



## Accounting and Business Research

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rabr20>

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Published online: 04 Jan 2011.

To cite this article: Thomas Schleicher & Martin Walker (2010) Bias in the tone of forward-looking narratives, *Accounting and Business Research*, 40:4, 371-390, DOI: [10.1080/00014788.2010.9995318](https://doi.org/10.1080/00014788.2010.9995318)

To link to this article: <http://dx.doi.org/10.1080/00014788.2010.9995318>

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# Bias in the tone of forward-looking narratives

Thomas Schleicher and Martin Walker\*

**Abstract** – We extend the prior literature on biased disclosure decisions by examining whether, when and how managers bias the tone of forward-looking narratives. In order to measure tone we employ techniques of manual content analysis and we aggregate positive, neutral and negative statements into an overall measure of tone. We then analyse the frequency of positive and negative statements for firms with large impending year-on-year changes in sales and operating profit margin, and we regress tone cross-sectionally on four managerial incentive variables that are unrelated to the private signal about future trading, namely loss status, sign of earnings change, business risk, and the existence of an analyst earnings forecast.

We find that firms with large impending performance declines bias the tone in the outlook section upwards. Also, we find that loss firms, risky firms and firms with an analyst earnings forecast provide a more positive tone, while firms with an earnings decline provide a more negative tone. Finally, we observe that for a majority of our managerial incentive variables the main vehicle of biasing the tone is to change the number of negative statements, not the number of positive statements. Overall, our findings are difficult to reconcile with predictions from signalling models, but they are consistent with the alternative view of impression management. Our results have policy implications. In particular, they suggest that there is a need to reconsider the current largely unregulated nature of forward-looking narratives.

**Keywords:** forward-looking; narratives; tone; bias; impression management; content analysis

## 1. Introduction

We extend the prior literature on biased disclosure decisions by focusing on the tone of forward-looking narratives. We focus on forward-looking narratives because the existing evidence on the usefulness, predictive value, and value-relevance is stronger for forward-looking narratives than for backward-looking narratives (e.g. Bryan, 1997; Schleicher and Walker, 1999; Clarkson et al., 1999). This suggests that managers with a willingness to engage in impression management are likely to target forward-looking statements. Thus, our study differs from prior research on impression management in narratives in that we focus exclusively on forward-looking disclosures.

At the same time we define forward-looking disclosures more widely than management earnings forecast studies (e.g. McNichols, 1989; Jelic et al., 1998; McConomy, 1998; Rogers and Stocken, 2005). In particular, we include all types of forward-looking statements, including qualitative and non-earnings-related statements. We believe

such a focus is justified for two reasons. First, in the UK information on current and future trading is typically made through qualitative narratives, not through quantitative management earnings forecasts. For example, Brennan (1999: 884) observes that ‘forecasts are rarely disclosed by UK management except in new share issue prospectuses and during takeover bids’. Given the dominance of qualitative trading statements over hard earnings forecasts it is surprising how little research has been done on these statements. Second, the qualitative nature of forward-looking narratives and their frequent focus on soft and non-earnings-related topics makes it much harder for outsiders to effectively monitor the accuracy of these statements. Evidence in Rogers and Stocken (2005) suggests that an inability to monitor *ex post* increases the likelihood of *ex ante* manipulation.

We investigate whether, when and how managers bias the tone of forward-looking narratives. For that we use techniques of manual content analysis and we focus on the annual report outlook section, a paragraph of forward-looking statements that is typically located at the end of the Chairman’s Statement. For each forward-looking statement we determine the tone of the underlying message and we aggregate positive, neutral and negative statements into an overall measure of tone. The tone of forward-looking narratives is our proxy for forecast news.

We make the following observations when analysing a sample of annual reports with large impending year-on-year changes in sales growth rate and operating profit margin. First, firms with

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This paper was accepted for publication in October 2009.

large impending decreases use positive statements significantly more than negative statements. This is consistent with firms biasing the tone of outlook statements upwards. Second, when we estimate the determinants of tone we find that managerial incentives unrelated to future trading dominate our findings. In particular, we find that managers lower the tone if previous year's earnings decline and they increase the tone if previous year's earnings are negative. Also, we find that risky firms and firms with an analyst earnings forecast significantly increase the tone in the outlook section. These four observations are difficult to reconcile with predictions from signalling models, but they are consistent with the alternative view of impression management.

Investigating whether, when and how managers bias the tone of forward-looking annual report narratives is an important research issue as prior studies demonstrate that such narratives are considered useful by professional analysts (e.g. Clarkson et al., 1999) and that they are used by investors in setting market prices (e.g. Bryan, 1997; Hussainey et al., 2003). Thus, manipulating the news content of forward-looking annual report narratives has the potential to affect analyst views and market values.

Our findings have implications for accounting policy-makers. In particular, our results question the rationale of leaving forward-looking annual report narratives largely unregulated and unaudited. For example, while the Accounting Standards Board (ASB) (1993, 2006) is encouraging firms to include forward-looking narrative information in the Operating and Financial Review, the Reporting Statement is a formulation of best practice and not an enforceable accounting standard. Also, the UK Auditing Practices Board (APB) applies International Standards on Auditing in requiring the auditor to read other information to identify material inconsistencies with the audited financial statements. If the auditor becomes aware of any apparent misstatements or identifies any material inconsistencies, the auditor should seek to resolve them (APB, 2004, para. 2 and 2-1). This requirement is vague and difficult to act upon as financial statements and forward-looking narratives relate to different time periods. Our findings of biased disclosure decisions suggest that there is a need to reconsider the current regulatory regime for forward-looking narratives.

The remainder of the paper is organised as follows. The next section reviews the literature and derives hypotheses. Section 3 describes our research design, including sample selection, content

analysis, and hypotheses testing. Our results are reported in Section 4. Section 5 concludes.

## 2. Literature review and hypothesis development

A large number of theoretical papers examine incentives for managers to disclose private information to outside parties. Early studies like Grossman (1981) and Milgrom (1981), for example, assume that managers face incentives that induce them to act in the best interest of the firm's current owners and that such managers cannot pre-commit to disclose all value-relevant information, regardless of whether this information is good or bad. In other words, managers decide whether or not to disclose the value-relevant information only after they have learned the value of the signal and in making their disclosure decision they bear in mind the effect of the disclosure on the wealth of current shareholders (Walker, 1997). Grossman (1981) and Milgrom (1981) then predict that managers truthfully disclose all value-relevant information except in a situation where the manager receives the worst possible signal.

Since the above 'full disclosure' principle is often viewed as not being empirically descriptive subsequent analytical papers have added to the model a cost of disclosure (where this cost of disclosure is generally viewed as a proprietary cost of providing sensitive information to competitors) (Verrecchia, 1983). Other models have added uncertainty regarding whether or not managers have private information to disclose (Dye, 1985; Jung and Kwon, 1988). Both 'costly disclosure' and 'lack of information' models predict a separating equilibrium: firms with relatively good news disclose while all other firms remain silent (Miller, 2002).

Another stream of the analytical literature studies the effect of litigation liability by imposing a cost for non-disclosure of bad news as well as for good news disclosures that turn out *ex post* to be overly optimistic (Trueman, 1997; Hughes and Sankar, 1997). The resulting models predict that the value of the disclosed signal varies with the magnitude of the expected cost of litigation. When expected litigation costs are large managers have an incentive to err on the side of caution and hence they will tend to withhold good news while also disclosing bad news.

While US-style disclosure-related litigation is virtually non-existent in a UK context, the model predictions might still apply to a UK study if one interprets the cost of surprising the stock market more widely. For example, arguments and evidence in Skinner (1994) and Graham et al. (2005) suggest

that the reputational damage to the firm is by far greater for negative earnings surprises than for positive earnings surprises. This asymmetric loss in reputation can translate into a reduction in liquidity and share price and – following on from this – into a reduction in executive remuneration and managerial job security.

While the insights provided by the analytical literature are helpful, the models are generally silent on the nature of the value-relevant signal. However, a large impending year-on-year increase in sales and operating profit margin can be viewed as a ‘good’ news signal while a large impending decrease can be viewed as a ‘bad’ news signal. Furthermore, the fact that stock market participants express share prices in multiples of one-year-ahead sales and profit (e.g. Palepu et al., 2003) suggests that this signal is value-relevant. In the remainder of the paper we refer to firms with large impending increases (decreases) in sales and operating profit margins as UP (DOWN) firms. Our UP (DOWN) firms report, in the upcoming financial year, a median sales growth rate of 30.8 (–12.5)% and a median change in operating profit margin of 4.0 (–5.9) percentage points.

Below we begin our empirical investigation by analysing the number of positive and negative statements per annual report outlook section. The above theoretical models suggest that UP firm managers will want to disclose their positive expectations so as to maximise current market value. In particular, a large impending performance increase means that managers have little incentive to claim lack of information. Also, the sheer size of the impending performance change means that outlook statements are unlikely to turn out inaccurate *ex post*, even in cases where unforeseen events create a negative ‘wedge’ between expected and actual outcome. Thus, for UP firms there is little need to err on the side of caution by withholding positive statements and disclosing negative statements. These arguments yield our first hypothesis:

**H1:** For UP firms the number of positive statements exceeds the number of negative statements and the overall tone is positive.

The predictions for DOWN firms are – to some extent – dependent on the precise theoretical model. If we interpret our DOWN firms as having the worst possible news, then Grossman (1981) and Milgrom (1981) predict silence. Otherwise these models predict that DOWN firms truthfully announce the decline in sales and operating profit margin so as to screen themselves out from firms that have even worse news to report (like bankruptcy, for

example). The ‘costly disclosure’ models and the ‘lack of information’ models unambiguously predict silence, while the ‘asymmetric loss function’ argument predicts a tendency to disclose bad news. Overall, therefore, it is not clear from the signalling literature whether DOWN firms disclose. However, if they do disclose, then the negative statements should clearly outnumber positive statements, especially because the sheer size of the impending decline makes it very unlikely that many DOWN firms had indeed expected good news at the start of the year. Taking into account that the precise prediction depends to some extent on the underlying model we only predict that:

**H2:** For DOWN firms the number of positive statements does not exceed the number of negative statements and the overall tone is not positive.

The predictions in H1 and H2 are based on signalling models. These models assume that managerial interests are perfectly aligned with the interests of current owners and that managerial disclosures are always truthful. An alternative point of view is based on agency theory which stresses the possibility of conflicts between managers and owners and where managers are assumed to act in their own best interest, not necessarily in the owners’ best interest.

A seminal paper in the agency cost literature is that by Jensen and Meckling (1976). They model investment decisions, not disclosure decisions, but the principal idea behind their model is still relevant to our paper. In particular, Jensen and Meckling (1976) specify managers’ personal utility as increasing in private consumption of corporate resources and as decreasing in the level of effort that they put into managing the firm. Their model then predicts that, whenever a firm’s outside ownership stake is non-zero, managers choose an effort level that is too low and they spend too many corporate resources on activities that generate only personal utility.

While the agency model in Jensen and Meckling (1976) deals with investment, not disclosure, it is not difficult to ‘translate’ the model predictions into a disclosure setting: If managers are prepared to exploit the unobservability of the managerial effort in order to ‘shirk’, then, clearly, they can also be expected to exploit the unobservability of the private signal about future trading in order to misrepresent a firm’s trading prospect. The arguments in Jensen and Meckling (1976) suggest that they will do so whenever they personally gain from such a misrepresentation.

The idea that managers use their discretion over

corporate disclosures opportunistically to their own personal benefit is central to the impression management literature. For example, Clatworthy and Jones (2001: 311) define impression management as an attempt 'to control and manipulate the impression conveyed to users of accounting information' while Yuthas et al. (2002: 142) regard impression management as a vehicle to 'strategically . . . manipulate the perceptions and decisions of stakeholders'. In most empirical settings impression management would be expected to manifest itself through a positive disclosure bias as managers hope that the presentation of the firm in the best possible light leads to increased remuneration and job security (Clatworthy and Jones, 2003).

Empirically, impression management has been documented across a wide spectrum of accounting research issues, including the management of bottom-line earnings (e.g. Roychowdhury, 2006), the selective disclosure and calculation of pro-forma earnings (e.g. Walker and Louvari, 2003; Johnson and Schwartz, 2005), the use of prior-period benchmarks (e.g. Schrand and Walther, 2000), and the presentation of graphs and pictures in the annual report (e.g. Beattie and Jones, 1992). In terms of narratives, impression management studies have focused on reading ease manipulations (e.g. Curtis, 2004), thematic manipulations (e.g. Clatworthy and Jones, 2003) and one-sided performance attributions (e.g. Bettman and Weitz, 1983). For example, Clatworthy and Jones (2003) focus on the Chairman's Statement of 100 UK firms with extreme changes in pre-tax profits and examine whether firms with improving and declining performance in the year under review report good and bad news in a different way. Their findings suggest that both groups tend to dwell on the positive aspects of their performance and that both groups take credit for the good news themselves while blaming external factors for the bad news. This leads to the conclusion that managers use (predominately) backward-looking narratives in a biased and self-serving way. Evidence of a positive reporting bias is also documented in Rutherford (2005) for the Operating and Financial Review, in Guillamon-Saorin (2006) for press releases, and in Lang and Lundholm (2000) for firms with an imminent public offering of new equity. Finally, the evidence of a bias in management earnings forecasts is mixed. For example, Rogers and Stocken (2005) find that managers not only bias earnings forecasts in a self-serving way, but also that they are more likely to bias their forecasts when it is more difficult for investors to detect that they have misrepresented their information. This contrasts

with the earlier findings in McNichols (1989) who obtains only weak evidence of bias in management earnings forecasts.<sup>1</sup>

It is instructive to reconsider the signalling-based predictions in H1 and H2 in the light of self-serving behaviour. For example, as far as UP firms are concerned, agency theory and impression management make the same prediction as signalling models. In particular, managers personally benefit from truthfully revealing their positive expectations about the future. This is true because the anticipated rise in market value leads to a higher stock-based compensation and a lower risk of takeover-related dismissal. In contrast, for DOWN firms the predictions based on signalling models and self-serving behaviour differ. In particular, agency theory and impression management predict a tendency to bias the tone of forward-looking statements upwards. Not only can a positive tone delay the risk of dismissal, but there is even a small chance that managers might be able to turn things around before the end of the financial year.

We test H1 and H2 by calculating the difference between positive and negative statements per annual report outlook section and by testing whether the mean and median difference is significant. However, while such a test is a useful starting point, we also recognise that these tests might well lack the necessary power to detect biased disclosures decisions. In particular, comparing the predictions from signalling models with those based on self-serving behaviour suggests that the scenario underlying H1 is too weak to provide a strong test of opportunistic behaviour. This is true because there is no conflict between the managerial incentive to disclose good news and the real underlying outlook. Thus, one could argue that there is little reason for UP firm managers not to report a positive tone.

In order to provide a different angle to our analysis – especially as far as UP firms are concerned – we subsequently make two changes to the research design. First, we consider a number of additional disclosure incentives which are unrelated to the value of the privately observed signal about future trading. Second, we exploit cross-sectional variations in tone within our two subsamples so as to capture more subtle changes in the number of positive and negative statements. Such subtle changes might well go unnoticed in simple tests of means and medians.

Thus, in the second part of our paper we regress the firm's tone on a number of additional managerial

<sup>1</sup> See Merkl-Davies and Brennan (2007) for a comprehensive, up-to-date review of the impression management literature.

incentive variables. These are (a) loss status, (b) reduction in earnings, (c) business risk, and (d) the existence of an analyst earnings forecast. Note that none of these variables is related to the value of the private signal about future trading. Thus, in a signalling context these four variables are *not* expected to affect the tone of forward-looking narratives. However, if managers act in their own personal interest, then the correlations between tone and these four variables might well be non-zero. The following paragraphs discuss this possibility in more detail.

A characteristic feature of trading statements in the annual report outlook section is that they are released together with the result for the previous financial year. This increases the likelihood that the previous year's trading – in addition to future trading – influences a manager's disclosure decision. This is true because a disappointing trading result for the year under review is likely to impose costs on the manager that are quite similar to those associated with a negative trading outlook.

In order to mitigate these costs, managers might be tempted to bias the tone in forward-looking statements. In particular, they could issue optimistic disclosures in an attempt to offset the negative job market repercussions associated with a disappointing result. In order to examine whether last year's financial result affects a manager's choice of tone, we consider two types of disappointments: the incidence of (a) a loss and (b) a decline in earnings.

A large body of empirical research examines the tactics that are employed by managers to avoid the reporting of a loss (e.g. Walker and Louvari, 2003). The overall picture that emerges from these studies suggests that managers regard the reporting of a negative earnings number as a major disappointment that should be avoided if at all possible. This is understandable given that a loss that is perceived by outsiders to be permanent calls into question the competence of the management team and the general viability of the firm as a going concern.

Our third hypothesis deals with a scenario where a loss has not been avoided. We argue that in such a situation the management team's main concern must be to convince investors that its strategy is still working and that investors should continue to employ managers whose strategy will yield some positive rewards in the future. Thus, we predict that a loss firm's emphasis is on communicating the firm's positive prospects so as to prevent investors from extrapolating the current loss into the future. Note that this situation is very different from that of profit firms. For a profit firm the financial result already shows that the firm is managed compe-

tently. Thus, a manager of a profit firm has less need to communicate a firm's positive prospects through forward-looking statements. This yields our third hypothesis:

**H3:** Loss firms report a more positive tone than profit firms.

The second disappointment we consider relates to a reduction in earnings. A lower profit can lead to a decline in managerial remuneration (Matsunaga and Park, 2001), reduced job security (Puffer and Weintrop, 1991) and a loss in managerial disclosure reputation (Matsumoto, 2002). If a concern about short-term job market repercussions dominates, then one might expect disclosures to be more positive. Otherwise, if managers are more concerned about not negatively surprising outsiders in future years, then disclosures should be less positive. We would expect the latter concern to be particularly pronounced if the tone in last year's outlook section was typically positive and if the costs associated with a second straight disappointment are larger than usual. In particular, one might expect the damage to a manager's reputation to be large if investors interpret a second straight disappointment as evidence that the management team is either dishonest or incompetent. Given that *ex ante* it is not entirely clear which concern dominates, we formulate the fourth hypothesis as a non-directional forecast:

**H4:** The tone reported by managers is unaffected by the sign of previous year's earnings change.

The impression management literature suggests that most managers will try to present the firm in the best possible light. However, Rogers and Stocken (2005) argue that, as far as forward-looking disclosures are concerned, managers are constrained because outsiders can use the subsequent financial report to evaluate the truthfulness of managers' earlier statements. In particular, if outsiders later detect the positive disclosure bias, then a manager's disclosure reputation might suffer. In this case one would expect a rational manager to trade off the expected benefits from overly optimistic disclosures against any expected cost from reduced reputation.

In line with Rogers and Stocken (2005) we predict that the expected damage to a manager's reputation increases with a financial report's usefulness for evaluating the truthfulness of managerial outlook statements. In particular, if the firm operates in a stable environment with relatively stable financial results, then investors are more likely to ascribe any *ex post* deviation from earlier forecasts to a biased outlook section. In contrast, if the firm

operates in a risky, unstable environment with widely fluctuating financial results, then it is more difficult to conclude that the tone was a biased reflection of managers' expectations. This is true because a large inconsistency between the ex post financial result and the ex ante outlook statement might well be due to unpredictable and uncontrollable events. We predict that this inability to accurately assess truthfulness reduces a manager's expected reputational costs and, as a result, leads to an increased tendency to bias the tone in forward-looking statements upwards. This leads to our fifth hypothesis:

**H5:** The tone reported by managers is positively associated with a firm's business risk.

Our last hypothesis relates to the existence of an analyst earnings forecast. A possible association between disclosure and analyst following has long been acknowledged in the disclosure literature but the emphasis has traditionally been on the quality of the disclosure (e.g. Lang and Lundholm, 1996). This emphasis is consistent with the idea that analysts are attracted by – or actively demand – more value-relevant information. An alternative view is that the existence of an analyst earnings forecast affects the value of the disclosed signal and we predict that the relation between tone and analyst earnings forecast is positive. In particular, a prediction of a positive bias is consistent with the evidence of an 'earnings-guidance-game' between managers and analysts. This evidence suggests that analysts regularly issue optimistically biased earnings forecasts at the start of a reporting cycle and then 'walk down' the forecast to beatable levels (Richardson et al., 2004). This 'walking down' from optimistic to pessimistic levels is consistent with managers issuing positive guidance early on in a reporting cycle and then – if necessary – providing downward guidance as the cycle progresses. Such a 'dual' disclosure strategy benefits both analysts and managers. Analysts benefit because it provides the necessary 'ammunition' for a favourable recommendation and this helps to generate transactions from clients. At the same time it also shields analysts from the embarrassment of a negative surprise on earnings announcement day. Managers, in turn, benefit from a good relationship with analysts and from higher liquidity and share prices. Given that annual reports are released early on in the annual reporting cycle we predict that:

**H6:** Firms with an analyst earnings forecast report a more positive tone than firms without an analyst earnings forecast.

We now turn to a discussion of our research design, including sample selection, content analysis, and estimation strategy.

### 3. Research design

#### 3.1. Sample selection

We start our empirical analysis by selecting a sample of annual reports from the *Dialog* database. *Dialog* is a Thomson Financial product and it contains large cross-sections of UK annual reports in electronic format for the years 1996 to 2002.<sup>2</sup> The population of UK firms on *Dialog* includes fully-listed LSE firms and firms listed on the AIM but no unlisted firms. The total number of annual reports on *Dialog* for the seven years is 11,756. After removing financial companies this reduces to 8,098.<sup>3</sup> Of those, 7,977 firm-years have a matching record on *Datastream* which is our source for a firm's accounting variables.

Next, we delete firms with a changing year-end, and we match each firm-year with the following year's change in operating profit margin and sales growth rate (while deleting observations with missing accounting data where necessary). We use the following year's actual realisation as a proxy for management's expectation at the start of the financial year. Thus, we take the view that any increase (or decrease) in sales and operating profit margin can be predicted reasonably well by inside managers but less so by outside investors. As a result we use next year's actual change in performance as a proxy for the value of managers' private information.

We believe that the assumption of managers being able to forecast – albeit with some error – next year's sales and operating profit margin is valid on two grounds. First, at the time of making forward-looking statements, first quarter sales and margins are typically known to management. Second, backlog orders, production plans, and ongoing orders and enquiries for the remainder of the year should give managers a reasonably clear idea of the direction into which sales and margins are heading.

<sup>2</sup> *Dialog* was discontinued by Thomson Financial in mid-2004. The year 2002 is the last year with a comprehensive coverage.

<sup>3</sup> Removing financial companies is a standard procedure in the empirical literature. For example, Clatworthy and Jones (2003) remove financial companies before selecting firms with extreme changes in profit before tax. One argument for removing financial companies is that the formats of their financial statements are quite different from the formats of non-financial companies and that it is not clear whether the additional effort required to reconcile the two formats is justified given that the remaining sample of non-financial companies is still very large and still quite representative of the overall economy.

At the same time this kind of information is typically not available to outside investors. Thus, in the absence of forward-looking disclosures outsiders will typically rely on the previous year's result as a benchmark for next year's forecast. This is the rationale for using actual change in performance as a proxy for a firm's private information advantage *after* the mandatory release of the income statement but *before* any voluntary forward-looking narratives.<sup>4</sup> This approach is very similar to that taken in Miller (2002).<sup>5</sup>

Subsequently, we rank all firm-years into quartiles, and we do this once on the basis of next year's change in operating profit margin, and once on the basis of next year's sales growth rate. We define firm-years as observations with (an expectation of) strongly increasing (strongly declining) operating performance if the firm-year falls into the top (bottom) quartile of both distributions. We refer to these two groups as UP and DOWN. We use sales (in addition to profit) as a sample selection criterion because sales is often regarded as the other key measure of a firm's financial performance, and we

<sup>4</sup>Note that while in practice income statements and outlook sections are typically released together, insiders know the size of the imminent earnings number at the time of making decisions on forward-looking disclosures. Thus, with outsiders forming expectations according to a random walk process, inside managers can accurately predict the private information advantage they will have once the mandatory earnings announcement has been made.

<sup>5</sup>Miller (2002) examines the relation between voluntary disclosure and earnings performance. Miller (2002) selects his sample by choosing firms with eight consecutive quarters of actual earnings increases. As far as the subindex of forward-looking disclosures is concerned Miller (2002) investigates whether the amount of forward-looking disclosures responds to future changes in actual earnings performance. Such an investigation makes sense only if managers are assumed to have foresight of future earnings realisations. Also, such an investigation is only consistent with the theory in Miller (2002) if at least part of this foresight represents private information. Note that analyst forecasts of earnings and sales – even if available for a large number of observations in a sample – are unlikely to be a valid proxy. In particular, replacing last year's performance with analyst forecasts would only be valid if such forecasts could be observed after the release of the income statement but before any forward-looking disclosures. In practice, however, such forecasts do not exist because income statements and forward-looking narratives are typically released on the same day. On the other hand, replacing next year's actual performance with analyst forecasts is inconsistent with the idea of private information as analyst forecasts represent market expectations, not insider expectations. Finally, note that our proxy for private information effectively assumes rational expectations on the part of managers and investors (though with different information sets on which to base expectations). This assumption of rational expectations is perfectly consistent with the signalling models in Section 2 as signalling models are also rational expectations models. In particular, the assumption of rational expectations is not inconsistent with the idea of managers trying to bias the tone of forward-looking narratives so as to maximise current market value for existing shareholders.

wish to rule out the possibility that opposite expectations for sales and profit could be the reason for a 'mixed' message in the outlook section. We select only extreme observations – top versus bottom quartile – because we wish to maximise the likelihood that management's private information reflects changing trends that are material enough to be worth reporting.

The above selection criteria lead to an initial sample of 357 (484) firm-years with strongly increasing (strongly declining) sales and operating profit margins. We further reduce the number of observations for two reasons. First, we delete a large number of observations where the change in operating performance appears to be driven mainly by acquisitions and disposals of subsidiaries and other related companies. We do this because we know from our preliminary reading of annual reports that forward-looking narratives rarely discuss changes in operating performance that result from changes in the group composition. To account for this apparent 'convention' we delete such firms, and for this we take into account acquisitions and disposals in the year under review and in the next financial year.<sup>6</sup> Second, we remove a small number of firm-years whose (undeflated) operating profit

<sup>6</sup>One can only speculate about why firms are reluctant to discuss changes in the trading performance that result from acquisitions and disposals. As far as acquisitions and disposals over the coming year are concerned one could argue that changes in the group composition are often highly uncertain until the very last minute – for example until shareholder approval is granted to both entities – and as a result of this uncertainty management might prefer to stay quiet. However, this argument cannot apply to acquisitions and disposals in the year under review for which the 12-months effect in the coming year is necessarily (much) greater than the contribution in the current year. Perhaps the firms feel that the performance implications of such changes in the group composition can now easily be estimated from the financial statements. Whatever the precise reason for staying quiet, we prefer to delete such firms. Otherwise the trading outlook for the continuing businesses – which is regularly commented upon in the outlook section – could be dominated in next year's financial statements by the effect of acquisitions and disposals – which are regularly not commented upon. In practical terms we scrutinise the financial statements for the effect of acquisitions and disposals on sales and operating profit margin, both in the year under review and in the next financial year, and we make adjustments (based on estimates) where possible. For example, we remove the contribution of next year's acquisitions and recalculate sales growth and operating profit margin, and only retain the firm-year if the two adjusted values still fall into the range of the (original) top and bottom quartiles. Similarly, for any acquisition in the current year we scale up the contribution to the current year by estimating the 12-month effect of current year's acquisitions and replace the actual contribution with an estimated 12-month contribution. For that we assume a lack of seasonality in sales and operating profit. Note that we delete firms for which we have insufficient information to make the necessary adjustments, for example because the date of the first consolidation in the current year is not given anywhere in the annual report.

**Table 1**  
**Descriptive statistics: sample selection**

**Panel A: Accounting performance**

	UP MEAN	UP STD	UP MEDIAN	DOWN MEAN	DOWN STD	DOWN MEDIAN	T-TEST P-VALUE	WILCOXON P-VALUE
$REV_t$	83	233	21	369	1,183	41	0.000	0.000
$REV_{t+1}$	109	298	27	328	1,065	35	0.001	0.229
$OP_t$	6	30	1	30	101	3	0.000	0.000
$OP_{t+1}$	12	39	3	11	80	0	0.790	0.000
$OPM_t$	0.039	0.149	0.054	0.090	0.112	0.077	0.000	0.001
$OPM_{t+1}$	0.114	0.131	0.092	-0.008	0.144	0.014	0.000	0.000
$\Delta REV_{t+1}$	0.374	0.246	0.308	-0.152	0.102	-0.125	0.000	0.000
$\Delta OPM_{t+1}$	0.075	0.079	0.040	-0.098	0.101	-0.059	0.000	0.000
OBS	181	181	181	321	321	321		

**Panel B: Calendar year**

	1996	1997	1998	1999	2000	2001	2002	OBS
UP	29	27	23	31	25	30	16	181
DOWN	19	54	62	33	42	78	33	321
ALL	48	81	85	64	67	108	49	502

Panel A presents descriptive statistics on revenue,  $REV$ , operating profit,  $OP$ , operating profit margin,  $OPM$ , sales growth rate,  $\Delta REV$ , and change in operating profit margin,  $\Delta OPM$ . Revenue and operating profit are measured by *Worldscope* items WC01001 and WC01250 and are defined as 'gross sales and other operating revenue less discounts, returns and allowances' and 'difference between sales and total operating expenses'.  $REV$  and  $OP$  are measured in £000s, while  $OPM$ ,  $\Delta REV$  and  $\Delta OPM$  are expressed in % and percentage points, respectively, and then divided by 100. UP (DOWN) refers to the subsample of firm-years with strongly increasing (decreasing) sales and operating profit margin over the next financial year. A standard two-sample t-test (Wilcoxon Rank-Sum test) is used to test for differences in means (medians) between the two subsamples. Panel B illustrates the distribution of firm-years across calendar years. STD = standard deviation. OBS = observations. ALL = combined sample of UP and DOWN.

decreases (increases) despite an increase (decrease) in the operating profit margin.<sup>7</sup> This leaves us with a final sample of 181 firm-years in the UP group and 321 firms-years in the DOWN group.<sup>8</sup>

Panel A in Table 1 presents descriptive statistics for these two groups. The mean (median) sales

growth rate,  $\Delta REV_{t+1}$ , is 37.4 (30.8%) for the UP group and -15.2 (-12.5)% for the DOWN group, while the respective changes in the operating profit margin,  $\Delta OPM_{t+1}$ , are 7.5 (4.0) and -9.8 (-5.9) percentage points. The differences between the two groups are highly significant, using either a parametric two-sample t-test (means) or a non-parametric Wilcoxon Rank-Sum test (medians). A similar picture also emerges if we look at (absolute) sales,  $REV$ , and (absolute) operating profit,  $OP$ , in  $t$  and  $t+1$ , and compare any changes in these two variables over the 12-month period across the two groups. Thus, it is clear from Panel A that our sample selection procedure was effective in creating two dichotomous samples with very different prospects for the coming year. Panel B shows that - despite this very different outlook - no particular calendar year dominates our two subsamples.

Next we download the 502 annual reports from *Dialog* and identify any 'outlook sections' in the narrative part of the annual report. In a majority of

<sup>7</sup> We use the change in the operating profit margin (rather than the growth rate in operating profit) because it avoids the problems associated with a negative deflator.

<sup>8</sup> Note that as we move from the initial to the final sample we delete a larger proportion of firm-years in UP than in DOWN. This is because in UP the extreme changes in performance are driven more frequently by changes in the group composition. Also note that while the initial subsamples are defined via quartiles, the exact number of firms that fall into the two initial subsamples also depends on the correlation structure between sales growth rate and change in operating profit margin. For example, if the two performance measures are completely uncorrelated, then one would expect the number of observations in each initial subsample to be approximately equal to  $7,977 \div 16 = 499$ . However, a negative (positive) correlation will decrease (increase) this number. Thus, our initial sample sizes are consistent with diminishing returns as firms tend to grow. This is exactly what microeconomic theory predicts.

**Table 2**  
**Descriptive statistics: outlook section**

	<i>UP</i> 181 OBS	<i>UP</i> 181 OBS	<i>DOWN</i> 321 OBS	<i>DOWN</i> 321 OBS	<i>ALL</i> 502 OBS	<i>ALL</i> 502 OBS
<b>Panel A: Location</b>						
	TOTAL	%	TOTAL	%	TOTAL	%
Chairman's Statement	185	74.3	321	73.1	506	73.5
Chief Executive's Review	34	13.7	88	20.0	122	17.7
Operational and (or) Financial Review	29	11.6	27	6.2	56	8.1
Other	1	0.4	3	0.7	4	0.6
	249	100.0	439	100.0	688	100.0
<b>Panel B: Heading</b>						
	TOTAL	%	TOTAL	%	TOTAL	%
Current trading	27	10.8	46	10.5	73	10.6
Future	17	6.8	32	7.3	49	7.1
Looking ahead/forward	3	1.2	6	1.4	9	1.3
Outlook	51	20.5	117	26.7	168	24.4
Prospects	66	26.5	89	20.3	155	22.5
Summary	11	4.4	17	3.9	28	4.1
Other	15	6.0	22	5.0	37	5.4
No heading	59	23.7	110	25.1	169	24.6
	249	100.0	439	100.0	688	100.0
<b>Panel C: Length</b>						
	MEAN	MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN
Sentences	7.7	6	7.6	6	7.6	6
Words	190	151	194	170	192	163

UP and DOWN refer to the two subsamples of firm-years with strongly increasing and strongly decreasing sales and operating profit margins over the next financial year. ALL = combined sample of UP and DOWN. OBS = observations.

cases it is straightforward to locate such sections because they are given a special heading. But even if there are no explicit headings it is often easy to find these sections because they are almost always located at the end of the Chairman's Statement or at the end of the Chief Executive's Review. However, where necessary we read the entire narrative section of the annual report.

Table 2 gives some background information on the location of the outlook sections in the annual report, their headings, and their length. This background information is given for the combined sample of 502 annual reports, and also separately for UP and DOWN, though we notice that any differences between UP and DOWN are generally quite small. As Table 2 indicates, we identify a total of 688 outlook sections in the combined sample,

giving an average of 1.37 outlook sections per report. Almost three-quarters of these outlook sections can be found in the Chairman's Statement, while other popular choices are the Chief Executive's Review, and the Operational and (or) Financial Review. Only four outlook sections are outside these three parts.<sup>9</sup> In terms of headings 'Outlook' and 'Prospects' account for almost half of all headings, while 'Current trading' and 'Future' are also frequently chosen. Around a quarter of all outlook sections have no headings at all. Finally, Panel C of Table 2 indicates the mean and median length of an outlook section, measured both in terms

<sup>9</sup>Two outlook sections are found in the 'Directors' Report'. Another two outlook sections are located in the 'Statement of Prospects' and in 'Positioned for the Future'.

**Table 3**  
**Measuring tone: examples**

	<i>'The new year has started positively with unit sales in the first quarter being 20% higher than the same quarter of last year.'</i> [Tracker Network plc, Chairman's Statement, Future Outlook, 1996]	<i>'The board looks to the remainder of 1998 with great confidence.'</i> [Easynet Group plc, Chairman's Statement, Business Outlook, 1997]	<i>'We remain in a very demanding sector, with plenty of tough challenges ahead.'</i> [Howle Holdings plc, Chairman's Report, Outlook, 2002]	<i>'... we expect to generate significant profit growth in the upturn.'</i> [United Business Media plc, Chief Executive's Review, 2001]
<i>Topic</i>	Sales	General unspecified statement	Industry	Earnings
<i>Tone</i>				
Positive	1	1	0	1
Neutral	0	0	0	0
Negative	0	0	1	0

The table illustrates our approach to measuring tone. The three tone categories are listed in the left-hand side column. The remaining columns contain four example statements and are used to illustrate our coding of tone. The three tone categories are given a score of 1 for 'existent' and 0 for 'non-existent'. The three categories are mutually exclusive.

of sentences and words. It is clear from Panel C that, with only six sentences, the median outlook section is a rather small part of the annual report.

Given the length of the outlook section it might seem surprising that we focus exclusively on these short sections. Clearly, forward-looking narratives can be found elsewhere in the annual report. We have decided to focus on the outlook section for three reasons. First, Smith and Taffler (2000) observe consistency in the use of tone throughout narratives. This suggests that the tone in the outlook section is representative of the tone outside these sections. Second, statements in the outlook section typically deal with group prospects, while forward-looking narratives outside these sections are typically concerned with the outlook for individual segments. By aggregating segmental prospects into group prospects outlook sections effectively summarise forward-looking narratives in other parts of the annual report. Also, our focus on group prospects is consistent with prior studies on the usefulness and value-relevance of forward-looking disclosures (e.g. Hutton et al., 2003) as these studies deal with group forecasts, not with forecasts for individual segments. Finally, the content of the outlook section is frequently released to the stock market together with the preliminary earnings announcement and very often with exactly the same wording as in the annual report later on. Again, we believe that this suggests that special importance is attached to these summary sections

by capital market participants.<sup>10</sup> We now turn to a discussion of the way in which we measure tone in the annual report outlook section.

### 3.2. Measuring tone

We assess tone by manually reading all the sentences in the outlook section and by taking context into account. This approach is referred to in the literature as 'meaning-orientated' content analysis (e.g. Krippendorff, 1980; Weber, 1990). While such an analysis is frequently perceived to be more subjective than computer-assisted 'form-orientated' frequency counts, it is dictated by our focus on impression management. In particular, impression management techniques are usually subtle, complex and sophisticated (Brennan et al., 2008) and they warrant a coding technique that is more sensitive than computer-assisted word counts (Clatworthy and Jones, 2003).

We start the scoring process by determining an outlook statement's underlying topic. We differentiate between 'sales', 'costs', 'earnings', 'cash flow', 'dividends', 'market share', statements about a firm's 'industry' and the wider 'economy', general 'trading' statements, references to 'growth' and 'success and progress', and even statements about the outlook in general (which we refer to as 'general

<sup>10</sup> Another reason for our focus on the outlook section is more practical. In particular, the manual coding of tone is a very time-consuming process and is feasible only if the number of sentences is strictly limited.

unspecified statements'). This list of topics has been compiled after reading a set of 100 out-of-sample outlook sections from the two middle quartiles. Note that while we read outlook sections sentence by sentence our unit of measurement is actually the 'statement'. Thus, while in most cases one sentence contains exactly one statement, it is also possible for sentences to contain more than one statement, if – for example – a sentence contains a prediction for both sales and profits.<sup>11</sup>

Next, we determine tone for each statement. We follow Bryan (1997) and Lang and Lundholm (2000) and differentiate between positive, neutral and negative statements. Positive and negative statements include both directional forecasts as well as general impressions. While directional forecasts with their explicit or implicit benchmarks are relatively easy to code, judging general impressions is more subjective. To mitigate this subjectivity we compiled – prior to the coding of our two subsamples – a list of keywords from the 100 out-of-sample outlook sections. This list was intended to guide the first-named author in his judgment of a statement's tone and to increase the consistency of his judgments over time. The list contains keywords which are frequently associated with positive and negative impressions like 'promising', 'confident' and 'benefits' for positive prospects and 'difficult', 'challenging' and 'soft' for negative prospects. Finally, we define a statement as neutral if the statement uses keywords like 'same', 'in line with' or 'no growth', if it includes a mixed message with both positive and negative aspects, or if it appears to be factual without any apparent positive or negative connotation. Note that in assessing tone we take context into account. Thus, a firm's prediction of a 'reduced loss' would be coded as a positive statement even though, individually, the two underlying keywords – 'reduced' and 'loss' – are commonly associated with a negative tone.

A number of coding rules applied to our scoring process. In particular, we needed a decision rule for cases where more than one statement is made about the same topic. In such cases we decided to record only the 'highest-ranked' and 'least ambiguous' statement on our scoring sheet. This is similar to a decision rule in Kasznik and Lev (1995). For example, if a profit outlook is given for the first quarter as well as for the full year, then only the full year outlook is recorded. Where such a decision rule leads to no clear-cut ranking we

record the statement that comes first in terms of chronological order if the tone of the competing statements is identical. Alternatively, if the tone is different then we record a neutral statement. For example, a neutral tone is recorded for 'costs' if the firm indicates that next year's pension charge is likely to increase while other input prices are likely to ease.

Table 3 illustrates our scoring system for four example statements. It shows that the three tone categories are given a score of 1 for 'existent' and 0 for 'non-existent' and that the three tone categories are mutually exclusive. It also shows that we judge tone without reference to other forecast attributes. For example, the fourth statement is judged to be positive as the statement refers to 'profit growth' and this amounts to a directional forecast. In particular, we do not take into account the existence of a conditional statement. We understand that some might argue that the existence of a conditional statement weakens the positive message of the outlook statement. However, judging the tone of the fourth example as neutral (or even negative) is problematic as the firm has made a very clear choice of not commenting on any periods prior to the upturn. This is a case of non-disclosure. If one interprets non-disclosure as bad news then one assumes that the predictions of early signalling theories are correct. But then there is no need to test these theories on real-world forward-looking narratives.

Whenever a research design relies on manual content analysis reliability is an important consideration. To assess inter-coder reliability the second-named author coded once again the tone for a random sample of 50 annual reports. As far as the existence (non-existence) of topics is concerned the two coders agreed in 555 out of 600 cases. For the 102 cases where both coders judged a topic to be present, the agreement rate for 'tone' is 98%. This agreement rate compares favourably with the 80% benchmark for inter-coder reliability in Milne and Adler (1999).

Finally, it is worth noting that, before any coding took place, we removed from the outlook sections any references to the identity of the firm. This makes it less likely that any potential bias is correlated with the variables of interest. For example, with the coder being unaware about a firm's loss status it becomes less likely that a coder's potential measurement bias could vary across profit and loss firms. In other words, a systematic measurement error – even if it existed – should be constant across the two groups, and thus the estimated difference in tone between loss

<sup>11</sup> Note that throughout the paper we refer to the entirety of forward-looking statements as 'outlook section'.

and profit firms should be an unbiased estimate of the true difference. Similar arguments apply to H4, H5 and H6. We now turn to a discussion of our testing strategy. Different strategies apply to the two parts of our paper, namely H1–H2 and H3–H6.

### 3.3. Hypothesis testing and regression model

H1 and H2 make predictions about the relative frequency of positive and negative statements in UP and DOWN. We test H1 and H2 in two ways. First, we calculate the mean and median difference between positive and negative statements and we test whether these differences are statistically significant. Second, we calculate a measure of overall tone as the deflated difference between positive and negative statements and we use the sum of positive, neutral and negative statements as the deflator. The advantage of this tone variable is that it is a standardised measure of forecast news as it no longer varies with the absolute number of statements. Instead, for all firms it ranges from  $-1$  for entirely negative to  $1$  for entirely positive. This standardised range makes it easy to compare tone across observations. Thus, the standardised tone variable will be our preferred measure of tone in subsequent tests.<sup>12</sup>

In the second part of our paper we test H3–H6 through a cross-sectional regression of standardised tone on loss status (H3), the sign of previous year's earnings change (H4), a measure of business risk (H5), and an indicator variable for the existence of an analyst earning forecast (H6). For this we include  $LOSS_t$ ,  $EARNDOWN_t$ ,  $RISK_t$  and  $AF_t$  as the independent variables of main interest. In addition, we control for next year's performance by including  $UPDOWN_{t+1}$ ,  $\Delta REV_{t+1}$  and  $\Delta OPM_{t+1}$  as additional

regressors. This yields our regression model (1):

$$\begin{aligned} TONE_t = & b_0 + b_1 UPDOWN_{t+1} + b_2 \Delta REV_{t+1} \\ & + b_3 \Delta OPM_{t+1} + b_4 LOSS_t \\ & + b_5 EARNDOWN_t + b_6 RISK_t + b_7 AF_t \\ & + e_t \end{aligned} \quad (1)$$

where  $LOSS_t$  and  $EARNDOWN_t$  are dummy variables that equal 1 if period  $t$ 's earnings is negative and lower, respectively, and 0 otherwise,  $RISK_t$  is defined as the standard deviation of  $ROE$  for the five-year period  $t-4$  to  $t$ , and  $AF_t$  is a dummy variable that equals 1 if *Datastream* reports in period  $t$  at least one annual analyst earnings forecast for period  $t+1$ , and 0 otherwise. In terms of control variables,  $UPDOWN_{t+1}$  is a dummy variable that equals 1 for UP (and 0 for DOWN) and it controls for the sign of next year's performance change whenever we pool UP and DOWN, while our sample selection variables,  $\Delta REV_{t+1}$  and  $\Delta OPM_{t+1}$ , control for the magnitude of next year's sales growth rate and change in operating profit margin. Note the importance of controlling for future performance in testing our ceteris paribus predictions H3–H6. For example, H3 predicts that loss firm managers report a more positive tone than profit firm managers, but this is done on the assumption that both types of firms have the same outlook for the future. However, in reality the outlook is likely to vary between profit and loss firms and with it an outlook section's tone. In testing H3–H6 we allow for this variation by including  $UPDOWN_{t+1}$ ,  $\Delta REV_{t+1}$  and  $\Delta OPM_{t+1}$  as controls for the sign and the magnitude of next year's financial performance. Finally, the dependent variable in Equation (1),  $TONE_t$ , is the standardised measure of overall tone and ranges from  $-1$  to  $1$ .

We base the definition of all earnings and profit variables – including  $LOSS_t$ ,  $EARNDOWN_t$  and  $\Delta OPM_{t+1}$  – on *Worldscope* item WC01250. This item is defined as 'operating income' and represents the 'difference between sales and total operation expenses'. In particular, it excludes all types of operating and non-operating exceptional items. We use this definition for three reasons. First, Schleicher et al. (2007) demonstrate that this income number is highly correlated with other measures of 'permanent' earnings. Permanence is a desirable feature in the context of our study as it increases the likelihood that outsiders' expectations are formed according to a random walk process. Also, the elimination of exceptional items increases the predictability of next year's earnings from an insider's point of view. Second, trading

<sup>12</sup> The treatment of neutral statements in the calculation of the overall tone variable deserves some further explanation. In particular, in calculating a standardised measure of tone a number of previous content analysis studies deflate by the sum of positive and negative keywords but not by neutral keywords (e.g. Brennan et al., 2008; Citron et al., 2008; Henry, 2008). Our decision to include neutral statements in the calculation of an overall tone's deflator is taken for two reasons. First, very often we code a statement as neutral if the outlook section makes a positive and a negative statement on the same topic. Previous content analysis studies commonly code these statements as two separate statements with a corresponding increase in the deflator. Thus, including neutral statements in the deflator is indeed quite consistent with the prior literature. Second, neutral statements substantially increase the variability of the overall tone variable, especially for UP firms. Meaningful estimation of regression coefficients in part two of the paper is dependent on a minimum degree of variability in the regression variables. Finally, note that the numerator of the overall tone variable is unaffected by any decision in favour (or against) including neutral statements within the analysis.

**Table 4**  
**Tone**

	MEAN	MIN	25%	MEDIAN	75%	MAX	T-TEST	SIGN	SIGN RANK	OBS
<b>Panel A: UP</b>										
POS	2.87	0	2	3	4	7	0.000	0.000	0.000	181
NEU	0.23	0	0	0	0	2	0.000	0.000	0.000	181
NEG	0.24	0	0	0	0	3	0.000	0.000	0.000	181
POS – NEG	2.64	-1	1	3	4	7	0.000	0.000	0.000	181
TONE	0.80	-0.33	0.60	1.00	1.00	1.00	0.000	0.000	0.000	181
<b>Panel B: DOWN</b>										
POS	1.84	0	1	2	3	6	0.000	0.000	0.000	321
NEU	0.58	0	0	0	1	4	0.000	0.000	0.000	321
NEG	1.04	0	0	1	2	4	0.000	0.000	0.000	321
POS – NEG	0.80	-4	0	1	2	6	0.000	0.000	0.000	321
TONE	0.24	-1.00	0.00	0.25	0.67	1.00	0.000	0.000	0.000	321
<b>Panel C: ALL</b>										
POS	2.21	0	1	2	3	7	0.000	0.000	0.000	502
NEU	0.45	0	0	0	1	4	0.000	0.000	0.000	502
NEG	0.75	0	0	1	1	4	0.000	0.000	0.000	502
POS – NEG	1.46	-4	0	1	3	7	0.000	0.000	0.000	502
TONE	0.44	-1.00	0.00	0.50	1.00	1.00	0.000	0.000	0.000	502

The table presents descriptive statistics on the tone of forward-looking narratives in the annual report outlook section. *POS*, *NEU* and *NEG* are the (absolute) number of positive, neutral and negative statements per annual report outlook section. *TONE* is a measure of the overall tone. It is defined as the difference between positive and negative statements,  $POS - NEG$ , and scaled by the sum of positive, neutral and negative statements,  $POS + NEU + NEG$ . UP (DOWN) refers to the subsample of firm-years with strongly increasing (decreasing) sales and operating profit margin over the next financial year. A standard one-sample t-test (Sign test and Wilcoxon Sign-Rank test) is used to test for the significance of means (medians). P-values are reported to indicate significance levels. MIN = minimum. 25% = bottom quartile. 75% = top quartile. MAX = maximum. OBS = observations. ALL = combined sample of UP and DOWN.

statements conventionally comment on a firm's operating side but rarely on financial or tax aspects. The use of 'operating' income is consistent with this convention. Third, the argument that a negative or a declining income number is a disappointment and has costly consequences for managers is more convincing for a permanent than for a transitory earnings number (e.g. Walker and Louvari, 2003).

We define  $LOSS_t$  and  $EARNDOWN_t$  as dichotomous variables as H3 and H4 predict that it is the incidence, rather than the magnitude, of a loss and an earnings decline that affects a manager's choice of tone. Similarly, H6 predicts that it is the existence of an analyst earning forecast that leads to a more positive tone. Thus, we also define  $AF_t$  as a dichotomous variable. Finally, we use *ROE* to measure  $RISK_t$  as *ROE* depends on changes in sales as well as changes in the operating profit margin, both of which are key performance measures in our study.

#### 4. Results

We start our empirical investigation by analysing the distribution of positive and negative statements, *POS* and *NEG*, across our two subsamples, UP and DOWN. These distributions are reported in Table 4 and they are used to test H1 and H2.

Looking at Table 4 we first note that the mean and median number of positive statements in UP is 2.87 and 3 while the corresponding numbers in DOWN are 1.84 and 2. Also, for both groups the number of positive statements exceeds the number of negative statements: the mean and median value for  $POS - NEG$  is 2.64 and 3 in UP and 0.80 and 1 in DOWN. A parametric one-sample t-test for the mean and non-parametric Sign and Sign-Rank tests for the median confirm that the differences between positive and negative statements are significant at the 0.000 level in both groups. This finding is consistent with H1 but leads to a rejection of H2. Thus, while UP firms understandably emphasise positive aspects more than negative aspects, it is not the

case that DOWN firms emphasise negative news or, at least, remain silent, as predicted by signalling models. Rather DOWN firms also dwell mainly on positive news and this conclusion is reinforced by the *TONE* variable: for DOWN firms the mean and median value of *TONE* is 0.24 and 0.25, respectively, with p-values of 0.000. Thus, our main finding in this part of the paper is that DOWN firms bias the tone of forward-looking narratives upwards. This is consistent with impression management. It is also consistent with the evidence on predominately backward-looking narratives in Clatworthy and Jones (2003).

Next, we test H3–H6 by estimating the cross-sectional regression model (1). As indicated above estimating (1) is an attempt to detect further and perhaps more subtle changes in tone that remain unnoticed in simple tests of means and medians. Regression results are reported, together with descriptive statistics, in Table 5. We report separate results for the 162 UP firms, the 299 DOWN firms, and the combined sample of 461 UP and DOWN firms, and we note that missing observations for the four managerial incentive variables reduce the sample size by 19 and 22 observations, respectively. We also note from Panel B that 25.3 and 13.0% of our sample firms are loss firms, while 42.0 and 50.5%, respectively, have period  $t$  earnings which are lower than earnings in  $t-1$ . Finally, 68.5 and 73.2% of our observations have an analyst earnings forecast. Overall, we conclude that there is sufficient variation in our regression variables.

Table 5, Panel A reports two different types of regressions, an ordinary least squares (OLS) regression and a ROBUST regression. A ROBUST regression attempts to minimise the effect of influential observations by reducing the weight that is given to these observations in the calculation of regression coefficients. In an extreme case this weight can be reduced to zero. This contrasts with OLS which gives a disproportionately large weight to influential observations as its estimates are chosen to minimise the sum of squared residuals. We report ROBUST in addition to OLS as an alternative to deleting (or trimming) influential observations.<sup>13</sup>

<sup>13</sup> In Table 5 (and Table 6 below) we report the results of a Yohai (1987)-style robust regression because – unlike other robust regression methods – it can identify influential observations in the y-space ('outliers') as well as in the x-space ('leverage points'). However, in all cases untabulated results from 'median' regressions and Huber (1973)-style regressions are always very similar to those reported under the column 'ROBUST'. Perhaps this is unsurprising given that the proportion of leverage points is zero in all tables. In relation to OLS we report below the coefficient estimates p-values which are calculated from Clustered ('Rogers') standard errors and which allow for cross-sectional correlation within clusters. Clusters are

We start our interpretation of Table 5 by noting that the two estimation strategies produce regression results that are generally quite similar, both in terms of estimates and p-values, with only two notable exceptions, the p-value associated with the  $RISK_t$  variable in the UP sample and the p-value associated with the  $\Delta REV_{t+1}$  variable in the combined sample. Thus, we conclude that the regression results in Table 5 are not particularly sensitive to the existence of outliers.

In terms of control variables we note that the tone in the outlook section is at best weakly associated with the magnitude of next year's performance change. None of the coefficients associated with  $\Delta REV_{t+1}$  is significant at the 0.050 level and the six coefficients on  $\Delta OPM_{t+1}$  are all insignificantly negative. Thus, the evidence in Table 5 suggests that firms do not use the tone in the outlook section to signal their expectations about the magnitude of the impending performance change. This contrasts with the findings in Kasznik and Lev (1995). However, when we pool UP and DOWN and include  $UPDOWN_{t+1}$  as an indicator variable for the sign of next year's performance change, then the coefficient on this variable is positive and significant, and its values of 0.44 and 0.43 are similar to the difference in tone between UP and DOWN in Table 4 of  $0.56 = 0.80 - 0.24$ .

The coefficients of primary interest in Table 5 are those associated with  $LOSS_t$ ,  $EARNDOWN_t$ ,  $RISK_t$  and  $AF_t$ , and they are used to test H3–H6. We make the following four observations. First, the coefficient on  $LOSS_t$  is positive and highly significant in five out of six regressions, including the three robust regressions. This means that loss firms provide a more positive outlook than profit firms. This is consistent with H3 that loss firm managers feel a need to use a positive outlook section to override the negative signal sent out by current earnings. Note, however, that the more positive outlook section does not translate into a higher performance in  $t+1$  as next year's performance is being controlled for in the regression model.

Second, the coefficient on  $EARNDOWN_t$  is consistently negative and significantly so in the UP sample and in the combined sample, and for these two samples we reject H4 in favour of the alternative that managers become more conservative in their forecasts when earnings decline in the year under review. We have argued in Section 2 that

defined in terms of two-digit SIC codes. In most cases the reported p-values are quite similar to those that allow only for heteroscedasticity. Finally, note that we include, but do not tabulate, six incremental year dummies within all our regression models.

**Table 5**  
**Determinants of cross-sectional variation in tone**

**Panel A: Regression results**

Regressant	TONE <sub>t</sub>		TONE <sub>t</sub>		TONE <sub>t</sub>	
	OLS	ROBUST	OLS	ROBUST	OLS	ROBUST
UPDOWN <sub>t+1</sub> (+)					0.44*** (0.000)	0.43*** (0.000)
ΔREV <sub>t+1</sub> (+)	0.09 (0.429)	0.08 (0.442)	0.51* (0.056)	0.58 (0.113)	0.19* (0.076)	0.16 (0.291)
ΔOPM <sub>t+1</sub> (+)	-0.20 (0.666)	-0.15 (0.667)	-0.20 (0.428)	-0.18 (0.646)	-0.24 (0.204)	-0.17 (0.537)
LOSS <sub>t</sub> (+)	0.14* (0.068)	0.18*** (0.003)	0.34*** (0.000)	0.35*** (0.001)	0.23*** (0.000)	0.24*** (0.000)
EARNDOWN <sub>t</sub> (?)	-0.17** (0.011)	-0.19*** (0.000)	-0.09 (0.104)	-0.10 (0.176)	-0.11*** (0.009)	-0.13*** (0.007)
RISK <sub>t</sub> (+)	0.02** (0.045)	0.01 (0.508)	0.03*** (0.000)	0.03** (0.036)	0.03*** (0.000)	0.02** (0.022)
AF <sub>t</sub> (+)	0.06 (0.149)	0.04 (0.408)	0.18** (0.033)	0.18** (0.024)	0.16*** (0.006)	0.13** (0.013)
R2	14.83	11.60	11.66	10.35	31.29	26.28
Adj. R2	7.97		7.96		29.30	
F-Value	6.09*** (0.000)		5.34*** (0.000)		35.58*** (0.000)	
Outliers (in %)		2.47		0.00		0.00
OBS	162	162	299	299	461	461
Sample	UP	UP	DOWN	DOWN	ALL	ALL

**Panel B: Descriptive statistics**

Sample	UP	UP	UP	UP	DOWN	DOWN	DOWN	DOWN
	MEAN	STD	MEDIAN	OBS	MEAN	STD	MEDIAN	OBS
TONE <sub>t</sub>	0.789	0.317	1.000	162	0.236	0.545	0.250	299
ΔREV <sub>t+1</sub>	0.352	0.230	0.287	162	-0.152	0.105	-0.124	299
ΔOPM <sub>t+1</sub>	0.075	0.082	0.040	162	-0.094	0.099	-0.057	299
LOSS <sub>t</sub>	0.253	0.436	0.000	162	0.130	0.337	0.000	299
EARNDOWN <sub>t</sub>	0.420	0.495	0.000	162	0.505	0.501	1.000	299
RISK <sub>t</sub>	0.375	1.403	0.092	162	0.537	2.384	0.094	299
AF <sub>t</sub>	0.685	0.466	1.000	162	0.732	0.443	1.000	299

The table reports regression results in Panel A and descriptive statistics for the regression variables in Panel B. A ROBUST regression minimises the effect of influential observations, while OLS does not. The regressant, TONE<sub>t</sub>, is a measure of the overall tone of forward-looking narratives in the annual report outlook section. It is defined as the difference between positive and negative statements and scaled by the sum of all (positive, neutral and negative) statements. ΔREV<sub>t+1</sub> and ΔOPM<sub>t+1</sub> are sales growth rate and change in operating profit margin in t+1 (where revenue and operating profit are measured by *Worldscope* items WC01001 and WC01250 and are defined as ‘gross sales and other operating revenue less discounts, returns and allowances’ and ‘difference between sales and total operating expenses’). LOSS<sub>t</sub> and EARNDOWN<sub>t</sub> are dummy variables that equal 1 if period t’s earnings is negative and lower, respectively, and 0 otherwise, RISK<sub>t</sub> is defined as the standard deviation of ROE for the five-year period t-4 to t, and AF<sub>t</sub> is a dummy variable that equals 1 if *Datastream* reports in period t at least one annual analyst earnings forecast for period t+1, and 0 otherwise. The three sets of regressions refer to UP, DOWN, and the combined sample of UP and DOWN (where UP (DOWN) refers to the subsample of firm-years with strongly increasing (decreasing) sales and operating profit margins over the next financial year). We include incremental year dummies in all regressions. In addition, when we pool UP and DOWN, we also include an intercept dummy, UPDOWN<sub>t+1</sub>, which takes on the value of 1 for UP firms and 0 for DOWN firms. (+) and (?) indicate a positive and no prediction, respectively, for the sign of the regression coefficient. In relation to OLS we report below the coefficient estimates p-values which are calculated from Clustered (‘Rogers’) standard errors and which allow for cross-sectional correlation within clusters. Clusters are defined in terms of two-digit SIC codes. The significance levels (two-tail test) are: \* = 10%, \*\* = 5%, \*\*\* = 1%. The table reports three statistics for the overall model fit, the R2 (in %), the adjusted R2 (in %) and the F-Value (and its associated p-value in parentheses). OBS = observations. STD = standard deviation. ALL = combined sample of UP and DOWN.

a conservative bias would be consistent with a desire of not surprising the market negatively, especially if the current earnings decline is out of line with last year's guidance. While we have no direct evidence on last year's guidance, the dominance of positive statements over negative statements for DOWN firms in Table 4 suggests that most firms with a current earnings decline might well have provided positive guidance at the start of the year.

Third, we find that risky firms in the DOWN sample and in the combined sample provide a significantly more positive tone than firms that are less risky. This is consistent with the evidence from 'hard' management earnings forecasts in Rogers and Stocken (2005) and suggests that managers bias the tone upwards if the firm's widely fluctuating results make it difficult for outsiders to ex post monitor the truthfulness of forward-looking narratives. This observation is consistent with H5.

Finally, the coefficient on the analyst earnings forecast dummy,  $AF_t$ , is consistently positive and significantly so in the DOWN sample and in the combined sample. Thus, Table 5 suggests that the existence of an analyst earnings forecast provides an additional incentive for managers to increase the visibility of positive (earnings) trends. As far as we know, this is the first direct evidence of the role of managerial disclosures in the 'earnings-guidance game'. In particular, it appears that firms 'help' analysts by issuing positive guidance early on in the annual reporting cycle and in this way they provide the necessary ammunition for optimistic earnings forecasts. This is consistent with H6.

Overall the results in Table 5 suggest that it is not only the sign of next year's performance change, but also a firm's past performance, its risk, and the existence of an analyst earnings forecast that affect a manager's choice of tone. Thus, the tone in the outlook section is not only a biased reflection of the future – as shown in Table 4 – but it is also managed in response to a number of managerial incentives that are unrelated to future performance. This is inconsistent with signalling models, but consistent with the alternative view of impression management.

Two observations from Table 5 deserve a special mention. First, managers do not always bias the tone upwards. Instead, concern about (short-term) job market implications and (long-term) reputational effects appear to exist side by side. Second, the direction of the bias differs with the type of the disappointment.

Before we conclude, we wish to examine what type of statement is being managed in response to the four stimuli that underlie H3–H6. In principle, if one wishes to change an outlook section's tone, then

one can *either* change the number of positive statements *or* the number of neutral statement *or* the number of negative statements. To examine which type of statement is being managed we regress in Table 6 the absolute number of positive, neutral and negative statements on the four incentive variables (and the three control variables). Given that the signs of all coefficients in Table 5 are consistent across the two subsamples, we only report results for the combined sample in Table 6.<sup>14</sup>

We make the following three observations. First, the increase in the overall tone for loss firms and for risky firms is driven both by an increase in positive statements and a reduction in neutral and negative statements, but only the coefficients in the *NEG* regression are significant in both OLS and ROBUST. Second, a reduction in tone for firms with declining earnings is achieved by reducing the number of positive statements while also increasing the number of neutral and negative statements, but once again only the coefficients in the *NEG* regression are consistently significant. Third, an increase in the tone for firms with an analyst earnings forecast is achieved through a reduction in negative statements and an increase in positive statements, but only the coefficients in the *POS* regression are large and significant.<sup>15,16</sup>

<sup>14</sup> In Table 6 we do not deflate the absolute number of positive, neutral and negative statements because this could induce a spurious relation. Imagine, for example, a firm which dramatically increases the number of positive statements. If we express positive, neutral and negative statements as a proportion of all statements, then the values for *NEU* and *NEG* decrease even though the absolute number of neutral and negative statements remains unchanged. To avoid our results only reflecting such a cross-dependence in the proportion of positive, neutral and negative statements we use undeflated dependent variables in Table 6. Also note that we do not formulate formal hypotheses for Table 6. However, such hypotheses can be derived easily from H3–H6 by replacing 'tone' or 'positive tone' with 'positive statements'. Similarly, one can replace 'tone' or 'positive tone' with 'negative statements' and change the sign of the prediction where necessary.

<sup>15</sup> We also ran a TOBIT regression to acknowledge that *POS*, *NEU*, and *NEG* are effectively censored variables with a lower bound of 0. The coefficients from TOBIT regressions always have the same sign as those reported in Table 6 and the size of the coefficients is always very similar in *POS*, (which has less than 10% of left-censored observations) but is frequently (much) larger (in absolute terms) in *NEU*, and *NEG*, (which have a much larger number of censored observations). However, in all three regressions the p-values are quite similar to those reported in Table 6 and thus our conclusions are qualitatively unaffected by using OLS and ROBUST instead of TOBIT, even for *NEU*, and *NEG*.

<sup>16</sup> When we include an additional variable in Table 6 to control for the cross-sectional variation in the number of sentences per outlook section, then the response coefficient on this variable lies between 0.00 and 0.07, and the coefficient is highly significant in the *POS*, and *NEU*, regressions, but insignificant in the *NEG*, regression. More importantly, the coefficients on *LOSS*, *EARNDOWN*, *RISK*, and *AF*, and their associated p-values remain largely unchanged.

**Table 6**  
**Determinants of cross-sectional variation in the number of positive, neutral and negative statements**

**Panel A: Regression results**

Regressant		$POS_t$		$NEU_t$		$NEG_t$	
		OLS	ROBUST	OLS	ROBUST	OLS	ROBUST
$UPDOWN_{t+1}$	(+/-)	0.68*** (0.009)	0.61** (0.016)	-0.21** (0.045)	-0.12 (0.249)	-0.77*** (0.000)	-0.65*** (0.000)
$\Delta REV_{t+1}$	(+/-)	0.72* (0.052)	0.84* (0.056)	-0.32** (0.043)	-0.39** (0.031)	-0.11 (0.570)	0.05 (0.815)
$\Delta OPM_{t+1}$	(+/-)	-0.19 (0.797)	0.02 (0.980)	0.54 (0.132)	0.44 (0.167)	0.55 (0.167)	0.38 (0.333)
$LOSS_t$	(+/-)	0.06 (0.697)	0.07 (0.681)	-0.18** (0.013)	-0.12 (0.111)	-0.33*** (0.000)	-0.30*** (0.002)
$EARNDOWN_t$	(?)	-0.11 (0.364)	-0.02 (0.863)	0.12** (0.028)	0.07 (0.223)	0.14** (0.029)	0.17** (0.019)
$RISK_t$	(+/-)	0.01 (0.599)	0.01 (0.734)	-0.02** (0.015)	-0.01 (0.495)	-0.04*** (0.000)	-0.03** (0.038)
$AF_t$	(+/-)	0.59*** (0.001)	0.69*** (0.000)	-0.06 (0.407)	0.00 (0.980)	-0.05 (0.626)	-0.04 (0.654)
R2		18.88	17.26	10.07	6.72	21.40	14.89
Adj. R2		16.52		7.45		19.11	
F-Value		11.78*** (0.000)		4.71*** (0.000)		19.21*** (0.000)	
Outliers (in %)			0.87		2.39		2.60
OBS		461	461	461	461	461	461
Sample		ALL	ALL	ALL	ALL	ALL	ALL

**Panel B: Descriptive statistics**

Sample	ALL MEAN	ALL STD	ALL MEDIAN	ALL OBS
$POS_t$	2.215	1.428	2.000	461
$NEU_t$	0.469	0.693	0.000	461
$NEG_t$	0.777	0.949	1.000	461
$UPDOWN_{t+1}$	0.351	0.478	0.000	461
$\Delta REV_{t+1}$	0.025	0.289	-0.076	461
$\Delta OPM_{t+1}$	-0.035	0.123	-0.033	461
$LOSS_t$	0.174	0.379	0.000	461
$EARNDOWN_t$	0.475	0.499	0.000	461
$RISK_t$	0.480	2.092	0.095	461
$AF_t$	0.716	0.452	1.000	461

The table reports regression results in Panel A and descriptive statistics for the regression variables in Panel B. A ROBUST regression minimises the effect of influential observations, while OLS does not. The three regressants,  $POS_t$ ,  $NEU_t$  and  $NEG_t$ , measure the absolute number of positive, neutral and negative statements per annual report outlook section.  $\Delta REV_{t+1}$  and  $\Delta OPM_{t+1}$  are sales growth rate and change in operating profit margin in  $t+1$  (where revenue and operating profit are measured by *Worldscope* items WC01001 and WC01250 and are defined as 'gross sales and other operating revenue less discounts, returns and allowances' and 'difference between sales and total operating expenses').  $LOSS_t$  and  $EARNDOWN_t$  are dummy variables that equal 1 if period  $t$ 's earnings is negative and lower, respectively, and 0 otherwise,  $RISK_t$  is defined as the standard deviation of *ROE* for the five-year period  $t-4$  to  $t$ , and  $AF_t$  is a dummy variable that equals 1 if *Datastream* reports in period  $t$  at least one annual analyst earnings forecast for period  $t+1$ , and 0 otherwise. All regressions refer to the combined sample of UP and DOWN (where UP (DOWN) refers to the subsample of firm-years with strongly increasing (decreasing) sales and operating profit margins over the next financial year) and we include an intercept dummy,  $UPDOWN_{t+1}$ , which takes on the value of 1 for UP and 0 for DOWN. We also include incremental year dummies in all regressions. (+), (-) and (?) indicate a positive, a negative, and no prediction, respectively, for the sign of the regression coefficient. Where we indicate two predictions, the first relates to the  $POS_t$  regression and the second to the  $NEG_t$  regression. In relation to OLS we report below the coefficient estimates p-values which are calculated from Clustered ('Rogers') standard errors and which allow for cross-sectional correlation within clusters. Clusters are defined in terms of two-digit SIC codes. The significance levels (two-tail test) are: \* = 10 %, \*\* = 5%, \*\*\* = 1%. The table reports three statistics for the overall model fit, the R2 (in %), the adjusted R2 (in %) and the F-Value (and its associated p-value in parentheses). OBS = observations. STD = standard deviation. ALL = combined sample of UP and DOWN.

We believe the results in Table 6 are important for a number of reasons. First, they demonstrate that the changes in the number of positive and negative statements are consistent with the changes in the overall tone and in that they add further strength to the findings in Table 5. Second, the results in Table 6 suggest that for a majority of incentives the main vehicle for managing the overall tone is to change the number of negative statements. We believe this is an important observation as it demonstrates that impression management is not restricted to positive statements only. As such it calls into question the conventional wisdom of bad news being inherently more reliable than good news (e.g. Skinner, 1994; Hutton et al., 2003). Third, the only variable for which the change in positive statements is larger (in absolute terms) than the corresponding change in negative statements is the presence of an analyst earnings forecast. Perhaps this is unsurprising given that analysts demand visibility of growth for their earnings forecasts and that such visibility is hardly demonstrated by suppressing bad news only. Finally, the results in Table 6 confirm our impression from Table 4 that neutral statements are in effect negative news: with one exception the sign of all coefficients on managerial incentive variables is the same in *NEU* and *NEG*.

## 5. Conclusion

The present paper examines whether, when and how managers bias the tone of forward-looking narratives. For that we use techniques of manual content analysis and we focus on the annual report outlook section, a paragraph of forward-looking statements that is typically located at the end of the Chairman's Statement. For each forward-looking statement we determine the tone of the underlying message and we aggregate positive, neutral and negative statements into an overall measure of tone.

Our findings suggest that firms with an impending performance decline bias the tone in the outlook section upwards and this finding is consistent with earlier work on backward-looking narratives. In addition, we find that the tone in the outlook section responds to a number of managerial incentive variables that are unrelated to the private signal about future trading. In particular, we find that loss firms, risky firms and firms with an analyst earnings forecast provide a more positive tone, while firms with a contemporaneous earnings decline provide a more negative tone. These four observations are difficult to reconcile with signalling models, but they are consistent with impression management.

Perhaps the single most interesting finding of our

study is the observation that a biased tone is not achieved primarily by changing the number of positive statements. Indeed for a majority of our managerial incentive variables the main vehicle of managing the tone is to change the number of negative statements. This has two implications. First, it demonstrates that the conventional wisdom of bad news being more reliable than good news is not justified. Second, when coupled with the observation that negative statements trigger larger price revisions than positive statements (e.g. Hutton et al., 2003) this finding suggests a possible interaction effect between value-relevance and impression management. In particular, it suggests that impression management targets those outlook statements most that are known to trigger the largest price revisions. This would imply that bias and value-relevance are positively, rather than negatively, correlated with each other. We believe that a further (and more direct) examination of the link between value-relevance and impression management provides an interesting opportunity for future research.

Our findings have policy implications. In particular, while prior research demonstrates that analysts and investors rely on forward-looking annual report narratives for decision-making, these statements remain largely unregulated and unaudited. In particular, while the Companies Act 2006 now requires quoted companies to include, in the Directors' Report, a Business Review which analyses a firm's main future trends and factors 'to the extent necessary', the more specific requirements on forward-looking narratives in the ASB's (2006) reporting statement on the Operating and Financial Review still remain voluntary. At the same time our results indicate that market forces alone are unable to ensure that these narratives are unbiased and free from impression management. Thus, our findings demonstrate a need to consider a more formal review process for forward-looking statements. For example, auditors could check the outlook statements against actual performance during the first quarter, the firm's annual budgets, and existing orders and enquiries.

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