The Impact of Media Attention on the Use of Alternative Earnings Measures

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ABSTRACT AND KEYWORDS	
Abstract	The practice of reporting earnings measures that deviate from generally accepted accounting principles (non-GAAP measures) has received negative attention in the media. Regulators argue in favour of reporting GAAP earnings measures and utter their concerns that investors may be misled by the use of non-GAAP measures. In a period of increased regulatory concern for these reporting practices, we explore whether there has been a shift away from the use of non-GAAP metrics. We analyse a sample of earnings press releases in the period 1999-2004 from companies listed at Euronext Amsterdam. Our findings indicate that reporting non-GAAP measures is a common practice and that the frequency of reporting non-GAAP earnings measures has increased despite the concerns voiced by regulators. On the other hand, investors seem to have become more hesitant towards the use of alternative earnings measures for their decision-making. Our findings suggest that investors find non-GAAP measures informative before 2003, but they turn away from these measures in the following years and price GAAP earnings metrics instead. Together, these findings suggest that the negative media attention for non-GAAP measures has influenced the perception of investors, but not of managers.
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MIRIAM KONING, GERARD MERTENS AND PETER ROOSENBOOM

The impact of media attention on the use of alternative earnings measures

The practice of reporting earnings measures that deviate from generally accepted accounting principles (non-GAAP measures) has received negative attention in the media. Regulators argue in favour of reporting GAAP earnings measures and utter their concerns that investors may be misled by the use of non-GAAP measures. In a period of increased regulatory concern for these reporting practices, we explore whether there has been a shift away from the use of non-GAAP metrics. We analyse a sample of earnings press releases in the period 1999-2004 from companies listed at Euronext Amsterdam. Our findings indicate that reporting non-GAAP measures is a common practice and that the frequency of reporting non-GAAP earnings measures has increased despite the concerns voiced by regulators. On the other hand, investors seem to have become more hesitant towards the use of alternative earnings measures for their decision-making. Our findings suggest that investors find non-GAAP measures informative before 2003, but they turn away from these measures in the following years and price GAAP earnings metrics instead. Together, these findings suggest that the negative media attention for non-GAAP measures has influenced the perception of investors, but not of managers.

Keywords: Event study, Information content, Non-GAAP earnings, Regulation, Value relevance

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One of the controversial areas in financial reporting that received considerable media attention following recent corporate scandals is the disclosure of self constructed earnings measures. Regulators such as financial market authorities and accounting standard setters repeatedly expressed their worries about the possibly misleading use of financial information that does not comply with generally accepted accounting principles (GAAP), i.e. non-GAAP measures. In the U.S., the Sarbanes Oxley Act (SOX) of 2002 and pursuant SEC regulation have addressed the practice of non-GAAP reporting, allowing it only under strict conditions. Recent U.S. studies report that non-GAAP regulation seems to be effective, in the sense that the reporting practices became less opportunistic (e.g. Heflin and Hsu, 2007). Additionally, investors seem to react more strongly to non-GAAP information after the SEC regulation (Marques, 2006). Still, the reporting environment changed in various ways, regulatory changes being only one factor.

In this study we focus on the influence of media attention on both firms' reporting behaviour and investors' response to the reported information. We argue that media attention directed at misleading non-GAAP information has increased awareness for the use or potential abuse of these alternative earnings measures and has a substantial influence on the behaviour of companies and investors. To study the impact of the media in the U.S. is difficult, since all listed companies are affected by substantial new regulation. This would create the problem of disentangling the effect of regulation from the effect of media attention. We circumvent this problem by exploring non-GAAP reporting in the setting of the Dutch financial market. The practice of non-GAAP reporting also induced a sharp debate in the media in the Netherlands[1], however in this case regulators and policy makers did not respond with additional regulation similar to SOX. Hence, the Netherlands allows us to study reporting practices and, more specifically, the use of non-GAAP earnings measures of Dutch publicly listed companies in an environment of changing public opinions and negative media attention.

Our contribution to the literature is threefold. First and most importantly, we contribute to the debate concerning the effectiveness of regulation in general and SOX more specifically. SOX has been criticized for being a hasty overreaction to corporate

[1] For example, the speech delivered at the presentation of the Henri Sijthoff award, an influential annual award for the best corporate financial report for Dutch listed companies, was very critical towards the growing popularity of self-constructed earnings measures (Het Financieele Dagblad, 14 October 2002)

scandals, imposing substantial costs on companies without compelling evidence that this would create economic benefits (Romano, 2005). This assumes that financial regulation should be based on scientific evidence, an argument that was made more explicitly by Buijink (2006). He suggests that an evidence-based approach may be impossible for financial regulators due to the lack of relevant research. Since the implementation of SOX however, the number of empirical studies on financial regulation is rising. Several recent studies evaluate the economic consequences of SOX, for example going dark or going private decisions (Hostak, et al., 2006; Engel, et al., 2007) or the attractiveness of the U.S. markets to foreign companies (Piotroski and Srinivasan, 2006; Litvak, 2007). The papers that focus on financial reporting, mostly infer the effects of SOX by comparing some characteristic of financial reporting before and after the Act became effective (Bartov and Cohen, 2007; Cohen, et al., 2007;Kolev, et al., 2008; Marques, 2006) These studies inevitably suffer from the problem that the effect of SOX cannot be isolated and that other factors may have caused the observed changes in financial reporting (Coates, 2007; Leuz, 2007). Our paper helps to understand the incremental effect of SOX, by exploring if and how companies and investors change their behaviour in the absence of such a regulatory shock.

Second, our study adds to the growing literature on the effects of media on financial markets. While other studies try to infer the effect of company specific media coverage on stock prices (Dyck and Zingales, 2003) or on corporate governance characteristics (Dyck, et al., 2006; Louis, et al., 2005), we focus on the effect of media coverage from a financial reporting, i.e. disclosure, perspective.

Third, we provide additional evidence on the use of alternative earnings measures. Recent studies have examined the use of non-GAAP measures as reported in earnings releases in the United States (Bhattacharya, et al., 2003; Bowen, et al., 2005;Lougee and Marquardt, 2004). A vast majority of the international accounting literature stresses the importance of institutional factors and market forces in shaping management’s incentives to report informative earnings measures (Ball et al., 2003). To our knowledge, no research has been conducted on the use of alternative earnings measures outside the United States and Canada.

We report evidence that the practice of reporting non-GAAP earnings measures in earnings press releases is popular in the less regulated reporting environment of the Netherlands. First, we analyze the financial reporting environment during the period of interest (1999-2005) and describe a dynamic environment that leads to increased negative attention from the media and regulators for non-GAAP reporting. We then measure the popularity of non-GAAP reporting in terms of reporting frequency and prominence. Companies increasingly report non-GAAP earnings measures in corporate press releases during a period in which these measures receive negative attention in the media. Furthermore, we report evidence of opportunistic non-GAAP reporting and this behaviour persists after negative media attention. From these results we infer that companies do not adjust their reporting behaviour after negative media attention for these particular reporting practices.

We then explore whether investors use non-GAAP information as a basis for their decisions. We investigate the association between abnormal returns and non-GAAP earnings as well as GAAP earnings. On average, our results suggest that investors do not find non-GAAP measures to be more informative than GAAP operating earnings. This contrasts with U.S. findings, where Lougee and Marquardt (2004) and Bhattacharya et al. (2003) find evidence suggesting that investors find non-GAAP earnings measures informative. However, when identifying the development over time, we find that prior to 2003 investors seem to price non-GAAP earnings rather than operating earnings as defined under GAAP. Starting 2003, the situation changes, as investors seem to turn away from non-GAAP measures and start to price GAAP operating earnings instead. In all of the defined models, GAAP bottom-line earnings are informative. Overall, we conclude that although investors seem to turn away from non-GAAP information as a result of the negative media attention, companies do not adjust their reporting behaviour accordingly.

We interpret our empirical results as evidence for the conjecture that the use of financial reporting information can change in the absence of any regulatory intervention. This study shows that investors' perception of specific reporting practices change as a result of the public debate, and more specific, media attention. Investors that become more aware of the possibly negative aspects of certain (non-GAAP) earnings measures apparently ignore these disclosures, as they have become less credulous. On the other hand, media attention does not seem to affect firms' reporting behaviour, as they continue to report non-GAAP measures at least as frequently and as prominently as before. These findings are particularly relevant for standard setters, policy makers and financial market participants, since the debate on the negative consequences of a regulatory overload is on a new high.

LITERATURE REVIEW AND RESEARCH QUESTIONS

The effectiveness of regulation

The effectiveness and desirability of regulation of financial markets has long been debated (e.g. Stigler, 1964). In the aftermath of recent corporate scandals, regulators imposed far-reaching regulation on financial markets to restore investors' trust. These new regulations, such as the Sarbanes-Oxley law of 2002, stirred up the discussion on the effectiveness of regulation and led to several academic studies discussing the costs and benefits of SOX (e.g. Romano, 2005; Coates, 2007; Leuz , 2007).

The effects of SEC warnings and regulations concerning non-GAAP reporting have been investigated in a number of studies. When analysing firms' reporting behaviour, Marques (2006) and Heflin and Hsu (2007) document that the frequency of non-GAAP reporting declines significantly after SEC intervention. Marques (2006) distinguishes between the SEC warning in 2001 and Regulation G in 2003 and finds that the probability of reporting non-GAAP earnings is not affected by the SEC warnings. For other non-GAAP information, the frequency decreases after the SEC warning and additionally after SEC regulation. Heflin and Hsu (2007) find evidence that the SEC regulation effectively curbed opportunistic non-GAAP reporting, as the probability of meeting an earnings benchmark using non-GAAP measures decreases significantly after the regulation. Entwistle et al. (2006) study the impact of non-GAAP regulation of the SEC on reporting behaviour of firms between 2001 and 2003. They find that the number of firms reporting non-GAAP information after the introduction of SEC regulation declines sharply. They also report that by 2003 the reported non-GAAP information is less biased and presented less prominently. Kolev et al. (2008) analyse the change in non-GAAP reporting behaviour in more detail by examining the relative quality of the exclusions from GAAP earnings. They find that after SEC intervention the predictive ability of the exclusions improves.

These results seem to suggest that the regulation was effective in the sense that non-GAAP reporting became less opportunistic. On the other hand, the decreasing frequency of non-GAAP reporting may also imply that the more informative reporters stopped publishing non-GAAP measures (Marques, 2006; Heflin and Hsu, 2007). More evidence of unintended negative consequences is reported by Kolev et al. (2008). They find that the quality of reported special items deteriorates after SOX. They interpret their results as evidence that managers adapt to the stricter regulation by replacing opportunistic non-GAAP reporting with manipulating special items.

Besides companies' reporting behaviour, investors' reaction to non-GAAP information has been analyzed as well. Investors' response to non-GAAP measures has been has been compared to the response to GAAP earnings in several studies. Studies based on actual press releases found that investors find non-GAAP earnings more informative than GAAP earnings (Bhattacharya et al., 2003, Lougee and Marquard, 2004), more persistent (Bhattacharya et al., 2003) and cause stronger revisions to analysts' beliefs (Bhattacharya et al., 2003). In sum, this evidence suggests that the 'flexible' non-GAAP reporting leads to information that investors find useful.

More recently, a number of studies analyze investors' reactions to non-GAAP information before and after the implementation of SOX and Regulation G. For example, Heflin and Hsu (2007) find weak support for an increase in earnings informativeness after the implementation of Regulation G. Additionally, Marques (2006) reports that investors react more positively to non-GAAP disclosures after the regulation became effective. However, when she splits the exclusions from GAAP earnings, she finds that market does not respond to non-GAAP adjustments made by firms that deviate form adjustments made by analysts. A possible explanation for these results is that SEC Regulation increased the credibility of non-GAAP disclosures.

Taken together, the U.S. evidence suggests that SEC regulation has influenced the use of non-GAAP disclosures, but that there may also be unintended consequences that effectively decrease the quality of reported financial information. Moreover, studies that examine the effectiveness of regulation face the problem of contemporaneous changes in the reporting environment. Our research design enables us to address precisely that issue and ask what would happen in the absence of additional regulation. We first analyze the reporting environment and identify media attention for non-GAAP reporting as a changing characteristic that likely influenced companies and investors.

Media attention

We assume that negative media attention for non-GAAP disclosures changed the reporting environment. The potential for media attention to affect companies' behaviour has received some attention in previous studies. For example, Dyck et al. (2006) find that press coverage increases the probability of companies taking action to improve corporate governance. Louis et al. (2005) explore the impact of Business Week's publication of the worst corporate board officers and find that companies take action to improve corporate governance after negative media coverage and change their financial reporting strategy. On the other hand, Core, et al. (2007) find no evidence that negative press coverage influences executive compensation.

Some empirical studies investigate the effect of press coverage on investors' trading decisions. An early study by Foster (1979) analyses the effect of the critical articles by Brilofff, who is famous for his exposures of accounting malpractices. Foster finds an average drop in price of 8% for companies whose accounting practices are criticised by Briloff. Dyck and Zingales (2003) find that stock prices react most to the earnings metric that is emphasized by the press. In their study to the effect of Business Week's list of worst board members, Louis et al. (2005) find that individual investors overreact to this negative media coverage.

The empirical evidence from previous research on the effect of media coverage is based on press coverage of individual companies. Instead, we focus on newspaper articles that deal with the more general financial reporting issue of non-GAAP reporting. This media attention is likely to change the impact of earnings announcements on financial market participants. Assuming the influence of media attention on company's behaviour works through reputation based mechanisms, as Dyck et al. (2006) suggest, this relation is probably stronger in case of company specific media attention[2]. Investors' decisions on the other hand, are influenced by the media because they can provide credibility. (Dyck and Zingales, 2003). Conversely, media attention can also destroy credibility. Mercer (2004) identifies the level of external assurance as one of the four factors influencing disclosure credibility. Although the evidence is largely anecdotal, the opinions expressed in the financial press can provide external assurance. Similarly, negative media attention for certain disclosure practices will harm the credibility of that information and make it less useful for economic decisions. Building on this literature, we argue that the media attention for the misuse of non-GAAP information created more awareness and consequently influenced the behaviour of companies as well as investors.

THE CHANGING ENVIRONMENT OF NON-GAAP REPORTING

We argue that changing regulation is only one aspect that may influence the disclosure choices and the use of financial information. To illustrate our point, we focus on the changes in the financial reporting environment that relate to the use of non-GAAP metrics. Figure 1 depicts a timeline with important changes in the financial reporting setting.

[Insert Figure 1 about here]

Most notably, during the period of interest the first major accounting scandals in both the U.S (Enron in 2001) and the Netherlands (Royal Ahold early 2003) were revealed. Partly in response to these frauds, regulators issued several statements that directly implicated the practice of reporting non-GAAP information. Since a description of the financial reporting environment is important for our analysis, we describe the developments in some more detail.

[2] For example, when a company's name is in the heading of a newspaper article on specific financial reporting practices, the company may be more inclined to respond than when its name is not mentioned at all.

In the Netherlands, the emergence of non-GAAP[3] earnings measures in financial reports coincides with changes in the accounting standards. From 2001 onwards a new accounting directive by the Dutch Accounting Standards Board (DASB) was effective that required goodwill to be capitalised and amortised. Before 2001, acquired goodwill was usually set off against retained earnings. The DASB's accounting guidelines, however, are not legally enforceable. Because of this leeway in the regulation, some companies chose to ignore the guidelines. This led to a decreased comparability of reported net earnings. Anecdotal evidence suggests that among companies that did capitalize goodwill, reporting earnings before interest, taxes, depreciation and amortization (EBITDA) became popular. This non-GAAP earnings measure allowed them to avoid the negative effect of goodwill amortization on net earnings. This suggests that the changing accounting guideline for recording goodwill gave rise to non-GAAP reporting in the Netherlands. In the U.S., reporting EBITDA or similar earnings measures was already widespread by that time. The SEC issued a warning in 2001, with the intent to caution companies on their reporting of non-GAAP measures and to call the dangers of these measures to the attention of investors.

In 2002 the DASB emphasised that non-GAAP measures such as EBITDA cannot be reported in the profit and loss account, as they are inconsistent with the prescribed presentation formats[4]. The statement was issued as guidance to explain the application of current regulation and explicitly applied to the financial statements only. For example, disclosure of EBITDA in the footnotes to the financial statements does not violate the prescribed formats and is therefore allowed according to the DASB. Alternative earnings measures had not been dealt with by the standard setter before. The timing of this statement however, indicates that the practice of non-GAAP reporting had caught the attention of the accounting standard setter possibly in response to media attention and the developments in the U.S. Although the statement is not applicable to interim reports or press releases, the DASB gave a clear signal that any earnings measure that does not fit in

[3] In the Netherlands, the term generally accepted accounting principles.(GAAP) is not defined formally. Instead, the accounting practice is based on the law, the body of case law and guidelines as set by the DASB. Together, the regulation from these three sources is referred to as .Dutch accounting rules.

[4] The Dutch accounting rules are based on a legal framework, covered in Volume 2, Part 9 of the Netherlands Civil Code. The law prescribes the formats in which the financial statements have to be published.

the prescribed format of the profit and loss account is considered to be a deviation from GAAP. However, the statement does not qualify as new regulation of non-GAAP reporting, nor does it affect earnings releases. Moreover, in the absence of enforceability the guidance was regarded as advisory rather than prescriptive by some companies.

Following the Sarbanes-Oxley law of November 2002, the SEC established rules to regulate the disclosure of non-GAAP financial measures. Early 2003, the SEC reduced the flexibility in non-GAAP reporting considerably with the passing of Regulation G. This rule requires all publicly disclosed non-GAAP information to be reconciled with GAAP information. Furthermore, management has to explain why the non-GAAP information is relevant for investors. In addition, the GAAP information must be presented with the same prominence as the non-GAAP information. Besides the costly expanded disclosures that are required under Regulation G, management is also exposed to the risk of litigation if the requirements are not met.

Similar to the U.S. debate, the media in the Netherlands warned against the use of alternative earnings measures[5]. In 2004, the Dutch professional accountants and auditors organization, Royal NIVRA, investigated the annual statements of listed companies for the years 2002 and 2003 and found that alternative measures such as EBITDA are reported frequently[6]. In a research report by the Dutch Financial Market Authority (AFM), the various earnings measures reported in the annual reports over 2002 from 50 Dutch listed companies are criticized[7]. Early 2004, the AFM issued a press release to urge companies to adhere to guidelines that were very similar to Regulation G[8]. This led to discussions in the financial press. Royal NIVRA pressed external auditors and their clients that GAAP net income should be paramount in financial reports and that exotic

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[5] The discussion, although rather technical, reached the non-financial press as well. See for example "Five lessons from Enrons bankruptcy " (Vijf lessen uit het bankroet van Enron, De Volkskrant, 19 January 2002) and "An earnings measure for every company" (Elke onderneming een eigen winstbegrip, De Volkskrant, 14 May 2002)

[6] See Hooghiemstra and Van der Tas, (2003), "Reporting Financial Performance" (Rapportering over financial performance), in: Backhuijs, R.G. Bosman and Knoops, Het jaar 2002 verslagen. Onderzoek jaarverslaggeving Nederlandse ondernemingen, Kluwer/Koninklijk NIVRA and Hooghiemstra and Van der Tas, (2004), "Disclosure on performance indicators "(Informatieverschaffing over prestatie-indicatoren), in: Backhuijs et al., Het jaar 2003 verslagen. Onderzoek jaarverslaggeving Nederlandse ondernemingen, Kluwer/Koninklijk NIVRA, 2004.

[7] See "AFM critical towards the quality of annual reports" ("AFM kritisch over kwaliteit jaarverslagen" Het Financieele Dagblad, 5 December 2003)

[8] "Non Gaap Earnings measures", press release published by the AFM, 17 February 2004

alternative measures should be banned.[9] As net income is the only earnings measure uniquely defined by GAAP, it should remain the most important measure. Audit firms argued that financial disclosures in press releases should be regulated similarly to SOX[10]. Despite this regulatory riot, no specific regulation was issued to address the issue.

To summarize, the reporting of non-GAAP measures has led to discussions in the U.S and the Netherlands. Although faced with a similar challenge, the response of regulators in the Netherlands as compared to the U.S. has been fundamentally different. In contrast to the SEC in the U.S., Dutch regulatory agencies such as the DASB and the AFM did not issue any specific rules for the disclosure of non-GAAP information in press releases. However, there was substantial media attention for the practice of publishing non-GAAP earnings, warning against misleading and confusing use of alternative measures and advocating rehabilitation of GAAP net income. Overall, the Dutch environment of non-GAAP reporting is characterised by the absence of specific regulation directed at banning non-GAAP earnings reporting practices in combination with negative attention from regulators and media. This provides an interesting opportunity to explore whether the financial reporting practices and investors' response change without regulatory intervention.

Earnings debate in the Dutch press

In order to get a more comprehensive picture of the changing conditions surrounding non-GAAP reporting, we perform a search in all Dutch written newspapers in the years 1999-2005 as available in Lexis Nexis. As already explained, we argue that media attention is expected to influence behaviour of financial market participants (i.e. companies and investors). We use newspaper coverage as a proxy for media attention. Since regulators actively participate in the newspaper discussions by writing opinion articles and giving interviews, newspaper coverage captures pressure from regulators as well. We search for articles that specifically cover the earnings-measures debate. These

[9] "Nivra demands rehabilitation of original net earnings" (Nivra eist eerherstel oud winstbegrip, Het Financieele Dagblad, 14 January 2004)

[10] "Ebitda prohibited in press releases" (Ebitda taboe in persberichten, Het Financieele Dagblad, 23 February 2004).

articles typically acknowledge the fact that earnings is a hybrid concept that can be calculated in various ways. We use several text strings[11] for our searches in order to capture all the newspaper articles published on the subject. For each article, we determine if the central message deals with the earnings debate. For example, we remove articles that report the earnings announcement of a specific company and mention an earnings metric in the context of that announcement, without critically reflecting on the pro's and con's of that particular metric.

Our search yields a total of 96 newspaper articles of which 42 were published in the Dutch financial newspaper Het Financieele Dagblad (The Financial Daily). The articles published in the financial newspaper as well as the press in general all had a rather critical tone, warning against misleading reporting practices. As reproduced in Figure 2, the flow of articles seems to build up to a peak in 2002, after which the number decreases again.

[Insert Figure 2 about here]

Roughly one third (33 of 96) of the newspapers articles concerning the discussion of earnings measures were published in 2002. In 2004, we see another spike in the interest in the earnings debate. This time, the attention was motivated by concurrent statements of AFM and Royal NIVRA. They called up companies and their auditors to adhere to GAAP earnings as the most important earnings measure and to refrain from confusing non-GAAP measures. This led to an elaborate debate in the newspapers in January and February of 2004 (17 of the 26 articles of 2004). The statements by the AFM and Royal Nivra may be considered evidence of the influence of media attention on regulators. As a result of the negative press of non-GAAP measures, regulators felt they had to respond and issued a statement.

The spread of the newspaper coverage supports the notion that 2002 is an important year in the earnings debate. In the year where accounting was front-page news,

[11] We use variations of 'alternative' or a synonym in combination with 'definition of earnings' (in Dutch: "winstbegrip") or similar wordings. A second search uses Ebitda (and variations) in combination with a financial market institution (DASB, AFM, Nivra) or references to financial reporting (financial statements, annual report etc.) Together, we use 32 search words in different combinations.

substantial attention was paid to more technical topics such as alternative earnings measures. This set the spotlight on misleading reporting practices of non-GAAP earnings measures. During the first years of our sample (2000-2002) the negative attention for the use of non-GAAP earnings measures increased. We identify 2002 as the most important year in this discussion, as the legislation concerning the use of non-GAAP information in the U.S. became effective and the first European accounting scandals occurred. In our empirical analyses we measure the effects of media attention in two ways: (1) we examine whether non-GAAP reporting behaviour by companies changes and (2) we examine whether investors respond differently to GAAP and non-GAAP earnings measures before and after negative media attention. We therefore divide our sample in two periods: press releases that were issued before and after January 1 2003.

SAMPLE SELECTION

We retrieve the quarterly earnings announcements from the companies' websites in order to obtain the earnings release in its original format. Under Dutch regulation, only (half-) year reports are compulsory, but the majority of the companies voluntarily publish quarterly earnings releases.

For Dutch companies, comprehensive historical analyst data is not available in a database. Although our choice to collect non-GAAP measures from original earnings releases instead of commercial analyst databases is not a voluntary one, it has some advantages. For example, it leads to more accurate information on the reporting behaviour of companies. Adjustments to GAAP earnings made by analysts are not necessarily the same as those reported by firms in their press releases. When compared, non-GAAP earnings as reported in press releases on average differ significantly from the street earnings reported by analysts (Bhattacharya et al (2003), Marques (2006)).

The Dutch capital market is relatively small, allowing us to collect all earnings press releases of listed companies (large and midcap), and determine whether they report non-GAAP earnings measures or not. This provides a more comprehensive picture of reporting practices in earnings announcements. Prior studies with U.S. data used text searches in order to collect a sample of non-GAAP reporting companies (f.e. Bhattacharya et al., 2003, Lougee and Marquardt, 2004). This way, only the earnings releases with the ex ante defined non-GAAP measures can be selected, which may lead to self-selection problems.

We hand-collect the quarterly, half-year and annual earnings releases of companies that were listed at Euronext Amsterdam (large- and midcap indexes), issued between 2000 and April 2005[12]. In line with prior research, we refer to the collected data as firm-quarters, regardless of the frequency of the reports. Our initial sample consists of 766 earnings releases, reported in 21 different quarters for a total of 56 companies. This sample will be used to provide insight into the non-GAAP reporting behaviour of companies. As set out in Table 1, data required to examine market reactions is only available for 545 press releases. Therefore our analyses of the response of to the different earnings measures, which will be presented in the next section, is based on the final sample of 545 press releases.

[Insert Table 1 about here]

For each of the firm-quarters we read and code earnings releases and list the earnings measures reported. We focus on the non-GAAP earnings measure that is reported first in the earnings release. Our assumption is that this is the non-GAAP measure that management wants to put emphasis on. We define an earnings metric to be non-GAAP if the measure is not defined under Dutch regulation. Under Dutch law, the presentation format of the profit and loss account is prescribed.[13] The Dutch standard setter DASB has emphasized in 2001 that the prescribed formats should not be altered in order to present measures such as EBITA or EBITDA as a subtotal. In light of this view, we consider measures that do not fit in the prescribed models of the profit and loss account to be non-GAAP (NONGAAP)[14].

In contrast, GAAP earnings are defined as either bottom-line earnings or a recognized subtotal of the profit and loss account not in violation with the prescribed

[12] The collected press releases concern reporting quarters from the fourth quarter of 1999 upto and including the fourth quarter of 2004. For the purpose of our analyses, we classify the earnings releases depending on the year in which they were published.
[13] In Dutch referred to as ‘Modellenbesluit’. This means that every line item is defined and all line items should appear in a pre-specified sequence.

model, such as earnings before extraordinary items. Within these GAAP measures, we distinguish operating result (OPERGAAP) from bottom-line earnings (EARNGAAP). Proponents of non-GAAP measures claim that these adjusted GAAP measures provide more insight into a company's permanent earnings by excluding transitory items. This can result in non-GAAP measures referred to as adjusted bottom-line measures or adjusted operating measures, depending on the items that management considers to be transitory. In order to compare the information content of the different measures we need both operating GAAP and bottom-line GAAP.

THE NON-GAAP REPORTING BEHAVIOUR OF COMPANIES

We begin with an exploratory analysis of the way Dutch companies report non-GAAP measures in their earnings press releases. We measure the popularity of earnings measures in both the frequency and the prominence with which they are reported. Of our initial sample of 766 earnings releases, 523 (68%) contain at least one non-GAAP earnings measure. The companies that report these self-constructed measures present them prominently in their earnings press releases. In 341 firm quarters, a non-GAAP earnings measure is emphasised by reporting it before GAAP earnings (45% of the total sample, 65% of the non-GAAP releases). Figure 3 graphically illustrates the development of non-GAAP reporting over time. The frequency of reporting non-GAAP measures increases steadily over the period 2000-2005 (from 55% to 83 %). Furthermore, non-GAAP earnings are reported more often as the first and therefore primary earnings measure. In 2005 55% of the press releases publish a non-GAAP measure first, as compared to 30% in 2000. Based on this evidence, it seems the popularity of non-GAAP reporting has not declined in a period of negative media attention. Instead, the increasing trend seems to continue after the turbulent year 2002.

[Insert Figure 3 about here]

At first glance, the growing popularity of non-GAAP reporting suggests that companies continue their allegedly misleading reporting behaviour when there is no specific regulation to stop them. However, if companies are aware of increased scrutiny or scepticism towards non-GAAP reporting, they may have more incentives to report these measures in an informative manner. So, although non-GAAP reporting is increasingly popular, the motivation underlying non-GAAP reporting decisions may have changed. We therefore analyze if the non-GAAP measures are used (more or less) opportunistically. For example, if companies report non-GAAP to mislead investors, we would expect the non-GAAP measures to be more favourable than the GAAP measures. A simple way to measure this is to compare the frequency of non-GAAP profits to the frequency of GAAP profits in our sample. In our initial sample of 766 press releases, 93% of the reported non-GAAP earnings measures are a profit, compared to 77% of GAAP bottom-line earnings or 78% of GAAP operating earnings. On average, non-GAAP measures present a more favourable view of a firm's financial performance. For companies in the U.S., similar results have been reported[15]. Additionally, if non-GAAP earnings are used opportunistically to avoid a loss, we expect to see non-GAAP being reported more frequently in case of a GAAP loss. We therefore split the sample in GAAP-loss quarters and GAAP-profit quarters. Furthermore, to analyse the changes in the sample period, we partition the sample in the period before 2003 and from 2003 onward. The results are presented in Figure 4.

[Insert Figure 4 about here]

In general, companies report non-GAAP measures more frequently and more prominently in GAAP-loss quarters than in GAAP-profit quarters. This is consistent with the assumption of loss-avoidance or at least distracting the attention from a loss. When we look at the changes before and after the negative press coverage, we notice that the reporting behaviour in a loss situation is virtually unchanged after the negative media attention in 2002. In profit situations on the other hand, companies report alternative earnings measure more frequently and more prominently than before the negative media

[15] (Bhattacharya et al. (2003)) report 66% pro forma profits compared to 52% GAAP operating earnings profits. Although a direct comparison with our results is difficult because of differences in research design (f.e. different sample selection), it seems that non-GAAP disclosures are at least as favourable in the Netherlands as they are in the U.S.

attention. A GAAP-loss seems to curb companies' growing enthusiasm towards non-GAAP reporting. A possible explanation is that companies may feel that the bad news of a loss harms the credibility of a positive non-GAAP number. Overall, the frequency and prominence of non-GAAP reporting are consistent with an opportunistic use of non-GAAP measures that continues despite negative media attention.

Next, we look at the frequency of specific exclusions to see if the increasing popularity of non-GAAP reporting is driven by other changes in the financial reporting environment. As Entwistle et al. (2006) suggest, the exclusion of certain items may be influenced by changes in accounting standards (for example goodwill amortization) or changes in the business environment (for example acquisition related charges). For each earnings press release, we tabulate the items that are excluded from GAAP earnings to arrive at the reported non-GAAP earnings measure. Based on the descriptions of the non-GAAP measures in the earnings releases, we identify 22 different categories. A list of the exclusions is provided in Table 2.

[Insert Table 2 about here]

In total, we identify 1268 exclusions from 523 non-GAAP measures. On average, a non-GAAP measure excludes 2.4 items from GAAP earnings. This number is stable throughout the sample period, suggesting that the average complexity of the non-GAAP measures remains fairly stable. On the other hand, the variation of non-GAAP measures has grown, since the number of categories of exclusions increases from 17 to 21.

When comparing the period before the negative media attention (before 2003) with the period after (2003 and after), the overall picture looks relatively stable with 10 types of exclusions increasing and 11 decreasing. From the 523 non-GAAP measures, 371 exclude amortization charges. This supports the expectation that the change in the accounting treatment of goodwill precipitated the use of non-GAAP measures. When we compare the two periods, we see a significant decrease in the frequency with which amortization is excluded from GAAP earnings. This may coincide with an alternative accounting treatment of goodwill that was gaining popularity in this period, according to which goodwill is not amortized but instead tested for impairment annually. This explanation is also consistent with the significant increase from 0 to 15 exclusions of impairments. The changes in accounting procedures for goodwill are reflected in non-GAAP reporting. Adjustments related to goodwill (amortization and impairment) have decreased from 77.8% to 70.8%. Since the frequency decreases, this development does not drive the growing popularity of non-GAAP measures.

Our results reveal a simultaneous relative decrease in non-operating items, depreciation and amortization. This implies that EBITDA –type earnings measures have become less popular after negative media attention, which may be influenced by the guidance issued by the DASB reinforcing that EBITDA and similar measures cannot be reported in the income statement. Again, this change in the accounting environment does not explain the growing popularity of non-GAAP reporting.

Another accounting guideline that was issued during our sample period relates to the reporting of exceptional and extraordinary items[16]. Exceptional and extraordinary charges are excluded 147 and 109 times respectively. Presenting an earnings measure that excludes either extraordinary or exceptional items (or both) is increasingly popular. It seems that despite negative media attention companies continue to present non-GAAP measures. This development may be influenced by the stricter accounting guidelines with respect to the income statement.

Apart from regulatory accounting issues, changes in the economic environment may also explain the increasing frequency of particular items that are excluded. For example, acquisition items are influenced by the acquisition activity in the period. Pension charges are heavily influenced by demographic developments and the investment returns of pension funds. From Table 2, we see that the frequency of these items does not change significantly.

Finally, analyzing these exclusions also helps to distinguish between opportunistic and informative use of these measures. Assuming informative incentives for non-GAAP reporting would lead to a consistent way of reporting, we would expect companies to

[16] During the sample period, the DASB issued an accounting standard that effectively prohibited labelling items as extraordinary (except in very rare cases such as earthquakes). Items that are no longer allowed to be categorized as extraordinary are presented as exceptional items under the new accounting standard. In Table 2, we see that excluding exceptional items from GAAP earnings has become more popular (with a significant increase from 52 to 95 exclusions). However, it is conspicuous that the relative decrease for extraordinary items is insignificant. Given the fact that standards issued by the DASB are not enforceable, it seems that companies ignored the rules pertaining to extraordinary items.

report the same non-GAAP measure in its consecutive earnings releases. Moreover, companies would emphasize the same earnings measure in its press releases. Exploring the consistency with which the non-GAAP measures are being reported, we see that a stable proportion of our sample either switches the definition of the non-GAAP measure (41%-43%) or switches the measure they choose to report most prominently (30%-29%). Furthermore, in a small number of earnings releases, the company omits explaining the definition of the non-GAAP measure by either reporting an incomplete specification or no specification at all. Taken together, our analysis of the excluded items shows that there are some shifts in the use of non-GAAP earnings measures that may have been induced by changes in accounting standards, Moreover, some indicators of opportunistic disclosure (avoiding losses, switching behaviour, and incomplete specification) seem to prevail despite negative media attention in the more recent years.

Overall, we do not find evidence for a disciplining effect of negative media attention on the reporting of non-GAAP metrics. Companies continue to report non-GAAP measures and do so more frequently and more prominently, even after negative media attention. The increasing popularity of the non-GAAP measures cannot be explained solely by the influence of accounting standards or a changing business environment. While some accounting changes have had an impact on non-GAAP reporting (EBITDA-type earnings measures have become less popular due to changes in goodwill treatment), the use of exceptional and extraordinary items has increased over time. Moreover, we find that several indicators of opportunistic non-GAAP reporting practices persist after the negative attention. Thus, although the media repeatedly brand non-GAAP reporting as confusing and misleading, companies seem to ignore this message.

INVESTORS' USE OF NON-GAAP MEASURES

In order to determine investors' use of non-GAAP earnings measures as compared to GAAP earnings, we examine the informativeness of the identified earnings metrics. A standard event study procedure is used to assess if stock prices change in response to the different earnings measures disclosed in the press releases[17].

We use a random-walk earnings expectations model where we define unexpected earnings as the three EPS figures (GAAP, operational GAAP and non-GAAP) minus GAAP earnings from quarter q-4. We use unexpected earnings instead of forecast errors, because analyst forecast data is lacking for Dutch companies during our sample period. We calculate three measures of unexpected earnings or earnings surprise: UE GAAP, UE OGAAP and UE NONGAAP.. On average, the non-GAAP measures result in unexpected earnings of 5.3%, compared to UE GAAP of minus 0.2%. The mean market capitalisation MCAP (€10,397 million) is much higher than the median (€1,593 million), revealing that a few firms in our sample are much larger than most of the sample firms. This is in fact a characteristic feature of the Dutch financial market, which is dominated by a few large multinational companies.

[Insert Table 3 about here]

We first examine which definition of earnings investors pay attention to: non-GAAP earnings or GAAP earnings (either bottom-line or operating). To gain insight into the degree to which the market is processing each measure in prices, we investigate short-window association between abnormal returns on each earnings surprise (unexpected earnings) measure separately. If the market finds non-GAAP earnings to be a better

[17] The market model is used to calculate daily abnormal returns. We estimate the market model parameters for a pre-event estimation period of 100 trading days from of –110 to –10 days before the press release. Abnormal returns are computed during the event period. Our event period is from –10 to +10 days. Abnormal returns are then averaged across firms to generate the average abnormal return (AAR_t). Cumulative average abnormal returns ($CAAR_{-1,+1}$) are calculated by summing the average abnormal returns for an event window [-1,+1 relative to the event date (i.e. the date of the press release), which is labeled day 0.

summary measure of performance, returns will be more highly correlated with UE NONGAAP than with UE GAAP or UE OGAAP.

Table 4 presents the results of regressions of abnormal returns on unexpected earnings. The regression is estimated separately for UE GAAP, UE OGAAP and UE NONGAAP (Model 1-3 respectively). We do not estimate the regression for the three unexpected earnings metrics together, because of high correlations between the earnings definitions (correlations above 0.95).

[Insert Table 4 about here]

In the separate unexpected earnings regression reported in table 4, UE GAAP, UE OGAAP and UE NONGAAP are positively related to short window returns. The coefficients on both UE OGAAP and UE NONGAAP are significantly positive. These results indicate that the different definitions of unexpected earnings have different explanatory power with respect to short window abnormal stock returns. Remarkably, bottom-line earnings are informative whereas operating earnings are not. Normally it is argued that operating earnings are closer to core earnings and are therefore more relevant to investors. Furthermore, non-GAAP earnings are informative, which is in line with prior research. Consistent with U.S. studies, we find that non-GAAP earnings are more informative than GAAP operating earnings (Bhattacharya et al., 2003), but this does not hold for GAAP earnings.

If negative media attention has an effect on the way investors perceive non-GAAP information and if they adjust their behaviour accordingly, the information content of the respective earnings measures should change from 2003 onwards. The results of the regressions in these two periods are reported in Table 5.

[Insert Table 5 about here]

The Models 1-3 depict the results of the regression in the period before 2003, the Models 4-6 refer to the period 2003 until April 2005. Before 2003, both the bottom-line GAAP and the non-GAAP unexpected earnings measures are significantly positive. The coefficient on UE OGAAP is not significant during this period. This result is similar to the aggregated results for the entire period. So before 2003, investors seem to price both GAAP bottom-line earnings and non-GAAP earnings.

In the second period (2003 and after) however, the results change. UE NONGAAP is no longer significant, while the unexpected earnings on bottom-line GAAP and operating GAAP earnings are significant (at the 10% level). According to our results, the decreased use of non-GAAP information coincides with an increasing popularity of operating GAAP earnings. The coefficient on UE OGAAP switches to a positive sign, and is significant.

The coefficient on UE GAAP is statistically significant for the entire sample period as well as for the divided periods before and after 2003. This may suggests that bottom-line earnings are in fact informative to capital market participants. This contradicts the critics of bottom-line earnings, who claim that this earnings measure is not useful to investors because it includes items that are non-operating or transitory. The use of net income in financial reports is strongly encouraged by Dutch financial market authorities and regulators such as the DASB. Based on our results, it seems investors agree with the regulators on the importance of bottom-line GAAP earnings.

The explanatory power (R^2) of our Models as reported in Table 4 and 5 is low, but in line with other research (Bhattacharya, et al., 2003). We calculate Vuong's (1989) Z-statistic to compare the explanatory power of the Models and find that for the entire period EARNGAAP and NONGAAP have significantly more explanatory power than OPERGAAP, suggesting that investors find operating GAAP the least informative earnings measure. This result holds for the first period of our sample, before the negative media attention. After negative media attention, the explanatory power of the Models does not differ significantly, suggesting that investors find the earnings measures equally (un)informative.

We perform additional tests to determine if our results are robust for alternate model specifications. First, we test if our results are sensitive to the exact date that we chose to separate the observations before the negative media attention from the ones after (1 January 2003). While remaining within the boundaries of the period of intensified media attention, we shift the date partitioning the sample one quarter backward (30

September 2002) and forward (30 March 2003) and run the regressions again. We find similar results, suggesting our findings are not sensitive to the exact date. Furthermore, we repeat our regressions after excluding firms with a cross listing at a U.S. exchange. The results are consistent with the results for the entire sample. This alleviates concerns that our findings are driven by cross-listed firms that respond to the regulation in the U.S. Finally, in addition to the tabulated results, we performed the regressions including the market capitalization five days before the press release was published. The results of this test are similar to the models excluding market capitalization.

Collectively, our analyses of investors' response to non-GAAP reporting suggest investors' behaviour changes after negative media attention and in the absence of a specific regulatory change. Investors do not respond to non-GAAP measures, while they did react positively before 2003. In combination with the evidence of persistent opportunistic non-GAAP reporting practices, it seems investors find non-GAAP information less credible after the negative media attention.

CONCLUDING REMARKS

In this paper, we investigate the use of different definitions of earnings: earnings calculated according to generally accepted accounting principles (GAAP earnings, both bottom-line and operating) and alternative versions of earnings that exclude various items recorded under GAAP (non-GAAP earnings). Our study is placed in the turbulent period were financial scandals are front-page news and investors trust is on a historical low. During this period, influenced by the accounting scandals in the U.S. and the Netherlands, the use of alternative earnings measures received negative media attention. The Dutch setting offers us the unique possibility to study the effect of the negative attention while the rules and regulations remain the same as before the scandals.

We find that companies do not change their reporting behaviour despite the negative media attention. Investors on the other hand seem to take the warnings more seriously and turn away from non-GAAP measures. We also show that from 2003 on, investors consider GAAP earnings to be informative, whereas they do not price non-GAAP earnings measures. This contrasts with the findings before 2003, where investors seem to find non-GAAP earnings useful, as well as bottom-line GAAP earnings. Collectively, our findings suggest that market participants perceive non-GAAP earnings measures to be less informative after a gradual change in reporting environment.

This study is important to regulators and standard setters. It seems that critical opinions in the media and warnings by regulators expressed through the media are effective means to create awareness among investors, but not to alter companies reporting behaviour. U.S. studies suggest that specific regulation has successfully restrained opportunistic non-GAAP reporting practices. On the other hand, there is evidence that the SEC regulation leads to suboptimal reporting decisions (Kolev et al., 2006). Our results cast doubt on the attribution of changes in investor behaviour to the effect of regulation and suggest that investor perceptions can change without regulation. This potentially has important implications for regulation effectiveness studies that evaluate the effect of new regulations on the behaviour of market participants.

Our study may serve as an indication that we need to expand our understanding of the effect of regulation. In order to evaluate the effectiveness and necessity of the regulation of financial markets, we need to understand the effect of concurrent changes in the environment that may influence behaviour of financial markets participants. For example, media attention can induce reputation effects that discipline reporting behaviour or create awareness among the users of financial information. We report evidence that suggests that investors base their decisions on different earnings metrics after negative attention from media and regulators. Such effects may decrease the necessity of additional regulation. In order to disentangle the effects of regulation and reporting environment, more research in an international setting may be fruitful.

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FIGURE 1.

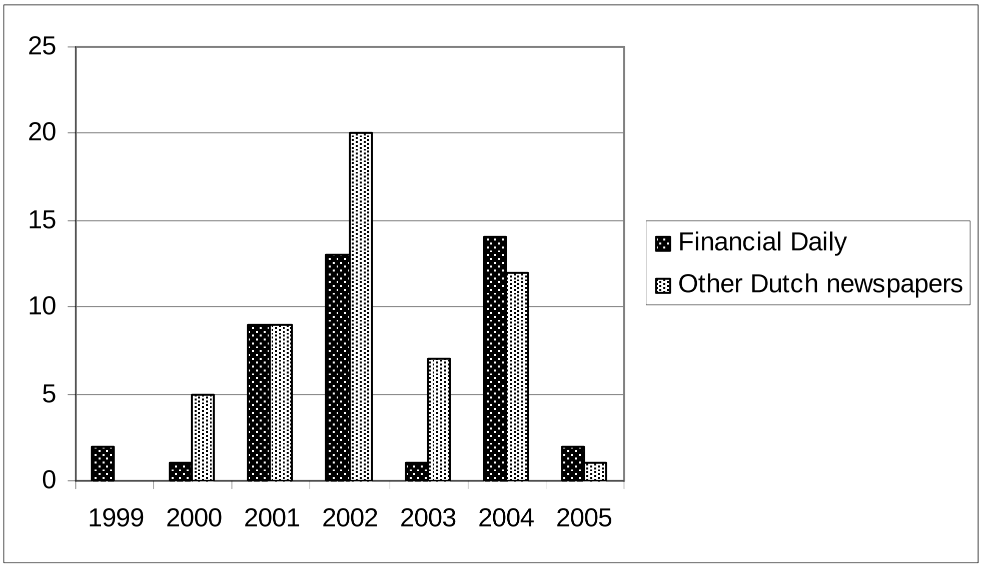
TIMELINE: EVENTS AND REGULATORY CHANGES INFLUENCING THE FINANCIAL REPORTING ENVIRONMENT FOR NON-GAAP DISCLOSURES

	2000	**2001**	**2002**	**2003**	**2004**
NL		New accounting standard for recording goodwill	DASB issues guidance for non-GAAP in Income-statement	Royal Ahold scandal	AFM issues advice for Non-GAAP in press-releases
US		-Enron scandal -SEC cautionary advice	Sarbanes Oxley Act	SEC Regulation G	

.
NL=Netherlands
US= United States

FIGURE 2

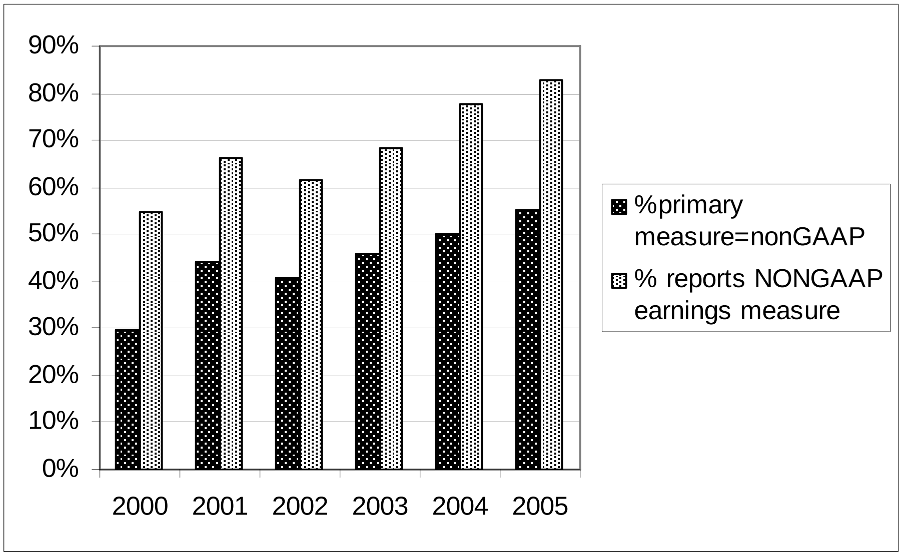
EARNINGS DEBATE IN DUTCH PRESS



Earnings debate in the Dutch press. The number of newspaper articles that appeared in Dutch newspapers from 2000-2005 that dealt primarily with the debate on different earnings definitions.

FIGURE 3

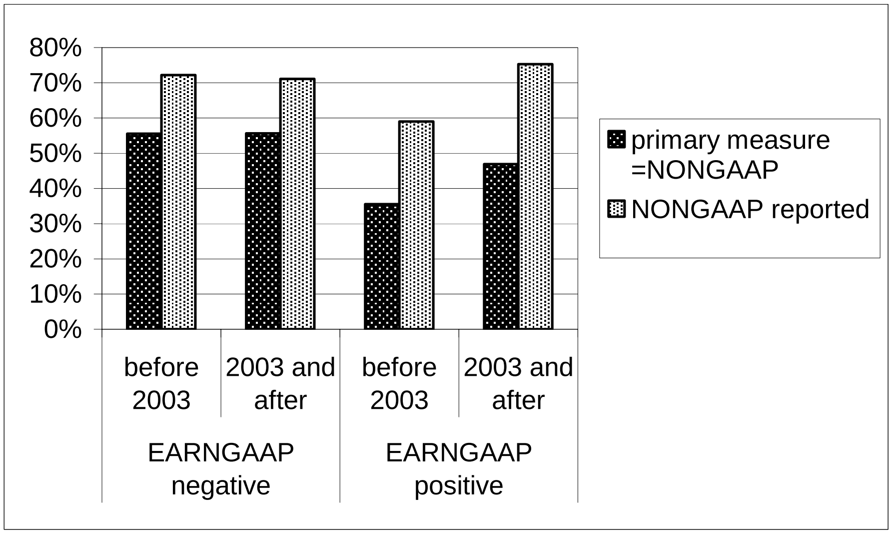
FREQUENCY OF NON-GAAP REPORTING 2000-2005



Frequency (relative to the total number of press releases in our sample for the year) of press releases containing a non-GAAP measure and frequency of non-GAAP earnings metrics reported as the first earnings measure (primary measure) in the year of publication.

FIGURE 4

NON-GAAP REPORTING IN LOSS OR PROFIT SITUATION



Comparison of earnings metrics in reporting a profit versus a loss.situation
EARNGAAP refers to bottom-line GAAP earnings.
NONGAAP refers to earnings measures that are not defined by accounting standards accepted in the Netherlands.
Primary measure is the first earnings measure in the press release.

TABLE 1

SAMPLE SELECTION

Companies listed AEX/AMX 1999-2004		70
No press releases available	[a]	14
		56
Theoretical initial sample	[b]	1.176
Archive starts later than 1999q4		188
Firm report semi-annually	[c]	189
		799
Missing release		33
Sample for descriptive analysis		**766**
No data for q-4		215
Insufficient data to estimate market model		6
Final sample		**545**

[a] The following firms are removed from the list (necessary data not available, often merger-related): ASR Verzekeringen, Baan, Cap Gemini, CMG, Endemol, Gucci, KPN Qwest, Libertel, Pakhoed, PinkRoccade, Rodamco Asia, UPC, Vodafone Libertel and Volker Wessels.
[b] 21 quarters of 56 companies would lead to a maximum of 1.218 earnings releases
[c] Listed companies at the Amsterdam Stock Exchange are not required to report quarterly but semi-annually. Therefore in the first and in the third quarter a number of companies don not report earnings.

TABLE 2

EXCLUSIONS FROM GAAP EARNINGS

Exclusion	2000-2002 n=225		2003-2005 n=298		TOTAL n=523
Non-Operating Items	114	50,7%	145	48,7%	259
Depreciation[a]	69	30,7%	53	17,8%	122
Amortization[a]	175	77,8%	196	65,8%	371
Impairment[a]	0	0,0%	15	5,0%	15
Exceptional Items[b]	52	23,1%	95	31,9%	147
Extraordinary Items	52	23,1%	57	19,1%	109
Restructuring Charges	14	6,2%	14	4,7%	28
Acquisition related charges	3	1,3%	1	0,3%	4
Sale of assets[c]	0	0,0%	5	1,7%	5
Share Compensation Expense[a]	12	5,3%	2	0,7%	14
R&D[a]	7	3,1%	0	0,0%	7
Revaluation (fixed/financial assets)[b]	14	6,2%	34	11,4%	48
Current cost valuation	10	4,4%	9	3,0%	19
Foreign Currency	10	4,4%	13	4,4%	23
Provisions/accruals	7	3,1%	10	3,4%	17
Discontinued operations	8	3,6%	12	4,0%	20
Realized investment gains/losses	11	4,9%	13	4,4%	24
Rent	5	2,2%	6	2,0%	11
Penalties/Claims[c]	3	1,3%	11	3,7%	14
Pension charges	0	0,0%	2	0,7%	2
Finance related charges	0	0,0%	3	1,0%	3
Excluded Segments[b]	0	0,0%	6	2,0%	6
TOTAL EXCLUSIONS	566		702		1268
no specification	4	1,8%	9	3,0%	
incomplete specification	5	2,2%	9	3,0%	
Switched primary measure	67	29,8%	86	28,9%	153
Switched definition of non-GAAP measure	93	41,3%	128	43,0%	221

For each exclusion we test whether the percentages are equal across the two periods. For exclusions with superscript a ,b or c equality is rejected at 1% , 5% or 10% significance respectively

TABLE 3

SUMMARY STATISTICS

Variable	Mean	Median	Standard deviation	N
EARN GAAP	255.991	44.000	952.908	538
EARN OGAAP	433.674	69.000	1,329.333	363
EARN NONGAAP	474.054	106.000	870.280	381
UE GAAP	-0.002	0.001	0.053	538
UE OGAAP	0.018	0.017	0.072	363
UE NONGAAP	0.052	0.022	0.090	381
MCAP	10,397.640	1,592.690	19,653.910	545
CAR (%)	-0.073	-0.430	7.376	545

Note: Table shows summary statistics for quarterly earnings press releases issued by Dutch listed companies from January 2000 to April 2005. EARN GAAP, EARN OGAAP and NONGAAP-EARN denote the GAAP earnings, operational GAAP earnings and non-GAAP earnings (in millions of euros), respectively. UE GAAP, UE OGAAP and UE NONGAAP denote the unexpected earnings (earnings surprise) for GAAP, operational GAAP and non-GAAP earnings, respectively. We use the random model to compute unexpected earnings and use the GAAP earnings four quarters earlier as our proxy for expected earnings. The UE GAAP is computed as (EARN GAAP-EARN GAAP (q-4))/MCAP, UE OGAAP is computed as (EARN OGAAP-EARN GAAP (q-4))/MCAP and UE NONGAAP is computed as (EARN NONGAAP-EARN GAAP (q-4))/MCAP. The unexpected earnings (earnings surprise) is trimmed at the 5th and 95th percentile. MCAP denotes the market capitalization five trading days before the press release (in millions of euros). CAR denotes the cumulative abnormal return during the three trading day interval from one day before to one day after the press release.

TABLE 4

REGRESSION RESULTS

	Model (1)	Model (2)	Model (3)
UE GAAP	0.155 (2.585)***		
UE OGAAP		0.033 (0.602)	
UE NONGAAP			0.107 (2.432)***
Intercept	-0.001 (-0.177)	-0.004 (-1.007)	-0.004 (-0.979)
R^2	0.012	0.001	0.015
F-statistic	6.684***	0.363	5.916***
Number of observations	538	363	381

	Comparison of earnings measures	
	Vuong's Z-statistic	Probability
OPERGAAP vs. EARNGAAP	7.48	<0.0001
NONGAAP vs. EARNGAAP	-1.62	0.1056
OPERGAAP vs. NONGAAP	7.75	<0.0001

Note: Table shows the regression results using CAR as the dependent variable. We refer to Table 3 for variable definitions. *t*-statistics are shown in parentheses. * statistically significant at the 10 percent level (one-tailed), ** statistically significant at the 5 percent level (one-tailed) and *** statistically significant at the 1 percent level (one-tailed).

TABLE 5

THE RISE AND FALL OF VALUE RELEVANCE OF NON-GAAP EARNINGS

	Before negative media attention			After negative media attention		
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
UE GAAP	0.207 (2.140)**			0.108 (1.522)*		
UE OGAAP		-0.021 (-0.240)			0.098 (1.445)*	
UE NONGAAP			0.130 (1.808)**			0.061 (1.148)
Intercept	0.004 (0.754)	-0.005 (-0.720)	-0.003 (-0.331)	-0.004 (-1.247)	-0.004 (-0.890)	-0.005 (-1.099)
R^2	0.018	0.001	0.020	0.008	0.010	0.006
F-statistic	4.580**	0.058	3.272**	2.317*	2.089*	1.318
Number of observations	248	160	166	290	203	215

Comparison of earnings measures

	Before negative media attention		After negative media attention	
	Vuong's Z-statistic	Probability	Vuong's Z-statistic	Probability
OPERGAAP vs. EARNGAAP	6.76	<0.0001	0.42	0.6759
NONGAAP vs. EARNGAAP	0.55	0.5831	-0.66	0.5110
OPERGAAP vs. NONGAAP	4.29	<0.0001	1.02	0.3103

Note: Table shows the regression results using CAR as the dependent variable. We refer to Table 3 for variable definitions. We split the sample in observations before and after the negative media attention received in 2002. *t*-statistics are shown in parentheses. * statistically significant at the 10 percent level (one-tailed), ** statistically significant at the 5 percent level (one-tailed) and *** statistically significant at the 1 percent level (one-tailed).

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