Kumulative Dissertation zum Themengebiet:

Non-GAAP Reporting around Financial Restatements

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1 INTRODUCTION

1.1 Motivation

This dissertation focuses on equity investors, publicly traded companies, and the voluntary disclosure of non-GAAP earnings in the United States around financial restatements.[1] US-based public companies are required to disclose financial information in conformity with the US Generally Accepted Accounting Principles (GAAP) through annual (10-K) and interim financial statements (e.g., 10-Q). This universal standardization, which is established by the Financial Accounting Standards Board (FASB), intends to enhance investors' and creditors' ability to compare financial performance across heterogeneous firms and increase the reliability of financial information. Since the FASB aims to provide standards that are applicable to a wide range of firms, they are likely to fall short in addressing firm specific characteristics (e.g., innovative firms in fast-moving economies (Sherman and Young 2016)) and one-time effects (e.g., acquisition-related charges) adequately. To overcome this potential shortcoming of GAAP reporting, firms may disclose non-GAAP earnings in addition to GAAP earnings through earnings press releases (e.g., 8-K).[2] By disclosing non-GAAP earnings, firms are able to exclude expenses and gains that under GAAP must not be excluded (e.g., restructuring costs). While one would expect that firms exclude only recurring expenses (often referred to as special items), "anecdotally, non-special-item exclusions include stock-based compensation expenses, payroll taxes on stock option exercises, and amortization costs" (McVay 2006, p. 505), suggesting that recurring expenses may be excluded as well.[3] Importantly, while GAAP information is a) mandatory to be disclosed, b) audited and c) follows existing guidelines, non-GAAP reporting is aa) voluntary, bb) not audited, and cc) largely unregulated, leaving a considerable amount of discretion to the manager when disclosing non-GAAP earnings to the public. To increase the transparency of non-GAAP disclosure and to counteract its potential exploitation by managers (e.g., by inflating non-GAAP earnings through the

1 We note that non-GAAP earnings are an umbrella term for "pro-forma earnings" and "street earnings". While pro-forma earnings are disclosed by the firm, street earnings reflect adjustments by forecast data providers (e.g., I/B/E/S). Importantly, both metrics deviate in (only) 3.8 percent of all cases, in which both metrics are available (Bentley et al. 2018).

2 Firms may disclose non-GAAP earnings in different ways (e.g., press release, Form 8-K, broadcast, telephonically, in regular filings such as 10-Q/K, etc.) (Deloitte 2017). Bernstein (2019), however, states that non-GAAP earnings "are most often disclosed through earnings press releases and investor presentations, rather than in the company's annual report filed with the Securities and Exchange Commission." Further, when firms do not explicitly provide non-GAAP figures, "managers appear to inform analysts adjustments through implicit forms of disclosure" (Black et al. 2018, p. 271).

3 Prior research calculates total exclusions as follows: non-GAAP earnings – GAAP earnings. Hence, positive values of exclusions indicate that expenses were excluded. In such case, the firm reported non-GAAP earnings above the GAAP earnings. Further, the total exclusions are often separated into special items (non-recurring expense exclusions) and other exclusions (recurring expense exclusions). Recurring expense exclusions are perceived as less justifiable and depict likely aggressive non-GAAP reporting choices (Black et al. 2017a; Bhattacharya et al. 2019).

exclusion of unjustified expenses), US-based public firms are required to reconcile non-GAAP to GAAP earnings since 2003 (SEC 2002).

In 2017, 97 percent of S&P 500 firms reported non-GAAP metrics in addition to GAAP earnings, up from 59 percent in 1996 (Usvyatsky and Coleman 2018). Further, as of 2015, non-GAAP earnings exceeded GAAP earnings by 33 percent for S&P 500 firms, suggesting that on average, firms exclude more expenses than gains when they report non-GAAP earnings. Remarkably, in 2015 GAAP earnings declined by –12.7 percent for S&P 500 firms, while non-GAAP earnings grew by 0.4 percent (Lahart 2016), meaning that performance may vary considerably between GAAP and non-GAAP figures. Consistent with this observation, Bernstein (2019) asks: "[w]hat do words like "earnings" and "profitable" even mean in the era of the non-GAAP arms race?"

Proponents of non-GAAP reporting are managers and financial analysts (Whipple 2015). Managers claim that they report non-GAAP earnings to reduce the noise from one-time effects in order "to aid investors in assessing the firm's core operating performance" (Curtis et al. 2013, p. 933). Further, a substantial part of analysts publishes earnings forecasts on a non-GAAP basis (Heflin and Hsu 2008), providing forward-looking information to investors, which is crucial for firm valuation and capital allocation. While Bradshaw and Soliman (2007) state that "[t]here is no compelling evidence in the literature that identifies Street earnings as a predominantly analyst-driven, manager-driven, or forecast data provider–driven phenomenon" (p. 736), more recent literature by Black et al. (2019) concludes that "both managers and analysts play important roles in determining non-GAAP performance metrics" (p. 1).[4]

While managers promote non-GAAP reporting as informative regarding sustainable earnings, critics (SEC 2018; PWC 2019) are concerned that non-GAAP exclusions may be strategically motivated to distract investors from unfavorable news. Being precise, income increasing expense exclusions may be driven by the managers' intention to camouflage poor operating performance (Graham et al. 2005), distract investors' attention from low GAAP earnings (Ciccone 2002; Graham et al. 2005) and increase the likelihood of exceeding analyst forecasts (Doyle et al. 2013). One could even go as far as arguing provocatively that non-GAAP earnings

[4] According to Bradshaw et al. (2018) "[a]nalysts can value a firm based on either GAAP or non-GAAP earnings, and researchers commonly refer to the I/B/E/S-provided earnings metric as "street" earnings, which is often calculated on a non-GAAP basis." Further, Bradshaw and Sloan (2002) highlight that "I/B/E/S earnings per share ("EPS_{Street}") reflect a company's earnings per" share reported on a "continued operations" basis". Heflin and Hsu (2008) identify non-GAAP disclosure when GAAP earnings (from Compustat) deviate from Street earnings (from I/B/E/S).

are the "numbers management talks about once the auditor leaves the room" (Bernstein 2019).[5] Consistent with non-GAAP earnings being not audited, non-GAAP reporting is debated by regulatory bodies (SEC 2018), standard setters (Kabureck 2017; Golden 2017) and practitioners (PWC 2019), addressing the concern that artificially inflated non-GAAP earnings might mislead investors. Supporting critics, Warren Buffett states that "it has become common for managers to tell their owners to ignore certain expense items that are all too real" (Buffet 2015, p. 16).

1.2 Prior Literature

Are Investors Misled by Non-GAAP Reporting?

Despite the frequent and excessive exclusion of expenses, prior empirical research finds that investors are more responsive to non-GAAP earnings relative to GAAP earnings, suggesting that investors find non-GAAP earnings useful (Bradshaw and Sloan 2002; Bradshaw et al. 2018). Further, investors are less responsive to non-GAAP earnings when recurring expenses are excluded, indicating that investors are able to distinguish between aggressive and non-aggressive non-GAAP reporting choices (Doyle et al. 2013).[6] While on average, empirical research does not provide evidence that non-GAAP reporting is harmful to investors, the exclusion of recurring expenses is perceived to be less justifiable and of lower quality (Barth et al. 2012; Bhattacharya et al. 2003). Prior literature finds that managers use the exclusion of recurring expenses to meet or beat analyst forecasts (Black and Christensen 2009; Doyle et al. 2013). Turning to the question of whether investors misprice non-GAAP earnings: **Analytical research** proposes that investors are misled by inappropriate non-GAAP adjustments, in particular, due to limited investor attention (Hirshleifer and Teoh 2003). **Empirical research**, however, yields ambiguous findings (Johnson and Schwartz 2005; Doyle et al. 2003) without addressing investor attention and appropriateness of non-GAAP adjustments in particular. Further, these findings are subject to discussions that signal room for improvement in this research area.[7]

[5] Black et al. (2017b) describe non-GAAP reporting as "a relatively lower-cost perception management technique." In other words, the low detection likelihood of managerial "mis-exclusions" increases the opportunity to manipulate earnings without being subsequently punished.

[6] We note that recurring expenses exclusions are a widely applied proxy for aggressive non-GAAP reporting choices and are used throughout two article that are included in this dissertation.

[7] Hirshleifer and Teoh (2003) are the subject of a discussion by Lambert (2003), Doyle et al. (2003) are the subject of a discussion by Easton (2003) and Johnson and Schwartz (2005) are the subject of a discussion by Berger (2005), suggesting room for improvement.

What Are the Determinants of Disclosing Non-GAAP Earnings (Aggressively)?

Regarding potential determinants of non-GAAP reporting choices, Christensen et al. (2019) show that non-GAAP reporting quality improves after debt covenant violations, and Basu et al. (2019) find that firms report non-GAAP earnings more aggressively when institutional investors are distracted. Both findings suggest that scrutiny might affect managerial non-GAAP reporting choices.[8] Moreover, Kolev et al. (2008) provide empirical evidence that SEC scrutiny enhances the quality of non-GAAP exclusions and Black et al. (2014) document a negative correlation between aggressive non-GAAP reporting choices and abnormal audit fees, indicating that audit effort moderates the aggressiveness of non-GAAP earnings, even though non-GAAP earnings are not audited. While presented findings suggest that increased oversight by investors, regulatory bodies and auditors enhances non-GAAP reporting quality, increased pressure and incentive to uphold high investor beliefs about profitability might increase the use of aggressive non-GAAP reporting. Supporting the latter, Black et al. (2017b) document that "companies are more likely to report non-GAAP earnings (and to do so aggressively)" (p. 750) when they are constrained by prior-period accruals management. Further, Kyung et al. (2019) find that non-GAAP exclusion quality decreases after clawback adoption, interpreting this result as managers seeking an alternative to GAAP based earnings management.[9]

1.3 Contribution

In our research, we focus on non-GAAP reporting and investor attention and ask the following three questions among others (see also Figure 1):

1) Which type of financial restatement suits well to capture heightened investor scrutiny? (Article A)
2) Are investors misled by aggressive non-GAAP reporting choices before the restatement announcement? (Article B)
3) Do firms report non-GAAP earnings differently after the restatement announcement? (Article C)

8 Christensen et al. (2019) consider the improvement of non-GAAP exclusions as being attributable to heightened investor scrutiny. Since investor scrutiny and investor attention are closely interrelated, we interpret these findings in the light of investor attention.

9 Recall that if clawbacks are in place the SEC may recover executive compensation when financial statements are restated in the future. As financial restatements are conditional on prior "GAAP-based" misreporting, the expected costs of misreporting increase, while non-GAAP earnings management remains a relatively costless tool. Importantly, Kyung et al. (2019) state that "[w]hile the required 8-K reconciliations of non-GAAP to GAAP earnings could arguably be subject to restatement in these instances, we were unable to identify a single instance of this occurring". Hence, we may assume that the majority of financial restatements corrects former GAAP misreporting. For our research, this is advantageous, as it mitigates endogeneity concerns when we condition market reactions to financial restatements on ex-ante non-GAAP aggressiveness.

Addressing the second and third question first, we carefully consider analytical work by Hirshleifer and Teoh (2003). According to Hirshleifer and Teoh (2003) investors are misled by the inappropriate non-GAAP exclusion because of limited investor attention. Further, Hirshleifer and Teoh (2003) assume that managers are more likely to exclude inappropriate non-GAAP expenses, when the information content of earnings is high, or put differently, when investors are highly responsive to disclosed earnings as they believe that disclosed information is true, even though it could be actually untruthful and misleading.

Figure 1: Relation of Articles

Article A: Focus on **Financial Restatements**, Overview Article
(Sievers and Sofilkanitsch, 2019)

Article B:
Focus on **Investors' Earnings Responsiveness**
in the Pre- and Post-Restatement Period,
Empirical Research
(Mehring, Müller, Sievers and Sofilkanitsch, 2020)

Article C:
Focus on **Firms' Non-GAAP Reporting Choices**
in the Pre- and Post-Restatement Period,
Empirical Research
(Sofilkanitsch, 2020)

Figure 1 illustrates our focus on financial restatements and non-GAAP reporting. In Article A, we outline characteristics of material and less severe restatements. In Article B, we focus on investors' responsiveness to aggressive and non-aggressive non-GAAP reporting choices. In Article C, I investigate whether firms change non-GAAP reporting after the restatement announcement.

Because investor attention and scrutiny are crucial for the research questions 2 and 3, we seek for a proxy for heightened investor attention in research question 1. We acknowledge that financial restatements (in most cases) represent the first incidence at which the public learns about prior reporting failures (Ronen and Yaari 2008) and are a sign of low financial reporting quality (Pomeroy and Thornton 2008). Further, to identify the type of financial restatements that most reliably captures heightened investor scrutiny, we review existing financial restatement literature (Article A: overview article).[10] After distinguishing between material and less severe restatements, we apply material restatements as an attention grabbing event and investigate how investors react to aggressively and non-aggressively reported non-GAAP earnings before and after the restatement announcement (Article B). Further, I ask whether firms change their non-GAAP reporting as a response to heightened investor scrutiny after the restatement announcement (Article C).

[10] We use the terms attention and scrutiny interchangeably, but prefer the term attention as it better reflects theoretical work by Hirshleifer and Teoh (2003).

Article A: Sievers and Sofilkanitsch (2019)

Article A of this Doctoral Thesis ('Determinants of Financial Misreporting: A Survey of the Financial Restatement Literature') provides an overview of financial restatements and its determinants. Reviewing financial restatement literature (172 articles), we learn that approximately 2 percent of restatements arise from intentional misreporting, while the remaining 98 percent are attributable to technical mistakes (e.g., misapplication of accounting standards). Further, we acknowledge that ordinary investors do not anticipate the announcement of material restatements, which is evidenced by cumulative abnormal returns of –13.64 percent around material restatement announcement dates (Hennes et al. 2008). Moreover, prior literature finds that there is an increase in insider trading before the restatement announcement (Griffin 2003), suggesting that managers perhaps commit two crimes, "earnings manipulation and insider trading" (Agrawal and Cooper 2015, p. 169). These findings align with the feature that restatements are always announced by the firm (Armstrong et al. 2013), and therefore managers are likely to have informational advantages. Therefore, material restatements provide a setting in which ex-ante informed managers (agents) might exploit their informational advantages (the anticipation of the restatement). For example, managers could extract rents from ordinary investors (principles) by aggressively reporting non-GAAP earnings before the announcements of material restatements and sell stock at inflated prices just before the revelation of low financial reporting quality (and perhaps lower than expected past earnings). This idea closely aligns with findings by Armstrong et al. (2013), who suggest that the average executive has time to "cash out" at inflated prices before a material restatement is announced.

After acknowledging that only some restatements suit well as attention grabbing events, we focus on material restatements and investigate investor's responsiveness to non-GAAP earnings around the restatement (Article B). Further, we analyze the firm's non-GAAP reporting choices around material restatements (Article C). We highlight that Article B and C apply two different approaches to identify materiality, which however, have been chosen consciously to align with prior literature and address the research questions adequately. Being precise, one can identify materiality based on the severity of the misreporting that is revealed/corrected (e.g., was the past misreporting intentional?). We refer to this approach as the fraud based approach (applied in Article B). Another way to identify materiality is based on the short-term market reaction to the restatement announcement. We refer to this approach as the market reaction based approach (applied in Article C). Both, the fraud based approach (Hennes et al. 2008; Chen et al. 2014) and the market reaction based approach (Larcker et al. 2007; Carcello et al. 2011) are applied by prior research. We posit that the fraud based approach suits well to investigate investors' reactions to information contained in a financial restatement (e.g., what is the market reaction to fraud?). In contrast, the market reaction based approach suits well to investigate firm reactions to heightened investor scrutiny (e.g., how do firms react to adverse market reactions?). Therefore, in Article B (focus: investor reaction) we use the fraud based approach and in Article C (focus: firm reaction) I use the market reaction based approach. In both settings the term "material restatement firm" can refer to the same set of firms (because of the close relationship between fraud related restatement and severe market reactions to the restatements), but does not have to. We argue that a restatement setting is in particular of high interest, as it reflects a pre-period in which the manager might be incentivized to extract informational rents by reporting non-GAAP reporting aggressively to misled investors. Further, the post-period reflects investor's update of beliefs and allows us to condition market reactions on ex-ante non-GAAP reporting. Non-GAAP reporting in a restatement setting has thus far been addressed only by Shiah-Hou (2018) (working paper). She finds that restatement firms are more likely to exclude recurring expenses (in 63.9 percent of all observations) relative to non-restating counterfactuals (54.6 percent) in the pre-restatement period.[11]

Article B: Mehring, Müller, Sievers, and Sofilkanitsch (2020)

In Article B of this Doctoral Thesis ('Are Investors Misled by Exclusions of Recurring Expenses from Non-GAAP Earnings?'), we address investors' responsiveness to non-GAAP earnings before and after the restatement announcement. Seeking to address propositions by Hirshleifer and Teoh (2003) empirically, we apply a material restatement as an attention grabbing event and use the exclusion of recurring expenses as a proxy for inappropriate non-GAAP adjustments. In more detail, we investigate investor's responsiveness to aggressively

[11] We note that Ettredge et al. (2010) and Badertscher (2011) use the term "non-GAAP reporting" and "non-GAAP earnings" in their restatement focused studies. Hence, one could assume that both studies investigate non-GAAP reporting in a restatement setting. However, after carefully reading these two studies, we conclude that both studies use "non-GAAP reporting" and "non-GAAP earnings" as a synonym for financial misreporting of GAAP reporting that eventually leads to a financial restatement. Recall that restatements correct financial statements that should have been disclosed in conformity with GAAP, but were not. Acknowledging the difference is essential, as one will otherwise misinterpret the implication of non-GAAP reporting. Ettredge et al. (2010), for example, describe non-GAAP reporting as the most severe form of misreporting. Interestingly, Shiah-Hou (2018) interprets the study by Ettredge et al. (2010) as a study that investigates non-GAAP reporting in a restatement setting, most likely because of the terminology used by Ettredge et al. (2010). Except for the studies by Ettredge et al. (2010) and Badertscher (2011), we found that the terms "non-GAAP reporting" and "non-GAAP earnings" are always used to describe the legal and voluntary disclosure of non-GAAP earnings (e.g., pro-forma earnings).

reported earnings (exclusions of recurring expenses) before and after the increase of investor attention. Further, supposing that market revisions are indicative of prior mispricing, we condition market reactions to material restatements on ex-ante non-GAAP reporting. We note that (to the best of our knowledge), investor's responsiveness to aggressive reporting choices has not been investigated around financial restatements. Our design choice allows us to investigate investors' responsiveness to the same set of firms, before and after investors' attention has increased.[12] Regarding whether investors are misled by aggressive non-GAAP reporting choices in the pre-restatement period, potential outcomes depend on investors' ex-ante ability to see through the quality of non-GAAP exclusions.

Turning to our findings, we show that before the restatement announcement, investors are more responsive to earnings that exclude recurring expenses. This is surprising given that Doyle et al. (2013) find an ERC-discount when recurring expenses are excluded in a non-restatement setting. Interestingly, once investor attention has increased due to the restatement, investors are less responsive to earnings that exclude recurring expenses. In other words, investors reward aggressive non-GAAP reporting choices in the pre-restatement period but punish the same reporting choice in the post-restatement period for the same set of firms. This change in investors' responsiveness, suggests that attention enhances investors' ability to disentangle informative from aggressive non-GAAP reporting choices. One could conclude that non-GAAP reporting is transparent, as otherwise attentive investors would not be able to distinguish between aggressive and non-aggressive reporting choices after the restatement.

We investigate the investors' revision in i) perceived financial reporting quality (measured through the earnings response coefficient), ii) market value (measured through cumulative abnormal returns around the restatement announcement date) and iii) overvaluation (measured through the relation of prices and intrinsic values from the market perspective). We find that revisions in all three measures are most pronounced (most negative) for firms with aggressive pre-restatement non-GAAP reporting. Given that revisions are indicative of prior mispricing, we may conclude that aggressive non-GAAP reporting causes mispricing before the restatement, but is reversed subsequently. This finding closely aligns with Hirshleifer and Teoh (2003), who propose that inappropriate non-GAAP adjustments mislead investors due to limited attention.

[12] Johnson and Schwartz (2005) find no difference in overvaluation between non-GAAP and GAAP-only disclosure firms. In a discussion, however, Berger (2005) finds that the comparison between non-GAAP and GAAP-only disclosure firms, as applied by Johnson and Schwartz (2005), is not convincing. Comparing the same set of firms before and after an informational shock resolves the concern addressed by Berger (2005).

Article C: Sofilkanitsch (2020)

In Article C of this Doctoral Thesis ('Does Non-GAAP Reporting Change after Financial Restatements?'), I focus on firm's non-GAAP reporting choices after the restatement announcement. Investigating whether the quality of non-GAAP earnings improves or deters after a restatement announcement remains an empirical question, as I do not know which of both forces (increased investor oversight or increased manager pressure and incentive) will dominate. In other words, firms may respond to heightened investor scrutiny after the restatement by improving non-GAAP earnings. In contrast, firms may increase the use of aggressive non-GAAP reporting as an alternative to GAAP earnings management. In particular, when managers are constrained by prior-period accruals management (Black et al. 2017b) and GAAP numbers are audited more carefully after the restatement announcement (Thammasiri and Tepalagul 2016), the manager might choose to become more aggressive in non-GAAP reporting (as GAAP earnings management has become more costly).

Turning to the findings, I show that firms are less likely to exclude inappropriate items (recurring expenses) after the restatement, suggesting that firms respond to heightened investor scrutiny. Further, I document an increase in the quality of non-GAAP earnings and exclusions. This improvement is concentrated in the exclusion of recurring expenses, the type of adjustment found to be most aggressive.[13] Overall, my findings support the view that shareholder oversight may improve non-GAAP reporting quality.

The Relation between Article B and C

In Article B, we provide strong empirical evidence that investor attention enhances investors' ability to disentangle aggressive from non-aggressive non-GAAP reporting choices. Moreover, in Article C, I find that non-GAAP disclosure quality improves significantly after the restatement announcement, suggesting that firms respond to heightened investor scrutiny. While both findings investigate non-GAAP reporting in a restatement setting, implications and samples differ substantially. First, while Article B focuses on investors' responsiveness to non-

[13] In detail, I follow prior literature (Kolev et al. 2008; Christensen et al. 2019) and regress future operating earnings on the recurring expenses exclusions. If these expense exclusions are of high quality, they should not be significantly correlated with future operating earnings. I find a significant negative association between exclusions and future operating earnings in the pre-period, suggesting that these expenses have predictive power for future operating earnings, and are therefore of low quality. This correlation disappears in the post-restatement period, suggesting an improvement in non-GAAP earnings.

GAAP earnings and applies the ERC-, CAR-, and valuation-model, Article C focuses on firms' response to heightened investor's scrutiny and investigates the likelihood of recurring expense exclusions and the quality of non-GAAP earnings and exclusions by the firm. Consequently, both articles incorporate different models and require different data. Importantly, Article B (264 firms) focuses on investor reactions, and Article C (804 firms) focuses on the firm behavior after a restatement. The larger sample used in Article B is attributable to primarily two factors. First, in Article C I observe material and less severe restatements (in Article B; only material restatement). Second, in Article C I identify materiality through the market reaction based approach (in Article C; fraud based approach).

Finally, one could argue that the research questions addressed in Article B and Article C should be dealt with in one paper. However, if I had addressed such an extensive set of research questions concerning the investor (in Article B) and the firms' non-GAAP reporting choices (in Article C) in one paper, I would have violated the principle of answering one central research question in one paper. My approach is omnipresent in prior literature. To put the approach used in this dissertation into perspective, I give an example in which prior literature applied a clawback adoption setting (instead of a restatement setting) and produced two stand-alone papers. Dehaan et al. (2013) and Kyung et al. (2019) both investigate the post-clawback adoption period. However, while i) Dehaan et al. (2013) focus on the investor responsiveness (using the ERC-model as applied by Wilson (2008) and applied by us in Article B), ii) Kyung et al. (2019) focus on the firms´ ex-post non-GAAP reporting quality (using the model as applied by Kolev et al. (2008) and as applied by me in Article C). In light of prior literature (Dehaan et al. 2013; Kyung et al. 2019), each article in this dissertation incorporates a substantial stand-alone contribution to the prior literature.

Contribution to Prior Literature

While our main findings largely contribute to the non-GAAP related literature, we also contribute to the restatement and attention related literature as we apply financial restatements as an attention grabbing event. In particular, we address suggestions by Li et al. (2018), who find that the prior restatement research fails to condition market reactions to financial restatements on ex-ante disclosure. Moreover, we consider DellaVigna and Pollet (2009), who propose that "[d]espite the intuitive appeal of limited attention, little evidence exists on the extent to which the quality of decision-making by investors declines in response to distractions"

(p. 709). Importantly, we carefully address suggestions from former discussions (Lambert 2003; Easton 2003; Berger 2005) on prior non-GAAP related literature (Hirshleifer and Teoh 2003; Doyle et al. 2003; Johnson and Schwartz 2005). For example, Lambert (2003) advises that future research could investigate "the process by which the valuation errors made by inattentive investors get corrected (whether it is by eventually learning the truth or by having the error driven out by the attentive investors)" (p. 399). Further, McVay (2006) proposes investigating item shifting in a setting in which executives might be incentivized to exclude expenses from core earnings. Eventually, Black et al. (2018) pose the following question:

> "*If recurring exclusions really are a signal of aggressive and opportunistic reporting, how do managers continue to benefit from making these same adjustments year after year while explicitly disclosing them to investors?*" (p. 284)

1.4 Summary and Publication Details

The Doctoral Thesis at hand is a cumulative work that consists of three individual papers in the context of non-GAAP reporting, investor attention, and financial restatements. In this section, each paper is summarized and co-authors are named.

Article A: Determinants of Financial Misreporting: A Survey of the Financial Restatement Literature

We provide a comprehensive overview of the findings regarding the causes of financial restatements in the US. Acknowledging that restatements may derive from intentional and unintentional misreporting, we assign the findings to one of three pillars: i) expected benefits, ii) expected costs, and iii) executive characteristics. Assuming that managers are rational decision-makers, the likelihood of misreporting increases in expected benefits and decreases in expected costs. While expected benefits reflect executives' desire to maximize private benefits through compensation contracts, expected costs refer to the likelihood that misreporting will be revealed through internal or external controls. Given that the efficiency of internal and external controls derives from the ability to avoid both intentional and unintentional misreporting, we also review literature that investigates less severe restatements. We support the existing research by enhancing the understanding of restatements in light of severe and less severe restatements, identifying research gaps and organizing fragmented findings into a larger picture. Ultimately, our survey might inform regulatory bodies, auditors, standard setters and executives regarding restatements of financial restatements.

Co-author: Soenke Sievers

JEL classification: G1, K4, M4
Keywords: Survey, financial restatement, audit quality, financial reporting quality

Article B: Are Investors Misled by Exclusions of Recurring Expenses from Non-GAAP Earnings?

While non-GAAP reporting is under debate as managers may opportunistically inflate non-GAAP earnings, analytical research by Hirshleifer and Teoh (2003) proposes that limited attention causes mispricing when inappropriate items are excluded from non-GAAP earnings but will be reversed subsequently. Addressing this proposition empirically, we find that revisions upon the release of material restatements are most pronounced for firms that frequently inflated non-GAAP earnings through the exclusion of recurring expenses before the restatement announcement. Further, we document that investors reward aggressively reported non-GAAP earnings before the restatement announcement, but punish the same reporting choices in the post-restatement period. Overall, our findings suggest that investor attention, which increases after the restatement, enhances investors' ability to see through the quality of non-GAAP exclusions.

Co-author: Oliver Mehring, Jens Mueller, Soenke Sievers

JEL Classification: G1, K4, M4
Keywords: Non-GAAP reporting, investor attention, financial restatements, information content of earnings, firm value, overvaluation

Article C: Does Non-GAAP Reporting Change after Financial Restatements?

Non-GAAP reporting is debated as managers might opportunistically exclude less justifiable, yet income increasing, items and mislead investors. In this paper, I investigate whether non-GAAP reporting improves or deteriorates after a firm admits to past GAAP based misreporting through a financial restatement announcement. Hirshleifer and Teoh (2003) propose that the managerial use of inappropriate non-GAAP adjustments increases in investors' responsiveness to earnings and Mehring et al. (2020) show that investors' responsiveness to aggressively reported non-GAAP earnings decreases after the restatement announcement. Consequently, conditional on manager's awareness of reduced expected benefits from aggressive non-GAAP reporting choices, I predict and find a significant decline in the *likelihood* of aggressive non-GAAP reporting choices in form of recurring expense exclusions. Moreover, in cross-sectional analyses, I document an improvement in non-GAAP exclusion *quality* for firms that have experienced severe short-term market reactions to the restatement announcement (material restatement firms), but not for those restatement firms that did not. Finally, I disaggregate total exclusions into below-the-line items, special items and recurring items. For material restatement firms, I find that the improvement in quality is found only in recurring expense exclusions; the type of exclusions perceived as most aggressive. In sum, my findings are consistent with the view that increased shareholder monitoring (heightened investor scrutiny) might constrain a firm's aggressive use of non-GAAP disclosure. My findings are novel to the restatement and non-GAAP related literature and hold in the post-Regulation G period.

JEL Classification: G1, K4, M4
Keywords: Non-GAAP reporting, financial restatements, quality of voluntary disclosure, recurring expense exclusions

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