, one should bear in mind that ‘either discretionary accounting is used to improve the accuracy of earnings forecasts disclosed in the directors reports or managers’ earnings forecasts are sometimes disclosed in anticipation of planned discretionary accounting actions (Jaggi and Sannella, 1995).

KEYWORDS: Forecasting earnings, discretionary accounting and qualitative management earnings forecasts
1. INTRODUCTION

In general, publicly disclosed management earnings forecasts are considered an important source of information to investors. This is indicated by the markets' reaction to disclosure of these forecasts (for example Patell, 1976; Penman, 1980; Waymire, 1986; Jaggi and Sannella, 1995 and Van der Meer, 1981 for the Netherlands). A reason for this market reaction is the comparatively higher accuracy of management earnings forecasts relative to financial analyst or time-series model forecasts.

This higher accuracy of management forecasts has been demonstrated in the literature (for example Copeland and Marioni, 1973; Jaggi, 1980; Hassell and Jennings, 1986).

Brown (1988) hypothesizes that high(er) management forecast accuracy could result from unique environmental factors that affect manager's forecast. He contends that the accuracy of management earnings forecasts is influenced by three environmental factors. First, the availability of asymmetric, inside information about a firm's production, investment, and financing activities may have a positive effect on the accuracy of management forecasts. Second, there may be a self-selection bias on the part of management when deciding whether to disclose a forecast. Because earnings forecasts in the director's report are not obliged in the Netherlands, it is plausible to assume that managers will release a forecast only when they are better able to "predict" or control earnings. Third, managers have control over numerous transactions that impact reported earnings and their resultant forecast accuracy such as accounting changes, sale and lease back, provisions, asset write downs, pensions and (other) extraordinary gains and losses. "When all else fails", a manager can also use discretionary accounting techniques in an attempt to report earnings that conform to the forecast.

The results of the empirical analysis of Jaggi and Sannella (1995) indicate that discretionary accounting changes were used to reduce (but not to eliminate) the pre-change forecast errors. However, as they point out discretionary accruals could also be used to improve the forecast accuracy (Jaggi and Sannella, 1995, p. 19). Therefore, we will try to investigate the effect of accounting changes and other discretionary accounting techniques on the accuracy of earnings forecasts in the Netherlands. We restricted our research to qualitative management earnings forecasts as management of Dutch listed companies often disclose their expectations about future earnings performance without projecting explicit earnings or earnings per share numbers in their director's report. Only a minority group of Dutch listed companies provide quantitative earnings forecasts.

The aim of this paper is to examine the association between the qualitative management-forecast accuracy and the use of discretionary accounting for the Netherlands. Partially, it is a replication of the research of Jaggi and Sannella (1995) for the United States (US). It also is an extension, as we will
examine the impact of both discretionary accounting changes and other discretionary accounting techniques on the accuracy of earnings forecasts and especially because we investigate the effects of qualitative management earnings forecasts instead of quantitative management earnings forecasts. Generally, the research in this field was restricted to quantitative management earnings forecasts (with the exception of Foster, 1973, Patell, 1976, Hoskins et al., 1986, Lev and Penman, 1988 and Mensah et al., 1996). Mensah et al. (1996) provided evidence on the predictive value of qualitative management earnings forecasts, and their effects on financial analyst's expectations and stock prices. However, they did not include (the effect of) discretionary accounting in their research.

The results of this study provide evidence that there is an association between the adoption of discretionary accounting techniques and the size of the qualitative management earnings forecast error. Furthermore, there is evidence that qualitative earnings forecasts provide a better prediction of the actual earnings than reported EPS on t-1 and EPS t-1 after the correction for discretionary accounting.

The paper is organized as follows. The first section provides an overview of previous research in this field where we will specifically deal with the incentives to disclose voluntarily earnings forecasts and the relationship between forecast accuracy and discretionary accounting (changes). The second section gives a brief discussion of the institutional background of the Netherlands. The third section describes the empirical analysis with respect to the association between discretionary accounting and accuracy of management's forecasts. In the last section the results are discussed and summarized.

2. PREVIOUS RESEARCH

Reasons for voluntary management earnings forecasts

Previous research indicates a number of reasons for the disclosure of voluntary management earnings-forecasts (see King et al., 1990 for a review).

A number of studies provide evidence that management forecasts are used as a signaling device. Trueman (1986) hypothesizes that the disclosure of management forecasts is motivated by managers' desire to signal their ability to anticipate the company's economic environment and to respond with the appropriate adjustments in production. Therefore, managers have incentives to disclose the fact that they have new information as quickly as possible, irrespective of whether the information is favorable or unfavorable. If forecasts are primarily signals of managers' information gathering ability, it is plausible that ex post forecast accuracy also is a signal of managerial ability and that the greatest benefits are obtained by the most accurate forecasters. If this is the case, the managers who are superior forecasters are most likely to disclose long run earnings forecasts and one would expect these managers to make repeat forecasts (Bartley and Cameron, 1991, p. 25).
Another suggestion why managers disclose their long-run management forecasts is suggested by the findings of Imhoff and Pare (1982). They contacted 15 percent of the companies in their sample of long-run management forecasts. They found that all of the companies indicated that the disclosures appeared to be the result of the CEO's decision to provide what he considered good news. Ross (1979) suggests that if favorable disclosures increase the value of the company, then outsiders will interpret no news as bad news. Consequently, all managers without bad news have an incentive for disclosure, and only companies with the worst news will fail to disclose information. Pastena and Ronen (1979) conclude that most (voluntary) forecasts in their sample contain good news. However, more recent studies of Ajinkya and Gift (1984), Waymire (1984) and Ruland et al., (1990) did not observe an overall tendency to report good news by means of an earnings forecast. Therefore, the empirical results with respect to the good or bad news are mixed in relation to the release of earnings forecasts. Numerous studies document the decline in share prices associated with the issuance of new securities (e.g. Myers and Majluf, 1984). According to Leland and Pyle (1977) this price reduction is attributed to outsiders' reluctance to increase investments given that managers know more than outsiders do and given the associated problems of adverse selection and moral hazard. This can be overcome by voluntary earnings forecasts. Managers that responded to the survey by Lees (1981) indicated that forecasts enhance the ability to attract new capital and that this may be the most important benefit of a forecast release. This is confirmed by the empirical results of Ruland et al. (1990); forecasting companies show a greater tendency than other companies to issue new capital. Frankel et al. (1995) also document a positive relation between the company's tendencies to access capital markets and to disclose earnings forecasts. However, their evidence also indicates that companies financing externally are not significantly more likely to forecast in the period shortly before an offering than at other times. Therefore, while companies that issue more capital tend to release more forecasts, forces like legal liability deter them from more frequent forecasting around the time of an actual offering (Frankel et al, 1995, p. 135).

Jensen and Meckling (1976) assert that as the manager's ownership share of the company's equity falls, outside shareholders have increased incentives to expend resources to monitor the manager's behavior. Reasons include increased incentives for the owner-manager to consume perks and reduced incentives for the owner-manager to maximize job performance. Based on this line of reasoning Ruland et al. (1990) formulate the hypothesis that forecast reporting firms have a higher proportion of outside ownership than other companies. Their research reveals that this relationship is significant. Ajinkya and Gift (1984) provide evidence that managers would disclose their earnings forecasts to correct unrealistic forecasts published by financial analysts. This correction becomes necessary especially when the forecast information provided by analysts is not considered to reflect the economic conditions of the company. Ruland et. al. (1990) have, on the other hand, shown that management
forecasts are used to confirm rather than correct analysts forecasts. Kasznik and Lev (1995, p. 121) interviewed several CEO's who indicated another important reason for disclosure of earnings forecasts, namely to avoid embarrassing their analysts by surprising them. Analysts' ill feelings and loss of confidence in management because of such surprises (particularly disappointments) apparently impose a heavy cost (of capital) on companies. Dorsman et al. (1994) investigated the relevance of investor relations for Dutch companies. One of their variables was the surprise factor of the annual report. They found that if the annual report contains new information, the cost of capital will rise. The results of the research of Frankel et al. (1995) suggest that managers release earnings forecasts to influence capital market participants. The aim of these forecasts may be to attract attention to the company, to develop a reputation for reliable disclosure or to diminish the chance of insider trading (Van der Meer, 1981). Overall, the effect could be that these disclosures lower the cost of capital (Trueman, 1986).

Another reason to use earnings forecasts as a signaling device is for the instances when information transfers from disclosing to non-disclosing companies are not feasible. Pownall and Waymire (1989) noted that forecasting companies were larger and more diversified than non-forecast companies. Because large, highly diversified companies are not likely to benefit from intra-industry information transfers, the managers of these companies would consider disclosing their own earnings forecast to signal inside information to investors.

In summary, it can be concluded that the forecast literature suggests several reasons for the release of a voluntary earnings forecast.

**Qualitative earnings forecasts**

In this paper, a qualitative management earnings forecast is defined as an announcement of management in the director's report on the business outlook with the following characteristics: the subject of the announcement is management's expectations about the company's earnings for the next annual reporting date; the company official expresses these expectations in words without estimating a specific amount or range; and the words clearly indicate whether management expects an increase or a decrease in earnings from the previous year. Beyond these minimum characteristics, the qualitative management earnings forecasts encountered in our research contain qualifying language used to convey managements' expectations about the relative magnitudes of expected earnings changes. Words such as 'slightly', 'significantly', and 'substantially' are often used to qualify the expected changes in earnings. One should bear in mind that qualitative forecasts are less precise than the various kinds of quantitative earnings (per share) projections that have been studied in past research. This lack of precision would appear to reduce the predictive ability and feedback value of qualitative earnings projections, since it is neither possible to infer the exact percentage change in earnings predicted by management, nor is it easy to determine the extent to which management was able to meet expectations ex post. Despite this,
qualitative forecasts may be informative about the expected direction of the change in earnings (per share) and may thus help investors revise their projections. An important finding in this respect is that Mensah et al. (1996) concluded that there are no differences in the reliability of quantitative and qualitative forecasts with respect to the signs of predicted earnings changes. Further, our data for Dutch listed companies indicate that these announcements are usually made in the director's report from 1984 till present.

**Forecast accuracy and discretionary accounting**

The primary issue of this paper is to establish managers' incentive for reducing forecast errors and to determine why they are actually motivated to reduce forecast errors by resorting to discretionary accounting techniques. The underlying rationale for improving forecast accuracy is to ensure that the forecast represents a reliable source of market information to be used in developing future earnings and cash flow expectations. To be specific, the voluntary earnings forecast should minimize the "earnings surprise" when the actual earnings are released. Moreover, managers want to reduce the potential penalty resulting from high forecast errors. The potential penalty may be in the form of credibility loss, a negative impact on share prices, an adverse effect on managers' compensation and a potential legal liability that could result from large forecast errors (Jaggi and Sannella, 1995, p. 4). Also the decision to disclose a qualitative rather than quantitative forecasts may be related to a desire to avoid some of the potential penalties of providing a more specific forecast, while successfully signaling management's planning capabilities to investors and the labor market, and/or because the earnings of these companies are less subject to accurate prediction (Mensah et al., 1996, p. 1248). Even if a manager discloses a truthful forecast, shareholders might be able to sue if actual earnings deviate significantly from forecasted earnings, claiming that a misleading forecast was released (Trueman, 1986). Therefore, a rational manager would only release a forecast if the expected benefits from the voluntary disclosure exceed its costs. This notion is consistent with Brown's (1988) self-selection bias concept in that managers will only release a forecast if they believe they can better predict profit or have the ability to manage earnings through discretionary accounting techniques.

The objective of lowering forecast errors could be achieved by discretionary accounting. Contrary to Jaggi and Sannella (1995) we will not restrict ourselves to the use of accounting changes. In our opinion, managers will use both accounting changes and other discretionary accounting techniques to reduce forecast errors or in general to manage their actual earnings (see Healy, 1985, p. 3).

By using discretionary accounting changes, managers may achieve the objective of providing signals of their future cash flow expectations (signaling hypothesis). If a manager was concerned only with the adverse compensation effects of a forecast error, then other discretionary accounting techniques would be preferred because they are less visible and offer more future flexibility than accounting changes.
In summary, managers are interested in reducing forecast errors to signal their future cash flow expectations, to increase the company's market value, to increase their own compensation, or to mitigate the possible adverse effects of significant forecast errors (Jaggi and Sanella, 1995, pp. 6-7).

3. ACCOUNTING AND CAPITAL MARKET ENVIRONMENT FOR EARNINGS FORECASTS IN THE NETHERLANDS

According to Choi and Mueller (1992, p. 371) Dutch accounting and auditing are at an international high level of professional, technical, and international development. The accounting and auditing environment in the Netherlands is regarded as (strongly) related to the "British Commonwealth Model". In the cluster studies of Nair and Frank (1980) and Nair (1982), the Netherlands is placed in the group British Commonwealth (although it was never part of it). A similar result was suggested in the classification scheme of Nobes (1983). According to this classification system, based on nine factors for differentiation between accounting systems in countries, the Netherlands belong to the class of micro-fair-judgmental commercially-driven accounting systems as in i.e. Australia, Canada, the United Kingdom (UK) and the US. On the level of sub-class, the Netherlands has a place separate from the aforementioned four countries. The discriminating factor is that the accounting system in the Netherlands is heavily influenced by business economics theory and the accounting system in the other four countries is heavily influenced by business practice.

From the financial year 1984/1985, as a consequence of the implementation of the Fourth EC Directive in Dutch accounting law, companies in the Netherlands are obliged to provide information on the business outlook in the directors' report. Paying particular attention, unless there are compelling reasons for not doing so, to investments, financing and personnel and circumstances affecting future turnover and profitability (Dutch accounting law, section 391, subsection 2). So, the company is not obliged to give an earnings forecast for the next period. The company must only pay attention to the circumstances affecting future profitability in the directors' report. The Council for Annual Reporting (CAR) in the Netherlands adds in Guideline 4.01.108 to this section 391 that companies should prevent to confine their remarks in this field to generalizations and vague pronouncements. In addition, the auditor has to ascertain that the directors' report has been prepared consistent with the annual accounts (Dutch accounting law, section 393, subsection 3).

Recently, Capstaff et al. (1996) made a comparative analysis of earnings forecasts in Europe. For 14 countries (including the Netherlands), they compared by country the accounting and the capital market environment with respect to four items (earnings behavior, frequency, timeliness and quality of accounting disclosure, influence of taxation, and securities markets). We will discuss their findings
briefly and highlight the position of the Netherlands.

**Earnings behavior**

In countries where earnings are erratic, forecasting is likely to be more difficult. Capstaff et al. (1996, p. 3) measure earnings behavior for the years 1987-1991 by the mean absolute change in earnings for companies/years and the mean (signed) change in earnings. The presumption is that the larger the change in earnings the more difficult it is to forecast that change. It might also be expected that countries where earnings have been declining will tend to show less accurate forecasts. According to the results of the research of Capstaff (1996, p. 3) the earnings in the Netherlands have relatively low volatility and show small positive changes.

**Frequency, timeliness and quality of accounting disclosure**

The frequency, timeliness and quality of accounting disclosure might be expected to affect the accuracy of earnings forecasts (especially of financial analysts). The requirements in the Netherlands for interim reporting (semi-yearly or quarterly) and the limit for disclosure of the final accounts (five months) are in line with the other European countries. According to Capstaff et al. (1996), the Netherlands is ranked as second best (after the UK) with respect to the quality of accounting disclosure.

**Influence of taxation**

The influence of taxation on forecastability and forecast errors is unclear. The Netherlands has an accounting system like Denmark, Ireland and the UK that is relatively free from the influence of taxation. Therefore, management has no impetus for tax reasons to depress reported earnings in these countries.

**Securities markets**

Well-developed securities markets require good earnings forecasts (from both management and financial analysts). The voluntary earnings forecast should minimize the earnings surprise when the actual earnings are released. Managers want to reduce the potential penalty resulting from high forecast errors. A high forecast error could result in a negative impact on share prices. So, in well-developed securities markets there is an incentive to reduce high forecast errors. This reduction could be effected by discretionary accounting techniques. Capstaff et al. (1996, p. 6) pose that if earnings are value relevant the benefit from reliable forecast earnings is likely to be greater thereby encouraging management to raise the frequency and resources to forecasting and to improve the accuracy of forecasts by discretionary accounting techniques. In the Netherlands (like Norway and the UK) there seems to be a high degree of association between earnings and share prices.
Generally, we can conclude that the accounting and capital market environment for earnings forecasts in the Netherlands is reasonably comparable to the UK.

**Overview of management earnings forecast research in the Netherlands**

In the 1980s and 1990s, some researchers investigated earnings forecasts. These studies were mainly descriptive by nature. These researchers use both the quantitative and qualitative forecasts released in the directors' reports. Most authors came for different years to the conclusion that most of the listed companies voluntarily release earnings forecasts and mostly these forecasts were correct (Van der Meer, 1981, 62% forecasts, 81% correct; Levy, 1995, 66% forecasts, 72% correct, Stolwerk et al. 1997, 87% forecasts, 62% correct). Other remarkable results were that larger companies release more often an earnings forecast than small companies and large companies have smaller forecast errors than small companies (Levy, 1995). The actual release of earnings forecasts seems to be dependent of factors as general economic conditions and market or currency movements. Moreover, management was releasing more often an earnings forecast if the earnings were higher than if they were lower (Knoops and Van der Gaag, 1986; Levy, 1995).

4. **EMPIRICAL ANALYSIS**

**Hypotheses**

First, we examine whether companies that disclose qualitative earnings forecasts in their directors' reports provide additional information on future performance over and above the information from autoregressive models.

**H1:** Qualitative earnings forecasts help to predict future performance.

The null-hypothesis is that there is no additional information contained in the qualitative forecasts in the directors' report.

Another factor influencing the accuracy of performance forecasts could be the use of discretionary accounting decisions. The second hypothesis examines whether the pre-change forecast error is associated with the magnitude of discretionary accounting techniques. It is hypothesized that large pre-change forecast errors would be associated with greater costs of voluntary disclosure and consequently would require greater adjustments to reported earnings to improve the forecast accuracy. The null
hypothesis for this test is as follows:

\[ H2: \text{There is no association between the size of management's pre-change earnings forecast error and the magnitude of discretionary accounting techniques.} \]

The alternative hypothesis is that high pre-change forecast errors require discretionary accounting techniques that produce larger adjustments to reported earnings to achieve the desired forecast accuracy.

**Data collection**

The data used in this study are derived from annual reports of listed companies (excluding financial institutions) and from the accounting database REACH. For our study we only used these companies which had a listing during at least three years at the Amsterdam Stock Exchange for the period 1984-1994. A listing for three successive years is required because two years are needed for a proper comparison of the forecast and the reported earnings. We started with the financial year 1984 because Dutch companies from that year on were obliged to present information in their directors’ report with respect to the circumstances affecting future turnover and profitability. The original sample consists of the data for 1394 company years over the period 1984-1994 for Dutch listed companies, excluding financial institutions.

The business outlook paragraphs in the directors’ reports can be divided in five categories with respect to earnings forecasts:

a. no forecast (251; 18%)
b. only in vague wordings management gives an impression of the future (126; 9%)
c. only an earnings forecast with respect to profit before extraordinary items (113; 8%)
d. a qualitative forecast of earnings (867; 62%)
e. a quantitative forecast of earnings (37; 3%)

We added the number of forecasts by category, the total is 1394; 100%.

We used category d. for our empirical analysis. The small number of quantitative forecasts does not allow a comparison between categories d. and e. The other three categories were not suitable for our research purposes (clear comparison of earnings forecast and reported earnings).

Furthermore, the sample size is reduced because company years can only be included if the prior year’s earnings forecasts are available and comparable with the reported earnings. This means that the first year for every company is not used. Moreover, a number of companies merged or defaulted during the selected period. In addition, companies reporting losses in the period of t-1 or t are also
excluded. This ended up in 772 company years that are unsuitable for our empirical analysis. The sample that remained consists of 622 (= 1394 - 772) useful earnings forecasts.

Each business outlook paragraph was carefully read using the following sample selection criteria. The forecast must be a disclosure, in words, of management’s expectations about the next annual earnings performance, without the specificity of amounts or estimated percentage changes. Only announcements that were exclusively qualitative earnings forecasts were included in our sample. For the translation of the qualitative statements, we used a translation table, based on the scale of Mock (see table 1). This scale is developed by Mock specifically for the interpretation of qualitative earnings forecasts in the business outlook paragraph of the director’s report of Dutch listed companies. This scale is first published by Mock in 1984. The scale does not fully cover all the used adjectives we discovered in the directors’ reports. Therefore, we extended the scale of Mock to facilitate the classification of all qualitative management forecasts with adjectives not included in the original scale of Mock. 3)

In table 1, the resulting scale is displayed.

Insert table 1 here

In table 2 a summary is displayed of the descriptives for the companies in the final sample and their forecast disclosures. The most noticeable difference is between the reported numbers and the pre-adjustment numbers. The reported numbers display a lower variance than the pre-adjustment earnings.

Insert table 2 here

Calculation of forecast errors
Forecast accuracy is measured by the difference between reported and projected earnings per share (EPS). Data on reported EPS (R_EPS) were obtained from annual reports, and information on projected EPS (management earnings forecasts) was extracted from directors’ reports and will be referred to as F_EPS. The variable PA_EPS is the EPS for financial year t after the correction for discretionary accounting. The forecast error (F_ERR) measure is used to evaluate the forecast accuracy:

\[ F\_ERR = F\_EPS - PA\_EPS \]

The F_ERR for all forecasts is calculated based on primary EPS (net income after tax). The forecast error is computed as the difference between the R_EPS before discretionary accounting items and the management forecast. The pre-change EPS is calculated by adjusting the reported EPS by the effect
of the change on net income after tax as reported in the annual reports. From descriptive analysis (not included in the tables) we infer that there is no difference in the tendency to forecast over time nor is there a difference in the extent to which the specified discretionary items are used by reporting entities.

It can be seen in table 2 that the order of magnitude for the earnings variables is about equal for the different measures. For all the earnings measures per share, it can also be seen that the variable PA_EPS has the highest value. The fact that this measure of earnings displays the highest value is an indication that the net effect of the discretionary items is to decrease reported earnings.

Before continuing with the further analysis, a remark on the distributional properties of the variables has to be made. All earnings and forecasted earnings variables display high levels of kurtosis. To remedy this problem a natural log transformation was used. Because of this transformation the variables become approximately normal.

**Identification of discretionary accounting techniques**

To obtain information on discretionary accounting we consulted the annual reports of all 166 companies over the period 1984-1994 issuing 622 useful earnings forecasts. Discretionary accounting techniques relating to accounting changes, sale and lease back, provisions, asset write downs, pensions and (other) extraordinary gains and losses were identified in the footnotes in the annual reports. We restricted ourselves to these categories of discretionary accounting. They are visible in the footnotes in the annual reports. Dutch accounting law requires disclosure with respect to these items in the footnotes.

In table 3, it can be seen that the most important discretionary accounting measures are the extraordinary items.

**Insert table 3 here**

Both in the frequency of occurrence and in the magnitude of the amounts the extraordinary items are more important than the other variables together. Moreover, there seem to be more extraordinary gains than losses.

Since our interest is in the investigation of all discretionary accounting items taken together, the various discretionary accounting items are aggregated. The remaining income values after the correction of the reported numbers is referred to as PA_EPS. However, this is by no means an indication that in the opinion of the authors, it is a more moral or more correct income measure. It
just denotes the income number after adjusting for discretionary items.

**Results**

Our first hypothesis was that management is better positioned to predict earnings and that hence the information content of qualitative earnings forecasts is higher. To test this first null-hypothesis we examine the univariate differences in the R_EPS R_EPSTM1, and the F_EPS. The results are displayed in table 4.

**Insert table 4 here**

The earnings per share differ significantly at the 0.01 level of significance from the previous year and the earnings in the previous year without the discretionary accounting techniques. Furthermore, it can be seen that the forecasted **EPS** is lower than the average reported **EPS**. In table 4, the results of three pair-wise t-tests are displayed. There is a statistically significant increase in the **EPS** over time at the \( \alpha = 0.05 \) level. There is also a significantly lower forecast than the actual results. The difference between the adjusted and unadjusted **EPS** is not significant.

This could be interpreted as a conservative manner of prediction but on the other hand, it can also be due to the construction of the adjusted scale of Mock. Namely, it is possible that the classification from qualitative predictions into quantitative predictions are too conservative.

**Regressions**

In order to investigate further the relationship between the **EPS** and predictive variables for that variable a set of univariate regressions is run. In the first set of regressions the dependent variable is the reported earnings per share (R_EPS). As predictors the forecasted (F_EPS), last years reported earnings (R_EPSTM1) and last year’s earnings without a discretionary earnings adjustment (PA_EPSTM1) are used.

**Insert table 5 here**

Table 5 shows that all three equations show a high level of fit. The F-values range from 5780.12 for the forecasted EPS variable (F_EPS) as a predictor to for pre-adjusted EPS at t-1 (R_EPSTM1) with an F-value of 2273.41, which is still highly significant. The adjusted \( R^2 \) range from a low of 78.5% for again the pre-adjusted EPS (R_EPSTM1) to a high of 90.3% for the forecasted EPS (F_EPS).

To test the explicit hypothesis of which predictor has a higher relative information content a
Hotellings t-test is used. This test can be used to examine the differences in predictive content of several regressors on a pair-wise basis in the case of non-nested hypotheses. Usually the comparisons are for different variables in the same model and the difference can be tested using some form of parameter restriction. In this case the independent variables are from different regressions and a maximum correlation test is used.

The results show that all three differences are statistically significant at the 0.001 level. The forecasted earnings (F_EPS) have significantly more information content then the reported earnings of last year (R_EPSTM1), which in turn have more predictive content then earnings of last year before discretionary accounting adjustments (PA_EPSTM1). The results are in line with the t-values and adj-R^2 levels of the regressions.

Two aspects of the models are of particular interest. First, the forecasted EPS based on the adjusted scale of Mock results in the highest adjusted R^2. Both the constant and the coefficient are statistically significant and the model has the highest fit.

Second, there seems to be a great similarity between the model for the prediction of the EPS with last year's earnings and the prediction of EPS with the forecasted variable. The parameters of the model, the fit and the significance levels seem to be quite similar. However the results of the Hotellings t-tests show that the forecast (F_EPS) is statistically significantly better at predicting earnings in period t.

Now that we have seen the results for the reported earnings per share we commence with the same set of regressions for the EPS without the discretionary accounting techniques as identified above. If indeed, as hypothesized, the discretionary items are used to enhance the predictability of the EPS these regression should display a lower degree of fit and significance for the parameters. Because the discretionary items are hypothesized to increase the fit, models for numbers without the discretionary components should display a lower degree of fit. The results are displayed in table 6.

**Insert table 6 here**

For the regressions with the dependent variable EPS corrected for the discretionary accounting techniques, the fit of the model is lower for all estimations in relation to the corresponding EPS models that are not corrected. The overall significance of this set of regressions is again satisfactory, with F-values ranging from 1199.2 for the prediction based on the pre-adjustment EPS of t-1 to an F of 3486.1 for the forecasted EPS (F_EPS). Although the adjusted-R^2 has decreased somewhat it still ranges from 65.9% to 84.9%. Again, there is a high degree of similarity between the earnings per
share for the previous financial year and the model for the forecasted earnings per share.

Again Hotellings t-tests are used to examine the differences in $R^2$ between the different models. Similar to the previous set of regressions all three differences are again significant with t-values between -4.08 and 22.216. These results show that the forecasted earnings per share are the best predictor for next year's earnings. Moreover, the correction for discretionary accounting deteriorates the predictive content of last year’s earnings as a predictor.

Our second null hypothesis was that there is no association between the size of management's pre-change earnings forecast error and the magnitude of discretionary accounting techniques. An explanation for the decrease in fit is that the discretionary accounting measures are used to increase the predictability of the $EPS$ measure.

If discretionary accounting is indeed used to increase the predictability and the effort to do so is successful the adjustments per share should be a significant contributor in the reduction of the $F_{ERR}$. To test this hypothesis directly we use the following model:

$$DA_{PS} = \alpha + \beta F_{ERR} + \epsilon$$

where

$DA_{PS} =$ Discretionary accounting per share

$F_{ERR} =$ Forecast error

When the model is estimated the following output resulted:

Insert table 7 here

As can be seen in table 7 the model is statistically significant with an F-value of 38.80 and an adjusted-$R^2$ of 5.7 %. The coefficient is statistically significant at $\alpha = 0.01$ with a t-value of 6.229 and is of the expected sign. An increase in the error of prediction increases the size of the adjustment in the opposite direction. In other words, discretionary accounting decreases the difference between the actual and the predicted $EPS$.

**Summary of the results**

The univariate tests show that earnings increase with time and that the prediction by management is conservative in nature or that the classification based on these predictions is conservative.

When on an univariate level the different predictors are used to estimate models for the prediction of
the EPS, the best predictor is the management forecast. It should be noted that this conclusion is only valid for the cases where both the dependent and independent variable in the equation are positive.

When the EPS variable for year t is corrected for discretionary accounting the models lose power and fit but seem to describe the same relationship. This can be seen as support for the hypothesis that adjustments are made to increase the predictability of the EPS variable.

5. SUMMARY AND DISCUSSION

Many earnings forecasts studies are conducted for the Anglo-Saxon countries, but to date very few have focused on continental Europe. This study has examined the association between discretionary accounting and the accuracy of long-run forecasts of annual earnings voluntarily disclosed by managers in the directors’ reports in the Netherlands. Data on management forecasts were collected from the directors’ reports included in the annual reports. Annual reports were also used to obtain information on actual EPS and (the effects of) discretionary accounting techniques.

Our empirical results have indicated that qualitative earnings forecasts provide a statistically better prediction of the actual earnings than the reported EPS on t-1 and the EPS on t-1 after the correction for discretionary accounting techniques and that there is a relationship between high pre-discretionary forecast errors and the adoption of discretionary accounting. After adopting discretionary accounting techniques the forecast errors are reduced, but not eliminated.

The results of this study cannot be interpreted to mean that accuracy of all forecasts is forced through the discretionary accounting techniques investigated. Other discretionary accounting techniques as (other) accruals could also be used to improve the forecast accuracy. Furthermore, it needs to be pointed out that the discretionary accounting techniques used in this analysis may not be adopted to improve the accuracy of management earnings forecasts. As Kasznik (1996, p. 2) mentions there can be competing earnings management incentives to use discretionary accounting as income smoothing and external financing. Also some of the discretionary techniques investigated in this study could be used for practical reasons or fiscal reasons. The results only suggest that some discretionary accounting is associated with management’s desire to improve the accuracy of their forecasts.

It should also be noted that the adoption of discretionary accounting enables management to reduce forecast errors but it may not enable them to eliminate the forecast error.

These findings may also suggest that managers will release a forecast on a voluntary basis only when they are able and willing to “control” reported earnings through discretionary accounting techniques. These results thus provide some empirical support for Brown’s (1988) argument that the release of a
management forecast reflects the self-selection bias of the forecaster, and that the forecaster has the ability to control events that impact reported earnings and affect the magnitude of the forecast error.

A possible limitation of our study is that we excluded company years with losses from our sample. This has been done for statistical reasons (transformations in order to arrive at a normal distribution of the sample). Of course, our results are country and period specific and one should be cautious in generalizing the results to all management forecasts and all discretionary accounting techniques.
Notes

1. Skinner (1994) investigated the frequency of and reasons for an voluntary disclosure of negative news. The study of Kasznik and Lev (1995) confirmed the result of the study of Skinner that companies facing disappointments were more likely to make a disclosure than other companies.

2. For the Netherlands, Knoop and Van der Gaag (1986) also concluded that larger companies more often release earnings forecast than smaller companies.

1. Recently, Mensah et al. (1996, p. 1252-1254) used a two step procedure to classify qualitative management earnings forecasts. In the first step, these authors arrived at a subjective consensus interpretation of each statement on a five-point scale that included the range points -2, -1, 0, +1, and +2. On this scale a forecast was classified as -2 (+2) if a forecast was interpreted as implying a relatively large anticipated decline (increase) in EPS. Forecasts classified as zero were those interpreted as predicting no significant change in EPS. If the level of change was not unusual or significant, it was classified as relatively small change (+1, -1). In the second step, 13 MBA-students were asked in a formal survey to classify a sub-sample of the total sample used by Mensah. et al.. There was a significant consistency between classification between Mensah et al. and the 13 MBA-students. The adjusted scale of Mock is, in our opinion, a better and more refined scale for interpretation of qualitative management earnings forecasts. It is a 13-point scale instead of a five-point scale. The scale of Mock is based on a careful interpretation of Dutch adjectives according to the well known Dutch dictionary “Groot Woordenboek der Nederlandse Taal”(1984) and a Dutch book for synonyms “Groot Woordenboek van Synoniemen” (1991). Further, the scale of Mock is widely used in the Netherlands and management of companies for writing their paragraph on the business outlook in the director’s report and by financial analysts for interpretation since its first publication in 1984.
References


Dutch Accounting Law (Burgerlijk Wetboek, Boek 2, titel 9).

Foster, G. (1973), Stock market reaction to estimates of earnings per share by company officials, Journal of Accounting Research, (Spring), 25-37.


Healy, P. and K.G. Palepu (1990), Effectiveness of Accounting-Based Dividend Covenants, Journal of Accounting and Economics, 97-123.


King, R., G. Pownall and G. Waymire (1990), Expectations adjustment via timely management forecasts: Review, synthesis, and suggestions for future research, Journal of Accounting Literature, 9, 113-144.


Ruland, W., Tung, S. and N.E. George (1990), Factors associated with the disclosure of managers' forecasts, *The Accounting Review*, 2, 710-721.


Table 1: The adjusted scale of Mock.

The classification scheme for translating the qualitative management earnings forecasts into point estimates.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>INCREASE/DECREASE OF THE PROFIT (%)</th>
<th>MID-POINT(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal, no deviation, same size, approximate equal</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fractional, slightly, small, a little bit, modest, moderate, limited, some</td>
<td>0 - 7</td>
<td>3.5</td>
</tr>
<tr>
<td>Clearly, reasonable, sizable, satisfactory</td>
<td>7 - 12</td>
<td>9.5</td>
</tr>
<tr>
<td>Important, large, significant</td>
<td>12 - 20</td>
<td>16</td>
</tr>
<tr>
<td>Strong</td>
<td>20 - 30</td>
<td>25</td>
</tr>
<tr>
<td>Considerable, substantial, appreciable</td>
<td>30 - 45</td>
<td>37.5</td>
</tr>
<tr>
<td>Robust</td>
<td>45 or more</td>
<td>50</td>
</tr>
</tbody>
</table>

* With the aid of 'Groot Woordenboek der Nederlandse Taal (Geerts and Heestermans, 1984) a well known Dutch dictionary and the 'Groot Woordenboek van Synoniemen' (Van Dale, 1991) a Dutch book for synonyms we have grouped the different wordings to similar groups. In
this process we have adapted the scale of Mock (1992). He published an overview which allowed for the translation of adjectives into percentages for changes in earnings forecasts by management in the business outlook paragraph of the directors' report of Dutch listed companies. This overview was published for the first time in 1984.
| Table 2 | Descriptive Statistics for various measures of income |
|-----------------|-----------------|-----------------|-----------------|-----------------|
|                | N   | Minimum  | Maximum | Mean  | Std. Deviation |
| R-EPS           | 622 | -2.04    | 6.39    | 2.18  | 1.06           |
| R-EPSTM1        | 622 | -1.43    | 6.92    | 2.09  | 1.10           |
| PA_EPS          | 622 | -3.72    | 6.63    | 2.18  | 1.13           |
| PA_EPSTM1       | 622 | -2.15    | 6.92    | 2.03  | 1.13           |
| F_EPS           | 622 | -1.43    | 6.92    | 2.13  | 1.07           |
| DA_PS           | 622 | -12.14   | 5.60    | -0.46 | 3.37           |
| F_ERR           | 622 | -12.58   | 20.02   | 1.41  | 10.61          |

Where:
- R_EPS = Reported EPS
- R-EPSTM1 = Reported EPS on t-1
- PA_EPS = Pre-adjustment EPS
- PA_EPSTM1 = Pre-adjustment EPS on t-1
- F_EPS = Forecasted EPS
- DA_PS = Discretionary Accounting per share
- F_ERR = Forecast Error per share as the difference between the forecasted and actual EPS

Apart from the forecast error and the discretionary accounting per share all variables are transformed to enhance normality.

| Table 3 | Descriptive Statistics for various discretionary accounting decisions |
|-----------------|-----------------|-----------------|-----------------|-----------------|
|                | N   | Minimum  | Maximum | Mean  | Std. Deviation |
| Provisions      | 622 | -12000   | 14000   | 33.66 | 1384.05        |
| Accounting Changes | 622 | -54600   | 83000   | 423.07 | 5671.22        |
| Sale/lease back | 622 | 0        | 48300   | 240.54 | 2934.12        |
| Pensions        | 622 | -20000   | 15000   | -13.12 | 1105.47        |
| Extraordinary Gains | 622 | 0        | 840000  | 5914.05 | 43930.60       |
| Extraordinary Losses | 622 | -532000  | 0       | 4638.31 | 36400.80       |
| Asset write-downs | 622 | -40000   | 15200   | -131.27 | 2667.91        |

Amounts are in Dutch guilders x 1000. To avoid double counting items were only classified as extraordinary items when no other discretionary category was causing the item to occur.
Table 4
Paired Samples Test

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>t-value</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R_EPS - R_EPST1</td>
<td>0.091</td>
<td>6.105</td>
<td>621</td>
</tr>
<tr>
<td>F_EPS - R_EPS</td>
<td>-0.049</td>
<td>-3.650</td>
<td>621</td>
</tr>
<tr>
<td>F_EPS - R_EPST1</td>
<td>0.042</td>
<td>6.541</td>
<td>621</td>
</tr>
</tbody>
</table>

Where:
R_EPS = Reported EPS
R-EPSTM1 = Reported EPS on t-1
F_EPS = Forecasted EPS

Table 5: Regressions with depend variable reported net income

R_EPS = b1 + b2 (Predictor)

<table>
<thead>
<tr>
<th>Independent</th>
<th>Adj. R-square</th>
<th>Constans</th>
<th>Coefficient</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(in %)</td>
<td>t</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F_EPS</td>
<td>90.3</td>
<td>0.184</td>
<td>0.937</td>
<td>5780.12</td>
</tr>
<tr>
<td></td>
<td>(6.262)</td>
<td>(76.027)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R_EPSTM1</td>
<td>88.5</td>
<td>0.288</td>
<td>0.906</td>
<td>4802.73</td>
</tr>
<tr>
<td></td>
<td>(9.328)</td>
<td>(69.302)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA_EPST1</td>
<td>78.5</td>
<td>0.51</td>
<td>0.825</td>
<td>2273.41</td>
</tr>
<tr>
<td></td>
<td>(12.69)</td>
<td>(47.680)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hotelling's t test of correlations of dependent variables

<table>
<thead>
<tr>
<th>F_EPS</th>
<th>R_EPST1</th>
<th>PA_EPST1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t-values</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.09</td>
<td>12.58</td>
</tr>
</tbody>
</table>

n= 622 and the t-values are in parentheses
R_EPS = Reported Eps
F_EPS = Forecasted Eps
R-EPSTM1 = Reported Eps on t-1
PA_EPST1 = Pre-adjustment Eps on t-1
Table 6  
Regressions with depend variable net income before discretionary adjustments

PA_EPS = b1 + b2 (Predictor)

<table>
<thead>
<tr>
<th>Independent</th>
<th>Adj. R-square</th>
<th>Constant</th>
<th>Coefficient</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>F_EPS</td>
<td>84.9</td>
<td>0.111</td>
<td>0.969</td>
<td>3486.1</td>
</tr>
<tr>
<td></td>
<td>-2.835</td>
<td>-59.043</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R_EPSTM1</td>
<td>83.2</td>
<td>0.219</td>
<td>0.936</td>
<td>3071.7</td>
</tr>
<tr>
<td></td>
<td>-5.487</td>
<td>-55.423</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA_EPST1</td>
<td>65.9</td>
<td>0.543</td>
<td>0.806</td>
<td>1199.2</td>
</tr>
<tr>
<td></td>
<td>-10.056</td>
<td>-34.629</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hotellings t test of correlations of dependent variables

<table>
<thead>
<tr>
<th></th>
<th>F_EPS</th>
<th>R_EPSTM1</th>
<th>PA_EPST1</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-values</td>
<td>-4.08</td>
<td>20.83721</td>
<td></td>
</tr>
</tbody>
</table>

n=622 and the t-values are in parentheses

PA_EPS = Pre-adjustment Eps
F_EPS = Forecasted Eps
R-EPSTM1 = Reported Eps on t-1
PA_EPST1 = Pre-adjustment Eps on t-1
Table 7  Forecast errors and discretionary accounting

\[ DA_{PS} = b1 + b2 \times F_{ERR} \]

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.24</td>
<td>0.058</td>
<td>0.057</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>416.33</td>
<td>1</td>
<td>416.33</td>
<td>38.80</td>
</tr>
<tr>
<td>Residual</td>
<td>6652.28</td>
<td>620</td>
<td>10.73</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7068.62</td>
<td>621</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictors: (Constant), F_ERR
Dependent Variable: earnings adjustments per share

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Model</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.353</td>
<td>0.132</td>
</tr>
<tr>
<td>F_ERR</td>
<td>-0.077</td>
<td>0.012</td>
</tr>
</tbody>
</table>

Where:
- DA_PS = Discretionary Accounting Per Share
- F_ERR = Forecast Error per share as the difference between the forecasted and actual EPS