

Non-IFRS Earnings Reporting in Highlights of Annual Reports – Evidence from Australia

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The President:

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List of Abbreviations

AASB	Australian Accounting Standards Board
ATO	Australian Taxation Office
ASIC	Australian Securities & Investments Commission
C&DI	Compliance and Disclosure Interpretations
CESR	Committee of European Securities Regulators
EBT	Earnings Before Taxes
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
E.G.	For Example
ESMA	European Securities and Markets Authority
E.U.	European Union
GAAP	Generally Accepted Accounting Principles
I/B/E/S	Institutional Brokers' Estimate System
IFRS	International Financial Reporting Standards
IOSCO	International Organization of Securities Commissions
JSE	Johannesburg Stock Exchange
LSE	London Stock Exchange
MD&A	Management Discussion and Analysis
NPAT	Net Profit After Taxes

PBT	Profit Before Taxes
RG	Regulatory Guide
SEC	Securities and Exchange Commission
SOX	Sarbanes-Oxley Act
S&P	Standard and Poor's
TCEGS	Transportation, Communication, Electric, Gas and Sanitary Service
U.K.	United Kingdom
U.S.	United States

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Abstract¹

The highlights section in the annual reports warrants a closer analysis because it allows firms to direct the readers' attention to specific figures and emphasize their relative importance. Throughout my dissertation, I observe the reporting behavior of Australian firms regarding non-IFRS earnings and earnings-before measures in the highlights section and in the income statements of annual reports. I make use of my sample of the top 200 Australian firms from 2013 to 2017 to conduct descriptive as well as empirical analyses to primarily gain an understanding when firms are more likely to present non-IFRS earnings and earnings-before measures in the highlights.

My results suggest that firms might use non-IFRS earnings to complement statutory net income as it might allow them to provide incremental earnings information which reflects management's view on permanent earnings. Similarly, my results also suggest that firms might use earnings-before measures to complement statutory net income as they allow for a more disaggregated and comparable view. While firms in my sample appear more likely to present non-IFRS earnings in highlights when they exceed earnings benchmarks, the same reporting behavior is found for non-IFRS earnings from audited sections. This indicates that firms might guide the readers' attention to firm-specific earnings information that can be found in the audited sections and thus can be expected to have a certain level of reliability and informativeness. Finally, my results suggest that emphasizing earnings-before measures might allow for better comparability and be associated with higher analyst forecast accuracy. Taken together, there is indication that an informative motivation might be behind the reporting of earnings-before measures and non-IFRS earnings in the highlights.

¹ Dissertation is partly based on the paper "Non-IFRS Earnings Information in Financial Highlights of Annual Reports" by Chang Zhao, Tami Dinh and Helen Kang

Zusammenfassung

Der Highlights Abschnitt im Jahresbericht ermöglicht es den Firmen, bestimmte Ergebnis Kennzahlen hervorzuheben und deren relative Bedeutung zu betonen. In meiner Dissertation analysiere ich primär das Berichtsverhalten australischer Firmen in Bezug auf non-IFRS Gewinne und Earnings-Before Gewinne (z.B. EBT, EBIT und EBITDA) im Highlights Abschnitt. Dafür verwende ich eine Stichprobe der 200 größten australischen Firmen von 2013 bis 2017.

Ich führe deskriptive sowie empirische Analysen durch, um in erster Linie ein Verständnis dafür zu gewinnen, wann Firmen eher non-IFRS Gewinne und Earnings-Before Gewinne in den Highlights präsentieren. Meine Ergebnisse deuten darauf hin, dass Firmen non-IFRS Gewinne ergänzend zum statutarischen Nettoeinkommen in den Highlights einsetzen. Ein Beweggrund dafür könnte sein, dass sie hierdurch zusätzliche Gewinninformationen dem Leser bereitstellen könnten, die die Meinung des Managements zu dauerhaften Gewinnen widerspiegeln. Ähnlich gibt es auch Hinweise dafür, dass Earnings-Before Gewinne ergänzend zum Nettoeinkommen in den Highlights präsentiert werden, möglicherweise um eine disaggregierte und vergleichbare Perspektive zu bieten. Während Firmen in meiner Stichprobe eher non-IFRS Gewinne in den Highlights präsentieren, wenn sie den statutarischen Nettoeinkommen oder den Analystenschätzungen übersteigen, findet sich das gleiche Berichtsverhalten für non-IFRS Gewinne aus geprüften Abschnitten der Jahresberichte. Dies weist darauf hin, dass Firmen die Aufmerksamkeit der Leser auf unternehmensspezifische Gewinninformationen zu lenken versuchen könnten, da die geprüften Abschnitte mit einem Maß an Zuverlässigkeit und Aussagekraft assoziiert werden. Zuletzt deuten meine Ergebnisse darauf hin, dass ein Fokus auf Earnings-Before Gewinne eine bessere Vergleichbarkeit ermöglichen und mit einer höheren Prognosegenauigkeit der Analysten einhergehen könnte.

1. Introduction

Various studies document the rising prominence of non-GAAP earnings² reporting around the world through different reporting channels such as press releases or annual reports (e.g., Coulton, Ribeiro, Shan, and Taylor, 2016; Black, Christensen, Ciesielski, and Whipple, 2018). With non-GAAP earnings becoming an increasingly popular reporting choice globally for communicating financial performance, concerns regarding their comparability and transparency have also increased among researchers, regulators, and standard setters around the world. These concerns, in part, have motivated the Primary Financial Statements project of the International Accounting Standards Board (IASB), with its latest Exposure Draft published in December 2019³. Similar concerns led previously to the implementation of Regulation G by the Securities and Exchange Commission (SEC) in the U.S. in 2003, accompanied by further Compliance and Disclosure Interpretations (C&DIs) in 2010 and 2016. Internationally, the focus was set on providing guidance for reporting non-IFRS earnings; for example, the Australian Securities & Investments Commission (ASIC) issued the Regulatory Guide 230 in 2011 and the European Securities and Markets Authority (ESMA) issued ESMA Guidelines on Alternative Performance Measures in 2015.

The global prevalence in the usage of non-IFRS earnings has also motivated a large stream of literature studying the motivations of firms using them and their impact on investors and the market. Within this stream of literature, non-IFRS earnings have been scrutinized in a variety of settings, including the U.S., the E.U., Australia and a number of other countries. The concern and scrutiny of non-IFRS earnings by international regulators and standard setters, as well as by international

² The IASB defines non-IFRS earnings as “management-defined performance measures (i.e., non-GAAP)” (IASB, 2019). The Australian Regulatory Guide 230 refers non-GAAP earnings to non-IFRS profit information. Non-GAAP and non-IFRS are used synonymously in this thesis to refer to management-adjusted performance measures.

³ The Board discussed feedback on the Exposure Draft in December 2020 and January 2021. In the most recent development, the Board met on 26 April 2022 to redeliberate some of the proposals in the Exposure Draft relating to classification in categories in the statement of profit or loss.

researchers, suggest their importance and call for a greater understanding of the way firms present them in annual reports. In particular, the *financial highlights*⁴ (referred to as *highlights*, hereafter) section at the very beginning of the annual report offers ground for further analysis since it allows firms to set the focus on the earnings measures that, from the firm's perspective, best reflect its true financial performance.

In this thesis, I first examine the presentation of non-IFRS earnings and earnings-before measures in annual reports through a descriptive analysis. More specifically, I observe the reporting behavior with regards to non-IFRS earnings and earnings-before measures in the highlights section and in the income statements of annual reports. Additionally, the descriptive analysis examines the reporting of non-IFRS earnings and earnings-before measures throughout the annual report by industry.

In the empirical analysis that follows, I investigate when firms are more likely to present non-IFRS earnings and earnings-before measures in the highlights section of annual reports. I examine the question in connection with the following three elements – statutory earnings, earnings benchmarks, and external assurance. First, I take a closer look at whether the presence of statutory net income as a directly comparable earnings figure is associated with the likelihood of firms presenting non-IFRS earnings in the highlights section. This provides me with an indication of non-IFRS earnings being used as supplement information in addition to the statutory net income in order to appropriately portray earnings performance. Second, I examine whether firms are more likely to present non-IFRS earnings in the highlights section if they beat statutory net income or analyst earnings estimates. This provides me with an indication of the potential opportunistic motivations behind the disclosure of non-IFRS earnings in the highlights section. To further explore the motivations driving the disclosure of non-IFRS earnings in the highlights section, I take a closer look at where the non-IFRS earnings in the highlights section are taken from. More specifically, I look at whether they are used in other audited or unaudited sections of the annual

⁴ Firms may title this section differently, such as “financial snapshot”, “financial summary”, “at a glance” etc.

report. Based on the assumption that non-IFRS earnings disclosed in the audited sections (i.e., notes to the financial statements) may be associated with higher informativeness and reliability, having non-IFRS earnings from audited sections in the highlights section may point towards them being more informative. To better understand the incentive behind the reporting of non-IFRS earnings that beat earnings benchmarks, I investigate whether non-IFRS earnings reported in the highlights section, which beat statutory net income or analyst earnings estimates, are more likely to be from the audited section of the annual report. Adding earnings-before measures to my area of investigation, I examine whether the number of earnings-before measures firms present in the highlights section is associated with the presence of statutory net income and non-IFRS earnings in the highlights section. This offers an understanding of whether the different earnings performance measures complement each other. Finally, to investigate whether a higher reporting emphasis on more comparable earnings-before measures than on more firm-specific non-IFRS earnings in the highlights section can be associated with higher forecast accuracy, I examine whether the presence of more earnings-before measures relative to non-IFRS earnings measures in the highlights section has any impact on analyst forecast errors. This provides an indication of whether the comparability of earnings measures has any relation with their forecast accuracy.

Non-IFRS earnings and earnings-before measures are used throughout the annual report to communicate earnings information. Thus, they can be disclosed in audited sections such as the notes to the financial statements, as well as in unaudited sections such as the highlights section or the letters to shareholders. For my analyses, I differentiate between non-IFRS earnings that are disclosed in both the audited and unaudited sections of the annual report and non-IFRS earnings that are only presented in unaudited sections of the annual report. For simplicity, I will refer to non-IFRS earnings that are disclosed both in audited sections and unaudited sections as non-IFRS earnings from audited sections. External assurance is especially valuable when confronted with highly scrutinized and discretionary measures such as non-IFRS earnings. As the purpose of external assurance is to provide more credibility and

reliability to the audited content, I assume non-IFRS earnings from audited sections to be less opportunistic and misleading. Their distinctive use in the highlights section is therefore particularly interesting as they may signal higher credibility than non-IFRS earnings that are presented only in the unaudited sections.

The highlights section is in the narrative section of Australian annual reports, normally following the table of content and preceding the letters to shareholders, the Operating and Financial Review (OFR) and the directors' report. The highlights section summarizes the firm's annual performance and may contain statutory net income as well as non-IFRS earnings. It offers firms a higher level of flexibility in presenting and emphasizing their financial performance compared to, for instance, the form 10-K used in the U.S. In the highlights section, firms have complete discretion in determining the information they want to present and emphasize at the very beginning of the annual report. The information firms deliberately choose to include in the highlights section might therefore be particularly informative.

However, as the highlights section is positioned at the beginning of the annual report, it is also particularly prone to be impacted by management's opportunistic incentives since it has been shown that the deliberate placing of earnings information can be used to direct the reader's attention to, or away from, specific items (Bowen, Davis, and Matsumoto, 2005; Elliott, 2006). Having to summarize the firm's financial performance in such a limited space, generally a maximum of two pages, it can be assumed that the measures deliberately chosen to be presented in the highlights section are indispensable and serve a clear purpose for the firm to grab and direct the attention of investors or to communicate important information. This is especially important for investors, including less sophisticated retail investors, who rely on the annual report as the main source of information for their analyses and decision-making (ASX, 2020).

Recent developments indicate a rising power and increasing influence of retail investors. Retail trading accelerated when major retail brokerage firms dropped their commissions to zero in September 2019 (CNBC, 2021). In particular, the

pandemic-fueled market volatility brought in new investors, who are further encouraged by work-from home models, stimulus checks, higher personal savings levels as well as social media platforms like Reddit. It is estimated that retail trading has accounted for a third of all U.S. stock market trading at times in 2021, a significant increase as compared to the beginning of 2020 and almost accounting for as much volume as mutual funds and hedge funds combined (Financial Times, 2021). As retail investors are gaining influence, the way firms present their performance in their annual reports, an important source of information for retail investors, should matter even more. Assuming a consistent reporting strategy, firms will also choose to emphasize these measures through other communication channels such as press releases or conference calls.

According to the Australian Regulatory Guide 230, “non-IFRS profit information is a common type of non-IFRS financial information. It is profit information calculated on a basis other than in accordance with IFRS or calculated in accordance with IFRS but adjusted in some manner. Entities calculate non-IFRS profit information in different ways and use different descriptions” (ASIC, 2011). In practice, firms use descriptions for non-IFRS earnings such as “underlying earnings”, “core earnings” or “adjusted earnings”. Firms supplement their statutory income with non-IFRS earnings to provide investors with more tailored and alternative insights into the financial performance and condition of their business. Following the prior literature (e.g., Malone, Tarca, and Wee, 2016), my definition of non-IFRS earnings does not include earnings-before measures. Earnings-before measures are earnings measures such as EBT, EBIT and EBITDA. I specifically differentiate between earnings-before measures and non-IFRS earnings and examine them separately in my analyses because the calculation of earnings-before measures is more standardized than non-IFRS earnings. While the calculations of EBIT and EBITDA exclude certain standard items such as interest, tax, depreciation, or amortization, non-IFRS earnings are adjusted at the discretion of the individual firm. This makes earnings-before measures of different firms more comparable with each other whereas non-IFRS earnings are more firm-specific.

My analysis is based on a sample consisting of the top 200 Australian firms listed on the Australian Stock Exchange (ASX 200) in the period from 2013 to 2017. The data on non-IFRS earnings is collected manually from the annual reports. I choose Australia as a setting due to its adoption of IFRS as issued by the IASB and its lack of mandatory regulations around the presentation and reconciliation of non-IFRS earnings such as Regulation G in the U.S., thus lending even more weight to the role of external assurance as a source for credibility. Another reason I choose Australia is the higher proportion of individual retail investors in the Australian capital market compared to the European market. More precisely, about 46 percent of Australians are individual investors, with a median investment portfolio of AUD 130,000 (ASX, 2020). In comparison, German individual investors traditionally prefer the usage of savings accounts as an investment vehicle. With a recent increase in stock market participation due to low interest rates on savings accounts, individual share ownership is around 13 percent in Germany (Financial Times, 2015; Financial Times, 2019). For the average Australian individual investor, regardless of gender and age, company annual reports and websites are the most used information sources, followed by online broker websites and newspapers (ASX 2020). This is especially relevant for studies examining non-IFRS earnings since less sophisticated retail investors are more likely to rely on non-IFRS earnings for their decision-making (Elliott, 2006; Allee, Bhattacharya, Black, and Christensen, 2007; Bhattacharya, Black, Christensen, and Mergenthaler, 2007).

My findings suggest that firms use non-IFRS earnings as a supplement to statutory net income in the highlights section. This underlines the importance and indispensability of non-IFRS earnings as a measure firms use to communicate their financial performance as they deliberately choose to include non-IFRS earnings in the limited highlights section despite it already containing a comparable earnings figure. In line with prior studies (e.g., Bowen et al., 2005; Doyle, Jennings, and Soliman, 2013), the results indicate that firms are more likely to present non-IFRS earnings in the highlights section of their annual reports when non-IFRS earnings beat the statutory net income or the analyst earnings estimate. This suggests at a first glance

that firms tend to present non-IFRS earnings opportunistically in the highlights section, aiming to portray their financial performance in the best possible light. However, taking a closer look at the annual report section from where the non-IFRS earnings are taken from, it can be noted that firms are more likely to present non-IFRS earnings from audited sections in the highlights section. This indicates that the reporting of non-IFRS earnings in the highlights section of the annual report may also be informative as firms deliberately choose to highlight non-IFRS earnings that are also disclosed in the audited notes to the financial statements instead of non-IFRS earnings from other unaudited sections that have not been examined by external auditors. Extending my observations in the highlights section from non-IFRS earnings to earnings-before measures, my findings indicate that firms present more earnings-before measures in the highlights section when statutory net income or non-IFRS earnings are in the highlights section. This points towards the notion that disaggregated earnings-before measures complement statutory net income that is fully aggregated and less firm-specific due to its uniformity. Though not confirmed by the main analysis, the results of my robustness tests further indicate that earnings-before measures might be complementary to non-IFRS earnings that are less comparable across firms since their individual adjustments depend on management judgement. Lastly, my examination of earnings-before measures in the highlights indicate that more emphasis on earnings-before measures that have higher comparability as opposed to non-IFRS earnings might be associated with higher analyst forecast accuracy. I find that firms that present more earnings-before measures than non-IFRS earnings in their highlights have lower analyst forecast errors.

In this thesis, I make several contributions to the existing literature. First, I contribute to the understanding of the way firms use annual reports, more specifically the highlights section of the annual report, to communicate their financial performance. Since the highlights section is at the beginning of the annual report, the measures presented in the highlights section set the tone for the rest of the report. Thus, it is important to understand when firms are more likely to put the focus on non-IFRS earnings in the highlights section.

Second, I contribute to the non-IFRS reporting literature, expanding on the existing theories regarding the incentives of firms behind disclosing non-IFRS earnings. Prior literature on the incentives behind non-IFRS reporting is mixed. Some studies indicate that benchmark beating with non-IFRS earnings is used as an opportunistic tool to mislead investors, without any benefit to predicting future performance (e.g., Barth, Gow, and Taylor, 2012; Doyle et al., 2013). Other studies present results that correspond with the idea that non-IFRS earnings provide incremental information about future firm performance and firm value, particularly when the underlying statutory net income is less informative (e.g., Loungee and Marquardt, 2004; Leung and Veenman, 2018). My findings indicate that firms' use of non-IFRS earnings in the highlights section is not primarily driven by the need to mislead investors or to hide weak financial performance even when non-IFRS earnings beat the statutory net income or the analyst earnings estimate as firms are more likely to present non-IFRS earnings from audited sections in the highlights section. Rather, firms use both non-IFRS earnings and the statutory net income complementarily to communicate their financial performance and inform investors in the highlights section.

Moreover, I also contribute to the understanding of the relationship between non-IFRS earnings, earnings-before measures, and statutory earnings. I observe that non-IFRS earnings and earnings-before measures are used as supplement earnings information in addition to the presence of statutory net income in the highlights section. This indicates that statutory net income alone is not comprehensive enough for firms to accurately depict earnings performance and that non-IFRS earnings and earnings-before measures are needed to complete the narrative.

Finally, I contribute to the understanding of the relationship between the comparability of earnings measures and analyst forecast accuracy. I find a slight indication that when it comes to the communication of earnings information, more earnings-before measures than non-IFRS earnings in the highlights might be associated with lower analyst forecast errors. As earnings-before measures are more standardized and less firm-specific than non-IFRS earnings, this points towards an

association between an emphasis on earnings comparability and forecast accuracy. Overall, my findings allow for a more well-rounded understanding of the role of non-IFRS earnings and earnings-before measures in the highlights of annual reports.

The remainder of my thesis is organized as follows. In section 2, I provide information on the terminology, the regulatory landscape, and the popularity around non-IFRS earnings and earnings-before measures. In section 3, I shed more light on the Australian institutional background that is the setting for my descriptive and empirical analysis. In section 4, I introduce the prior literature and takes a closer at the literature around the annual report, earnings management, impression management, external audit, managerial incentives of reporting non-GAAP earnings, and reactions of capital market participants to non-GAA earnings. This leads me to elaborate further on the hypotheses development in section 5. In section 6, I explain my data sample that I use for the descriptive and empirical analyses. I explain my research methodology in section 7 and present the results of my descriptive and empirical analyses in sections 8 and 9 respectively. Finally, I present a brief conclusion in section 10 of my thesis.

2. Terminology, Regulatory Landscape and Popularity

2.1. Non-GAAP terminology

Regulatory bodies around the world require that companies disclose statutory earnings prepared in accordance with statutory accounting principles, which are officially recognized in their jurisdictions. For example, Australian companies are required to apply IFRS while U.S. companies are required to apply U.S. GAAP. These statutory earnings are audited and disclosed in the financial statements.

Any earnings measure that deviates in its calculation from statutory earnings can be considered non-GAAP earnings. Officially, the ASIC defines non-GAAP financial information as “financial information that is presented other than in

accordance with all relevant accounting standards” (ASIC, 2011). Similarly, the SEC defines a non-GAAP financial measure as “a numerical measure of a registrant’s historical or future financial performance, financial position or cash flow that a) excludes amounts, or is subject to adjustments that have the effect of excluding amounts, that are included in the most directly comparable measure calculated and presented in accordance with GAAP in the statement of comprehensive income, balance sheet or statement of cash flows of the issuer; or b) includes amounts, or is subject to adjustments that have the effect of including amounts, that are excluded from the most directly comparable GAAP measure so calculated and presented” (SEC, 2002).

In practice, companies make discretionary adjustments to the most directly comparable statutory earnings. These adjustments, either exclusions or additions, are company specific and decided by management. It is intended for management to exclude unusual, non-recurring or non-cash items that are unrelated to the fundamental value or that might even obscure the underlying financial performance of the company. As management has considerable flexibility and discretion in determining non-GAAP earnings, the calculation of non-GAAP earnings is highly subjective and varied from company to company as well as from year to year. As such, non-GAAP earnings are not necessarily comparable across companies or industries.

In the academic literature as well as in practice, several terms are used interchangeably for non-GAAP earnings. These terms include (but are not limited to) “non-IFRS earnings”, “alternative earnings measures”, “alternative performance measures”, “pro forma earnings”, “street earnings”, “underlying earnings”, “adjusted earnings”, “supplementary earnings”, “core earnings”, “recurring earnings”, “non-cash earnings” or “ongoing earnings”. Out of these terms, “street earnings” is also used in the academic literature to refer to non-GAAP earnings from forecast data providers such as I/B/E/S or Datastream.

I use the labels “non-GAAP earnings” and “non-IFRS earnings” interchangeably in this thesis as an umbrella term to refer to all the beforementioned

terms of management-adjusted earnings measures, independent of whether the company falls under U.S. GAAP, IFRS or any other local accounting requirements. For simplicity reasons, I choose to apply the terms “non-GAAP earnings” and “non-IFRS earnings” interchangeably on all earnings measures that are adjusted by management and thus deviate from the earnings number mandated by the set of accountings standards that apply in the company’s jurisdiction.

A special type of non-GAAP earnings that I would like to highlight here are earnings-before measures. Earnings-before measures are measures such as EBT, EBIT and EBITDA. As their names indicate, they exclude specific items such as taxes, interests, depreciation or amortization. They deviate from statutory earnings in their calculations and are thus, per official definition, non-GAAP earnings. However, in this thesis, I deliberately exclude earnings-before measures from other conventional non-GAAP earnings and treat them as separate financial measures for mainly two reasons. Firstly, earnings-before measures are in their calculations far more standardized than conventional non-GAAP earnings. Their names already indicate which items are excluded from statutory earnings in order to arrive at the specific earnings-before measure. For example, in order to arrive at the earnings-before measure EBIT, it is expected that interest and taxes are excluded from statutory earnings. Earnings-before measures are commonly used by companies across industries and widely recognized by market participants. On the contrary, the adjustments needed to arrive at conventional non-GAAP earnings are freely determined by management and vary greatly from company to company. Thus, they are far more individualistic in their calculations than earnings-before measures. Secondly, contrary to conventional non-GAAP earnings, earnings-before measures can appear as subtotals on the income statement. In this thesis, the label “non-GAAP earnings” encompasses all non-GAAP earnings apart from earnings-before measures.

In Australia, non-GAAP earnings are used throughout the annual report to communicate earnings information. Thus, they can be disclosed in audited sections such as the notes to the financial statements, as well as in unaudited sections such as the highlights section or the letters to shareholders. Thus, I further differentiate

between non-GAAP earnings that are disclosed in both the audited and unaudited sections of the annual report and non-GAAP earnings that are only presented in unaudited sections of the annual report. For simplicity, I refer to non-GAAP earnings that are disclosed both in audited sections and unaudited sections as non-GAAP earnings from audited sections.

Originally, non-GAAP earnings were intended to be used by the accounting profession to offer more information on the underlying value and to grant a better understanding of the financial health of a company. Non-GAAP earnings were first employed when reporting on financial performance due to concerns that the rigidity of statutory earnings might result in omission of information that is relevant to determine real earnings growth in a company (Jennings, 2003). That kind of concern was particularly justified in cases where a company has undergone a change in accounting practice. Compared to the old accounting practice, the new accounting practice might substantially impact statutory earnings (Jennings, 2003). For example, companies might decide to switch from capitalizing to expensing certain costs in their accounting practice. Another example is a switch between different inventory evaluation methods. After such a change in accounting practice, investors and other capital market participants might want to know what the earnings would have looked like under the old methodology in order to better comprehend the development of real performance. This is where non-GAAP earnings first came into play. With time, these original intentions in the use of non-GAAP earnings changed and non-GAAP earnings became a more broadly accepted earnings measure.

2.2. Regulatory landscape for non-GAAP earnings

The regulatory landscape for non-GAAP earnings varies by country as there is no internationally accepted standard for their calculation or disclosure. For example, while the regulatory body SEC has issued regulations regarding non-GAAP earnings for the U.S., companies in Europe are generally allowed more leeway in this matter. Existing guidance and recommendations on non-GAAP earnings on the supranational level is not mandatory for European companies and on the national level, individual

European countries have not yet issued any regulations for non-GAAP earnings. Similarly, companies in Australia follow a regulatory guide on non-GAAP earnings disclosure.

In the following, I am going to take a closer look at the regulatory landscape for non-GAAP earnings in the above mentioned three regions - the U.S., Europe, and my main focus of this thesis – Australia.

1. United States

The U.S. is the first country to regulate the voluntary disclosure of non-GAAP earnings. It started with the issuance of the cautionary advice and the investor alert regarding non-GAAP financial measures by the SEC on December 4, 2001 (SEC, 2001). Both statements were intended to raise the market's attention to companies potentially misusing non-GAAP financial measures. A few months afterwards, on July 30, 2002, the Sarbanes-Oxley Act (SOX) was enacted. The SOX included a specific section on non-GAAP reporting – Section 401(b). This section directs the SEC to regulate non-GAAP disclosure within 180 days. More specifically, the Section 401(b) directs the SEC to ensure that non-GAAP financial measures are presented in a manner that (1) “does not contain an untrue statement of a material fact or omit to state a material fact necessary in order to make the pro forma financial information, in light of the circumstances under which it is presented, not misleading” (SOX, 2002) and (2) “reconciles it with the financial condition and results of operations of the issuer under generally accepted accounting principles” (SOX, 2002).

In January 2003, the SEC fulfilled the congressional mandate of SOX Section 401 (b) by issuing Regulation, which regulates the disclosure of non-GAAP financial measures and takes effect for periods ending after March 28, 2003. Regulation G applies “whenever a company publicly discloses or releases material information that includes a non-GAAP financial measure” (SEC, 2002). That includes disclosures in press releases, conference calls and investor presentations. Regulation G contains two requirements – the general disclosure requirement and the

reconciliation requirement. Under the general disclosure requirement of Regulation G, companies are prohibited from making “public a non-GAAP financial measure that, taken together with the information accompanying that measure, contains an untrue statement of a material fact or omits to state a material fact necessary in order to make the presentation of the non-GAAP financial measure, in light of the circumstances under which it is presented, not misleading” (SEC, 2002). Under the reconciliation requirement of Regulation G, any public disclosure including a non-GAAP financial measure must provide “a presentation of the most directly comparable financial measure calculated and presented in accordance with GAAP; and a reconciliation [...] of the differences between the non-GAAP financial measure presented and the most directly comparable financial measure or measures calculated and presented in accordance with GAAP” (SEC, 2002). In case the disclosure takes place orally, by telephone, webcast, broadcast or any similar channels, companies must provide the required information by “(1) posting that information on the registrant's web site; and (2) disclosing the location and availability of the required accompanying information during its presentation” (SEC, 2002).

Along with the issuance of Regulation G, the SEC also declared amendments to Item 10 of Regulation S-K, Item 10 of Regulation S-B and Securities Exchange Act of 1934 Forms 8-K and 20-F. These extensive and detailed amendments have the purpose to provide further clarity on how to report non-GAAP financial measures for companies. Regulation S-K and Regulation S-B apply to companies’ SEC filings, such as the 10-Ks (annual reports) or 10-Qs (quarterly reports). Their amendments require companies that use non-GAAP financial measures in their SEC filings “to provide (1) a presentation, with equal or greater prominence, of the most directly comparable [...] GAAP measure; (2) a reconciliation [...] of the differences between the non-GAAP financial measure with the most directly comparable [...] GAAP measure; (3) a statement disclosing the reasons why management believes that presentation of the non-GAAP financial measure provides useful information to investors regarding the company’s financial condition and results of operations; and (4) [...] a statement disclosing the additional purposes, if any, for which management

uses the non-GAAP financial measure [...]” (SEC, 2002). In addition, the amendments to Regulation S-K and Regulation S-B prohibit companies from presenting non-GAAP financial measures on the face of their financial statements or in the accompanying notes. Exchange Act Form 20-F concerning foreign private issuers is amended to include Item 10 of Regulation S-K (SEC, 2002). Exchange Act Form 8-K is amended with the addition of Item 12, which requires companies to file a Form 8-K with the SEC within five business days of any public disclosure of previously non-public information regarding annual or quarterly financial results, for example through earnings releases (SEC, 2002). In case the public disclosure contains a non-GAAP financial measure, the exact above requirements of the amended Regulation S-K and Regulation S-B apply.

Since 2003, the SEC issued and updated a set of Compliance and Disclosure Interpretations (C&DIs) to address common questions arising in reporting practice and further clarify the requirements for the use of non-GAAP financial measures in SEC filings and other public disclosures. For example, Regulation G prohibits the use of misleading measures but do not specifically define when a measure would be considered misleading. The CD&Is clarify under which conditions a measure may be determined to be misleading (SEC, 2018). Furthermore, the CD&Is also provide specific examples of reconciliations of a non-GAAP financial measure to the most directly comparable GAAP measure that the SEC would deem to be inappropriate under the specific requirements in Regulation G (SEC, 2018).

2. *Europe*

At the European supranational level, there is no regulation for the disclosure of non-GAAP earnings and no restrictions on how non-GAAP earnings are communicated to investors. Thus, if not stated otherwise by the individual regulatory bodies of European countries, companies are permitted to present non-GAAP earnings in unaudited reports and narratives without any limitations such as the need to provide accompanying definitions, reconciliations, or explanations.

The International Organization of Securities Commission (IOSCO) was the first organization to officially address the application of non-GAAP reporting in Europe. In May 2002, the IOSCO issued a cautionary statement similar to the SEC's cautionary advice in from 2001. In it, the IOSCO notified the public that non-GAAP earnings have the potential to be useful to investors. At the same time, they might mislead investors if they are presented in a certain way, with the intention to obscure or to provide an incomplete picture of the financial results determined through statutory accounting rules. Following the IOSCO statement and the passing of Regulation G in the U.S., the Committee of European Securities Regulators (CESR) issued a set of recommendations on non-GAAP measures in October 2005 with the aim to encourage European companies to disclose non-GAAP measures in an appropriate and informative way. The recommendations of the CESR mirror the requirements under Regulation G in that they suggest the non-GAAP measures to be presented in combination with comparable statutory measures as well as with a reconciliation (CESR, 2005).

In October 2015, the European Securities and Markets Authority (ESMA), which is the successor of the CESR, published the ESMA Guidelines on Alternative Performance Measures to replace the recommendations issued by the CESR in 2005. Effective for all documents issued on or after July 3, 2016, the ESMA Guidelines have the purpose to improve the comparability, reliability and comprehensibility of non-GAAP measures and to ensure a faithful representation of financial information disclosed to investors and other market participants (ESMA, 2015). However, the ESMA Guidelines explicitly do not apply to non-GAAP measures disclosed in financial statements (ESMA, 2015). In essence, the ESMA Guidelines demand companies to “define the [non-GAAP measures] used and their components as well as the basis of calculation adopted, including details of any material hypotheses or assumptions used. [Companies] should also indicate whether the [non-GAAP measure] or any of its components relate to the (expected) performance of the past or future reporting period” (ESMA, 2015). With regards to the presentation, this means that companies should (1) disclose the definitions of the non-GAAP measures in a

clear and readable way and (2) give them meaningful labels reflecting their content and basis of calculation to avoid conveying misleading messages to users (ESMA, 2015). When it comes to reconciliations, companies should (1) disclose a reconciliation of the non-GAAP measure to the most directly comparable measure in the financial statements and (2) separately identify and explain the material reconciling items (ESMA, 2015). In addition, companies are asked to (1) explain the use of non-GAAP measure in order to allow users to understand their relevance and reliability; (2) display statutory measures with at least equal prominence, emphasis or authority than non-GAAP measures; (3) provide accompanying comparatives for the corresponding previous periods and reconciliations thereof; (4) define and calculate non-GAAP measures consistently over time and when this is not the case, explain the changes to the non-GAAP measure, provide restated comparative figures, as well as list the reasons why these changes result in reliable and more relevant information on the financial performance (ESMA, 2015).

3. *Australia*

The Corporations Act, which is the principal legislation regulating companies in Australia, and the Australian Accounting Standards issued by the Australian Accounting Standards Board (AASB), which are the Australian equivalent to IFRS, do not explicitly prohibit companies to present non-GAAP measures in public disclosures. However, companies have the obligation to provide information that is not misleading (Corporations Act, 2001). There are a number of sections in the Corporations Act pertaining to misleading information, including s1041E for false or misleading statements as well as s1041H for misleading or deceptive conduct. In addition, management is required to perform their duties with care and diligence (Corporations Act, 2001). Thus, management is liable for any misleading non-GAAP information provided through public disclosures such as press releases and corporate reports. This is monitored by the ASIC, which has the goal to maintain a high-quality financial reporting environment.

When it comes to non-GAAP measures specifically, the ASIC first released a consultation paper, CP 69, in July 2005 on disclosing non-GAAP information. The draft guide was intended to propose guidelines for the use of non-GAAP financial measures in financial reports and other public documents and to seek feedback on the proposed guidelines (ASIC; 2005). In March 2011, the ASIC released another consultation guide, CP 150, on disclosing non-GAAP information, with the same purpose as the previous consultation paper (ASIC, 2011).

Following the two consultation papers, the ASIC released Regulatory Guide (RG) 230 in December 2011. Generally, regulatory guides explain when and how the ASIC will exercise its authority under the applicable legislation such as the Corporations Act. Regulatory guides also explain how the ASIC interprets the law, describe the principles underlying its approach and provides practical examples and guidance for companies. RG 230 is on disclosing non-GAAP financial information and its purpose is “to promote full and clear disclosure for investors and other users of financial information and minimize the possibility of those users being misled by such information” (ASIC, 2011). To this end, RG 230 provides guidance on the use of non-GAAP measures in annual reports and other corporate documents, such as transaction documents and market announcements. It is an extensive guide and majorly focuses on the prominence granted to non-GAAP measures, the terminology used by companies to refer to these measures, the disclosure of a detailed reconciliation between non-GAAP measures and their statutory counterparts, and the consistency of adjustments chosen in the calculations to arrive at non-GAAP measures across financial periods. More importantly, the issuance of RG230 indicates that Australia is a setting where firms and regulators are aware of potential issues with non-IFRS earnings in annual reports.

Going into the content of guidelines for presenting information in detail, it is stated that statutory earnings should be presented with “equal or greater prominence, emphasis or authority” (ASIC, 2011) compared to the corresponding non-GAAP earnings measure. This requirement takes into consideration the order and manner in which the statutory earnings and non-GAAP earnings are presented on the first page

of the document in question (ASIC, 2011). In the case of the annual report, this may apply to how the statutory earnings and non-GAAP earnings are presented in the highlights section, which usually comes first in the annual report. In addition, according to the guidance, “any [non-GAAP] financial information necessary to give a true and fair view of the financial position and performance of the entity” (ASIC, 2011) should be disclosed in the notes to the financial statements. However, they “should not be presented in a manner that may mislead or deceive. For example, that information should not be given greater prominence than IFRS financial information and it should be clear that it has not been prepared in accordance with accounting standards.” (ASIC, 2011). This indicates that the location and the emphasis put on non-GAAP earnings in comparison to statutory earnings is important and that the ASIC is concerned that there might be incentives to present non-GAAP earnings in a potentially misleading and deceiving manner. Taking a closer look at when non-GAAP earnings, including non-GAAP earnings from audited sections, are more likely to be presented in the highlights section of the annual reports might address these concerns.

RG 230 also specifically touches upon the disclosure of earnings-before measures in the financial statements. Although non-GAAP earnings in the statement of comprehensive income is not in accordance with Australian Accounting Standards AASB 101, the standard “permits and requires additional line items and subtotals to be disclosed in the statement of comprehensive income when such presentation is relevant to an understanding of the entity’s financial performance” (ASIC, 2011). More specifically, RG 230 makes clear that the following presentations would not meet that requirement of being relevant to an understanding of a company’s financial performance: “(1) presenting non-GAAP earnings as subtotals in the [income statement]; (2) describing additional line items and subtotals [that are permitted by AASB 101] as alternative profit measures [...]; and (3) continuing the statement of comprehensive income to remove particular expenses from the statutory earnings and thus show a bottom line non-GAAP profit” (ASIC, 2011). However, RG 230

explicitly points out that describing and disclosing EBIT in the income statement is accepted as it may be useful in assessing interest cover (ASIC, 2011).

2.3. Popularity of non-GAAP earnings around the world

Evidence provided in prior literature suggests that the disclosure of non-GAAP earnings is an increasingly common global phenomenon. In the U.S., the frequency of non-GAAP earnings increased substantially from the 1980s onwards until the issuance of Regulation G in 2003 (Bhattacharya, Black, Christensen and Mergenthaler, 2004; Zhang and Zheng, 2011; Black, Black, Christensen and Heninger, 2012). In 2001, 77% of the S&P 500 companies voluntarily report non-GAAP earnings (Entwistle, Feltham and Mbagwu, 2006). In 2003, however, this percentage has declined to 54% (Entwistle et al., 2006). Other studies similarly find consistent evidence of a temporary decrease in the frequency of non-GAAP earnings reporting in the U.S. immediately after the introduction of Regulation G (Nichols, Gray and Street, 2005; Marques, 2006; Heflin and Hsu, 2008). However, there is also evidence that non-GAAP earnings reporting of the S&P 500 companies in the U.S. has increased again across all industries from 53% in 2009 to 71% in 2014 (Black, Christensen, Kiosse and Steffen, 2017). This recovery and continued growth in the popularity of non-GAAP earnings reporting is recorded in other studies as well (Black et al., 2012; Bentley, Christensen, Gee and Whipple, 2018). For example, the findings in Webber, Nichols and Street (2013) indicate that there has been a significant increase in the number of S&P 100 companies reporting non-GAAP earnings from 44% in 2005 to 60% in 2010. For a more recent period, it has been found that while 76% of companies filing with the SEC reported non-GAAP measures in 2006, that percentage has risen to 96% over a decade later in 2017 (McKeon, 2018).

Similarly, data outside the U.S. indicate that the rise in the popularity of non-GAAP earnings disclosure is prevalent around the world. In the U.K., 39% of the 500 largest non-financial companies listed on the London Stock Exchange (LSE) disclosed non-GAAP earnings in 1994. That percentage increased to 53% by 1996 and 76% by 2011 (Choi, Lin, Walker and Young, 2007; Choi and Young, 2015).

Studies that examine the entirety of Europe also find the reporting of non-GAAP earnings to be a widespread phenomenon among companies. According to Aubert and Grudnitski (2014), the absolute number of companies disclosing non-GAAP earnings in Europe rose from 1.331 companies in 2005 to 2.249 companies in 2012. That translates to 23% of the total number of observed companies of 5.896 in 2005 and 38% of the same total number of observed companies in 2012. In another study focusing on the 500 largest European companies based on a Financial Times 2006 classification, the frequency of non-GAAP earnings disclosure has risen from 55% in 2003 to 67% in 2007 (Isidro and Marques, 2015).

Compared to the U.S. and Europe, there are relatively few studies examining the popularity of non-GAAP earnings in Australia. One Australian study examines the disclosure of non-GAAP earnings for the top 50 non-mining companies from 2007 to 2009 (Cameron, Percy and Clarke, 2012) and finds that 48 companies reported non-GAAP earnings in the narrative sections of their annual reports in 2007. For the following years 2008 and 2009, the study finds that all companies reported non-GAAP earnings in the narrative sections of their annual reports (Cameron et al., 2012). A more recent study by Coulton et al. (2015) examines the disclosure of non-GAAP earnings more extensively. Coulton et al. (2015) focus on non-GAAP earnings in earnings announcements for all companies in the ASX 500, also titled the ASX All Ordinaries Index, for the period from 2000 to 2014. The ASX All Ordinaries Index is the oldest share index in Australia and consists of the shares for the 500 largest companies listed on the ASX. The study finds that the frequency of companies reporting non-GAAP earnings significantly increased over the observed period, starting with 23% in 2000 and rising to a peak of 42% in 2014 (Coulton et al., 2015). The descriptive graphs in section 8.2 of my thesis adds to the existing evidence that the disclosure of non-GAAP earnings is increasingly popular in Australia.

3. Australian Institutional Background

3.1. Financial reporting in Australia

Reporting standards are consistent across all Australian states and territories. In general, Australian companies might be required to submit documents to the Australian Taxation Office (ATO), the ASX and the ASIC. The ATO demands certain companies and individuals to make payments and report their tax obligations. ASX requires its listed companies to follow its continuous and periodic disclosure rules. The ASIC regulates Australia's corporate, financial markets and financial services. Companies operating in Australia have to prepare and file audited financial reports with the ASIC, usually at the end of the financial year. Another important task of the ASIC is to administer the Corporations Act, which is the core legislation that regulates companies in Australia. It regulates for instance the formation and operation of companies, duties of officers, takeovers, and fundraising. The ASIC has also issued numerous policies and regulatory guides to assist companies with compliance and execution of the Corporations Act as well as with regulations made under the Corporations Act.

In addition to complying with requirements of the Corporations Act, companies and financial institutions in Australia also must follow the Australian Accounting Standards and Interpretations set and issued by the AASB, an independent Australian government agency. The statutory functions of the AASB are: "(1) to develop a conceptual framework for the purpose of evaluating proposed standards; (2) to make accounting standards under section 334 of the Corporations Act 2001 on the AASB's power to make accounting standards and their application (Corporation Act, 2001); (3) to formulate accounting standards for other purposes; (4) to participate in and contribute to the development of a single set of accounting standards for worldwide use; and (5) to advance and promote the main objects of Part 12 of the ASIC Act, which include reducing the cost of capital, enabling Australian entities to

compete effectively overseas and maintaining investor confidence in the Australian economy” (AASB, 2021).

The Australian Accounting Standards meet the requirements of IFRS produced by the IASB. Australia was the first country with a history of its own autonomous standard-setting to follow international accounting standards for general purposes. The Australian equivalents of IFRS were first adopted for reporting periods beginning on or after January 1, 2005. Although the IASB is mostly responsible for the standard-setting process, the AASB stays the relevant entity with standard-setting power over issues specifically relating to Australia.

3.2. Australian investors

Australia offers investors well-developed financial markets across various financial products, such as money, debt, equities, foreign exchange, and derivatives. By October 2021, the ASX has a domestic equity market capitalization of around \$2.5 trillion and total of 2,108 listed companies, including domestic and foreign ones.

According to the ASX Australian Investor Study 2020⁵, Australia continues to be a nation of investors, with 46%⁶ of a total adult population of 19.4 million currently holding investments other than their primary residence. Among the 46% who invest, 74%⁷ hold listed investments. That percentage equates to 35% of the total adult population in Australia, similar to previous years. After the rapid growth in share ownership during the late 1990s and early 2000s in Australia, which was boosted by the introduction of online broking and a series of de-mutualization and privatizations, the proportion of people who invest on a securities exchange has stabilized at around 35% of the adult population in Australia (ASX, 2020). Although the overall

⁵ Successor of the ASX Share Ownership Study, first conducted in 1986. The annual studies have provided an authoritative guide to the evolution of Australian investment markets and changing investor behavior. The study is based on two in-depths surveys of a nationally representative sample of Australian adults, conducted on behalf of ASX by Investment Trends (ASX, 2020).

⁶ That is 9 million in absolute numbers.

⁷ That is 6.6 million in absolute numbers.

proportion of Australian adults has stabilized, the numbers of new investors entering the financial market have increased over the last few years, even before the upswing in activity during the COVID-19 crisis. More specifically, around 23% of the adult population in Australia began investing less than two years ago and a total of 900,000 intending investors plan to begin investing in the following year (ASX, 2020).

The study also investigates the demographic and investing preferences of Australian investors. The average age of current investors in Australia lies at 46, with 42%⁸ being female and 58%⁹ being male investors. Among those 9 million current investors, the median portfolio size¹⁰ amounts to \$130,000 and around 58% hold Australian direct shares. Thus, shares represent the most widely held and most accessible investment options of the Australian people, especially for younger investors (ASX, 2020). In comparison, 38% of current investors hold residential investment properties and 25% hold term deposits.

The rise of a new generation of younger investors, combined with a growth in commonly available online investment information and tools, has led an observable shift towards digital channels across investor groups (ASX, 2020). Especially in the wake of the COVID-19 pandemic, the rise of zero-cost online brokerage, fractional investing, finance social media, heightened volatility, and continued fiscal and monetary stimulus have created an environment that encourages larger than typical retail risk-appetite. This is particularly clear in the aftermath of the Gamestop event, which took place in January 2021 and where a U.S. bricks-and-mortar videogame retailer saw an eight-fold increase in its stock price in less than a week, fueled by a frenzy of activity from online communities and social media platforms, most notably from a Reddit user group called WallStreetBets (CNN, 2021). The global rise in retail participation has already been observed in Australia before the Gamestop event. The

⁸ Out of the total of 9 million current investors.

⁹ Out of the total of 9 million current investors.

¹⁰ Outside investments in property and the superannuation and pension fund.

ASIC released a statement in May 2020 reiterating that Australian retail investors were taking increased levels of risk in a volatile market (ASIC, 2020).

At the same time, a fragmentation in the financial market can be observed, with different investor groups preferring different information sources, and each investor group referring to a wide variety of information channels to support their decision-making process. Company annual reports and websites is the overall most preferred information source to use to make decisions about investments for Australian investors overall. Looking at investor groups individually, company annual reports and websites are also the most preferred information source for male investors, wealth accumulators¹¹ and non-high value investors¹². The importance of annual reports as the most preferred information source for investors, retail as well as institutional, has already been detected by a 1981 study by Anderson which reports the findings of an empirical investigation into the usefulness of annual reports to institutional investors in Australia. The findings suggest that, based on mean values, corporate annual reports are the most important source of information for the decision-making process of institutional investors. Thus, it appears that the usefulness of annual reports for Australian investors has not diminished over the decades. Coupled with the trend of the rising participation of retail investors in Australia, the importance of annual reports as information sources for retail investors begs for a closer look at the disclosure of financial information in the annual reports, which I attempt in this thesis.

¹¹ Wealth accumulators are defined as investors aged 25-59.

¹² High value investors are defined as the top 20% investors by portfolio size and trading value. The non-high value investors are defined as the remaining 80%.

4. Literature Review

4.1. Annual report

Annual reports are published by companies as formal public documents. By doing so, companies fulfil the legal imperative of the mandatory corporate reporting requirements in their countries. Furthermore, annual reports are widely acknowledged as a communication channel to the public and offer companies the opportunity to proactively construct a particular narrative and dispense information about the reporting period to investors and other market participants. In Australia, annual reports are the primary document companies use to communicate details of their activities, financial results and strategies (CPA Australia, 2019). Globally, annual reports are also perceived as a core public disclosure (Lang and Lundholm, 1993; Botosan, 1997; Chau and Gray, 2010) and in developing countries sometimes as the only formal information source (Naser and Nuseibeh, 2003; Al-Razeen and Karbhari, 2007).

As formal documents, annual reports commonly consist of different elements, such as quantitative information, narratives, photographs, and graphs. In addition, annual reports can be divided into two parts – the audited mandatory disclosure in the rear part, and the unaudited voluntary disclosure in the front part. In Australia, the audited mandatory disclosure required by the Corporations Act and ASX listing rules comprises the directors' report¹³, the corporate governance statement¹⁴, the financial report and the auditor's report on the financial and remuneration reports (CAP Australia, 2019). The unaudited voluntary disclosure usually comprises narrative disclosure sections such as the highlights and the letters to shareholders from the chairman and the chief executive officer.

¹³ The directors' report includes the remuneration report.

¹⁴ An alternative to the corporate governance statement is the URL of the homepage on the company's website where the statement is located.

In the following, I am going to take a closer look at the two major parts of the annual report – the voluntary disclosure and the audited financial statements and notes.

1. Voluntary disclosure

Voluntary disclosure encompasses all disclosure that is not mandated by regulations or statutory requirements, such as the highlights section in annual reports. As mentioned above, voluntary disclosure is placed in the front part of the annual report, where it can be classified into financial and non-financial (narrative) disclosure. However, voluntary disclosure is not limited to the annual report as it is also incorporated in other communication channels such as press releases, conference calls and company presentations.

Voluntary disclosure has the purpose to reduce information asymmetry and agency conflicts between companies and external stakeholders as it compliments and supplements the disclosures required by accounting and disclosure regulations (Davis and Tama-Sweet, 2012). Its primary objective is to inform investors and analysts to help them with predicting future earnings (Verrecchia, 1983). The major factors that determine the general level of voluntary disclosure are found to be company size, leverage, earnings volatility, board independence, ownership structure, country or region, listing status, and industry (Hossain, Perera and Rahman, 1995; Kent and Ung, 2003; Eng and Mak, 2003; Cheng and Courtenay, 2006). With regards to the quality of voluntary disclosure, which in prior literature is commonly measured by a disclosure index or disclosure score, studies have found that it is associated with characteristics such as listing status, firm size, leverage, country, earnings margin, and earnings variability (Lang and Lundholm, 1993; Skinner, 1994; Meek, Roberts and Gray, 1995).

Theories linked to voluntary disclosure practices generally attempt to explain why companies choose to voluntarily disclose information publicly. One of the most commonly applied theories in prior literature is agency theory. Jensen and Meckling

(1976) introduce and define agency theory as the concept of misaligned interests between capital providers and managers. The agency relationship is defined as “a contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent” (Jensen and Meckling, 1976).

In a company environment, capital providers represent the principal and managers represent the agent of the agency relationship. Capital providers delegate strategic and operating decision-making to managers who should maximize the value of shareholders and that ensure debt repayment. However, managers have their own interests, which diverts from those of the capital providers. This agency problem occurs due to the separation of ownership and control and is further emphasized by information asymmetry since managers have better access to information about the company compared to shareholders and debt holders (Jensen and Meckling, 1976). The agency problem can lead to issues such as adverse selection and moral hazard as capital providers doubt the managers’ actions and decisions. Tools used to reduce the agency and information asymmetry problems are monitoring devices, such as the appointment of a board of directors, and bonding devices, such as compensation packages or debt contracts (Healy and Palepu, 2001). In addition, voluntary disclosure can be seen as another way to mitigate the agency problem, since managers share additional information about the state of the company with capital providers to reduce information asymmetry (Barako, Hancock and Izan, 2006; Watson, Shrives and Marston, 2002).

Narrative disclosure contains contextual and non-financial information that is disclosed in addition to the financial information to offer a broader understanding of a company’s business and its market position, strategy, overall performance, and growth prospects (PwC, 2007). In the annual report, the voluntary disclosure usually consists of narrative disclosures such as the highlights and the letters to shareholders. As they help to connect a company’s financial statement numbers and its underlying business fundamentals (Merkley, 2014), narrative disclosures are an integral component in annual reports and an important source of information for analysts

(Balakrishnan, Qiu and Srinivasan, 2010). In addition, studies such as Hussainey and Walker (2009) and Balakrishnan et al. (2010) suggest that narrative disclosures in annual reports contain value-relevant information for predicting market performance and anticipating future variations in earnings.

Within narrative disclosures, which are part of the voluntary disclosure in annual reports, managers are allowed a certain degree of discretion in how they choose to present financial performance. Thus, managers might be tempted to exploit this discretion to influence investors' judgment and decision-making (Libby and Emett, 2014). Many studies, both experimental and archival, examine the impact of the location of financial information reported within narrative disclosures. More specifically, some of these studies focus on how investors respond to the relative emphasis placed non-GAAP earnings compared to statutory earnings (Bowen et al., 2005; Elliott, 2006; Allee et al., 2007). Their findings indicate that unsophisticated investors are more aware of and respond more strongly to the more emphasized earnings measures in narrative disclosures. Other studies focus on items presented in the income statement that managers choose to emphasize in press releases (Guillamon-Saorin, Osma and Jones, 2012; Huang, Nekrasov and Teoh, 2018). Their findings indicate that managers strategically emphasize good news by making them stand out in the narrative disclosure, consistent with opportunistic motives. For instance, Huang et al. (2018) find that the way managers present the headline of an earnings release creates biases in the investors' initial reaction. Similarly, Schrand and Walther (2000) find that managers strategically repeat financial information from prior periods in narrative disclosures to point out a more favorable benchmark for evaluating current earnings to investors. This finding is further corroborated in an experimental study, that finds that investors have short-term memory limitations and that managers strategically exploit these limitations by prominently displaying more favorable financial information from prior periods in narrative disclosures (Krische, 2005).

2. *Financial statements and notes*

a. IASB's Primary Financial Statements project

As a response to investors' concerns about the comparability and transparency of corporate financial reporting, the IASB initiated the Primary Financial Statements project in 2015 to examine the purpose, structure, and content of the primary financial statements, including the relationship between the individual statements (IFRS Foundation, 2022). As part of the ongoing project, the IASB published the Exposure Draft on General Presentation and Disclosures in December 2019 (IFRS Foundation, 2019). In essence, the Exposure Draft proposes requirements for presentation and disclosure in financial statements to improve the way information is communicated by companies, which a special focus on the income statement. The purpose is to arrive at a proposal for an IFRS Standard that, when finalized, should replace IAS 1 Presentation of Financial Statements and also add amendments to other current standards.

More specifically, the IASB proposes to introduce new subtotals in the income statement to improve the comparability across companies (IFRS Foundation, 2019). Ideally, the new subtotals would provide relevant information and create a consistent structure to the income statement. In addition, the IASB proposes disaggregation principles and requirements to help companies provide relevant information to investors (IFRS Foundation, 2019). These proposals include requirements on the disaggregation of operating expenses either by nature or by function in the income statement, the disaggregation of large unspecified other balances, and the disaggregation of information about unusual income and expenses (IFRS Foundation, 2019). Finally, the Exposure Draft also contains proposals on the disclosure of non-GAAP measures. For instance, the IASB proposes the disclosure of reconciliations between non-GAAP measures and statutory subtotals to promote transparency in financial reporting.

b. Earnings disaggregation

Prior studies, both experimental and archival, examine the effects of earnings disaggregation. In the following, I make use of the thought structure in Libby and Emett (2014) who provide a comprehensive list of several relevant studies in their literature review on this topic. For instance, they refer to the model of accounting choice in Demski (1973) to point out that any level of aggregation obscures useful information, even if only for a certain type of investor. The model indicates that it is in the interests of investors to be presented with financial statements that do not contain any aggregation of information (Demski, 1973). In practice, according to Libby and Emett (2014), two types of earnings disaggregation can be observed – the vertical disaggregation and the horizontal disaggregation. Libby and Emett (2014) individually examine these two types of earnings disaggregation and how they are reflected in prior literature.

Under vertical disaggregation, companies disaggregate transactions into selected summary line items and subtotals in the income statement, such as EBIT or EBITDA. Libby and Emett (2014) suggest considering vertical aggregation as a continuum. On one end, companies report each transaction as a separate line item and on the other end of the continuum, companies aggregate all transactions into a single summary line item (Libby and Emett, 2014). In practice, managers appear to disaggregate income statement items for both informational and opportunistic purposes which according to Libby and Emett (2014) is reflected in studies such as Riedl and Srinivasan (2010), Bonner, Clor-Proell and Koonce (2014) as well as Libby and Brown (2013). For instance, companies tend to disaggregate special items in the income statement if the items are less persistent, indicating that it is done with informative purposes (Riedl and Srinivasan, 2010). Similarly, companies mostly disaggregate special items with lower persistence in the income statement when they decrease income, particularly restructuring and merger and acquisition items (Riedl and Srinivasan, 2010). On the other hand, managers appear to disaggregate bond gains and losses when this puts them in a more favorable light, which suggests opportunistic motives (Bonner et al., 2013). Examining in an experiment whether voluntary

disaggregation of income statement information increases the reliability of income statement subtotals, Libby and Brown (2013) find that auditors encounter financial statement errors in need of correction with disaggregated numbers when the items are disaggregated on the face of the income statement as opposed to the notes. Their findings indicate that auditors permit less misstatement with disaggregated numbers and that voluntary disaggregation has an unintended positive consequence for the reliability of income statement subtotals.

Similarly, Libby and Emett (2014) also provide a collection of studies that closely examines horizontal disaggregation where companies disaggregate earnings information, including non-GAAP earnings, by segments, locations, and products. These studies include Botosan and Harris (2000), Botosan and Stanford (2005), Berger and Hann (2007) as well as Bens, Berger and Monahan (2011). Taken together, their results indicate that in practice, managers tend to utilize their choice over the items and level of horizontal disaggregation to protect business details about segment earnings in industries with low competition or to evade external monitoring of an underperforming business segment while at the same time trying to increase liquidity by supplying full disclosure. Libby and Emett (2014) additionally list studies by Berger and Hann (2003) and Ettredge, Kwon, Smith and Zarowin (2005) which observe the impact of horizontal disaggregation on investors' judgment and decision-making. Their results suggest that the supplementary information found in segment disclosures improves security valuation, analyst forecast accuracy and future earnings predictability.

Thus, studies on both vertical and horizontal disaggregation suggest that disaggregated earnings information helps investors and analysts to extract important and value-relevant information from financial statements and that they rely on disaggregated information to improve their judgments and decision-making. However, earnings disaggregation might also mislead unsophisticated investors about the underlying value of companies as managers appear to disaggregate earnings information strategically (Libby and Emett, 2014).

Regardless of their level of aggregation, the bottom-line statutory earnings, just like non-IFRS earnings and earnings-before measures, are disclosed throughout an annual report, including both the voluntary disclosure section and the financial statements section. Due to a certain level of reporting discretion allowed by statutory accounting standards, firms have the opportunity to disclose earnings in the various sections of the annual report in a more favorable light through earnings management. I have a closer look at the different forms of earnings management and their link to non-GAAP earnings in the following section.

4.2. Earnings management

One of the earliest definitions of earnings management describes it as a process of taking deliberate steps within the constraints of statutory accounting standards to bring about a desired level of reported earnings (Davidson, Stickney and Weil, 1987). The reporting flexibility provided by statutory accounting standards allows managers to exercise a certain level of judgment. The purpose is to allow managers to use their insider knowledge about the company and its opportunities and select reporting methods, estimates and disclosures that are best suited to depict the company's underlying value. However, this reporting discretion also creates opportunities for earnings management. Incentives for earnings management include capital market expectations and valuation (e.g., Teoh, Wong and Rao, 1998; Burgstahler and Eames, 2006), contracting (e.g., Healy, 1985; Dechow and Sloan, 1991; Holthausen, Larcker and Sloan, 1995) and regulatory considerations (e.g., Beatty, Chamberlain and Magliolo, 1995). Prior literature has identified three main forms of earnings management – accruals earnings management (e.g., Healy and Wahlen, 1999, Bartov, Givoly and Hayn, 2002), real earnings management (e.g., Cohen, Dey and Lys, 2008) and classification shifting (e.g., McVay, 2006).

1. Accruals earnings management

Accruals earnings management is enabled by the circumstance that managers are to a certain level free to choose between accounting methods, accounting

estimates, and the timing of accruals. That means that managers can either inflate current period earnings or push earnings from the current period to a future period. Amongst the beforementioned incentives, accruals earnings management is also used to meet or beat strategic earnings benchmarks (Bartov et al., 2002; Graham, Harvey, and Rajgopal, 2005). For example, a study that analyzes the capitalization of research and development expenditures under IFRS arrives at the finding that both the decision to capitalize and how much to capitalize are strongly associated with benchmark beating. (Dinh, Kang and Schultze, 2016).

One advantage of applying accruals earnings management is that it can be implemented after the end of the fiscal year and within the boundaries of the statutory accounting standards, making the risk of detection relatively low (Black, Christensen, Taylor Joo and Schmardebeck, 2017). In addition, accruals earnings management has no direct effect on cash flow, and it allows managers to meet earnings expectations with an audited earnings measure (Badertscher, 2011).

There are also disadvantages to using accruals earnings management. When it is detected, negative consequences can follow. They might occur in the form of SEC enforcement actions, which is a civil enforcement action in the U.S. that might result in civil penalties for the accused individuals or entities (Dechow, Sloan, and Sweeney, 1995). Other negative consequences might take the form of earnings restatements due to a material inaccuracy in the financial statement, which might raise red flags for investors and damage their confidence in the company (Palmrose, Richardson, and Scholz, 2004). Additional negative consequences for the company that results from the detection of accruals earnings management can for example be shareholder litigation, or qualified audit reports (DuCharme, Malatesta, and Sefcik, 2004; Dopuch, Holthausen, and Leftwich, 1986). For undetected accruals earnings management, one of the potential costs that might occur for the company is the reversal of accruals, which is expected because these artificial accounting adjustments to real cash flows cannot be sustained for long. A later reversal of current accruals goes hand in hand with a decrease of future reported earnings, thus explaining a negative relationship between current accruals and future earnings (Teoh, Welch, and Wong, 1998).

Another potential cost from accruals earnings management is the constraints on the discretion managers can exercise on the balance sheet where it already reflects the extent to which net assets are overstated from previous earnings management choices (Barton and Simko, 2002). This is mainly because accruals show up in earnings and thus also are reflected in net assets on the balance sheet. Additional costs from accruals earnings management might include an increase in audit costs, a decreased in perceived earnings quality and an increase in the probability of detection (Antle, Gordon, Narayanamoorthy, and Zhou, 2002; Leuz, Nanda, and Wysocki, 2003; DuCharme et al., 2004).

2. Real earnings management

Real earnings management takes place when managers manipulate real business transactions, for instance by adjusting the timing, scale, and structure of operating, investing or financial decisions, to strategically alter reported earnings and meet earnings targets (Cohen et al., 2008). The goal is to avoid reporting losses or missing analyst forecasts through the manipulation of real activities. Examples for real earnings management include managers manipulating sales (Roychowdhury, 2006), overproducing inventory to decrease cost of goods sold (Roychowdhury, 2006), and reducing research and development expenditures (Bushee, 1998).

From a chronological standpoint, real earnings management takes place during the fiscal year whereas accruals earnings management is more likely to be carried out at the close of the fiscal year. Following this chronology, managers are likely to apply real earnings management first and accruals earnings management afterwards (Graham et al., 2005). For example, Pincus and Rajgopal (2002) find that managers of oil and gas companies first determine the extent to which financial derivatives are used to hedge oil price risk, and then in the fourth quarter, manipulate abnormal accruals to smooth earnings.

Prior research also examines the trade-off between accruals and real earnings management based on their potential costs (e.g., Cohen et al., 2008; Badertscher,

2011). As mentioned above, accruals reverse in subsequent periods and can be scrutinized by auditors, investors and other stakeholders. Real earnings management also bears real economic penalties. For example, managers might decide to cut funds for research and development or advertisement (Bushee, 1998). They might also decide to introduce price reductions or decrease capital investments (Graham et al., 2005). These decisions can be costly in terms of future cash flow and might hurt future performance and decrease company value due to lost opportunities (Badertscher, 2011). Managers also must plan for and make decisions regarding real earnings management early in the reporting cycle.

Compared to accruals management however, real earnings management is more difficult to detect (Kothari, Mizik and Roychowdhury, 2016). Managers increasingly employ real earnings management when their ability to engage in accruals earnings management is constrained or when the potential costs are higher (Cohen et al., 2008; Chi, Lisic and Peyzner, 2011; Badertscher, 2011; Zang, 2012). For example, companies switched from accruals management to real earnings management after the issuance of SOX, which placed regulatory scrutiny on accruals earnings management (Cohen et al., 2008). Companies audited by high quality auditors are also more likely to employ real earnings management because their ability to inflate accruals is constrained (Chi et al., 2011). Furthermore, Badertscher (2011) finds that overvalued companies switch from accruals earnings management to real earnings management as they run out of accruals management choices due to constraints. Zang (2012) indicate a similar substitute relationship between accruals and real earnings management as the study finds that managers adjust the level of accruals earnings management at the end of the fiscal period according to the realized level of real earnings management.

3. *Classification shifting*

Classification shifting takes place when managers strategically shift expenses from core expenses¹⁵ to special items (McVay, 2006). Companies also employ classification shifting by using discontinued operations in addition to special items (Barua, Lin, and Sbaraglia, 2010), by misclassifying recurring expenses as non-recurring items (Zalata and Roberts, 2016), or by misclassifying non-operating revenues as operating revenues (Malikov, Manson and Coakley, 2018). The goal behind classification shifting is to meet or exceed the analyst forecast earnings benchmark, as special items tend to be excluded from both non-GAAP and analyst earnings definitions (McVay, 2006).

In contrast to accruals and real earnings management, classification shifting does not change statutory net income, thus limiting the scrutiny of auditors and regulators. Managers decide between the three earnings management choices depending on the potential costs and timing of the individual choices (Cohen et al., 2008; Badertscher, 2011; Zang, 2012). Chronologically, classification shifting is likely to be one of the last earnings management choices left in managers' arsenals to meet earnings targets (McVay, 2006). Thus, managers might use it to offset overly impactful accruals and real earnings management. For example, companies are more likely to use classification shifting in the fourth quarter and when accruals earnings management is constrained (Fan, Barua, Cready, and Thomas, 2010). Similarly, Abernathy, Beyer and Rapley (2014) find that managers are more likely to use classification shifting when accruals earnings management is limited by accumulated accruals impacting the balance sheet and when real earnings management is limited by a poor financial environment, high levels of institutional ownership and low industry market share. This indicates that managers are more likely to resort to classification shifting as a substitute for accruals and real earnings management.

¹⁵ Defined here as cost of goods sold and selling, general, and administrative expenses.

4. *Non-GAAP earnings and earnings management*

Prior studies establish non-GAAP earnings as another way for managers to meet or beat earnings targets (Doyle et al., 2013; Black and Christensen, 2009). Compared to the previously mentioned earnings management strategies, one advantage of using non-GAAP earnings is that its adjustments can be determined after the decision to use either accruals earnings management, real earnings management or classification shifting. In addition, the adjustments used to calculate the non-GAAP earnings measure do not impact actual operative performance items in the balance sheet.

Having the choice to make use of earnings management and non-GAAP earnings, managers' preferences likely vary across companies, depending on unique company characteristics and circumstances as well as the potential costs of each choice. Black et al. (2017b) find that managers avoid using earnings management when solid operating performance makes it possible for companies to meet earnings expectations. When they use accruals and real earnings management to meet earnings targets, managers are significantly less likely to report a non-GAAP earnings measure (Black et al., 2017b). However, when managers just miss their earnings targets despite having employed earnings management strategies, they are significantly more likely to disclose non-GAAP earnings (Black et al., 2017b). These findings indicate that managers prefer to meet earnings targets through the reporting of reasonable operating earnings first before turning to earnings management or the disclosure of non-GAAP earnings measures. However, if necessary, managers tend to first use earnings management strategies before disclosing non-GAAP earnings measures as Black et al. (2017b) find that managers are less likely to report non-GAAP earnings if they are able to meet or beat analyst forecasts with accruals and real earnings management. In addition, managers are more likely to disclose non-GAAP earnings in an aggressive manner when they are unable to use accruals or real earnings management, when they are limited by accruals management from previous periods and when the operating earnings are low (Black et al., 2017b).

Apart from the above-mentioned forms of earnings management, another way to influence the perception of earnings measures, including statutory earnings, earnings-before measures and non-GAAP earnings, is impression management. In the following section, I have a closer look at the different impression management strategies and their implementation in connection to non-GAAP earnings.

4.3. Impression management

Impression management is another communication tool for managers to influence the perception of company performance. Originating in the social psychology literature, the term impression management refers to the process of individuals attempting to create a favorable impression on other people by altering their manner, appearance, and setting in different social scenarios (Leary and Kowalski, 1990). In the context of corporate reporting, impression management takes place when information is strategically chosen and displayed in a way that distorts readers' perceptions of corporate performance and influence their impressions of future prospects (e.g., Merkl-Davies, Brennan, and McLeay, 2011). In order to enhance, retain or repair their corporate image and reputation, companies employ impression management strategies to present a self-serving view of their performance (e.g., Leary and Kowalski, 1990; Aerts, 2005).

Impression management is predominantly found in less regulated narrative disclosures which focus on interpreting financial outcomes (Brennan, Guillamon-Saorin and Pierce, 2009). In fact, annual reports are especially seen as an effective medium for impression management since the narrative sections are in close proximity to the auditor's report, which may add credibility to the disclosures (Neu, Warsame and Pedwell, 1998). Although narrative disclosures can provide more detailed information and explanations of financial performance and thus narrow the information gap between managers and outside investors, they can also be subject to impression management through the emphasis, reinforcement or omission of certain information (Leung, Parker and Courtis, 2015).

1. Impression management strategies

Impression management is a cosmetic disclosure tool used by managers to distort investors and other users' perceptions of company performance. Several strategies can be selectively employed for this purpose. Impression management strategies can be broadly categorized as either defensive or assertive (Tedeschi and Melburg, 1984). Examples for a defensive strategy are underreporting, downplaying, omitting, minimizing, or concealing certain negative information to create or maintain a positive impression about the corporate image or the financial performance (Yang and Liu, 2017). Under an assertive strategy, managers use language and presentational patterns to signal good performance and attribute positive outcomes to their capabilities (e.g., Smith and Taffler, 2000; Aerts, 2005). Examples are emphasizing and enhancing information to proactively establish and maintain a positive reputation (e.g., Bolino, Kacmar and Turnley, 2008).

Merkel-Davies and Brennan (2007) also call attention to several impression management strategies in their study. One of them is thematic manipulation, which is based on the assumption that managers tend to conceal bad news by not reporting them as extensively as good news to present the company and its financial performance in the best light possible. For instance, managers tend to emphasize positive organizational outcomes (Merkel-Davies and Brennan, 2007). In the context of non-GAAP earnings, managers might prefer to emphasize non-GAAP earnings which are comparatively higher than the corresponding statutory earnings. Their optimism regarding future financial performance is reflected neither by analyst opinion nor by actual future financial performance, which indicates that it is rather led by bias than by information (Merkel-Davies and Brennan., 2007).

Another impression management strategy used by managers is performance comparisons, where managers choose specific measures as performance comparisons that allow them to portray the company in the best possible light (Merkel-Davies and Brennan, 2007). It is about selecting benchmarks that give the impression of performance achievement (Guillamon-Saorin, Isidro and Marques, 2017). For

example, with performance comparisons, managers can choose the lowest benchmark earnings measure from a previous period as a direct comparison or compare performance indicators with industry averages (e.g., Schrand and Walther, 2000). In the context of non-GAAP earnings, that could for instance be statutory earnings or analyst earnings estimates. More specifically, Lewellen, Park and Ro. (1996) find that managers select benchmark earnings measures strategically to point out positive changes in earnings. They find that share price performance benchmarks disclosed in corporate proxy statements are biased downwards, which allows managers to overstate relative share return performance (Lewellen et al., 1996). Similarly, managers are also found to be likely to present the lowest comparative earnings benchmark from the previous period, which allows them to report the highest increase in earnings year after year (Schrand and Walther, 2000).

Next to thematic manipulation and performance comparisons, Merkl-Davies and Brennan (2007) also point out the choice of earnings measure as another impression management strategy employed by managers. Managers strategically choose specific earnings measures, such as non-GAAP earnings, to display or to omit. With regard to the presentation of non-GAAP earnings, managers are either motivated to provide more accurate useful information or they are motivated to make the company appear more profitable (Bowen et al., 2005). The latter corresponds to the motivations of impression management. Compared to statutory earnings, non-GAAP earnings are found to be predominantly income increasing (Johnson and Schwartz, 2005). Furthermore, Johnson and Schwartz (2005) find that managers make other unspecified adjustments next to the exclusion of non-recurring items to arrive at non-GAAP earnings, which indicates that managers use non-GAAP earnings as a part of their impression management strategy.

There are indications that impression management strategies are employed consciously and deliberately by managers as opposed to unintentionally (e.g., Abrahamson and Park, 1994). There is evidence that impression management strategies are associated with managers subsequently selling shares of the company. If impression management strategies are used deliberately to increase the company's

share price, it's likely that managers sell their shares shortly after applying impression management strategies because they foresee them going down when the company's financial problems are revealed later on (Abrahamson and Park, 1994). Thus, the findings indicate that managers employ impression management strategies deliberately and opportunistically.

2. *Non-GAAP earnings and impression management*

There is evidence that managers employ impression management strategies when reporting non-GAAP earnings (Bowen et al., 2005; Isidro and Marques, 2015; Guillamon-Saorin et al., 2017). For instance, companies with less value-relevant statutory earnings disclose non-GAAP earnings before the statutory earnings, thus strategically emphasizing the non-GAAP earnings information (Bowen et al., 2005). Similarly, Isidro and Marques (2015) find that European companies commonly disclose non-GAAP earnings before the statutory earnings in press releases. Guillamon-Saorin et al. (2017) study non-GAAP earnings in the context of impression management by examining multiple impression management strategies such as the use of positive tone, the strategic emphasis put on non-GAAP earnings and the use of performance comparisons. They find that managers exclude recurring items from non-GAAP earnings and that they combine this kind of strategic behavior with the beforementioned impression management strategies to deflect from the recurring nature of these adjustments as it is in the interest of managers to make it appear like the non-GAAP earnings represent persistent earnings better than statutory earnings (Guillamon-Saorin et al., 2017). That is because when adjustments are transitory, their persistence is expected to be very low, which corresponds to the view that the adjustments are informative (Frankel, McVay and Soliman, 2011; Jennings and Marques, 2011). Contrarily, making adjustments that are of a recurring nature is an indication leans towards strategically altering the impression of company performance on investors.

In addition, employing impression management strategies, such as putting emphasis on non-GAAP earnings compared to statutory earnings, can affect retail

investors' judgments, as suggested by findings of Elliott (2006) and Allee et al. (2007). Investors also tend to perceive non-GAAP earnings with low levels of impression management positively (Guillamon-Saorin et al., 2017). Guillamon-Saorin et al. (2017) find at the same time that investors tend to disregard non-GAAP earnings if they come along with high levels of impression management, suggesting that investors can identify high levels of impression management as an attempt to influence their understanding of the persistence of non-GAAP earnings.

4.4. External audit

With both earnings management and impression management at their disposal, firms can influence the perception of earnings measures disclosed in their annual reports. At the same time, investors also have something at their disposal which increases the reliability of earnings disclosed in the financial statements – external audit. External audit has the purpose to certify that the financial statements are in conformity with statutory accounting standards and that they accurately reflect the economic condition and operation results of the company. The goal is to add credibility to the financial statements through the external auditor's verification (Chow, 1982). External audits are expected to constrain opportunistic behavior such as earnings management and to reduce the risk of misstatements or omissions in the audited financial statements and notes (Lin and Hwang, 2010).

The necessity for external audit is rooted in the agency theory (Jensen and Meckling, 1976). As elaborated in section 4.1.1., agency theory revolves around the separation of ownership and control. It addresses the issue of information asymmetry between the management and the shareholders of the company. External audit functions as an effective monitoring mechanism in this context and improves the informative content of audited financial information (Seow, 2001; Cano Rodriguez and Sánchez Alegria, 2012). It is intended to provide assurance to shareholders, certifying that the financial statements and notes are free of material misstatements. Another motivation for companies to demand external audit is the benefit of having a Big Four as auditor because these auditors can serve as a safeguard against any losses

stemming from a potential misstatement (Seow, 2001; Wallace, 2004; Fortin and Pittman, 2007).

Commonly, the term “Big Four” is used to refer to the four largest accounting companies in the world, which are Deloitte, Ernst & Young (EY), KPMG, and PwC. In the auditing literature, the Big Four is one of the factors used to proxy for audit quality, as audit quality itself is unobservable (Firth and Liao-Tan, 1998). In general, audit quality is defined in terms of the auditor’s competence, independence and exercise of due professional care (Lin and Hwang, 2010). It is characterized by the accuracy of information provided by the auditor or their ability to detect and eliminate misstatements and falsehoods in the financial statements and notes (Titman and Trueman, 1986; Palmrose, 1988; Davidson and Neu, 1993). Differences in audit quality might lead to variation in credibility offered by the auditors and the earnings quality of their clients (Lin and Hwang, 2010). Following the reasoning that bigger audit companies have more to lose from supplying a lower level of quality, researchers find that bigger audit companies provide higher quality audits by reducing the level of discretionary accruals on their clients’ financial statements and notes, or by encouraging the more timely recognition of bad news as compared to good news in earnings (Francis, Stokes and Anderson, 1999; Chung, Firth and Kim, 2005; Hussainey, 2009). In addition, there is evidence that engaging bigger audit companies leads to positive capital market consequences, as it likely provides a signal to uninformed investors about the underlying value of the company (Datar, Feltham and Hughes, 1991; Aobdia, Lin and Petacchi, 2015).

1. External audit and earnings management

Studies that examine whether external audit functions as a constraint to earnings management provide evidence that suggests external audit and earnings management have a negative association. Taking auditor size as an example, studies such as Becker, DeFond, Jambalyo and Subramanyam (1998), Francis et al. (1999), Lin, Li and Yang (2006), and Kent, Routledge and Stewart (2010) show that employing external auditors from bigger audit companies reduces earnings

management. These studies commonly argue that auditors of bigger audit companies are better able to detect earnings management because they possess a superior expertise and more resources to do so (e.g., Becker et al., 1998; Francis et al, 1999). In addition, they have the incentive to restrain earnings management to protect the audit company's professional reputation (Krishnan, 2003). Contrary to smaller audit companies, they are also less economically dependent on single clients and thus less likely to acquiesce to unreasonable client demands regarding earnings management (Wilson, 2011). For instance, Jackson, Moldrich and Roebuck (2008) finds that appointing bigger audit companies is negatively associated with signed abnormal accruals, suggesting that the employment of bigger audit companies is connected to more conservative accounting choices. However, other studies such as Davidson, Goodwin-Stewart and Kent (2005), Antle et al. (2006) and Lin et al. (2006) fail to reach the same conclusions regarding the link between external audit and earnings management. For instance, Davidson et al. (2005) find that the choice of auditor is not significantly related to a reduction in the level of discretionary accruals for a sample based on Australian firms. Taking it one step further, Antle et al. (2006) find evidence that indicate that audit fees increase abnormal accruals. Nevertheless, the majority of evidence found in prior literature points towards a negative link between auditor size and earnings management, thus indicating a link between auditor size and higher reliability and quality of earnings.

2. *External audit and disclosure credibility*

Disclosure credibility can be defined in terms of how believable investors perceive a particular company disclosure. Therefore, disclosure credibility refers to a subjective judgment, rather than a characteristic that can be assessed objectively. Investors usually do not possess or are prepared with any immediate knowledge about the actual reliability or quality of a disclosure initially when they first encounter it. Instead, it is more likely that they rely on their first impression and how they perceive the credibility to be (Jennings, 1987). Furthermore, investors can vary in their

perception regarding the credibility of individual disclosures from the same company (Mercer, 2004).

Generally, disclosure credibility is likely to be higher when managers have little incentive to mislead investors (Mercer, 2004). In addition, when individual managers are deemed to be competent and trustworthy, their company disclosure also appear more credible to investors (Mercer, 2004). Mercer (2004) also refers to the study by Lo (2015) which observes that additional validation from external or internal sources, that are independent from the company and that have a reputation for being competent and trustworthy, enhances the disclosure's credibility. These sources can investigate the content of the disclosure and attest to its lack of bias to increase its credibility (Lo, 2015). Sources for external assurance include external auditors, analysts, and providers of public information such as financial bloggers. Sources for internal assurance include the board of directors, the audit committee if available, and internal auditors with companies of a certain size. Lastly, disclosure credibility also depends on the characteristics of individual disclosures, for example how precise they are formulated, where and when they are presented, whether they appear sensible based on the available information (Mercer, 2004).

External audit is one of the factors that help investors determine how credible a company disclosure is (Mercer, 2004). Mercer (2004) lists several archival and experimental studies which find that external audit enhances disclosure credibility as investors generally consider audited information more credible than unaudited information e.g., Libby (1979), Leftwich (1983), and Hodge (2001). Libby (1979) and Hodge (2001) find that bankers as well as analysts are under the impression that audited disclosures are more credible than disclosures that have not undergone an audit. Leftwich (1983) studies banks and find that they ask private companies to provide audited financial statements and that reward them with lower interest rates if they can meet this request. Examining small non-public banks for which external audits are voluntary, Lo (2015) finds that banks with audited reports have better access to funds during periods of monetary tightening than banks with unaudited reports.

This finding indicates that external audit affects disclosure credibility, which in turn affects companies' ability to fund investments.

Moreover, Mercer (2004) also uses the studies by Birnbaum and Stegner (1979) and Hirst, Koonce and Miller, (1999) to suggest with regards to credibility that investors place more weight on information from sources that are more credible and vice versa. Thus, as investors perceive audited disclosures as more credible than unaudited disclosures, they also weigh the audited disclosures more heavily relative to the unaudited disclosures in their decision-making process (Hodge, 2001).

4.5. Managerial incentives of reporting non-GAAP earnings

In view of the possible link between non-GAAP earnings and earnings management as well as impression management, it begs to examine the incentives behind the reporting of non-GAAP earnings. Academic literature on non-GAAP earnings is largely focused on understanding this issue. With time, two opposing theoretical perspectives have become apparent in the debate – the informative and the opportunistic sides. Studies on one side indicate that managers are primarily motivated by a desire to provide incremental and value relevant information to investors, especially on permanent earnings (e.g., Choi et al., 2007; Curtis, McVay and Whipple, 2014; Choi and Young, 2015; Leung and Veenman, 2018; Ribeiro, Shan and Taylor, 2019). On the other side, numerous studies suggest opportunism as the main incentive behind non-GAAP earnings disclosure (e.g., Bowen et al., 2005; Landsman, Miller, & Yeh, 2007; Black and Christensen, 2009; Barth et al., 2012; Doyle et al., 2013; Guillamon-Saorin et al., 2017). I take a closer look at both sides in the following.

1. Informativeness

From the standpoint of non-GAAP earnings being informative, non-GAAP earnings reporting addresses the trade-off between the valuation and stewardship roles of accounting, which is inherently rooted in the application of accounting standards

(Ribeiro et al., 2019). To fulfil their purpose of stewardship, accounting standards necessarily bring about significant amounts of conditional conservatism. This can hinder their usability for valuation purposes. In this context, non-GAAP earnings might be a potential solution to this balancing act. They represent an alternative measure of financial performance that helps the single statutory earnings measure meet the competing purposes for value relevance and conservatism. They can answer the demand for value relevance information that is not solely provided by statutory earnings alone.

To assess the informativeness of non-GAAP earnings, prior studies often depend on tests of predictability, which examine the ability of non-GAAP earnings and their exclusions to predict future earnings, stock prices or analyst forecasts (Aboody and Lev, 1998). In practice, earnings predictability is a major concern among managers as well as sell-side analysts. Earnings predictability can be tested by regressing future profitability, either statutory or non-GAAP earnings, on both current period statutory earnings and non-GAAP earnings (Lougee and Marquardt, 2004).

For instance, one of the earlier studies on non-GAAP earnings shows that non-GAAP earnings can better predict future earnings than operating earnings taken from the financial statements (Brown and Sivakumar, 2003). This predictive ability indicates that non-GAAP earnings contain value relevant information, in addition to the information that can be derived from the financial statements. It supports the notion that non-GAAP earnings more precisely incorporates information on the magnitude of non-recurring items (Brown and Sivakumar, 2003). In a more recent study, Ribeiro et al. (2019) use a large sample of earnings press releases by Australian companies to manually extract the non-GAAP earnings they disclose. In an elaborate analysis, Ribeiro et al. (2019) compare various characteristics of non-GAAP earnings with their comparable statutory earnings, including earnings predictability. The findings indicate that, though both non-GAAP and statutory earnings both are predictive of future statutory earnings, non-GAAP earnings have significantly higher predictive ability for future earnings than their closest statutory equivalent. What might further support the informative incentive of reporting non-GAAP earnings is

that companies with less informative GAAP earnings are more likely to release non-GAAP earnings than other companies (Lougee and Marquardt, 2004). In addition, Bhattacharya, Black, Christensen and Larson (2003) observe that some companies report the non-GAAP earnings before the statutory earnings in their press releases even when the statutory earnings are higher in magnitude. This is also consistent with the notion that in some cases, managers might report non-GAAP earnings because they believe that non-GAAP earnings are more informative than statutory earnings.

Additionally, higher earnings predictability suggests that the exclusion of certain items from statutory earnings to arrive at non-GAAP earnings are largely transitory, as permanent earnings are more value relevant than transitory earnings. Managerial adjustments that lead to an improved ability of non-GAAP earnings to predict future performance would further strengthen the notion that the primary managerial incentive behind reporting non-GAAP earnings is to provide incremental information. To assess this more closely, studies investigate the actual adjustments to non-GAAP earnings. For instance, Choi et al. (2007) find that most non-GAAP earnings adjustments by managers is based on appropriate classification of earnings components. While aggregate management exclusions are found to be irrelevant to the valuation and forecasting aspect, management inclusions to non-GAAP earnings are incrementally value and forecast relevant (Choi et al., 2007). This suggests that managers single out transitory items to be excluded from non-GAAP earnings while they correctly determine and retain recurring earnings components that increase the predictive ability of non-GAAP earnings. On average, when adjustments are decomposed into net gains and net losses, gains and losses that are excluded are both value irrelevant whereas losses that are included are highly value relevant (Choi et al., 2007). Thus, in aggregate, the exclusions determined by managers have no incremental explanatory power for future operating cash flows and decomposed, both gains and losses of the exclusions appear to be transitory items. However, losses that are included in non-GAAP earnings appear to be recurring earnings components. Taken together, the findings indicate that adjustments by managers reflect their

superior knowledge regarding the true predictive ability of the earnings components (Choi et al., 2007).

Finally, another finding that points towards non-GAAP earnings being informative is that non-GAAP earnings improve price discovery (Huang and Skantz, 2016). Using adverse-selection cost as a proxy for information asymmetry, Huang and Skantz (2016) find that the information asymmetry is less pronounced after an earnings announcement when the earnings announcement contains non-GAAP earnings and when the magnitude of the non-GAAP earnings adjustment is larger. Their results indicate that earnings adjustments for non-GAAP earnings increase quantity and quality of earnings information. This leads to a decrease in information asymmetry between sophisticated and unsophisticated traders following earnings announcements and strengthens the notion that non-GAAP earnings are informative.

2. Opportunism

Academics supporting the opportunistic perspective view non-GAAP earnings as a way for managers to present a more favorable view of financial performance and to mislead investors. There are many findings pointing into this direction. For instance, non-GAAP earnings are typically higher than the corresponding statutory earnings (Bhattacharya et al., 2003; Marques, 2006). In an early study, Bradshaw and Sloan (2002) find that there is a tendency for managers to report a non-GAAP earnings number that exceeds the statutory earnings number. Similarly, Bhattacharya et al. (2003) find through matched-pair t-tests that non-GAAP earnings are significantly greater and that they also result in a profit more often than statutory earnings.

Through an analysis of press releases, Bradshaw and Sloan (2002) also find that managers proactively define and emphasize non-GAAP earnings when they communicate the financial performance to analysts and investors. They are not the only ones to examine the prominence of non-GAAP earnings disclosures. Another early study finds that when the non-GAAP earnings are higher than the statutory

earnings, they are generally reported first (Bhattacharya et al., 2003). In a survey, Graham et al. (2005) find that managers tend to emphasize non-GAAP earnings when the statutory earnings reflect a weak financial performance. Bowen et al. (2005) provide further evidence consistent with opportunism when they find that managers strategically emphasize the earnings measure, be it statutory earnings or non-GAAP earnings, which portrays the company in the best light possible. Similarly, managers of the top 50 Australian public companies tend to emphasize the earnings measure which communicates the highest financial performance, an indication that managers might use non-GAAP earnings strategically to steer investors' perceptions (Cameron et al., 2012).

Another indication of opportunistic behavior in prior literature is the evidence that managers tend to use non-GAAP earnings to meet or beat strategic earnings benchmarks. Meeting or beating strategic earnings benchmarks can take many forms, such as avoiding reporting a loss, meeting or beating analysts' earnings estimates, and meeting or beating the previous period's financial results to report positive earnings growth (e.g., Bhattacharya et al., 2004; Lougee and Marquardt, 2004; Nichols et al., 2005; Black and Christensen, 2009; Barth et al., 2012; Brown, Christensen, Elliott, and Mergenthaler, 2012; Isidro and Marques, 2013; Doyle et al. 2013). In an early study, researchers find that a relatively high proportion of non-GAAP earnings in press releases from their sample meet or beat the mean analyst earnings estimate, compared to statutory earnings (Bhattacharya et al., 2003). This is consistent with the notion that managers are often under pressure to meet analysts' expectations and might use non-GAAP earnings to meet these targets (Black et al., 2018). Further evidence shows that managers disclose non-GAAP earnings to meet strategic earnings benchmarks when the statutory earnings are less than expected (Black and Christensen, 2009; Brown et al., 2012; Doyle et al., 2013). For instance, managers opportunistically define non-GAAP earnings in a way that makes it hard for analysts to anticipate with the purpose of meeting or beating analysts' earnings estimates (Doyle et al., 2013). This result holds when controlling for other tools of meeting or beating earnings benchmarks, such as accruals or real earnings

management (Doyle et al., 2013). Comparing non-GAAP earnings with statutory earnings, Black and Christensen (2009) observe that managers frequently exclude recurring items from non-GAAP earnings which are significantly associated with meeting strategic earnings benchmarks that the companies would have missed using statutory earnings alone. Managers specifically exclude expenses from non-GAAP earnings but include transitory gains when it allows them to disclose non-GAAP earnings which meet earnings benchmarks (Curtis et al., 2014). Managers also specifically exclude stock-based compensation expenses from non-GAAP earnings to increase earnings and meet earnings benchmarks, despite mandated recognition of these expenses (Barth et al., 2012). Additionally, taking institutional and economic factors into consideration, Isidro and Marques (2015) find that companies are more likely to disclose non-GAAP earnings that meet or beat earnings benchmarks when the statutory earnings miss the target in countries with efficient laws and law enforcement, strong investor protection, developed financial markets, and good communication and dissemination of information. Their findings suggest that non-GAAP earnings are more likely to be used to meet or beat earnings benchmarks in markets where there is more pressure to meet these benchmarks and where forms of earnings management are more likely to be noticed by the market participants.

Many studies take a closer look at the actual adjustments of non-GAAP earnings to assess whether they are opportunistically motivated. In particular, the exclusion of recurring items such as depreciation, amortization, research and development, and stock-based compensation, or the failure to consistently exclude non-recurring transitory items can be seen as an indication of aggressive non-GAAP earnings reporting (Black and Christensen, 2009; Curtis et al., 2014). Examining the extent to which individual exclusions are associated with future earnings, several studies find that exclusions of recurring items can potentially mislead investors (Landsman et al., 2007; Kolev, Marquardt and McVay, 2008; Bentley et al., 2018).

As presented above, robust evidence from prior research support both the informative and opportunistic viewpoints on the managerial incentive of reporting non-GAAP earnings. This is consistent with the findings by Lougee and Marquardt

(2004), who examine the information content of non-GAAP earnings and the ability of non-GAAP earnings to predict future profitability and returns. Their findings indicate that investors find non-GAAP earnings more useful when statutory earnings are less informative or when strategic considerations are absent (Lougee and Marquardt, 2004). While they find that non-GAAP earnings contribute to predicting future profitability, they do not find that non-GAAP earnings predict future one-year-ahead returns for these companies (Lougee and Marquardt, 2004). Thus, as their results are mixed and highly context-dependent, the investor reaction to non-GAAP earnings at the time of the press release can both be due to market efficiency and mispricing (Lougee and Marquardt, 2004). Curtis et al. (2014) and Choi and Young (2015) come to similar mixed conclusions. Curtis et al. (2014) examines the disclosure non-GAAP earnings in quarters that contain transitory gains and whether managers disclose non-GAAP earnings in their earnings announcements to highlight the transitory nature of the gain. If managers are more interested in informing investors about sustainable earnings, they will disclose non-GAAP earnings excluding the gain even though that would make the non-GAAP earnings lower than the statutory earnings (Curtis et al., 2014). If managers are interested in opportunistically reporting higher earnings, they will focus on statutory earnings or other operating performance measures that include the gain (Curtis et al., 2014). The evidence based on the investors' perceptions about future earnings and efficient pricing of transitory gains suggest that the disclosure choices vary widely across firms (Curtis et al., 2014). When contrasting how the same companies disclose non-GAAP earnings with the existence of transitory losses, the findings are again mixed (Curtis et al., 2014). Similarly, Choi and Young (2015) examine the association between non-GAAP earnings disclosure and transitory items in statutory income, depending on managers' reporting incentives. Their findings indicate that non-GAAP earnings reporting is informative when statutory earnings beat market expectations and that non-GAAP earnings reporting is opportunistic when statutory earnings are lower than market expectations (Choi and Young, 2015). Thus, according to Choi and Young (2015), conflicting incentives co-exist, as in certain circumstances, non-GAAP earnings reflect a genuine

attempt by managers to communicate valuable information about the core operations while in other circumstances, non-GAAP earnings more likely reflect a more strategic attempt to present financial performance in a favorable light. With these mixed findings, there is no consensus yet on the definite conclusions regarding the dominant reporting incentive behind non-GAAP earnings.

4.6. Reactions of capital market participants to non-GAAP earnings

With the evidence on the incentive behind the reporting of non-GAAP earnings being divided between informativeness and opportunism, prior studies have further turned their focus on examining whether non-GAAP earnings reporting has an impact on investors and other capital market participants such as financial analysts. To this end, studies assess the information content of non-GAAP earnings by examining the association between abnormal stock returns around earnings announcements and earnings surprises. Studies also test for value relevance by examining the association between earnings current stock prices. Generally, prices are expected to reflect all available information if markets are efficient. However, evidence shows that holding information constant, the way financial performance is presented can affect investors' decision-making (Hirst and Hopkins, 1998; Maines and McDaniel, 2000). Investors are found to respond more to non-GAAP earnings than to statutory earnings, suggesting that they rely more on non-GAAP earnings and perceive them as more informative (Bhattacharya et al., 2003; Lougee and Marquardt 2004; Bradshaw, Christensen, Gee, and Whipple, 2018; Ribeiro et al., 2019). For instance, Ribeiro et al. (2019) regress price on book value as well as earnings, where earnings are either the voluntarily disclosed non-GAAP earnings or its closest statutory equivalent. Their results indicate that non-GAAP earnings are more value relevant than statutory earnings and that the difference in explanatory power appear to have increased over time (Ribeiro et al., 2019).

At the same time, there is evidence suggesting that investors can be skeptical of non-GAAP earnings disclosures when there are signs of opportunism. Investors perceive non-GAAP earnings as less informative when they meet analysts' earnings

estimates while the statutory earnings do not (Bhattacharya et al., 2003). Investors also discount non-GAAP earnings surprises that occurs at the same time with higher levels of prior earnings management or when managers make aggressive earnings adjustments (Black et al., 2012; Black et al., 2017a). However, the ability of investors to fully recognize non-GAAP earnings disclosures that are opportunistically motivated might be limited. For instance, investors do not discount non-GAAP earnings that report a profit while the statutory earnings report a loss (Bhattacharya et al., 2003). Investors are also likely to overvalue statutory earnings when transitory gains are ambiguously reported in statutory earnings rather than transparently excluded in a non-GAAP earnings disclosure (Curtis et al., 2014). In addition, Bowen et al. (2005) examine investor response in relation to the extent of emphasis managers place on non-GAAP earnings in earnings releases. They find that the market reaction to non-GAAP earnings increases with the level of emphasis (Bowen et al., 2005). This suggests that investors' perceptions of non-GAAP earnings are influenced by how much managers emphasize these earnings and that they are likely to overreact to the emphasis (Bowen et al., 2005). Together, the results indicate that investors could be confused or misled by non-GAAP earnings disclosure.

Having established that investors are likely to react to non-GAAP earnings disclosures, some studies go one step further and examine whether different types of investors or market participants vary in their reactions depending on their degree of financial reporting sophistication. Experimental as well as archival studies find that less sophisticated retail investors process non-GAAP earnings differently from sophisticated investors (Frederickson and Miller, 2004; Elliott, 2006; Allee et al., 2007; Johnson, Percy, Stevenson-Clarke and Cameron, 2014). For example, in the experimental setting by Frederickson and Miller (2004), less sophisticated investors are represented by MBA students and sophisticated investors are represented by financial analysts. Examining the participants when they deliver stock price assessments in response to reviewing background financial information and an earnings press release, they find that less sophisticated investors who receive a press release with non-GAAP earnings arrive at a higher stock price than those who receive

a press release with only statutory earnings (Frederickson and Miller, 2004). This indicates that the mere presence of non-GAAP earnings affects how less sophisticated investors perceive company performance and influences their decision-making through unintentional cognitive effects (Frederickson and Miller, 2004). Contrarily, financial analysts are not affected in their judgement by the disclosure of favorable non-GAAP earnings and do not fixate on them (Frederickson and Miller, 2004). The non-GAAP earnings in these cases all exceed the statutory earnings (Frederickson and Miller, 2004). Furthermore, the researchers find that financial analysts are likely to use well-defined valuation models that are based on either earnings multiples or cash flows for their information processing whereas less-sophisticated investors are likely to depend on simpler, heuristic-based valuation models (Frederickson and Miller, 2004).

Expanding the results by Frederickson and Miller (2004), Elliot (2006) examines how the emphasis of non-GAAP earnings and the presence a quantitative reconciliation influence investors' reliance on non-GAAP earnings disclosures. The results indicate that the emphasis placed on non-GAAP earnings the relative placement of the non-GAAP earnings and the statutory earnings in the earnings releases affects the judgments of less sophisticated investors (Elliot, 2006). Elliot (2006) attribute this to unintentional cognitive effects such as overweighting primary information. This effect can be lessened by the presence of a quantitative reconciliation. While analysts appear not to be affected by the emphasis of non-GAAP earnings, the presence of a quantitative reconciliation leads them to perceive non-GAAP earnings as more reliable and increases their reliance on non-GAAP earnings in judging the financial performance of the company (Elliot, 2006). Similarly, Andersson and Hellman (2007) also arrive at results that suggest that more sophisticated investors can be influenced by non-GAAP earnings through positive framing and a higher level of anchoring.

Adding to the existing evidence, an experimental study with Australian investors investigates whether reporting non-GAAP earnings in addition to statutory earnings in annual reports has an impact on the information choices of less

sophisticated investors (Johnson et al., 2014). Participants are asked to pick out common profitability measures such as profit, changes in profit, and earnings per share from an annual report extract (Johnson et al., 2014). When non-GAAP earnings are provided in addition to statutory earnings, participants tend to select non-GAAP earnings rather than statutory earnings (Johnson et al., 2014). They appear to pay attention to the well positioned non-GAAP earnings rather than taking account of the all the earnings information provided, including the income statement (Johnson et al., 2014). Hence, the results indicate a positive relation between the prominently placed non-GAAP earnings and the confidence less sophisticated investors have in these earnings (Johnson et al., 2014). Like Elliot (2006), The authors also attribute their findings to the lack of expertise knowledge from less sophisticated investors regarding topics such as annual report analysis, which might lead to unintentional cognitive effects and impact their decisions and judgements (Johnson et al., 2014).

Archival studies such as Allee et al. (2007), Bhattacharya et al. (2007) and Christensen et al. (2014) use proxies based on trade size to distinguish the trading activities of less sophisticated and sophisticated investors. Their findings complement the results obtained through experimental studies. Using intraday transaction data as proxies for investor sophistication and distinguish the trading activities of less sophisticated investors from those of more sophisticated investors, Allee et al. (2007) find that the existence of non-GAAP earnings influences the trading behavior of less sophisticated investors as they rely more on quarterly earnings releases that include non-GAAP earnings than on those that do not. Contrarily, sophisticated investors trade less or even in the opposite direction to that indicated by the earnings surprise (Allee et al., 2007). This is consistent with the findings of Frederickson and Miller (2004). Additionally, Allee et al. (2007) find evidence that indicates that the strategic emphasis of non-GAAP earnings impacts the judgement of less sophisticated investors, which mirrors the findings of Elliott (2006). Similarly, Bhattacharya et al. (2007) study the intraday transactions around earnings releases containing non-GAAP earnings and find that the abnormal buying behavior of less sophisticated investors are positively associated with the amount and direction of the non-GAAP earnings

surprise. They also find that there is no association between the trading of sophisticated investors and the reporting of non-GAAP earnings, further suggesting that the segment of the market that relies non-GAAP earnings is populated primarily by less sophisticated investors (Bhattacharya et al., 2007). Finally, another archival study by Christensen, Drake and Thornock (2014) examines the trading behavior of short sellers, a group of sophisticated investors, around earnings releases that contain non-GAAP earnings. They find that there is a significant abnormal increase in short sales and that short sellers take greater short positions when the non-GAAP earnings exclude recurring items such as depreciation and share-based compensation (Christensen et al., 2014). This indicates that short sellers exploit potential information asymmetries arising from the disclosure of non-GAAP earnings and that the overvaluation might be caused by less sophisticated investors and their failure to fully understand the implications of recurring exclusions for future performance (Christensen et al., 2014).

5. Hypotheses Development

5.1. Non-IFRS earnings in highlights

In general, narrative sections of the annual report, such as the highlights section and letters to shareholders, provide useful information for investors and analysts alike (Bartlett and Chandler, 1997; Rogers and Grant, 1997; Smith and Taffler, 2000). They allow management to present an overall landscape of corporate financial performance for the reporting period. Narrative sections in annual reports allow firms to counteract the potential information asymmetry by providing more detailed information to explain the periodic performance, thus increasing their usefulness for decision-making (Merkl-Davies and Brennan, 2007). In particular, the highlights section at the beginning of the annual report deserves a closer scrutiny since it has been shown that the physical arrangement of information is used to direct the

reader's attention to or away from certain items (Bowen et al., 2005; Elliott, 2006). The highlights section allows firms to set the tone for the following sections and to focus the reader's attention on the core measures that, from the firm's perspective, best reflect the true financial performance of the firm. It offers great flexibility and discretion for firms in creating a first impression of the annual report and determining what earnings measure they prefer to highlight to the reader. In Australian annual reports, earnings performance is usually one of the first measures highlighted (Holland and Ramsay, 2013).

Non-IFRS earnings are increasingly taking the shape of a central attribute in the performance reporting narrative (Graham et al., 2005). Studies around the world provide evidence for the prevalence of non-IFRS earnings (Entwistle et al., 2006; Marques, 2006; Choi, et al., 2007; Heflin and Hsu, 2008; Hitz, 2010; Zhang and Zheng, 2011; Black et al., 2012; Choi and Young, 2015; Isidro and Marques, 2015; Black et al., 2018). For instance, Coulton et al. (2016) show an increasing tendency among their sample of Australian All Ordinaries Index firms to report non-IFRS earnings in their earnings announcements, from 15 percent of firms in 2002 to 42 percent in 2014.

Studies, both experimental and archival, indicate that the existence of non-IFRS earnings and their strategic placement especially affect the judgments of less-sophisticated investors (Frederickson and Miller, 2004; Allee et al., 2007; Johnson et al., 2014). In the experiment carried out by Frederickson and Miller (2004), the disclosure of non-IFRS earnings in earnings announcements made less-sophisticated investors perceive the earnings announcement as more favorable compared to earnings announcements containing only statutory earnings. Similarly, Allee et al. (2007) find that less sophisticated investors rely more on quarterly earnings press releases that include non-IFRS earnings than those that do not, while more sophisticated investors exhibit the opposite behavior. In the experiment conducted by Johnson et al. (2014), it is shown that the disclosure of non-IFRS earnings affects the information choices of less sophisticated Australian financial statement users. The results of the experiment suggest that less sophisticated investors tend to prefer to

incorporate disclosures on non-IFRS earnings rather than statutory net income in their information-gathering stage.

Comparing non-IFRS earnings with their closest IFRS equivalent in earnings press releases by Australian firms, Ribeiro et al. (2019) find that non-IFRS earnings are more persistent, smoother, more value-relevant and have higher predictive power than their closest IFRS equivalent. Together with the evidence pointing towards firms' increased reliance on non-IFRS earnings, it can be deduced that disclosing non-IFRS earnings fulfils a specific purpose for the firms' reporting strategy. If non-IFRS earnings are truly indispensable for financial performance communication, I expect firms to disclose them in the highlights section of the annual report even when the highlights section simultaneously displays a comparable earnings figure such as the statutory net income. Therefore, I examine the following hypothesis:

H1a: Firms are more likely to disclose non-IFRS earnings in the highlights section when statutory net income is presented in the highlights section.

The flexibility within the highlights section in terms of choosing specific earnings measures and omitting others means that the highlights section also offers an opportunity for firms to present their financial performance in the best possible light, thereby potentially misleading readers. Guillamon-Saorin et al. (2017) show in their study of the market's reaction to non-IFRS earnings that while non-IFRS earnings are informative to capital markets, managers are more likely to employ higher levels of impression management when non-IFRS earnings are of lower quality. Findings by Degeorge, Patel and Zeckhauser (1999) support the view that from the companies' perspective, investors seem to think that if companies perform well in the current period, they will also perform well in the future periods. This goes hand in hand with higher valuations and better chances at raising capital for the companies. Thus, they prefer higher earnings and might report non-IFRS earnings opportunistically to present a more favorable view of financial performance.

In general, non-IFRS earnings are found to be higher than the comparable statutory earnings (Marques, 2006; Choi et al., 2007; Isidro and Marques, 2013). The

reason is that less informative transitory items are likely to be expenses and at the same time, managers have an incentive to pursue the goal of inflating the perceptions of firm performance (Johnson and Schwartz, 2005; Bradshaw and Soliman, 2007; Young, 2014). For example, Johnson and Schwartz (2005) find that the income increasing adjustments made to statutory income are large in magnitude and encompass more transitory than nonrecurring items.

Malone et al. (2012) examine ASX 200 firms from 2008 to 2010 and find that management adjusted non-IFRS earnings tend to exceed statutory net income. Coulton et al. (2016) find for their Australian sample that most firms report higher figures using non-IFRS earnings and are more likely to report strong non-IFRS earnings when statutory earnings are negative. Among the firms emphasizing non-GAAP earnings, they also find that there are more firms making net positive adjustments to increase non-GAAP earnings than those making negative adjustments (Coulton et al., 2016).

Since firms emphasize the earnings measure that portrays better financial performance (Bowen et al., 2005), it is expected that firms would prioritize presenting non-IFRS earnings when they exceed statutory income. Bowen et al. (2005) also find for U.S. press releases that firms reporting non-GAAP profit, but statutory losses, place more emphasis on non-GAAP earnings and less emphasis on statutory income. These findings are consistent with firms reacting to the pressure coming from the market and using non-IFRS earnings to make weak statutory earnings more acceptable. Examining Australian annual reports, Holland and Ramsay (2013) find that earnings are one of the first measures highlighted especially when the earnings performance is favorable, pointing towards strong incentives for managers to highlight the highest available earnings measure. Therefore, I examine the following hypothesis:

H1b: Firms are more likely to disclose non-IFRS earnings in the highlights section when non-IFRS earnings beat statutory net income.

Generally, firms disclose earnings information to increase clarity and help investors understand firm performance. According to Graham et al. (2005), firms endeavor to meet market expectations in order to not raise any doubt about their underlying strength. Graham et al. (2005) also find that firms believe earnings to be the key metric considered by investors, with analyst earnings estimate being one of the most important earnings benchmarks. The most frequently used analyst estimate metric is earnings per share (EPS), defined as “the EPS that the contributing analyst considers to be that with which to value a security. This figure may include or exclude certain items depending on the contributing analyst’s specific model” (Thomson Reuters, 2009), and is also referred to as “street” earnings¹⁶. They are based on analysts’ assessment of earnings performance and differ in systematic ways from management adjusted non-IFRS earnings. (Bentley et al, 2018; Bradshaw et al., 2018). For instance, Bentley et al. (2018) provide evidence that analyst earnings estimates mirror the more informative non-GAAP disclosure choices managers make while they also exclude the more aggressive reporting choices managers make. This leads to a different quality of non-GAAP earnings across managers’ and analysts’ adjusted measures. In addition, comparing non-IFRS and street earnings for a small subsample of observations, Gu and Chen (2004) find that analysts are aware of managers’ choice in what they exclude and often make different choices.

Prior research supports the idea that managers disclose information with the aim to influence stakeholders’ perceptions of earnings (Schrand and Walther, 2000), suggesting that managers may behave opportunistically. Brown and Caylor (2005) show that meeting analysts’ forecasts is an important benchmark for managers and that on average, firms tend to hit or slightly exceed earnings targets. However, failure to meet analysts’ forecasts is shown to lead to pay cuts for the CEO (Matsunaga and Park, 2001). Bartov et al. (2002) find that there is a stock price premium for meeting

¹⁶ Street earnings are mostly defined on a non-IFRS basis. Thomson Reuters also provides analyst estimates defined on a statutory basis, called GAAP earnings per share (GPS). According to Thomson Financial (2008), the mean estimate for the GPS data measure will only reflect the strict adaptation of GAAP basis estimates. In countries that have adopted IFRS, this figure will include all items according to IFRS rules.

analysts' forecasts, reporting superior future operating performance. Habib and Hossain (2008) show that there are discontinuities in the distribution of Australian firms' earnings around the level of analysts' earnings forecasts and that these discontinuities are related to opportunistic incentives. Similarly, in their survey of more than 400 executives, Graham et al. (2005) find that executives believe that hitting earnings benchmarks builds credibility with the market and helps to maintain or increase their firm's stock price. They also believe that not being able to hit earnings benchmarks such as analysts' forecasts leads to investors being uncertain about a firm's future prospects as it could indicate that the firm has serious financial problems that prevents them from hitting the benchmark or, in case the firm had previously guided analysts to the consensus estimate, that the firm cannot accurately predict its own performance.

Due to the discretion that managers are allowed in computing non-IFRS earnings, managers may opportunistically define non-IFRS earnings in order to beat analyst earnings estimates (Frankel et al., 2011; Barth et al., 2012; Doyle et al., 2013). Frankel et al. (2011) provide evidence consistent with insider selling increasing when the use of non-GAAP exclusions enables the firm to meet or beat analyst estimates. Comparing non-GAAP and street earnings directly through the exclusion of stock-based compensation, Barth et al. (2012) find that managers opportunistically exclude the expense to increase and smooth earnings while analysts exclude the expense from their estimates when doing so allows their estimates to predict future earnings more accurately. Further, Doyle et al. (2013) show that managers strategically defined non-GAAP earnings in order to meet or beat analyst expectations. For their sample of ASX 200 firms, Malone et al. (2012) find that firms are less conservative in their estimates of non-IFRS earnings than financial analysts.

However, a recent study by Bradshaw et al. (2018) finds that 34 percent of the traditionally identified meet-or-beat firms in studies which examine how non-GAAP exclusions are utilized to meet analysts' estimates, especially when statutory earnings cannot, are not identified correctly due to measurement error. Taking this error into account, the authors find that firms exclude more often transitory rather than

recurring expenses to meet-or-beat estimates. Their findings indicate that firms can also use transitory items next to recurring expenses for a meet-or-beat purpose by moving core expenses into transitory items, thus inflating non-GAAP earnings while statutory earnings appear untouched.

I expect firms to report non-IFRS earnings that beat the analyst earnings estimate in the highlights section of their annual reports in order to present their performance in the best possible light. Therefore, I examine the following hypothesis:

H1c: Firms are more likely to disclose non-IFRS earnings in the highlights section when non-IFRS earnings beat the analyst earnings estimate.

5.2. Non-IFRS earnings from audited sections in highlights

Although I expect firms to disclose non-IFRS earnings that beat the statutory net income and the analyst earnings estimate in the highlights to present their earnings performance for the year in the best possible light, their incentive might not be solely opportunistic. After all, the existing literature on non-IFRS reporting suggests that the disclosure of non-IFRS earnings reflects a mixture of both informative and opportunistic incentives that are difficult to disentangle from an outside perspective. Non-IFRS earnings contain incremental information on permanent earnings as they reflect management's inside information about the persistence of earnings components compared to external sources. They allow firms to separate different types of income, which enhances the explanatory power of reported numbers (Bhattacharya et al., 2004). As they allow extraordinary factors and calculations based solely on technical accounting considerations to be excluded from the resulting figure, they enable easier comparisons across firms and periods of the core operational performance. Research indicates that non-IFRS earnings are considered more value relevant by investors than statutory earnings and are better equipped to predict future performance (Bradshaw and Sloan, 2002; Brown and Sivakumar, 2003; Marques, 2006; Choi et al., 2007). For instance, Guillamon-Saorin et al. (2017) show with their broad European sample that non-IFRS earnings are informative to capital markets.

Prior research also indicates that firms are more likely to disclose and emphasize non-IFRS earnings when statutory earnings have low value relevance (Lougee and Marquardt, 2004; Bowen et al., 2005).

Taking the informative motivations into account, I take a closer look at the non-IFRS earnings presented in the highlights section to investigate their reporting incentives. To this end, I specifically examine whether they are from the audited sections or the unaudited sections of the annual report. Thus, I use external audit as an indication for credibility and informativeness. As mentioned previously, validation and external assurance through the audit process is valued for its ability to strengthen the credibility of accounting information. External auditors assure independently that the financial statements faithfully reflect the firm's underlying operations and can attest to the lack of bias in the disclosure to increase its credibility.

Studies suggest that the assurance by external parties can enhance a disclosure's credibility. For example, Mercer (2004) identifies the levels of external assurance as one factor that investors consider when assessing the credibility of management disclosure. Studies examining the effects of auditing on disclosure credibility find that readers perceive audited disclosures as more credible than unaudited disclosures (Libby, 1979; Hodge, 2001; Mercer, 2004). Coram, Mock, Turner, and Gray (2011) find results implying that the auditor's report *per se* is of importance to the readers of annual reports, in the sense that it translates into a level of reliability not available in unaudited sections of the annual report.

As investors perceive audited disclosures as more credible than unaudited disclosures, they also weigh the audited disclosures more heavily relative to the unaudited disclosures in their decision-making process (Hodge, 2001). Findings from prior studies, such as Leftwich (1983) and Blackwell et al. (1998), suggest that capital providers regard auditors as enhancing credibility, since they charge lower interest rates to private companies if they provide audited financial statements, thus implying that audit adds value for investors. A later study from Lo (2015) examines small non-public banks for which external audits are voluntary and finds that banks with audited

reports have better access to funds during periods of monetary tightening than banks with unaudited reports. This finding indicates that external audit affects disclosure credibility, which in turn affects companies' ability to fund investments. Similarly, several other studies also support the notion that investors and analysts alike place more confidence in and rely more on audited financial information (e.g., Watts and Zimmerman, 1983; Abdel-Khalik, 1993; Deumes, Knechel, Meuwissen, Schelleman, and Vanstraelen, 2010). It appears that investors place more weight on information from sources that are more credible and vice versa (e.g., Birnbaum and Stegner, 1979; Hirst et al., 1999).

As previously elaborated, reporting discretion due to the flexibility in statutory accounting standards allows managers to exercise a certain level of judgment which creates opportunities for earnings management. Studies suggest that external assurance increases the reliability of these disclosures and prevent misleading disclosures in annual reports (e.g., Becker et al., 1998; Francis et al., 1999; Lin et al., 2006; Jackson et al., 2008). For example, Becker et al. (1998) and Francis et al. (1999) argue that auditors from bigger audit companies are better able to detect earnings management because they possess a superior expertise and more resources to do so. Bigger audit companies also have the incentive to restrain earnings management to protect the company's professional reputation (Krishnan, 2003) and they are economically less dependent on a single client (Wilson, 2011). Jackson et al. (2008) find that appointing bigger audit companies is negatively associated with signed abnormal accruals, both findings suggesting that the employment of bigger audit companies is connected to less earnings management. Furthermore, a more recent study by Sumiadji and Subiyantoro (2019) finds indications for a positive association between auditor size and earnings quality, which in their case is defined by factors like persistence and predictability. Studies also find a positive link between auditor size and value relevance. For example, an Australian study by Gul, Tsui and Dhaliwal (2006) finds that auditor size has a positive effect on the value relevance of earnings as bigger audit companies are more affected by possible reputational damages and litigation costs. Furthermore, Lee and Lee (2013) find that audit quality, proxied by

auditor size, improves the value relevance of earnings and book value of equity. Their results are robust to different empirical models and measurements of value relevance.

Examining the link between external assurance and non-IFRS, Chen, Krishnan, and Pevzner (2012) find that optimistic non-IFRS disclosures are associated with higher audit fees and auditor resignations. Further research in this area indicates that the involvement of audit committee oversight is associated with higher quality non-GAAP earnings exclusions, assuming that the non-recurring items are synonymous with higher quality as they are not related to future earnings (Seetharaman, Wang, & Zhang, 2014). A more recent study by Feng, Francis, Shan, and Taylor (2019) finds that firms with high-quality auditors are more likely to voluntarily disclose non-GAAP earnings numbers. Their results also indicate that firms with high-quality auditors have more transitory non-GAAP exclusions and thus higher quality non-GAAP earnings, meaning that non-GAAP exclusions are less aggressive than those of other firms. Together, these findings carry an implication that audit not only offers a level of reliability and credibility, but also a level of accuracy and informativeness.

As reflected in the previous literature, I expect firms to disclose non-IFRS earnings in the highlights not solely out of opportunistic motivations. I expect firms to report non-IFRS earnings from audited sections in the highlights section which simultaneously displays the statutory net income because they want to be informative by providing an additional earnings information. As external audit is associated with credibility and reliability of earnings, I argue that non-IFRS earnings from the audited section can also be assumed to be more credible and reliable than non-IFRS earnings from the unaudited section of the annual report. Therefore, I hypothesize:

H2a: Firms are more likely to disclose non-IFRS earnings from audited sections in the highlights section when statutory net income is disclosed in the highlights section.

Furthermore, I expect firms to deliberately choose to disclose non-IFRS earnings from the audited section in the highlights section when these non-IFRS

earnings exceed earnings benchmarks such as statutory net income or analyst earnings estimate. This is because firms not only want to present their earnings in the best possible light, but they also have the incentive to be informative and transparent. As external audit is linked to higher credibility, earnings quality and value relevance, I argue that non-IFRS earnings from the audited section can be assumed to be more informative than non-IFRS earnings from the unaudited section of the annual report. Thus, I expect firms to deliberately choose non-IFRS earnings from audited sections which reflect their incentive to inform and not mislead investors. Therefore, I further hypothesize:

H2b: Firms are more likely to disclose non-IFRS earnings from audited sections in the highlights section when non-IFRS earnings beat statutory net income.

H2c: Firms are more likely to disclose non-IFRS earnings from audited sections in the highlights section when non-IFRS earnings beat the analyst earnings estimate.

5.3. Earnings-before measures in highlights

Apart from non-IFRS earnings, earnings-before measures such as EBT, EBIT and EBITDA are also earnings measures which are disclosed in the annual reports, and which are not directly derived from the statutory accounting standards. They enable the disaggregation of earnings information in annual reports. While statutory net income is the most aggregated form of a firm's earnings performance since it is the bottom-line of the income statement, earnings-before measures are derived before the statutory net income as they usually exclude certain items like interest, tax, depreciation, or amortization. Thus, showing earnings-before measures in addition to net income leads to a more disaggregated view of the earnings performance.

Previous experimental studies find that the disaggregation of statutory earnings benefits investors. For instance, Tarca, Hancock and Woodliff (2008) find that disaggregation of statutory earnings into earnings-before measures increases

transparency and accuracy. In another experiment with auditors as participants, Libby and Brown (2013) find voluntary disaggregation of statutory earnings increases the reliability of earnings-before measures. Using archival data and field interviews, Davern, Gyles, Hanlon and Pinnuck (2019) find that EBIT and EBITDA are more value relevant than statutory earnings.

As part of the narrative section of the annual report, the highlights section gives firms the opportunity to overcome information asymmetries by presenting and emphasizing earnings measures apart from the statutory net income that help investors gain an understanding of the true financial performance and position of the firm. The highlights section summarizes annual performance measures and may contain statutory earnings, earnings-before measures like EBT, EBIT and EBITDA, as well as non-IFRS earnings. The more earnings-before measures are disclosed in addition to the statutory net income in the highlights, the more disaggregated is the earnings information in the highlights. A disaggregated earnings presentation is associated with being more informative and transparent. I expect firms to show a higher number of earnings-before measures in addition to statutory net income to provide a disaggregated earnings view and thus be more informative for investors. Therefore, I examine the following hypothesis:

H3a: Firms disclose a higher number of earnings-before measures in the highlights section when statutory net income is disclosed in the highlights section.

As mentioned previously, I examine earnings-before measures like EBT, EBIT, and EBITDA separately from non-IFRS earnings in this thesis because their comparability is different. Earnings-before measures are more comparable than non-IFRS earnings because their calculation is more uniform across firms whereas the calculation of non-IFRS earnings is more entity specific and more flexible due to management discretion.

Financial statement comparability is defined as the qualitative characteristic that enables users to identify similarities in and differences between two sets of economic phenomena (IASB, 2010). Comparable financial statement figures,

especially earnings figures, are necessary for the functioning of the capital market and the transactions taking place in it. They improve the usefulness of accounting information and help financial market participants make economic decisions (Franco, Kothari and Verdi, 2011; Kim, Kraft and Ryan, 2013; Choi, Choi, Myers and Ziebart., 2019).

Discussions in prior research indicate two theoretical approaches to attain comparability— uniformity and flexibility (Cole, Branson and Breesch, 2012; Yip and Young, 2012). Uniformity is reached when all companies apply the same accounting methods under the same circumstances. Between statutory earnings, non-IFRS earnings and earnings-before measures, statutory earnings have the highest uniformity since they are standardized and not entity specific. A disadvantage of uniformity is that it might ignore signaling values of the choices managers make (Yip and Young, 2012). Flexibility is reached when all companies can apply an accounting method that is tailored to their unique characteristics and needs. Here, non-IFRS earnings have the highest flexibility since they are entity specific and not standardized. A disadvantage of flexibility is that it might result in unwanted differences in the accounting methods used due to differences in individual judgement (Yip and Young, 2012). Earnings-before measures are more standardized than non-IFRS earnings and more entity specific than statutory earnings, thus having characteristics pertaining to both uniformity as well as flexibility.

Apart from the theoretical approach to attain comparability, prior research also shows that accounting comparability increases the accuracy of analysts' evaluation of firms (Bhojraj and Lee, 2002; De Franco et al., 2011; Kim et al., 2013). For example, Franco et al. (2011) find that analyst forecasts are more accurate when there is higher comparability across peer firms since it lowers the cost of acquiring information for analysts. Similarly, Stallings (2017) find that firms with greater accounting comparability also have more informative earnings. His findings suggest that higher comparability is associated with more informativeness for equity valuation decisions. Furthermore, accounting comparability increase the value relevance of earnings as investors tend to attach higher value to reported earnings when earnings

are more comparable between industry peers (Chen, Kurt and Wang, 2020). Turning to the debt market instead of the equity market like the previous studies, Kim et al. (2013) find that higher comparability is associated with reduced uncertainty and pricing of credit risk as more comparable financial statements allow for market participants to make fewer adjustments to accounting numbers within peer groups. Contrarily, less comparable financial statements require market participants to make more adjustments involving judgement and less standardized calculations, leading to more uncertainty and lower accuracy (Kim et al., 2013). Taken together, previous studies point towards a positive association between accounting comparability and informativeness of earnings.

As part of the narrative section of the annual report, the highlights section gives firms the opportunity to overcome information asymmetries by presenting entity specific information that from the firm's perspective, best reflect the true financial performance and position of the firm. (Merkel-Davies and Brennan, 2007). I argue that earnings-before measures are less uniform than statutory net income and thus better reflect signaling values of the choices managers make. At the same time, I argue that earnings-before measures are less entity specific and more comparable than non-IFRS earnings and are thus less likely to be different in their calculations across firms due to management judgement than non-IFRS earnings. Due to the higher comparability of earnings-before measures as opposed to non-IFRS earnings, I expect firms to provide a higher number of earnings-before measures in addition to non-IFRS earnings in the highlights to provide a more comparable and informative view on earnings performance. Therefore, I hypothesize:

H3b: Firms disclose a higher number of earnings-before measures in the highlights section when non-IFRS earnings are disclosed in the highlights section.

Financial analysts are among the most important users of financial reports. Hope (2003) finds that higher quantity of firm-level disclosures is associated with higher forecast accuracy, suggesting that analysts find useful data in such disclosures. Taking a closer look at the relationship between accounting comparability and analyst

forecasts, prior studies suggest that a someone hoping to extract useful information from financial reports can have lower information acquisition and processing costs, and expect a better quality of financial data, if the financial report is more comparable (De Franco et al., 2011; Kim et al., 2013; Choi et al., 2019). Analysts can make better use of financial reports to assess the relative financial performance of firms if these reports are easily comparable with those of benchmark firms, oftentimes industry peers. Higher comparability allows analysts to better evaluate firms' historical and current economic performance. Brochet, Jagolinzer and Riedl (2013) for instance find that comparability helps investors to understand a firm's relative performance more easily, meaning that this information becomes more accessible to outsiders. Thus, comparability is found to reduce the information advantage available to insiders (Brochet et al., 2013). This more accessible information allows analysts to better explain historical performance and to add the data from benchmark firms to their earnings forecasts, thus facilitating analysts' ability to forecast earnings (Brochet et al., 2013). Horton, Serafeim and Serafeim (2013) provide evidence in the context of mandatory IFRS adoption that analyst forecast accuracy improves with increased comparability. De Franco et al. (2011) also find that their measure of comparability is positively related to analyst forecast accuracy. More recently, Choi et al. (2019) find that financial statement comparability leads to a better reflection of future earnings by current period returns. This indicates that comparability is linked with stock prices being more informative and investors being able to better anticipate future firm performance. Choi et al. (2019) also find that comparability has a positive impact on the amount of firm specific information reflected in stock prices, indicating that comparability enables analysts to gather and process firm-specific information at a lower cost.

Compared to statutory earnings and earnings-before measures, non-IFRS earnings have the highest flexibility as their purpose is to convey entity specific information. However, due this entity specific nature and the increased management judgement involved in determining non-IFRS earnings, it lacks in comparability across firms. I argue that earnings-before measures such as EBT, EBIT and EBITDA

are more comparable across firms than non-IFRS measures because their calculation is more uniform and standardized across firms. As comparability is linked with higher analyst forecast accuracy, I expect firms with more emphasis on comparable earnings before measures than entity specific non-IFRS earnings to have more accurate analyst earnings estimates. Thus, I hypothesize:

H4: Analyst forecast error is lower when the highlights section contains a higher number of earnings-before measures than the number of non-IFRS earnings.

6. Data Sample

Data concerning the presentation and disclosure of non-IFRS earnings and earnings-before measures in annual reports, both in the audited section and in the unaudited section, is obtained through a manual collection from annual reports lodged with the ASX. In practice, one annual report might contain several different non-IFRS earnings and several different earnings-before measures. For example, non-IFRS earnings reported in the audited sections such as the notes to the financial statements, might also appear in unaudited sections of the annual report such as the highlights section. Similarly, an annual report might contain non-IFRS earnings or earnings-before measures that only appear in the audited sections or only in the unaudited sections.

Following the ASIC's definition of non-IFRS earnings, annual reports in the sample are searched for common descriptions of non-IFRS earnings, such as "underlying earnings", "normalized earnings", "core earnings", "adjusted earnings" and "earnings before significant items". I categorize the collected data on non-IFRS earnings into five individual categories of non-IFRS earnings, consisting of "underlying net profit after tax (NPAT)", "underlying profit before tax (PBT)", "underlying EBIT", "underlying EBITDA" and "Other non-IFRS earnings". With regards to earnings-before measures, annual reports in the sample are searched for

common descriptions such as “EBT”, “earnings before tax”, “EBIT”, “earnings before interest and tax”, “EBITA” and “earnings before interest, tax and depreciation”.

To illustrate the way non-IFRS earnings is used throughout the different audited and unaudited sections of the annual report, the Appendix provides excerpts from annual reports as examples for firms reporting: i) only non-IFRS earnings in the highlights section; ii) non-IFRS earnings, earnings-before measures, and audited statutory net income in the highlights section; iii) non-IFRS earnings in the audited notes to the financial statements; and iv) earnings-before measures as subtotals in the income statement. The rest of the data in the sample is obtained through the Compustat and the Thomson Reuters Datastream databases. Table 1 below displays all variables used in the descriptive as well as the empirical analysis.

Table 1: Variables used in descriptive and empirical analysis

Variable	Definition
nonIFRS	1= non-IFRS earnings in the annual report; 0=otherwise
nonIFRS_HIGHLIGHTS	1= non-IFRS earnings in the highlights of the annual report; 0= otherwise
nonIFRS_HIGHLIGHTS_ QUANT	Number of different non-IFRS earnings measures in the highlights
HIGHLIGHTS_AUDITED	1= non-IFRS earnings from audited sections is in the highlights; 0= otherwise

BEAT_ANALYST	1= non-IFRS earnings*** beats analyst earnings estimate, defined as analyst EPS estimate** multiplied with shares outstanding*; 0= otherwise
HIGHLIGHTS_BEAT_ANALYST	1= non-IFRS earnings which beats analyst earnings estimate** is in the highlights; 0= otherwise
BEAT_IFRS	1= non-IFRS earnings*** beats statutory net income*; 0= otherwise
HIGHLIGHTS_BEAT_IFRS	1= non-IFRS earnings which beats statutory net income* is in the highlights; 0= otherwise
STATUTORY	1= statutory net income* is in the highlights; 0= otherwise
EBT_IS	1= EBT is disclosed in the income statement; 0= otherwise
EBIT_IS	1= EBIT is disclosed in the income statement; 0= otherwise
EBITDA_IS	1= EBITDA is disclosed in the income instatement; 0= otherwise
SUBTOTALS	Total number of EB measures (EBT, EBIT or EBITDA) in the income statement
SUBTOTALS_dummy	1= subtotals are disclosed in the income statement; 0= otherwise

EBT_HIGHLIGHTS	1= EBT in the highlights of the annual report; 0= otherwise
EBIT_HIGHLIGHTS	1= EBIT in the highlights of the annual report; 0= otherwise
EBITDA_HIGHLIGHTS	1= EBITDA in the highlights of the annual report; 0= otherwise
EB_HIGHLIGHTS	Number of EB measures (EBT, EBIT or EBITDA) in the highlights of the annual report
RATIO_EB	$\frac{\text{EB_HIGHLIGHTS}}{\text{EB_HIGHLIGHTS} + \text{nonIFRS_HIGHLIGHTS_QUANT}}$
AFE	Absolute forecast error, defined as the absolute value of the difference between net income* and analyst estimate scaled by net income
SIZE	Natural logarithm of total assets*
ROA	Return on assets, defined as net income scaled by total assets*
LOSS	1=statutory net income* less than zero; 0= otherwise
LEVERAGE	Total liabilities* divided by total shareholders' equity*
ANALYST_FOLLOWING	Number of analysts following the firm**

BIG4

1= audited by a Big 4 accounting firm*; 0= otherwise

* and ** indicate data items collected from Compustat and Datastream databases, respectively. Definition of analyst EPS estimate according to Thomson Reuters: “Valuation earnings per share, defined as the EPS that the contributing analyst considers to be that with which to value a security. This figure may include or exclude certain items depending on the contributing analyst’s specific model.” Non-IFRS earnings indicated through *** are defined as the highest non-IFRS earnings measure available throughout the annual report. Audited non-IFRS earnings indicated through **** are non-IFRS earnings used in the section on operating segments in the notes to the financial statements.

7. Research Methodology

7.1. Non-IFRS earnings in highlights

1. Main analysis

To test hypotheses H1a, H1b, and H1c, I investigate the impact of the independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* on the propensity of firms presenting non-IFRS earnings in the highlights section of the annual report. For this purpose, I estimate the multivariate logit regression using the following Equation (1):

(1) *nonIFRS_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\ &+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{SIZE} + \beta_5 \text{ROA} + \beta_6 \text{LOSS} \\ &+ \beta_7 \text{LEVERAGE} + \beta_8 \text{ANALYST_FOLLOWING} + \epsilon \end{aligned}$$

The dependent variable, *nonIFRS_highlights*, is equal to one if the company presents non-IFRS earnings in the highlights section of its annual report, and zero if the highlights section does not contain any non-IFRS measure. It is a binary variable,

also called a dichotomous variable, which is defined as discrete data that can be in only one of two categories (Gujarati and Porter, 2009). This is important to consider when choosing the appropriate regression model for the analysis. Regression models generally describe the relationship between a set of independent variables and a dependent variable. There are various types of regression models and the choice usually depends on the type of data contained in the dependent variable (Angrist and Pischke, 2009). As the dependent variable in Equation (1) is a binary variable, applying a binary response model would provide the best fit (Gujarati and Porter, 2008). Thus, I choose to use the logit model to examine how changes in the independent variables are associated with changes in the probability of an event occurring (Gujarati and Porter, 2009).

In line with the hypotheses, I expect the coefficients for the independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* in Equation (1) to be positive. I include several control variables in the multivariate logit regression that have been found to be associated with the use of non-IFRS earnings and with non-IFRS earnings beating earnings benchmarks. Following prior studies on non-IFRS earnings, I include *SIZE*, *ROA*, *LOSS*, *LEVERAGE* and *ANALYST_FOLLOWING* as control variables.

The control variable *SIZE* is defined as the natural logarithm of the total assets of a firm. It is associated with the likelihood of firms meeting or beating analyst earnings estimates, the appearance of non-IFRS earnings in press releases as well as the total amount of non-IFRS earnings exclusions (Jennings and Marques, 2011; Doyle et al., 2013; Isidro and Marques, 2013; Curtis et al., 2014; Choi and Young, 2015; Malone et al., 2016; Guillamon-Saorin et al., 2017; Bentley et al., 2018; Bradshaw et al., 2018; Ribeiro et al., 2019). The control variable *ROA* is defined as net income scaled by total assets of a firm and is also related to the likelihood of firms meeting or beating analyst earnings estimates and the total amount of non-IFRS earnings exclusions (Doyle et al., 2013). The control variable *LOSS* is an indicator variable defined as one if the net income in one year is negative and zero otherwise. It reflects the incentive of loss firms to provide informative non-IFRS earnings. Loss

firms are motivated to help investors disaggregate losses into components that have differential implications for forecasting and valuation (Isidro and Marques, 2013; Curtis et al., 2014; Choi and Young, 2015; Malone et al., 2016; Guillamon-Saorin et al., 2017; Leung and Veenman, 2018; Ribeiro et al., 2019). The control variable *LEVERAGE* is defined as total liabilities divided by total shareholders' equity. According to the studies by Lougee and Marquardt (2004), Isidro and Marques (2013) and Guillamon-Saorin et al. (2017), it is related to the disclosure of non-IFRS earnings and opportunistic non-IFRS earnings reporting in press releases. Lastly, the control variable *ANALYST_FOLLOWING* is defined as the number of analysts following a firm and works as a proxy for the influence of financial analysts on non-IFRS earnings reporting (Bowen et al., 2005; Choi and Young, 2015; Isidro and Marques, 2013; Malone et al., 2016; Guillamon-Saorin et al., 2017 and Bentley et al., 2018).

In addition, I control for industry sector since prior studies on non-IFRS earnings have found that the service and the information technology sectors are more likely to release non-IFRS earnings (e.g., Brown and Sivakumar, 2003; Coulton et al., 2016). For all regressions, I also include year fixed effects and cluster the standard errors by firm to correct for cross-sectional correlation. The intuition behind including fixed effects, be it industry or year fixed effects, is to exploit within-group variation and thus deal with omitted variable bias caused by unobservable factors that might simultaneously affect the dependent and independent variables (Angrist and Pischke, 2009). The purpose of using fixed effects is to remove unobserved heterogeneity caused by unobserved variables that systematically vary across specific groups. Not doing so would lead to biased coefficients of any variable that is correlated with this variation (Angrist and Pischke, 2009). More specifically, including industry and year fixed effects in the regression holds constant the average effects of each industry and year and thus controls for the average differences across industries and years in any observable or unobservable predictors (Angrist and Pischke, 2009). In addition, clustering standard errors allows for correlation within clusters and over time. It prevents misleadingly small standard errors for the estimates and thus misleadingly narrow confidence intervals (Angrist and Pischke, 2009).

2. Robustness tests

In order to further strengthen the results, I run tests with alternative equations (1.1) through (1.9) that address H1a, H1b and H1c. I investigate through a series of separate multivariate logit regressions the impact of *STATUTORY* (Equation 1.1), *BEAT_IFRS* (Equation 1.2) and *BEAT_ANALYST* (Equation 1.3), respectively, on the propensity of firms presenting non-IFRS earnings in the highlights section of the annual report. I include the same control variables as in Equation (1). Similarly, I also control for industry and year fixed effects as in the previous equations and cluster the standard errors by firm to correct for cross-sectional correlation. I use this robustness test to ascertain that having the independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* in the same equation does not alter the interpretation of the relation between them and the dependent variable *nonIFRS_highlights*. Thus, I expect the coefficients for the independent variables *STATUTORY* (Equation 1.1), *BEAT_IFRS* (Equation 1.2) and *BEAT_ANALYST* (Equation 1.3) to be positive, as predicted in the hypotheses. The Equations (1.1) through (1.3) are as follows:

(1.1) *nonIFRS_HIGHLIGHTS*

$$= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{SIZE} + \beta_3 \text{ROA} + \beta_4 \text{LOSS} \\ + \beta_5 \text{LEVERAGE} + \beta_6 \text{ANALYST_FOLLOWING} + \epsilon$$

(1.2) *nonIFRS_HIGHLIGHTS*

$$= \beta_0 + \beta_1 \text{BEAT_IFRS} + \beta_2 \text{SIZE} + \beta_3 \text{ROA} + \beta_4 \text{LOSS} \\ + \beta_5 \text{LEVERAGE} + \beta_6 \text{ANALYST_FOLLOWING} + \epsilon$$

(1.3) *nonIFRS_HIGHLIGHTS*

$$= \beta_0 + \beta_1 \text{BEAT_ANALYST} + \beta_2 \text{SIZE} + \beta_3 \text{ROA} + \beta_4 \text{LOSS} \\ + \beta_5 \text{LEVERAGE} + \beta_6 \text{ANALYST_FOLLOWING} + \epsilon$$

Following the direction of Whited, Swanquist, Shipman and Moon (2022), I furthermore investigate through the series of logit regressions whether individually omitting the control variables *SIZE* (Equation 1.4), *ROA* (Equation 1.5), *LOSS* (Equation 1.6), *LEVERAGE* (Equation 1.7) and *ANALYST_FOLLOWING* (Equation 1.8) has any impact on the results or alters the inferences gained from the main regression in Equation (1). The purpose is to gain a better understanding of how each control variable contributes to the results. This is important as including control variables that correlate with independent variables might introduce multicollinearity into the regression model. Multicollinearity might lead to unstable coefficient estimates, lower statistical power, and less precise estimates (Whited et al., 2022). Simply leaving out these control variables might lead to omitted variable bias as they are associated with the independent as well as the dependent variable. Thus, it is helpful to examine the trade-off between precision and bias in the regression model with Equations (1.4) through (1.8). Again, I continue to control for industry and year fixed effects as in the previous equations and cluster the standard errors by firm to correct for cross-sectional correlation. The Equations (1.4) through (1.8) are as follows:

(1.4) *nonIFRS_HIGHLIGHTS*

$$\begin{aligned}
&= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\
&+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{ROA} + \beta_5 \text{LOSS} \\
&+ \beta_6 \text{LEVERAGE} + \beta_7 \text{ANALYST_FOLLOWING} + \epsilon
\end{aligned}$$

(1.5) *nonIFRS_HIGHLIGHTS*

$$\begin{aligned}
&= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\
&+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{SIZE} + \beta_5 \text{LOSS} \\
&+ \beta_6 \text{LEVERAGE} + \beta_7 \text{ANALYST_FOLLOWING} + \epsilon
\end{aligned}$$

(1.6) *nonIFRS_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\ &+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{SIZE} + \beta_5 \text{ROA} \\ &+ \beta_6 \text{LEVERAGE} + \beta_7 \text{ANALYST_FOLLOWING} + \epsilon \end{aligned}$$

(1.7) *nonIFRS_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\ &+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{SIZE} + \beta_5 \text{ROA} + \beta_6 \text{LOSS} \\ &+ \beta_7 \text{ANALYST_FOLLOWING} + \epsilon \end{aligned}$$

(1.8) *nonIFRS_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\ &+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{SIZE} + \beta_5 \text{ROA} + \beta_6 \text{LOSS} \\ &+ \beta_7 \text{LEVERAGE} + \epsilon \end{aligned}$$

Lastly, I run a multivariate poisson regression with the dependent variable *nonIFRS_HIGHLIGHTS_QUANT* and the same independent variables as in Equation (1). I also control for industry and year fixed effects as in the previous equations and cluster the standard errors by firm to correct for cross-sectional correlation. The dependent variable *nonIFRS_HIGHLIGHTS_QUANT* represents the number of different non-IFRS earnings measures in the highlights of an annual report. It is a count variable consisting of non-negative discrete whole numbers (Gujarati and Porter, 2009). As count data with smaller means follow the poisson distribution, it is suitable to use a poisson regression model when the dependent variable is a count variable (Gujarati and Porter, 2009). Poisson regressions indicate how changes in the independent variables are associated with changes in the count variable. Similar to logit regression, poisson regression also make use of the maximum likelihood estimation and transform the count variable using the natural logarithm (Gujarati and Porter, 2009). In line with H1a, H1b and H1c, I expect the coefficients for the

independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* to be positive. The Equations (1.9) is as follows:

$$\begin{aligned}
 (1.9) \text{ } nonIFRS_HIGHLIGHTS_QUANT \\
 &= \beta_0 + \beta_1 STATUTORY + \beta_2 BEAT_IFRS \\
 &+ \beta_3 BEAT_ANALYST + \beta_4 SIZE + \beta_5 ROA + \beta_6 LOSS \\
 &+ \beta_7 LEVERAGE + \beta_8 ANALYST_FOLLOWING + \epsilon
 \end{aligned}$$

7.2. Non-IFRS earnings from audited sections in highlights

1. Main analysis

To test H2a, H2b and H2c, I investigate the impact of the independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* on the propensity of firms presenting non-IFRS earnings from audited sections in the highlights section. For this purpose, I estimate the multivariate logit regression using the following Equation (2):

$$\begin{aligned}
 (2) \text{ } HIGHLIGHTS_AUDITED \\
 &= \beta_0 + \beta_1 STATUTORY + \beta_2 BEAT_IFRS \\
 &+ \beta_3 BEAT_ANALYST + \beta_4 SIZE + \beta_5 ROA + \beta_6 LOSS \\
 &+ \beta_7 LEVERAGE + \beta_8 ANALYST_FOLLOWING + \beta_9 BIG4 \\
 &+ \epsilon
 \end{aligned}$$

The dependent variable *HIGHLIGHTS_AUDITED* is equal to one if the firm presents non-IFRS earnings from audited sections in the highlights section, and zero if the highlights section does not contain any non-IFRS earnings from audited sections. It is a binary variable and thus I employ a logit regression to model the

analysis and examine how changes in the independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* are associated with changes in the probability of firms presenting non-IFRS earnings from audited sections in the highlights section.

In line with the hypotheses, I expect the coefficients for the independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* in Equation (2) to be positive. I include the same control variables that are found to be associated with the use of non-IFRS earnings and with non-IFRS earnings beating earnings benchmarks in Equation (2) as I do in Equation (1). In addition, I add the control variable *BIG4* in Equation (2). *BIG4* is a binary variable which equals one if the firm is audited by the Big 4 accounting firm and zero otherwise. It is associated with audit fees and proxies for the influence of high-quality audits on with non-GAAP earnings reporting (Chen et al., 2012; Black et al., 2017a). In addition, as in Equation (1), I control for industry and year fixed effects and cluster the standard errors by firm to correct for cross-sectional correlation in Equation (2).

2. *Robustness tests*

As for Equation (1), I also run further tests for Equation (2) to strengthen the results. The alternative equations (2.1) through (2.9) that address H2a, H2b and H2c. First, I investigate through a series of separate multivariate logit regressions the impact of *STATUTORY* (Equation 2.1), *BEAT_IFRS* (Equation 2.2) and *BEAT_ANALYST* (Equation 2.3), respectively, on the propensity of firms presenting non-IFRS earnings from audited sections in the highlights section of the annual report. I include the same control variables as in Equation (2). Similarly, I also control for industry and year fixed effects as in the previous equations and cluster the standard errors by firm to correct for cross-sectional correlation. I use this robustness test to ascertain that having the independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* in the same equation does not alter the interpretation of the relation between them and the dependent variable *HIGHLIGHTS_AUDITED*. Thus, I expect the coefficients for the independent variables *STATUTORY* (Equation 2.1),

BEAT_IFRS (Equation 2.2) and *BEAT_ANALYST* (Equation 2.3) to be positive, as predicted in the hypotheses. The Equations (2.1) through (2.3) are as follows:

(2.1) *HIGHLIGHTS_AUDITED*

$$= \beta_0 + \beta_1 \textit{STATUTORY} + \beta_2 \textit{SIZE} + \beta_3 \textit{ROA} + \beta_4 \textit{LOSS} \\ + \beta_5 \textit{LEVERAGE} + \beta_6 \textit{ANALYST_FOLLOWING} + \beta_7 \textit{BIG4} \\ + \epsilon$$

(2.2) *HIGHLIGHTS_AUDITED*

$$= \beta_0 + \beta_1 \textit{BEAT_IFRS} + \beta_2 \textit{SIZE} + \beta_3 \textit{ROA} + \beta_4 \textit{LOSS} \\ + \beta_5 \textit{LEVERAGE} + \beta_6 \textit{ANALYST_FOLLOWING} + \beta_7 \textit{BIG4} \\ + \epsilon$$

(2.3) *HIGHLIGHTS_AUDITED*

$$= \beta_0 + \beta_1 \textit{BEAT_ANALYST} + \beta_2 \textit{SIZE} + \beta_3 \textit{ROA} + \beta_4 \textit{LOSS} \\ + \beta_5 \textit{LEVERAGE} + \beta_6 \textit{ANALYST_FOLLOWING} + \beta_7 \textit{BIG4} \\ + \epsilon$$

Secondly, I also investigate through the series of logit regressions whether individually omitting the control variables *SIZE* (Equation 2.4), *ROA* (Equation 2.5), *LOSS* (Equation 2.6), *LEVERAGE* (Equation 2.7), *ANALYST_FOLLOWING* (Equation 2.8) and *BIG4* (Equation 2.9) has any impact on the results or alters the inferences gained from the main regression in Equation (2). The purpose is to gain a better understanding of how each control variables contributes to the results. Again, I continue to control for industry and year fixed effects as in the previous equations and cluster the standard errors by firm to correct for cross-sectional correlation. The Equations (2.4) through (2.9) are as follows:

(2.4) *HIGHLIGHTS_AUDITED*

$$\begin{aligned} &= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\ &+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{ROA} + \beta_5 \text{LOSS} \\ &+ \beta_6 \text{LEVERAGE} + \beta_7 \text{ANALYST_FOLLOWING} + \beta_8 \text{BIG4} \\ &+ \epsilon \end{aligned}$$

(2.5) *HIGHLIGHTS_AUDITED*

$$\begin{aligned} &= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\ &+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{SIZE} + \beta_5 \text{LOSS} \\ &+ \beta_6 \text{LEVERAGE} + \beta_7 \text{ANALYST_FOLLOWING} + \beta_8 \text{BIG4} \\ &+ \epsilon \end{aligned}$$

(2.6) *HIGHLIGHTS_AUDITED*

$$\begin{aligned} &= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\ &+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{SIZE} + \beta_5 \text{ROA} \\ &+ \beta_6 \text{LEVERAGE} + \beta_7 \text{ANALYST_FOLLOWING} + \beta_8 \text{BIG4} \\ &+ \epsilon \end{aligned}$$

(2.7) *HIGHLIGHTS_AUDITED*

$$\begin{aligned} &= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\ &+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{SIZE} + \beta_5 \text{ROA} + \beta_6 \text{LOSS} \\ &+ \beta_7 \text{ANALYST_FOLLOWING} + \beta_8 \text{BIG4} + \epsilon \end{aligned}$$

(2.8) *HIGHLIGHTS_AUDITED*

$$\begin{aligned} &= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{BEAT_IFRS} \\ &+ \beta_3 \text{BEAT_ANALYST} + \beta_4 \text{SIZE} + \beta_5 \text{ROA} + \beta_6 \text{LOSS} \\ &+ \beta_7 \text{LEVERAGE} + \beta_8 \text{BIG4} + \epsilon \end{aligned}$$

(2.9) *HIGHLIGHTS_AUDITED*

$$\begin{aligned} &= \beta_0 + \beta_1 \textit{STATUTORY} + \beta_2 \textit{BEAT_IFRS} \\ &+ \beta_3 \textit{BEAT_ANALYST} + \beta_4 \textit{SIZE} + \beta_5 \textit{ROA} + \beta_6 \textit{LOSS} \\ &+ \beta_7 \textit{LEVERAGE} + \beta_8 \textit{ANALYST_FOLLOWING} + \epsilon \end{aligned}$$

7.3. Earnings-before measures in highlights

1. *Main analysis*

To test hypotheses H3a and H3b, I investigate the impact of the independent variables *STATUTORY* and *nonIFRS_HIGHLIGHTS* on the number of earnings-before measures presented in the highlights section of the annual report. For this purpose, I estimate the multivariate poisson regression using the following Equation (3):

(3) *EB_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 \\ &+ \beta_1 \textit{STATUTORY} + \beta_2 \textit{nonIFRS_HIGHLIGHTS} + \beta_3 \textit{SIZE} \\ &+ \beta_4 \textit{ROA} + \beta_5 \textit{LOSS} + \beta_6 \textit{LEVERAGE} \\ &+ \beta_7 \textit{ANALYST_FOLLOWING} + \epsilon \end{aligned}$$

The dependent variable *EB_HIGHLIGHTS* represents the number of different earnings-before measures, such as EBT, EBIT and EBITDA, in the highlights of an annual report. Since it is a count variable, it is suitable to use a poisson regression model for this analysis. In line with the hypotheses, I expect the coefficients for the independent variables *STATUTORY* and *nonIFRS_HIGHLIGHTS* in Equation (3) to be positive. I again include control variables *SIZE*, *ROA*, *LOSS*, *LEVERAGE* and *ANALYST_FOLLOWING* that are found to be associated with the use of non-IFRS earnings and the use of earnings-before measures. For instance, Bouwens, De Kok

and Verriest (2019) find through textual analysis of the use of EBITDA in financial disclosures that smaller, leveraged, and less profitable firms rely on EBITDA disclosures in their financial reporting. Similarly, Rozenbaum (2019) indicates that managers who report EBITDA overleverage their firm relative to their industry peers. In addition, as in the previous equations, I control for industry and year fixed effects and cluster the standard errors by firm to correct for cross-sectional correlation in Equation (3).

To test hypothesis H4, I investigate the impact of the independent variable *RATIO_EB* on analyst forecast accuracy. For this purpose, I estimate the multivariate ordinary least squares regression using the following Equation (4):

$$(4) AFE = \beta_0 + \beta_1 RATIO_EB + \beta_2 STATUTORY + \beta_3 SIZE + \beta_4 ROA \\ + \beta_5 LOSS + \beta_6 LEVERAGE + \beta_7 ANALYST_FOLLOWING \\ + \beta_8 BIG4 + \epsilon$$

The dependent variable *AFE* represents the absolute forecast error, which is defined as the absolute value of the difference between the net income and analyst estimate scaled by net income. It is a continuous variable, defined as a variable that can take on any value in an interval of values (Gujarati and Porter, 2009). With a continuous variable as the dependent variable, I need to apply a linear model for the analysis (Gujarati and Porter, 2009). I choose to use the ordinary least squares regression model as it is the most widely used linear regression model due to its mathematical simplicity (Gujarati and Porter, 2009).

In line with the hypothesis, I expect the coefficient for the independent variable *RATIO_EB* in Equation (4) to be negative. I include *STATUTORY* as a control variable as I expect it to be associated with the reporting of non-GAAP earnings in the highlights section of the annual report. I also include the control variables *SIZE*, *ROA*, *LOSS*, *LEVERAGE* and *ANALYST_FOLLOWING* and *BIG4* that are found to be associated with the use of non-IFRS earnings and with analyst forecast accuracy

(Malone et al, 2016; Bentley et al., 2018; Bradshaw et al., 2018). In addition, as in the previous equations, I cluster the standard errors by firm to correct for cross-sectional correlation in Equation (4). Contrary to Equations (1)-(3), I leave out fixed effects in Equation (4) as one potentially significant limitation of fixed effects models is that it is not possible to assess the effect of variables that have little within-group variation (Gujarati and Porter, 2009).

2. *Robustness tests*

In order to further strengthen the results of the Equations (3) and (4), I run tests with alternative equations (3.1) through (4.7) that address H3a, H3b and H4. First, I investigate through a series of separate multivariate poisson regressions the impact of *STATUTORY* (Equation 3.1) and *nonIFRS_HIGHLIGHTS* (Equation 3.2), respectively, on the number of earnings-before measures presented in the highlights section of the annual report. I include the same control variables as in Equation (3). Similarly, I also control for industry and year fixed effects as in Equation (3) and cluster the standard errors by firm to correct for cross-sectional correlation. I use this robustness test to ascertain that having the independent variables *STATUTORY* and *nonIFRS_HIGHLIGHTS* in the same equation does not alter the interpretation of the relation between them and the dependent variable *EB_HIGHLIGHTS*. Thus, I expect the coefficients for the independent variables *STATUTORY* (Equation 3.1) and *nonIFRS_HIGHLIGHTS* (Equation 3.2) to be positive, as predicted in the hypotheses. The Equations (3.1) and (3.2) are as follows:

(3.1) *EB_HIGHLIGHTS*

$$= \beta_0 + \beta_1 \text{STATUTORY} + \beta_2 \text{SIZE} + \beta_3 \text{ROA} + \beta_4 \text{LOSS} \\ + \beta_5 \text{LEVERAGE} + \beta_6 \text{ANALYST_FOLLOWING} + \epsilon$$

(3.2) *EB_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 + \beta_1 nonIFRS_HIGHLIGHTS + \beta_2 SIZE + \beta_3 ROA \\ &+ \beta_4 LOSS + \beta_5 LEVERAGE + \beta_6 ANALYST_FOLLOWING \\ &+ \epsilon \end{aligned}$$

Secondly, I substitute the independent variable *nonIFRS_HIGHLIGHTS* with the variable *nonIFRS_HIGHLIGHTS_QUANT* in Equations (3.3) and (3.4), once together with the other independent variable *STATUTORY* and once by itself, leaving all else about the poisson regression unchanged. My intention is to strengthen my results by using a different proxy for firms presenting non-IFRS earnings in the highlights section of their annual reports. In line with H3a and H3b, I expect the coefficients for the independent variables *STATUTORY* and *nonIFRS_HIGHLIGHTS_QUANT* to be positive. The Equations (3.3) and (3.4) are as follows:

(3.3) *EB_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 \\ &+ \beta_1 STATUTORY + \beta_2 nonIFRS_HIGHLIGHTS_QUANT \\ &+ \beta_3 SIZE + \beta_4 ROA + \beta_5 LOSS + \beta_6 LEVERAGE \\ &+ \beta_7 ANALYST_FOLLOWING + \epsilon \end{aligned}$$

(3.4) *EB_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 + \beta_1 nonIFRS_HIGHLIGHTS_QUANT + \beta_2 SIZE \\ &+ \beta_3 ROA + \beta_4 LOSS + \beta_5 LEVERAGE \\ &+ \beta_6 ANALYST_FOLLOWING + \epsilon \end{aligned}$$

Additionally, I also investigate through the following series of poisson regressions whether individually omitting the control variables *SIZE* (Equation 3.5), *ROA* (Equation 3.6), *LOSS* (Equation 3.7), *LEVERAGE* (Equation 3.8) and *ANALYST_FOLLOWING* (Equation 3.9) has any impact on the results or alters the inferences gained from the main regression in Equation (3). The purpose is to gain a better understanding of how each control variables contributes to the results. I continue to cluster the standard errors by firm to correct for cross-sectional correlation. The Equations (3.5) through (3.9) are as follows:

(3.5) *EB_HIGHLIGHTS*

$$\begin{aligned}
&= \beta_0 \\
&+ \beta_1 \textit{STATUTORY} + \beta_2 \textit{nonIFRS_HIGHLIGHTS} + \beta_3 \textit{ROA} \\
&+ \beta_4 \textit{LOSS} + \beta_5 \textit{LEVERAGE} + \beta_6 \textit{ANALYST_FOLLOWING} \\
&+ \epsilon
\end{aligned}$$

(3.6) *EB_HIGHLIGHTS*

$$\begin{aligned}
&= \beta_0 \\
&+ \beta_1 \textit{STATUTORY} + \beta_2 \textit{nonIFRS_HIGHLIGHTS} + \beta_3 \textit{SIZE} \\
&+ \beta_4 \textit{LOSS} + \beta_5 \textit{LEVERAGE} + \beta_6 \textit{ANALYST_FOLLOWING} \\
&+ \epsilon
\end{aligned}$$

(3.7) *EB_HIGHLIGHTS*

$$\begin{aligned}
&= \beta_0 \\
&+ \beta_1 \textit{STATUTORY} + \beta_2 \textit{nonIFRS_HIGHLIGHTS} + \beta_3 \textit{SIZE} \\
&+ \beta_4 \textit{ROA} + \beta_5 \textit{LEVERAGE} + \beta_6 \textit{ANALYST_FOLLOWING} \\
&+ \epsilon
\end{aligned}$$

(3.8) *EB_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 \\ &+ \beta_1 \textit{STATUTORY} + \beta_2 \textit{nonIFRS_HIGHLIGHTS} + \beta_3 \textit{SIZE} \\ &+ \beta_4 \textit{ROA} + \beta_5 \textit{LOSS} + \beta_6 \textit{ANALYST_FOLLOWING} + \epsilon \end{aligned}$$

(3.9) *EB_HIGHLIGHTS*

$$\begin{aligned} &= \beta_0 \\ &+ \beta_1 \textit{STATUTORY} + \beta_2 \textit{nonIFRS_HIGHLIGHTS} + \beta_3 \textit{SIZE} \\ &+ \beta_4 \textit{ROA} + \beta_5 \textit{LOSS} + \beta_6 \textit{LEVERAGE} + \epsilon \end{aligned}$$

Finally, I do the same for Equation (4) and test with the series of ordinary least squares regressions whether individually omitting the control variables *STATUTORY* (Equation 4.1), *SIZE* (Equation 4.2), *ROA* (Equation 4.3), *LOSS* (Equation 4.4), *LEVERAGE* (Equation 4.5), *ANALYST_FOLLOWING* (Equation 4.6) and *BIG4* (Equation 4.7) has any impact on the results or alters the inferences gained from the main regression in Equation (4). I also cluster the standard errors by firm to correct for cross-sectional correlation. The Equations (4.1) through (4.7) are as follows:

$$\begin{aligned} (4.1) \textit{AFE} &= \beta_0 + \beta_1 \textit{RATIO_HIGHLIGHTS} + \beta_2 \textit{SIZE} + \beta_3 \textit{ROA} + \beta_4 \textit{LOSS} \\ &+ \beta_5 \textit{LEVERAGE} + \beta_6 \textit{ANALYST_FOLLOWING} + \beta_7 \textit{BIG4} \\ &+ \epsilon \end{aligned}$$

$$\begin{aligned} (4.2) \textit{AFE} &= \beta_0 + \beta_1 \textit{RATIO_HIGHLIGHTS} + \beta_2 \textit{STATUTORY} + \beta_3 \textit{ROA} \\ &+ \beta_4 \textit{LOSS} + \beta_5 \textit{LEVERAGE} + \beta_6 \textit{ANALYST_FOLLOWING} \\ &+ \beta_7 \textit{BIG4} + \epsilon \end{aligned}$$

$$(4.3) AFE = \beta_0 + \beta_1 \text{RATIO_HIGHLIGHTS} + \beta_2 \text{STATUTORY} + \beta_3 \text{SIZE} \\ + \beta_4 \text{LOSS} + \beta_5 \text{LEVERAGE} + \beta_6 \text{ANALYST_FOLLOWING} \\ + \beta_7 \text{BIG4} + \epsilon$$

$$(4.4) AFE = \beta_0 + \beta_1 \text{RATIO_HIGHLIGHTS} + \beta_2 \text{STATUTORY} + \beta_3 \text{SIZE} \\ + \beta_4 \text{ROA} + \beta_5 \text{LEVERAGE} + \beta_6 \text{ANALYST_FOLLOWING} \\ + \beta_7 \text{BIG4} + \epsilon$$

$$(4.5) AFE = \beta_0 + \beta_1 \text{RATIO_HIGHLIGHTS} + \beta_2 \text{STATUTORY} + \beta_3 \text{SIZE} \\ + \beta_4 \text{ROA} + \beta_5 \text{LOSS} + \beta_6 \text{ANALYST_FOLLOWING} \\ + \beta_7 \text{BIG4} + \epsilon$$

$$(4.6) AFE = \beta_0 + \beta_1 \text{RATIO_HIGHLIGHTS} + \beta_2 \text{STATUTORY} + \beta_3 \text{SIZE} \\ + \beta_4 \text{ROA} + \beta_5 \text{LOSS} + \beta_6 \text{LEVERAGE} + \beta_7 \text{BIG4} + \epsilon$$

$$(4.7) AFE = \beta_0 + \beta_1 \text{RATIO_HIGHLIGHTS} + \beta_2 \text{STATUTORY} + \beta_3 \text{SIZE} \\ + \beta_4 \text{ROA} + \beta_5 \text{LOSS} + \beta_6 \text{LEVERAGE} \\ + \beta_7 \text{ANALYST_FOLLOWING} + \epsilon$$

8. Descriptive Analysis

8.1. Descriptive statistics

In the following, I provide a descriptive analysis of my data sample based on descriptive statistics containing the summary table and the correlation table. The sample selection process is shown below in Table 2.

Table 2: Sample selection for empirical analysis

Sample	Data Prerequisites	Firms	Firm-Years
	Manual collection of non-IFRS and earnings-before data directly from annual reports of ASX 200 entities from 2013-2017	204	977
Merge	Data from WRDS Fundamental Annual, from Datastream and from WRDS Security Daily	204	977
Drop	Firms without any non-IFRS earnings in their annual report for the purpose of the regression analyses	154	627

1. *Summary table*

Table 3: Descriptive statistics of data sample

	Obs	Mean	Std.Dev.	Min	Max
nonIFRS	977	0.642	0.480	0	1
nonIFRS_HIGHLIGHTS	627	0.467	0.499	0	1
nonIFRS_HIGHLIGHTS_QUANT	627	0.777	0.993	0	4
HIGHLIGHTS_AUDITED	627	0.207	0.406	0	1
BEAT_ANALYST	463	0.879	0.326	0	1

HIGHLIGHTS_BEAT_ANALYST	463	0.393	0.489	0	1
BEAT_IFRS	627	0.858	0.349	0	1
HIGHLIGHTS_BEAT_IFRS	627	0.404	0.491	0	1
STATUTORY	627	0.392	0.489	0	1
EBT_IS	191	0.974	0.160	0	1
EBIT_IS	191	0.419	0.495	0	1
EBITDA_IS	191	0.105	0.307	0	1
SUBTOTALS	191	1.497	0.687	0	3
SUBTOTALS_dummy	191	0.974	0.160	0	1
EBT_HIGHLIGHTS	977	0.047	0.212	0	1
EBIT_HIGHLIGHTS	977	0.098	0.298	0	1
EBITDA_HIGHLIGHTS	977	0.088	0.283	0	1
EB_HIGHLIGHTS	977	0.233	0.559	0	3
RATIO_EB	322	0.205	0.338	0	1
AFE	609	1.370	8.668	0	169.389
SIZE	877	7.932	1.867	1.550	13.792
ROA	842	0.047	0.123	-1.200	0.576
LOSS	842	0.146	0.351	0	1
LEVERAGE	865	1.949	11.510	-275.620	145.164
ANALYST_FOLLOWING	614	12.531	4.014	1	27
BIG4	885	0.899	0.300	0	1

Table 3 presents the descriptive statistics of the data sample. In total, the data sample offers 977 firm-year observations, each corresponding to one annual report from which non-IFRS information is manually collected. Around 64 percent of these observations have annual reports that contain at least one non-IFRS earnings measure,

irrespective of the annual report section it is presented in. Of these 627 annual reports containing non-IFRS earnings, around 47 percent provide non-IFRS earnings in the highlights section. Examining these non-IFRS earnings with regards to their origins, it is noted that around 21 percent of the 627 annual reports have non-IFRS earnings from audited sections in their highlights. Thus, it can be deduced that around 26 percent¹⁷ have non-IFRS earnings from unaudited sections in their highlights. This is a comparatively higher proportion than the annual reports that have non-IFRS highlights from audited sections in their highlights. Compared to the presence of non-IFRS earnings in the highlights section, around 39 percent of the 627 annual reports have the statutory net income in the highlights section, a slightly lower proportion than the 47 percent with non-IFRS earnings in their highlights section.

Taking a closer look at non-IFRS earnings beating earnings benchmarks, it can be noted that of the above mentioned 627 annual reports containing non-IFRS earnings, around 86 percent contain non-IFRS earnings that beat the statutory net income while around 40 percent not only contain non-IFRS earnings that beat the statutory net income, but also have them in the highlights section. Due to the limited information on analyst earnings estimates available, the number of observations that are related to analyst earnings estimates are limited to 463 out of the 627 annual reports containing non-IFRS earnings. Out of these 463 annual reports, around 88 percent contain non-IFRS earnings that beat the analyst earnings estimate while around 39 percent not only contain non-IFRS earnings that beat the analyst earnings estimate, but also have them in the highlights section.

Taking a closer look at the earnings-before measures in the highlights section, it can be noted that out of the total 977 annual reports observed, around 5 percent have EBT in their highlights while around 10 percent have EBIT in their highlights and 9 percent have EBITDA in their highlights. Between the earnings-before measures, EBIT appears comparatively more often in the highlights section of

¹⁷ This equals 47 percent minus 21 percent.

the 977 annual reports in the sample. Examining the earnings-before measures as subtotals in the income statement, it can be noted that the majority, more specifically around 97 percent, of income statements out of the 191 annual reports from the year 2017 contain subtotals. On average, one income statement of the observed sample of 191 annual reports contains around 1.5 out of three earnings-before measures as subtotals. Comparing the different earnings-before measures in the 191 annual reports, EBT with around 97 percent of the 191 observations appears most often as a subtotal in the income statement, followed by EBIT with around 42 percent and finally by EBITDA with around 11 percent.

It should also be mentioned that the number of observations for the variables collected from data bases vary depending on data availability, similar to the non-IFRS earnings data related to analyst earnings estimates. Thus, it can be noted that out of 842 firm-year observations in the sample, around 15 percent are loss firm-years. This is comparable to the sample used by Leung and Veenman (2018) who investigate U.S. firms from 2006 to 2014 of which 14 percent¹⁸ are firm-quarters with a loss.

Furthermore, analyst following for 614 firm-year observations ranges from 1 to 27 analysts, with around 13 analysts on average following a firm in a specific year. Finally, it can be noted that out of 885 firm-year observations, around 90 percent of firms are audited by a Big 4 accounting firm in a given year.

2. *Correlation table*

¹⁸ Calculated by dividing the number of loss firm-quarters (16,192) by the number of unique firm-quarters (113,575), both numbers found in the sample selection details (p. 1096).

Table 4: Pairwise correlation coefficients

LOSS	STATUTORY	ANALYST_ FOLLOWING	SIZE	ROA	BIG4	LEVERAGE
1.0000						
-0.0391	1.0000					
-0.0285	0.0383	1.0000				
-0.1346*	0.0561	0.5199*	1.0000			
-0.5869*	0.0729	-0.0583	-0.0844*	1.0000		
-0.0345	-0.0974*	0.2186*	0.2722*	0.0381	1.0000	
0.0073	-0.0047	0.0371	0.1531*	-0.0733*	0.0528	1.0000

	nonIFRS_ HIGHLIGHTS	HIGHLIGHTS _AUDITED	BEAT_ ANALYST	BEAT_IFRS	RATIO_EB	AFE
nonIFRS_ HIGHLIGHTS	1.0000					
HIGHLIGHTS _AUDITED	0.5461*	1.0000				
BEAT_ ANALYST	0.0744	0.1203*	1.0000			
BEAT_IFRS	0.1245*	0.0953*	0.2392*	1.0000		
RATIO_EB	-0.8628*	-0.2777*	-0.0993	-0.0849	1.0000	
AFE	0.0685	-0.0366	-0.0302	-0.0573	-0.0719	1.0000
LOSS	0.0446	-0.0189	-0.0145	0.1584*	-0.0894	0.0431
STATUTORY	0.5175*	0.2981*	-0.0035	-0.0569	0.0274	-0.0080
ANALYST_ FOLLOWING	0.1167*	0.1023*	-0.0382	0.1779*	-0.1404*	0.0492
SIZE	-0.0027	0.1352*	-0.0486	-0.0342	-0.0738	0.0070
ROA	-0.0060	0.0006	0.0651	-0.1890*	0.2162*	-0.0708
BIG4	-0.0950*	0.0097	0.0225	0.0225	0.0424	0.0244
LEVERAGE	-0.0037	-0.0210	-0.0408	0.0662	-0.0021	-0.0115

Correlation coefficients with *p<0.05

Table 4 presents all pairwise correlation coefficients of the data sample. It contains the correlation coefficients between the variables of interest in Equations (1) through (4), including their robustness tests. Correlation coefficients measure how strongly two variables are related to each other and range from -1 to 1. The farther away the correlation coefficient is from zero, the stronger is the correlation between the two variables. A positive correlation coefficient suggests that an observation with a high value for one variable is likely to have a high value for the other variable. A negative correlation coefficient suggests the opposite – that an observation with a high value for one variable is likely to have a low value for the other variable.

A strong and significant correlation with a negative correlation coefficient of $r = -0.86$ can be observed between the variables *nonIFRS_HIGHLIGHTS* and *RATIO_EB*. This is as expected, since a higher number of non-IFRS earnings in the highlights also increases the denominator in the formula for the variable *RATIO_EB*. The strong and significant correlations of the variable *nonIFRS_HIGHLIGHTS* with the variable *STATUTORY* ($r = 0.52$) indicate that the presentation of non-IFRS earnings in the highlights corresponds with statutory net income being in the highlights. This follows the expectation raised in *H1a*. The variable *nonIFRS_HIGHLIGHTS* is also strongly and significantly correlated with the variable *HIGHLIGHTS_AUDITED* ($r = 0.55$). This positive relationship is also as expected since both variables depict the presence of non-IFRS earnings in the highlights section. Further strong and significant correlations can be observed between the variables *LOSS* and *ROA* ($r = -0.59$), and *ANALYST_FOLLOWING* and *SIZE* ($r = 0.52$). They suggest that loss firms are associated with having lower return on assets and that bigger firms are associated with having more analysts following.

Weaker correlations that are still significant can be observed between the following pairs of variables: *HIGHLIGHTS_AUDITED* and *STATUTORY* ($r = 0.30$), *HIGHLIGHTS_AUDITED* and *RATIO_EB* ($r = -0.28$), *HIGHLIGHTS_AUDITED* and *BEAT_ANALYST* ($r = 0.12$), *BEAT_ANALYST* and *BEAT_IFRS* ($r = 0.24$), *BEAT_IFRS* and *nonIFRS_HIGHLIGHTS* ($r = 0.12$), *BEAT_IFRS* and *HIGHLIGHTS_AUDITED* ($r = 0.10$), *BEAT_IFRS* and *LOSS* ($r = 0.16$), *BEAT_IFRS*

and *ANALYST_FOLLOWING* ($r = 0.18$), *BEAT_IFRS* and *ROA* ($r = -0.19$), *RATIO_EB* and *ROA* ($r = 0.22$), *ANALYST_FOLLOWING* and *BIG4* ($r = 0.22$), *ANALYST_FOLLOWING* and *nonIFRS_HIGHLIGHTS* ($r = 0.12$), *ANALYST_FOLLOWING* and *HIGHLIGHTS_AUDITED* ($r = 0.10$), *ANALYST_FOLLOWING* and *RATIO_EB* ($r = -0.14$), *SIZE* and *HIGHLIGHTS_AUDITED* ($r = 0.13$), *SIZE* and *LOSS* ($r = -0.13$), *SIZE* and *BIG4* ($r = 0.27$), *SIZE* and *LEVERAGE* ($r = 0.15$), *BIG4* and *nonIFRS_HIGHLIGHTS* ($r = -0.10$), and *BIG4* and *STATUTORY* ($r = -0.10$).

These correlations also are to be expected as they suggest for instance that the presentation of non-IFRS earnings from audited sections in highlights is positively associated with the presence of statutory net income in the highlights and also with the beating of earnings benchmarks. This corresponds with the expectations presented through *H2a*, *H2b* and *H2c*. Furthermore, these correlations indicate for example that non-IFRS earnings beating analyst earnings estimates is positively associated with non-IFRS earnings beating statutory net income, another benchmark beating behavior that firms tend to exhibit. It is also suggested that this behavior of beating earnings benchmarks with non-IFRS earnings is correlated with the firm's profitability and its number of analysts following. The control variables measuring the firm size, the number of analysts following, and audit quality are also positively correlated with each other.

8.2. Descriptive graphs

In the following, I provide a descriptive analysis of my data sample based on graphs that are divided into four separate sections. The first section contains graphs with data that refers to the entirety of the annual report. The second and third section contain graphs with data that focus on specific sections of the annual report, namely the highlights and the income statement respectively. Lastly, the fourth section contains graphs that offer a perspective based on the different industries contained in the data sample.

1. *Annual report*

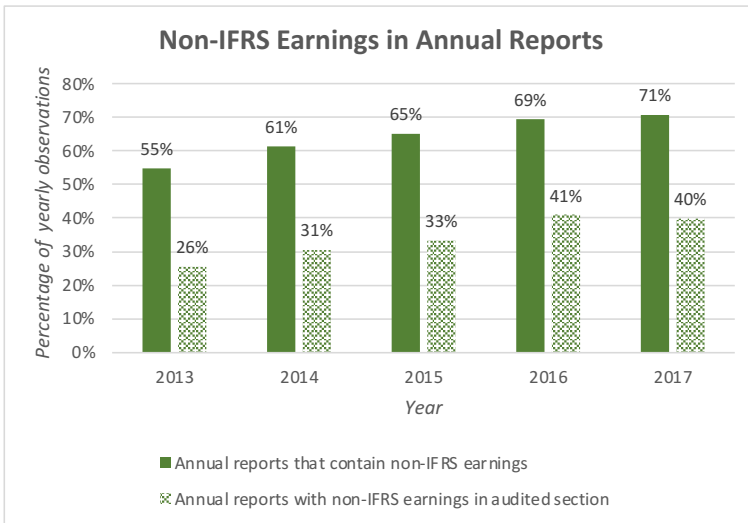


Figure 1: Non-IFRS earnings in annual reports

Figure 1 provides insights about the non-IFRS earnings in annual reports of ASX 200 firms over the period from 2013 to 2017. Of the total 977 annual reports in the data sample, 199 annual reports are from the year 2013, 196 annual reports from the year 2014, 195 annual reports from the year 2015, 193 annual reports from the year 2016, and 194 annual reports from the year 2017. Of the two bars for each year, the first bar depicts the percentage of annual reports per year that contain non-IFRS earnings. It is calculated with the number of annual reports containing non-IFRS earnings in a specific year divided by the number of total annual reports that year. The second bar depicts the percentage of annual reports per year that contain non-IFRS earnings in the audited section. It is calculated with the number of annual reports containing non-IFRS earnings in the audited section divided by the number of total annual reports that year.

From 2013 to 2017, there is a total steady increase of 16 percent for annual reports that contain non-IFRS earnings. This underlines the increasing global popularity of using non-IFRS earnings to communicate earnings performance. At the same time, the percentage of annual reports with non-IFRS earnings in the audited section has increased from 26 percent in 2013 to 40 percent in 2017. This means that the proportion of annual reports containing non-IFRS earnings in audited section compared to those present non-IFRS earnings only in unaudited sections has increased from 47 percent in 2013 to 56 percent in 2017. This suggests the growing popularity of non-IFRS earnings is accompanied by more transparency and accountability in their disclosure as they are increasingly found in the audited section of the annual report.

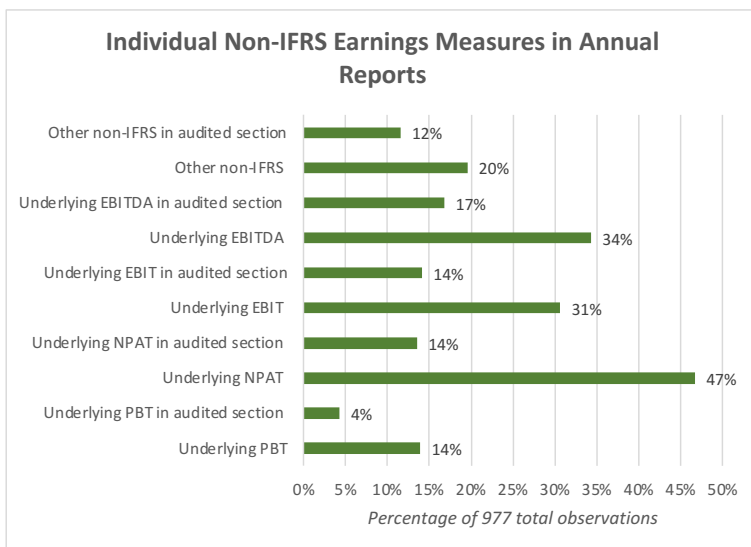


Figure 2: Individual non-IFRS earnings measures in annual reports

Figure 2 shows details about the individual non-IFRS earnings measures presented in annual reports of ASX 200 firms over the period from 2013 to 2017. The percentages represent the proportion of annual reports in the sample that contain a

specific non-IFRS earnings measure either in their entirety or in their audited section. The percentage is calculated with the number of annual reports containing a specific non-IFRS earnings measure divided by the total amount of 977 annual reports that the data sample offers.

It should be noted that underlying NPAT is the non-IFRS earnings measure that is most often presented in general, with 47 percent of annual reports containing underlying NPAT throughout their different sections. However, underlying EBITDA is the non-IFRS earnings measure that is most often presented in the audited section, with 17 percent of annual reports in the sample containing underlying EBITDA in their audited section. This suggests that there might be slight differences between the individual non-IFRS earnings measures when it comes to choosing which measure to employ in annual reports and in which section to disclose them.

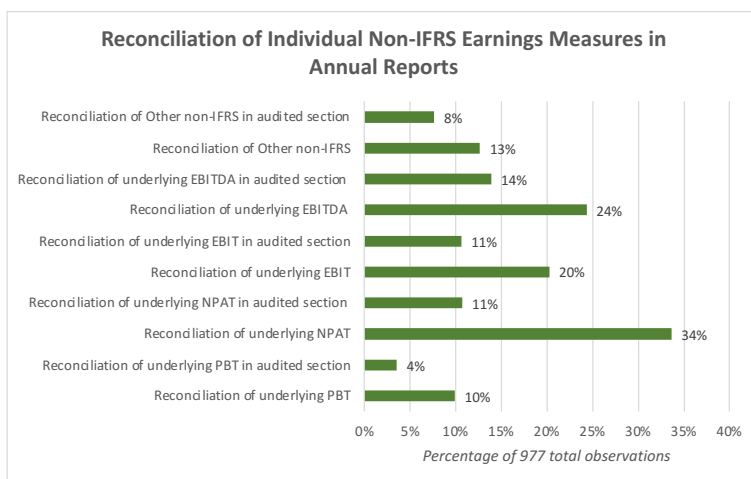


Figure 3: Reconciliation of individual non-IFRS earnings in annual reports

Figure 3 contains information on the reconciliation of individual non-IFRS earnings measures in annual reports of ASX 200 firms over the period from 2013 to 2017. The percentage is calculated with the number of annual reports containing a reconciliation divided by the total amount of 977 annual reports that the data sample

offers. It represents the proportion of annual reports that contain a reconciliation for a specific non-IFRS earnings measure either in their audited section and in the entire annual report including the unaudited sections.

A reconciliation throughout the annual report can be found most often for underlying NPAT as an individual non-IFRS measure. This corresponds to the observation from Figure 2. Similarly, a reconciliation in the audited section occurs most often for underlying EBITDA as an individual non-IFRS measure, also corresponding to the observation from Figure 2. Combining the information from Figure 2 and Figure 3, I observe that non-IFRS earnings in the audited section are accompanied by reconciliations more often than non-IFRS earnings that are not disclosed in the audited section. This further points towards a higher level of transparency and informativeness for non-IFRS earnings that are disclosed in the audited section of annual reports.

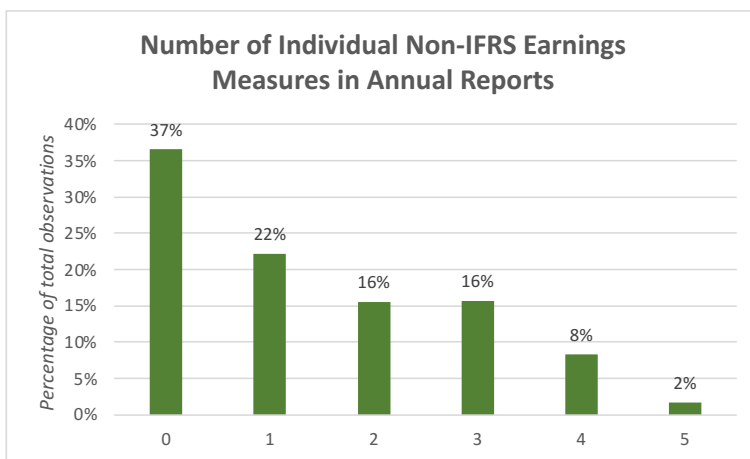


Figure 4: Number of individual non-IFRS earnings measures in annual reports

Figure 4 provides insights on the number of different individual non-IFRS earnings measures per annual report based on the total sample of ASX 200 firms over the period from 2013 to 2017. It should be noted here that only individual non-IFRS

earnings are considered, not individual earnings-before measures. The percentage is calculated with the number of annual reports containing a specific number of individual non-IFRS earnings measures divided by the total amount of 977 annual reports that the data sample offers. The individual number of non-IFRS earnings measures range from zero to five, falling under the categories underlying NPAT; underlying PBT, underlying EBIT, underlying EBITDA and Other non-IFRS earnings measures.

63 percent¹⁹ of annual reports in the sample, a majority, contain at least one non-IFRS earnings measure. More specifically, 22 percent contain only one individual non-IFRS earnings measure while only 2 percent of annual reports contain five individual measures. A high number of individual non-IFRS earnings measures in an annual report might indicate a more disaggregated earnings presentation. This could either correspond to an informative intention to provide more details on the earnings performance or to an opportunistic intention to mislead readers through an overabundance of individual earnings measures.

¹⁹ 100 percent minus 37 percent equals 63 percent

2. *Highlights*

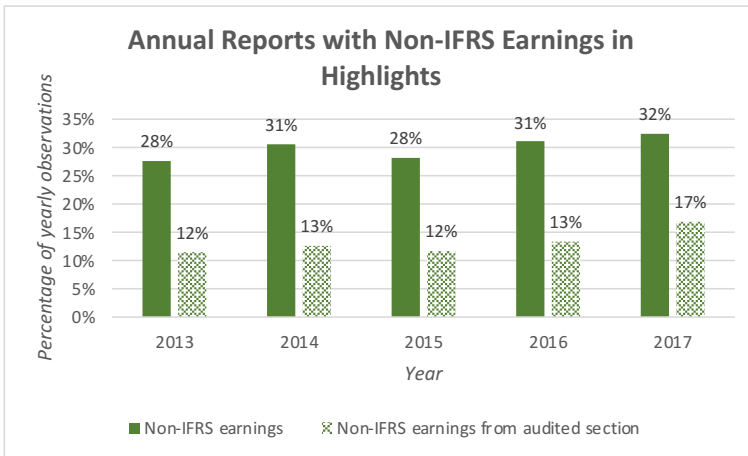


Figure 5: Annual reports with non-IFRS earnings in highlights

Figure 5 offers insights on non-IFRS earnings in the highlights of annual reports of ASX 200 firms over the period from 2013 to 2017. Of the two bars for each year, the first bar shows the percentage of annual reports per year that contain non-IFRS earnings in their highlights. The percentage is based on the number of total annual reports per specific year. The second bar depicts the percentage of annual reports per year that contain non-IFRS earnings from audited sections in their highlights. The percentage is again based on the number of total annual reports per specific year.

It can be noted that out of all annual reports per year, there has been a slight increase from 28 percent to 32 percent for annual reports that contain non-IFRS earnings in highlights over the sample period. Similarly, there has been a slight increase from 12 percent to 17 percent for annual reports that contain non-IFRS from audited sections in the highlights. Thus, it suggests that compared to 2013, more firms in 2017 prefer to use the highlights section to present non-IFRS earnings information, both from audited and unaudited sections. This observation points towards the

highlights section being increasingly used as a communication channel for earnings performance and supports the need to closely examine their motivations for doing so.

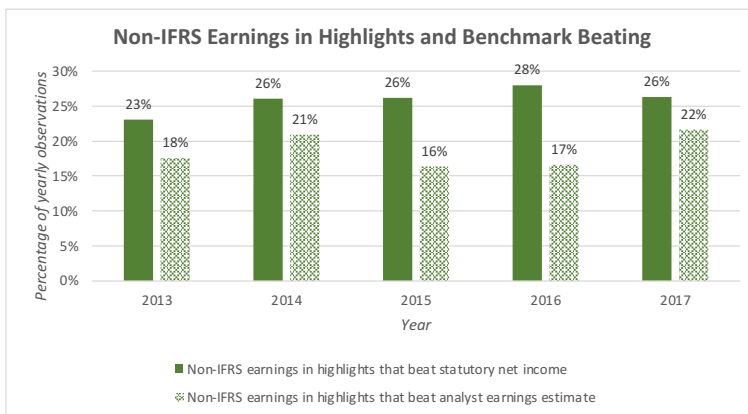


Figure 6: Non-IFRS earnings in highlights and benchmark beating

Figure 6 provides information on non-IFRS earnings in the highlights of annual reports and their beating of earnings benchmarks. Again, the percentages are based on the number of total annual reports of ASX 200 firms per specific year over the period from 2013 to 2017. Of the two bars for each year, the first bar reflects the percentage of annual reports per year that contain non-IFRS earnings that beat statutory net income in their highlights. The second bar shows the percentage of annual reports per year that contain non-IFRS earnings that beat analyst earnings estimate in their highlights.

Throughout the observation period, firms present more often non-IFRS earnings in the highlights of annual reports that beat statutory net income than non-IFRS earnings that beat analyst earnings estimate. This corresponds to the previous literature that finds that non-IFRS earnings are likely to be higher than statutory net income (Marques, 2006; Choi et al., 2007; Isidro and Marques, 2013). Comparing the highlights section of annual reports from years 2013 and 2017, there has been a slight increase from 23 percent to 26 percent for non-IFRS earnings that beat statutory net

income and also a slight increase from 18 percent to 22 percent for non-IFRS earnings that beat earnings analyst estimate. Combined with Figure 5, it can be noted that the majority of non-IFRS earnings in highlights of annual reports beat earnings benchmarks. Thus, the information gained through Figure 6 indicates an increasing preference of firms to highlight non-IFRS earnings that beat earnings benchmarks in their earnings communication and points on the surface to an increase in opportunistic motivations for presenting non-IFRS earnings.

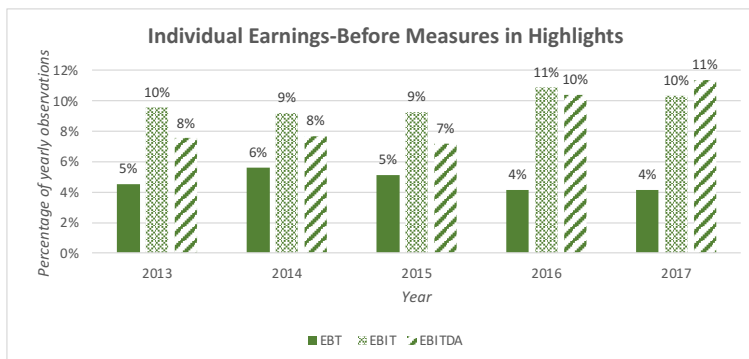


Figure 7: Individual earnings-before measures in highlights

Figure 7 offers insights on individual earnings-before measures in the highlights of annual reports of ASX 200 firms over the period from 2013 to 2017. The percentages are based on the number of total annual reports per specific year. Of the three bars for each year, the first bar reflects the percentage of annual reports per year that contain an EBT measure in their highlights. The second bar mirrors the percentage of annual reports per year that contain an EBIT measure in their highlights while the third bar shows the percentage of annual reports per year that contain an EBITDA measure in their highlights.

For the years from 2013 to 2016, EBIT is the earnings-before measure most often reported in the highlights. Only in 2017 does EBITA trump EBIT as the most often reported earnings-before measure in the highlights. From 2013 to 2017, EBT

stays the earnings-before measure that is the least reported in the highlights. This suggests that there are characteristic differences between the different earnings-before measures that lead to them being selected to present the earnings performance in the highlights of annual reports. Combining the information from Figure 5 and Figure 7, it can be observed that from 2013 to 2017, the highlights of annual reports in a specific year contain around three times more often non-IFRS earnings than earnings-before measures. This indicates that firms in the sample prefer to present non-IFRS earnings rather than earnings-before measure in the highlights. This might be related to the fact that on-IFRS earnings are less standardized and more flexible earnings performance measures.

3. *Income statement*

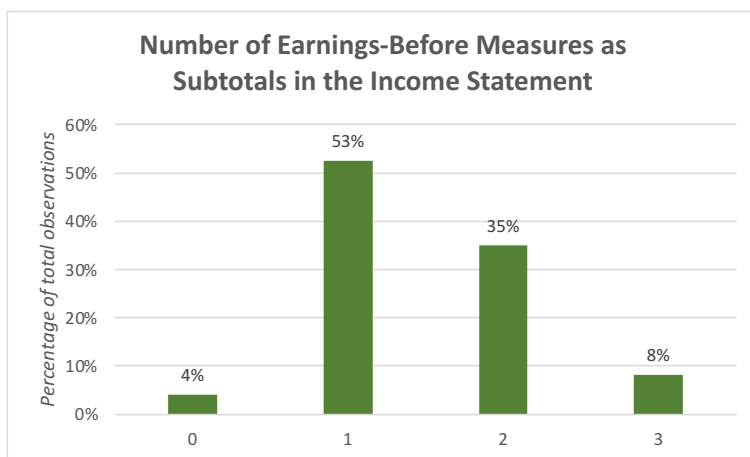


Figure 8: Number of earnings-before measures as subtotals in the income statement

Figure 8 presents information on the number of individual earnings-before measures that appear as subtotals in the income statement of annual reports. The percentages are based on the total number of 194 annual reports of ASX 200 firms in 2017 and present the proportion of annual reports that contain a specific number of earnings-before measures in their income statements. The percentages are calculated

with the number of annual reports containing a specific number of individual earnings-before measures in their income statements divided by the total amount of 194 annual reports from 2017. The number of earnings-before measures range from zero to three, including EBT, EBIT and EBITDA.

Around 53 percent, more than half the annual reports from 2017 have one earnings-before measure as subtotal in their income statement. Around one third, namely 35 percent, have two while only 8 percent have three earnings-before measures as subtotals in their income statement. This suggests that income statements are less likely to be disaggregated with several subtotals. However, only 4 percent of annual reports have zero earnings-before measures as subtotals in their income statements, suggesting that firms prefer to have at least one subtotal in their income statements to provide more earnings information in a disaggregated manner.

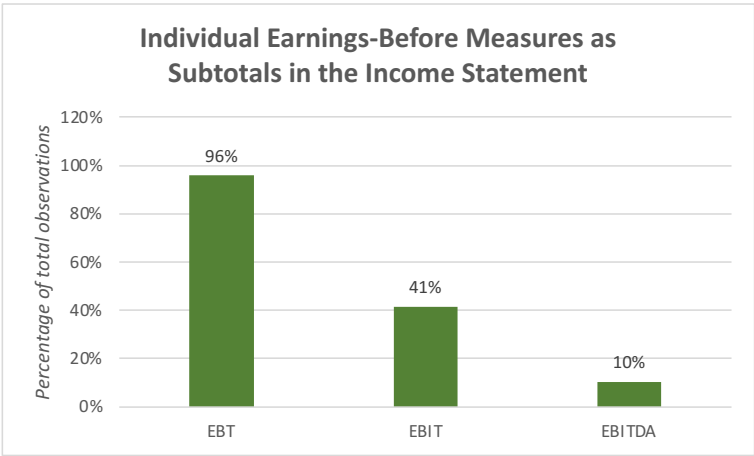


Figure 9: Individual earnings-before measures as subtotals in the income statement

Figure 9 provides insights on individual earnings-before measures as subtotals in the income statement. The percentages are based on the total number of 194 annual reports of ASX 200 firms in 2017 and present the proportion of annual reports that contain a specific earnings-before measure, meaning either EBT, EBIT,

or EBITDA, as a subtotal in their income statements. The percentages are calculated with the number of annual reports containing a specific earnings-before measure in their income statements divided by the total number of 194 annual reports in 2017.

It can be observed that almost all annual reports, namely 96 percent, from 2017 contain EBT as an earnings-before measure in the income statement. This is a notable difference to the least common earnings-before measure EBITDA. EBITDA is only disclosed in the income statement by 10 percent of the ASX 200 firms in 2017. EBIT however is disclosed in the income statement by 41 percent of the ASX 200 firms in 2017. This suggests that firms might have a clear preference regarding which earnings-before measures to disclose in the income statement.

4. Industry

As descriptive analyses of previous studies suggest, non-GAAP earnings appear to be used more commonly in certain industries than others (Bhattacharya et al., 2004; Bowen et al., 2005; Zhang and Zheng, 2011). For instance, non-GAAP reporting seem to concentrate in technology and manufacturing companies in the sample used by Bhattacharya et al. (2004), which contains U.S. companies. The observation that non-GAAP reporting varies across industries holds across countries, as Aubert and Grudnitski (2014) and Isidro and Marques (2015) indicate with their sample of European companies that non-GAAP reporting happens most often in manufacturing, material, and finance companies. Coulton et al. (2016) demonstrate with their sample of Australian companies that the picture is also similar in Australia, with firms from the utilities and finance industry most often reporting non-IFRS figures. In the following figures, I expand these observations with my sample of ASX 200 Australian companies categorized by industry and their non-GAAP reporting behavior.

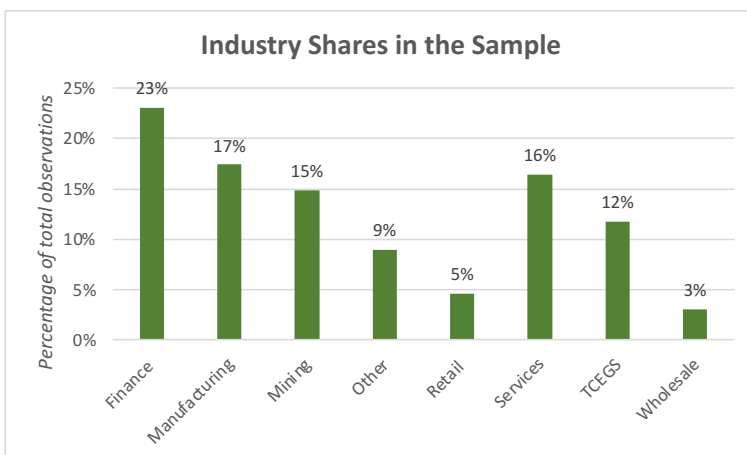


Figure 10: Industry shares in the sample

Figures 10 through 16 allow us to gain a more comprehensive understanding regarding the non-IFRS earnings in our sample in the context of the existing industries. Figure 10 provides information on the industry composition of the data sample. The percentages reflect the proportion of total observations that belong to a specific industry. They are based on the total number of 977 observations on ASX 200 firms over the period from 2013 to 2017. The industries present in the sample can be separated into eight categories including finance, manufacturing, mining, other, retail, services, TCEGS (Transportation, Communication, Electric, Gas and Sanitary Services) and Wholesale.

It is to be noted that almost a quarter of the observations are based on firms from the finance industry while the retail trade and wholesale trade are only represented in 5 percent and 4 percent of the observations, respectively. This shows that the industry composition and the weight of the different industries in the ASX 200 are varied, which is taken into consideration through industry fixed effects in the empirical analyses.

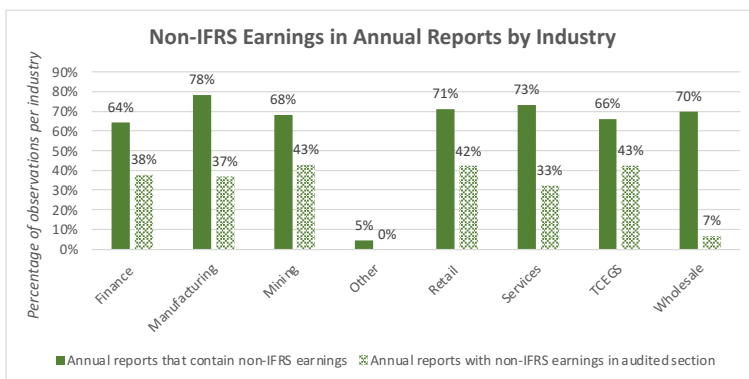


Figure 11: Non-IFRS earnings in annual reports by industry

Figure 11 provides insights on non-IFRS earnings in annual reports by industry. The percentages are based on the total number of annual reports of ASX 200 firms over the period from 2013 to 2017 per specific industry. Of the total 977 annual reports in the data sample, 225 annual reports are from the finance industry, 170 annual reports from the manufacturing industry, 145 annual reports from the mining industry, 87 annual reports from other industries that do not fall under a specific category, 45 annual reports from the retail industry, 160 annual reports from the services industry, 115 annual reports from the TCEGS industry, and 30 annual reports from the wholesale industry. Of the two bars for each industry, the first bar mirrors the percentage of annual reports per specific industry that contain non-IFRS earnings. The second bar shows the percentage of annual reports per specific industry that contain non-IFRS earnings in the audited section.

Figure 11 shows that the manufacturing industry exhibits the highest proportion (78 percent) of annual reports that contain non-IFRS earnings. Compared with the finance industry that has the smallest proportion (64 percent) of annual reports that contain non-IFRS earnings, it can be noted that there is a difference of maximum 14 percent between the individual industries when it comes to the proportion of annual reports that contain non-IFRS earnings. The difference is bigger

when it comes to whether these annual reports disclose non-IFRS earnings in their audited sections. Figure 11 shoes that the mining industry and the TCEGS industry have the highest proportion (both 43 percent) of annual reports that contain non-IFRS earnings in their audited sections. In comparison, only 7 percent of observations in the wholesale trade industry has annual reports that contain non-IFRS earnings in their audited sections. This indicates that there is a difference between firms from separate industries in how they choose to disclose their non-IFRS earnings in annual reports – whether to disclose them in audited or only in unaudited sections.

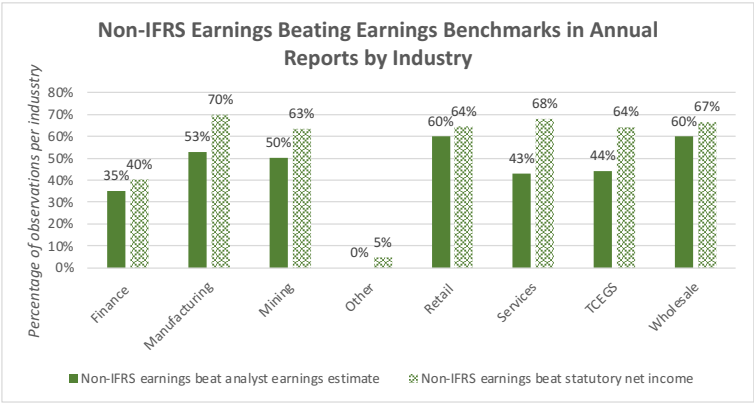


Figure 12: Non-IFRS earnings beating earnings benchmarks in annual reports by industry

Figure 12 conveys information about non-IFRS earnings that beat earnings benchmarks in annual reports by industry. As in Figure 11, the percentages are based on the total number of 977 annual reports of ASX 200 firms over period from 2013 to 2017 per specific industry. Of the two bars for each industry, the first bar shows the percentage of annual reports per specific industry that contain non-IFRS earnings that beat analyst earnings estimate. The second bar depicts the percentage of annual reports per specific industry that contain non-IFRS earnings that beat the statutory net income.

The finance industry has 35 percent of annual reports that contain non-IFRS earnings that beat analyst earnings estimates and 40 percent of annual reports that contain non-IFRS earnings that beat statutory net income. Both percentages are the lowest of all the defined industries, apart from undefined other industries. In comparison, the manufacturing industry has the highest percentage (70 percent) of annual reports that contain non-IFRS earnings that beat the statutory net income and the wholesale industry has the highest percentage (60 percent) of annual reports that contain non-IFRS earnings that beat analyst earnings estimates. This might indicate that benchmark beating behavior, which can be associated with opportunistic incentives, is more pronounced across firms belonging to certain industries and less pronounced across firms in other industries. In the data sample on hand, it might indicate that firms in the finance industry disclose non-IFRS less opportunistically than firms in the manufacturing or the wholesale industry.

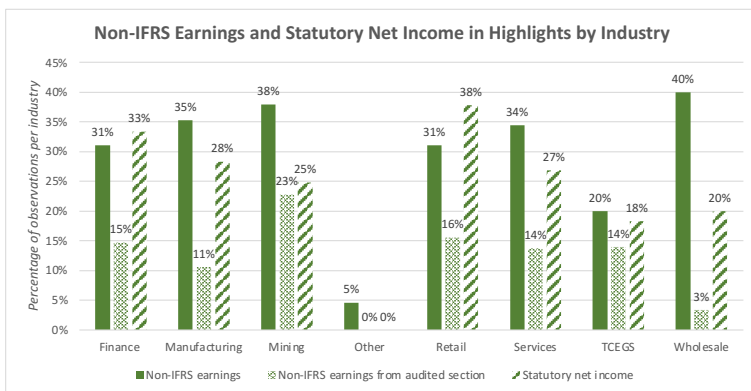


Figure 13: Non-IFRS earnings and statutory net income in highlights by industry

Figure 13 offers information on non-IFRS and statutory net income in highlights of annual reports by industry. The percentages again are based on the total number of 977 annual reports of ASX 200 firms over the period from 2013 to 2017 per specific industry. Of the three bars for each industry, the first bar shows the percentage of annual reports per specific industry that contain non-IFRS earnings in

their highlights. The second bar depicts the percentage of annual reports per specific industry that contain non-IFRS earnings from the audited section in their highlight. The third bar shows the percentage of annual reports per specific industry that contain the statutory net income in their highlights.

The wholesale industry has the highest proportion (40 percent) of annual reports with non-IFRS earnings in their highlights. At the same time, it has the lowest proportion (3 percent) of annual reports with non-IFRS from the audited section in the highlights. This indicates that firms in the wholesale industry most often present non-IFRS earnings from unaudited section in their highlights. As external assurance reflects transparency and informativeness, this again points towards the indication that firms in the wholesale industry might present non-IFRS earnings more opportunistically in their highlights. Out of all industries in the data sample, the wholesale industry also has the highest difference in percentages between the first and the third bar. This suggests that firms in the wholesale industry might prioritize non-IFRS earnings more often in their communication of earnings performance than the statutory net income. Furthermore, it indicates that firms in the wholesale industry might often present non-IFRS earnings in the highlights without offering a comparable statutory earnings measure which might also be associated with opportunistic behavior.

The TCEGS industry has the smallest difference in percentages between the first and the third bar. This indicates that firms in the TCEGS industry often present non-IFRS earnings and the statutory net income together in the highlights of their annual reports. In addition, the TCEGS industry also has the smallest different in percentages between the first and the second bar. This indicates that, when they have the choice between non-IFRS earnings from the audited section and non-IFRS earnings from the unaudited section, firms in the TCEGS industry more often choose to present non-IFRS earnings from audited sections in the highlights of their annual reports than other firms.

The finance and the retail industry both have a higher percentage and firms that display statutory net income in the highlights than firms that display non-IFRS earnings in the highlights. This indicates that the firms in both industries might prefer to communicate earnings information that is more uniform and comparable with other firms. However, as the difference in percentages is only 2 percent for the finance and 7 percent for the retail industry, it also might indicate that firms in both industries prefer to present non-IFRS earnings and the statutory net income together in the highlights of their annual reports.

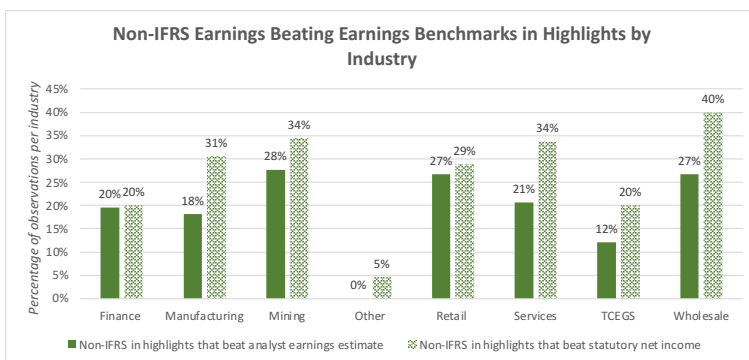


Figure 14: Non-IFRS earnings beating earnings benchmarks in highlights by industry

Figure 14 shows information on non-IFRS beating earnings benchmarks in highlights of annual reports by industry. The percentages are again based on the total number of 977 annual reports of ASX 200 firms over the period from 2013 to 2017 per specific industry. Of the two bars for each industry, the first bar shows the percentage of annual reports per specific industry that contain non-IFRS earnings in their highlights that beat the analyst earnings estimate. The second bar reflects the percentage of annual reports per specific industry that contain non-IFRS earnings their highlights that beat the statutory net income.

The wholesale trade industry has the highest proportion (40 percent) of annual reports in which the non-IFRS earnings in the highlights beat the statutory income. The mining industry has the highest proportion (28 percent) of annual reports in which the non-IFRS earnings in the highlights section beat the analyst earnings estimate. In comparison, the TCEGS industry has 12 percent of annual reports that contain non-IFRS earnings in their highlights that beat analyst earnings estimates, the lowest of all defined industries. Together with the finance industry, the TCEGS industry also has the lowest percentage (20 percent) of annual reports that contain non-IFRS earnings in their highlights that beat the statutory net income out of all defined industries. As benchmark beating behavior might be seen as an indication for opportunistic reporting behavior, this might further suggest that firms from certain industries might more often prioritize opportunistic non-IFRS earnings in their communication of earnings performance than other firms.

Combined with the information from the above figures, it is possible to note that firms and industries display different preferences regarding the use of non-IFRS earnings in the highlights section of the annual report compared to the use of non-IFRS earnings in the entire annual report. This indicates that firms deliberately choose to prioritize and emphasize certain measures of earnings performance in their communication to investors and readers of the annual report. This further underlines the importance to closely examine the highlights section and the non-IFRS earnings that are deliberately highlighted.

9. Empirical Analysis

9.1. Non-IFRS earnings in highlights

1. Main analysis

Table 5: Empirical results of main analysis for H1a, H1b and H1c

	Equation (1) H1a, H1b and H1c
	nonIFRS_HIGHLIGHTS
STATUTORY	6.156*** (5.72)
BEAT_IFRS	2.952*** (2.93)
BEAT_ANALYST	1.349*** (2.98)
SIZE	-0.679** (-2.32)
ROA	-2.279 (-0.63)
LOSS	0.639 (1.03)
LEVERAGE	-0.00338 (-1.05)
ANALYST_FOLLOWING	0.401*** (2.71)
Constant	-6.731** (-2.03)
Year FE	Yes
Industry FE	Yes
Pseudo-R ²	0.533
N	268

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R^2 as pseudo- R^2 . * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The results in Table 5 show that firms are more likely to present non-IFRS earnings in the highlights section when the statutory net income is in the highlights section, when non-IFRS earnings beat the statutory net income or when the non-IFRS earnings beat the analyst earnings estimate.

Table 5 displays the results for the multivariate logit regression for *H1a*, *H1b* and *H1c*. My expectation regarding *H1a* is corroborated by the results, as the coefficient for *STATUTORY* ($\beta = 6.156$, $p < 0.01$) is positive and statistically significant. This means that firms are more likely to disclose non-IFRS earnings in the highlights section when statutory net income is presented in the highlights section. This outcome suggests that non-IFRS earnings are used by firms as a supplement to the comparable statutory net income to add earnings information for investors that is not contained in the statutory net income alone. This corresponds to the findings by Ribeiro et al. (2019) which indicate that non-IFRS earnings are more persistent, smoother, more value-relevant and have higher predictive power than their closest statutory equivalent. It also lends explanation to the increasing prevalence of non-IFRS earnings in annual reports which has been observed in previous studies (Entwistle et al., 2006; Marques, 2006; Choi et al., 2007; Heflin and Hsu, 2008; Hitz, 2010; Zhang and Zheng, 2011; Black et al., 2012; Choi and Young, 2015; Isidro and Marques, 2015; Black et al., 2018) and indicates that statutory net income alone not enough to communicate earnings performance comprehensively.

On the other hand, it's also possible to argue that the placement of non-IFRS earnings in the highlights is born out of a strategic consideration. Frederickson and Miller (2004) show that the existence alone of non-IFRS earnings in an earnings report might be enough to influence the perception of less-sophisticated investors. Through their experiment, they find that disclosing non-IFRS earnings in earnings announcements made less-sophisticated investors judge the announcement as more favorable compared to announcements containing only statutory earnings. Furthermore, placing non-IFRS earnings in the highlights section which summarizes the core message of the annual report puts emphasis on and directs the readers'

attention to these non-IFRS earnings (Bowen et al., 2005; Elliott, 2006). Thus, non-IFRS earnings might be placed strategically in the highlights to affect the judgement of less-sophisticated investors. However, what speaks against this strategic view is that my analysis indicates that non-IFRS earnings are more likely to be disclosed in addition to the statutory net income instead of replacing the statutory net income which would strategically emphasize the non-IFRS earnings number. My findings rather point towards a complementary use of non-IFRS earnings with the purpose to provide entity specific earnings information which reflects managers' view of the true financial performance in addition to the statutory net income.

To further examine this argument, I turn to explore the characteristics of non-IFRS earnings disclosed in the highlights of annual reports. More specifically, I examine their tendency to exceed the statutory net income and analyst earnings estimates. As predicted in *H1b*, the coefficient of the *BEAT_IFRS* ($\beta=2.952$, $p<0.01$) is also positive and statistically significant, confirming my expectation that firms are more likely to present non-IFRS earnings measure in the highlights section of their annual reports when the non-IFRS earnings measure exceeds the statutory net income. My prediction concerning *H1c* is also supported as indicated by the positive and statistically significant coefficient of the *BEAT_ANALYST* ($\beta=1.349$, $p<0.01$). This suggests that firms are more likely to present non-IFRS earnings measures in the highlights section of their annual reports when the non-IFRS earnings measure exceeds the analyst earnings estimate.

The results for both *H1b* and *H1c* suggest that firms rely on non-IFRS earnings to communicate their financial performance in the highlights section of their annual reports, particularly when non-IFRS earnings beat the statutory income or the analyst earnings estimate. The reporting flexibility within the highlights section when it comes to choosing which earnings measures to present or to omit lends to firms opportunistically presenting their financial performance in the best possible light, setting the tone for the following sections of the annual report. That's because firms believe that investors extrapolate better current-period financial performance into the future, which translates into higher valuations and better chances at raising capital

(Degeorge et al., 1999). That corresponds with findings from Bowen et al. (2005) which indicate that firms place more emphasis on non-GAAP earnings in their earnings press releases when the non-GAAP earnings are positive, and the statutory net income is negative.

It should be noted though that firms might possibly present non-IFRS earnings in addition to the statutory net income to provide more comprehensive and entity specific earnings information and that these earnings simply happen to be higher than the statutory net income as uninformative transitory items tend to be income-decreasing (Johnson and Schwartz, 2005; Bradshaw and Soliman, 2007; Young, 2014; Ribeiro et al., 2019). For example, Johnson and Schwartz (2005) find that the income increasing adjustments made to statutory income are large in magnitude and encompass more than nonrecurring items. Malone et al. (2012) examine ASX 200 firms from 2008 to 2010 and find that non-IFRS earnings provided by firms generally exceed statutory net income.

Thus, even though the results from *H1b* indicate that firms are more likely to disclose non-IFRS earnings in the highlights section when non-IFRS earnings beat statutory net income, the incentive behind this reporting behavior is debatable. Based on prior literature, it can be expected that firms want to present their earnings performance in the best possible light and thus choose the highlight non-IFRS earnings when they exceed the statutory net income. At the same time, it is not possible to rule out that firms highlight non-IFRS earnings to provide earnings information that in their view reflects their true financial performance and that these non-IFRS earnings simply happen to be higher than the statutory net income due to the income-decreasing transitory items to be excluded (Johnson and Schwartz, 2005).

Similarly, the results from *H1c* suggest that firms are more likely to disclose non-IFRS earnings in the highlights section when non-IFRS earnings beat the analyst earnings estimate. This also fits the view that firms need to meet market expectations to assure investors of their underlying strength (Graham et al., 2005). As firms consider analyst earnings estimate to be one of the most important earnings

benchmarks, they are motivated to report non-IFRS earnings that beat the analyst earnings estimate in the highlights section to give a positive signal regarding their financial performance (Graham et al., 2005; Brown and Caylor, 2005; Bentley et al., 2018). To beat the analyst earnings estimate, firms might make use of the discretionary nature of non-IFRS earnings and define them opportunistically by excluding certain expenses even though they are persistent (Frankel et al., 2011; Barth et al., 2012; Doyle et al., 2013). For their sample of ASX 200 firms, Malone et al. (2012) find that firms are more optimistic in their estimates of non-IFRS earnings than financial analysts.

A more recent study by Bradshaw et al. (2018) finds that firms more frequently exclude transitory rather than recurring expenses from non-IFRS earnings for beating earnings benchmarks. As transitory exclusions are not as aggressive as recurring exclusions, the findings by Bradshaw et al. (2018) raise the possibility that the calculation of non-IFRS earnings which beat earnings benchmarks might not be mainly opportunistically motivated. Thus, the incentive behind disclosing non-IFRS earnings in highlights when they beat the analyst earnings estimate is not undoubtedly opportunistic. As firms have control over the calculation of non-IFRS earnings, they might define non-IFRS earnings to strategically adjust the statutory earnings and beat analyst earnings estimates. However, firms might also exclude mainly transitory items from non-IFRS earnings which beat the analyst earnings estimates. This would suggest that non-IFRS earnings might provide a cleaner measure of recurring performance by removing transitory items which do not contribute to the predictability of future performance. It is thus necessary to be cautious with the interpretation of the regression results and keep in mind that they might not necessarily correspond with an opportunistic reporting incentive in the highlights section.

Taking a closer look at the control variables, I see that the coefficients of the control variables *SIZE* ($\beta=-0.679$, $p<0.05$) and *ANALYST_FOLLOWING* ($\beta=0.401$, $p<0.01$) are also statistically significant. The negative coefficient for *SIZE* indicates that firms with a bigger asset base are less likely to present non-IFRS earnings in the

highlights section whereas the positive coefficient for *ANALYST_FOLLOWING* suggests that firms with a higher number of analysts following the firm are more likely to present non-IFRS earnings in the highlights section.

R^2 is a statistic generated in linear regressions and that is used as a goodness-of-fit measure (Gujarati and Porter, 2009). It indicates how well the regression model fits the existing data sample. More specifically, R^2 represents the proportion of the total variability explained by the model. At the same time, it indicates the degree to which the model parameters improve upon the prediction of the null model. This means that the higher R^2 is, the more variability is explained by the regression model and the greater the improvement is upon the null model (Gujarati and Porter, 2009). However, R^2 is not applicable for logit regressions. The model estimates from a logit regression are maximum likelihood estimates and are not determined to minimize variance (Gujarati and Porter, 2009). Instead, pseudo- R^2 measures have been created specifically for logit regressions to evaluate their goodness-of-fit. Pseudo- R^2 measures range from zero to one, with higher values indicating a better model fit (Gujarati and Porter, 2009). One of the most used pseudo- R^2 measures, and the one I am using for my analyses, is McFadden's pseudo- R^2 . It is helpful to know that McFadden's pseudo- R^2 values tend to be considerably lower than usual R^2 values. More precisely, values between 0.2 and 0.4 when applying McFadden's pseudo- R^2 already indicate good model fit. When comparing two logit regression models on the same data sample, the model with the greater likelihood has a higher McFadden's pseudo- R^2 (Gujarati and Porter, 2009). With a Pseudo- R^2 value of 0.533 for Equation (1), the logit regression model has a good model fit.

2. *Robustness tests*

Table 6: Empirical results of robustness tests for H1a, H1b and H1c

	Equation (1.1) H1a	Equation (1.2) H1b	Equation (1.3) H1c
	nonIFRS_ HIGHLIGHTS	nonIFRS_ HIGHLIGHTS	nonIFRS_ HIGHLIGHTS
STATUTORY	5.081*** (5.59)		
BEAT_IFRS		0.309 (0.59)	
BEAT_ANALYST			0.559* (1.66)
SIZE	-0.515* (-1.89)	-0.306 (-1.44)	-0.340 (-1.61)
ROA	-1.465 (-0.48)	2.362 (1.42)	1.906 (1.24)
LOSS	0.524 (0.93)	0.663 (1.37)	0.679 (1.44)
LEVERAGE	-0.00274 (-0.89)	-0.00307* (-1.71)	-0.00261 (-1.42)
ANALYST_ FOLLOWING	0.325** (2.53)	0.191** (2.38)	0.201** (2.54)
Constant	-2.525 (-0.96)	-0.606 (-0.31)	-0.646 (-0.33)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Pseudo-R ²	0.492	0.148	0.151
N	268	268	268

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the first column of Table 6 show that firms are more likely to have non-IFRS earnings in the highlights of their annual reports when there is also statutory net income in the highlights. The results in the second column show that the coefficient of the independent variable is statistically insignificant. The

results in the third column show that firms are more likely to have non-IFRS earnings in the highlights when the non-IFRS earnings exceed analyst earnings estimate.

Table 6 displays the results for the multivariate logit regressions in Equations (1.1) through (1.3). They mostly confirm the findings in the main regressions. The coefficients for the independent variables *STATUTORY* ($\beta=5.081$, $p<0.01$) in Equation (1.1) and *BEAT_ANALYST* ($\beta=0.559$, $p<0.10$) in Equation (1.3) are both statistically significant and positive, indicating that firms are more likely to display non-IFRS earnings in the highlights section when statutory net income is presented in the highlights section or when non-IFRS earnings beat analyst earnings estimates. However, the coefficient for the independent variable *BEAT_IFRS* in Equation (1.2) is statistically insignificant. This suggests that there is insufficient evidence in the sample in support of a non-zero correlation between the dependent variable *nonIFRS_HIGHLIGHTS* and the independent variable *BEAT_IFRS* (Angrist and Pischke, 2009). For Equation (1.2), it is not possible to make any conclusion based on the data available. This deviation from the main logit regression in Equation (1) could be ascribed to the weak correlation of *BEAT_IFRS* with the other independent variable *BEAT_ANALYST*, with a correlation coefficient of 0.2392 between the two variables. This might influence the regression results.

As in the results from Equation (1), the coefficients of the control variables *SIZE* ($\beta=-0.515$, $p<0.10$) and *ANALYST_FOLLOWING* ($\beta=0.325$, $p<0.05$) in Equation (1.1) are statistically significant. *SIZE* has a negative coefficient and *ANALYST_FOLLOWING* has a positive coefficient, both corroborating the results from Equation (1). In Equation (1.2), the coefficients of the control variables *LEVERAGE* ($\beta=-0.00307$, $p<0.10$) and *ANALYST_FOLLOWING* ($\beta=0.191$, $p<0.05$) are statistically significant. *LEVERAGE* has a negative coefficient, suggesting that firms with a higher leverage ratio are less likely to present non-IFRS earnings in the highlights section. *ANALYST_FOLLOWING* again has a positive coefficient. In Equation (1.3), the coefficient of the control variable *ANALYST_FOLLOWING* ($\beta=0.201$, $p<0.05$) is similarly positive and statistically significant.

The pseudo- R^2 values for Equations (1.1) through (1.3) are all lower than the pseudo- R^2 value from the main logit regression in Equation (1). This indicates that Equation (1) possesses higher model quality than the robustness tests presented in Equations (1.1) through (1.3). However, it should be noted that high predictive ability does not necessarily equal evidence for inference or control sufficiency in the regression model (Angrist and Pischke, 2009).

Table 7: Empirical results of robustness tests for H1a, H1b and H1c

	Equation (1.4) H1a, H1b and H1c	Equation (1.5) H1a, H1b and H1c	Equation (1.6) H1a, H1b and H1c
	nonIFRS_ HIGHLIGHTS	nonIFRS_ HIGHLIGHTS	nonIFRS_ HIGHLIGHTS
STATUTORY	5.670*** (5.69)	6.047*** (5.96)	6.193*** (5.65)
BEAT_IFRS	2.611*** (2.84)	2.926*** (2.91)	2.969*** (2.95)
BEAT_ANALYST	0.953** (1.98)	1.306*** (2.97)	1.316*** (2.93)
SIZE		-0.665** (-2.29)	-0.680** (-2.33)
ROA	-1.463 (-0.39)		-4.069 (-1.39)
LOSS	0.601 (1.06)	0.973* (1.83)	
LEVERAGE	-0.00398 (-1.33)	-0.00258 (-0.85)	-0.00385 (-1.02)
ANALYST_ FOLLOWING	0.292** (2.21)	0.384*** (2.79)	0.404*** (2.69)
Constant	-9.954*** (-3.15)	-6.534** (-2.04)	-6.578* (-1.95)

Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Pseudo-R ²	0.509	0.532	0.531
N	268	268	268

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the three columns of Table 7 all confirm that firms are more likely to present non-IFRS earnings in the highlights section when the statutory net income is in the highlights section, when non-IFRS earnings beat the statutory net income or when the non-IFRS earnings beat the analyst earnings estimate.

Table 8: Empirical results of robustness tests for H1a, H1b and H1c

	Equation (1.7) H1a, H1b and H1c	Equation (1.8) H1a, H1b and H1c	Equation (1.9) H1a, H1b and H1c
	nonIFRS_ HIGHLIGHTS	nonIFRS_ HIGHLIGHTS	nonIFRS_ HIGHLIGHTS_ QUANT
STATUTORY	6.218*** (5.80)	5.181*** (6.78)	1.045*** (3.50)
BEAT_IFRS	2.983*** (2.96)	2.627** (2.57)	0.714*** (3.63)
BEAT_ANALYST	1.365*** (2.99)	0.713* (1.65)	0.461*** (3.03)
SIZE	-0.690** (-2.35)	-0.243 (-1.04)	-0.115 (-1.11)
ROA	-2.029 (-0.54)	1.437 (0.50)	0.363 (0.68)
LOSS	0.681 (1.06)	0.317 (0.58)	0.239 (1.34)
LEVERAGE		-0.00576 (-0.97)	-0.00144 (-0.97)
ANALYST_ FOLLOWING	0.407*** (2.75)		0.0603* (1.95)
Constant	-6.790 (-2.04)	-2.654 (-0.91)	-1.960 (-1.42)

Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Pseudo-R ²	0.540	0.480	0.349
N	273	268	458

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the first and second columns of Table 8 both confirm that firms are more likely to present non-IFRS earnings in the highlights section when the statutory net income is in the highlights section, when non-IFRS earnings beat the statutory net income or when the non-IFRS earnings beat the analyst earnings estimate. The results in the third column show that firms present more non-IFRS earnings measures in the highlights section when the statutory net income is in the highlights section, when non-IFRS earnings beat the statutory net income or when the non-IFRS earnings beat the analyst earnings estimate.

Table 7 and Table 8 display the results for the multivariate logit regressions in Equations (1.4) through (1.8) and the multivariate poisson regression in Equation (1.9). The results corroborate the findings from the main analysis in Equation (1). For Equations (1.4) through (1.8), the coefficients for the independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* are all positive and statistically significant, confirming the results from Equation (1) that suggest firms are more likely to present non-IFRS earnings in the highlights section when the statutory net income is in the highlights section and when non-IFRS earnings beat earnings benchmarks. For Equation (1.9), the coefficients for the independent variables *STATUTORY* ($\beta=0.841$, $p<0.01$), *BEAT_IFRS* ($\beta=0.411$, $p<0.01$) and *BEAT_ANALYST* ($\beta=0.235$, $p<0.05$) are all positive and statistically significant. This further strengthens the main results from Equation (1) as it suggests that firms not only are more likely to present non-IFRS earnings in the highlights section, but that they also present quantitatively more non-IFRS earnings measures in the highlights section when the statutory net income is in the highlights section and when non-IFRS earnings beat earnings benchmarks.

There are slight variations in the coefficients of the control variables. The coefficients for the control variable *SIZE* are negative and statistically significant in Equations (1.5), (1.6), (1.7) and (1.9). This corroborates the results from the main regression in Equation (1). The coefficient for the control variable *LOSS* ($\beta=0.973$,

$p < 0.10$) is positive and statistically significant in Equation (1.5), suggesting that loss firms are more likely to have non-IFRS earnings in the highlights section. This result might indicate that non-IFRS earnings in the highlights section are informative since loss firms' non-GAAP earnings exclusions are found to offset the low informativeness of GAAP losses for forecasting and valuation (Leung and Veenman, 2018). As the variables *LOSS* and *ROA* have a strong and significant negative correlation ($r = -0.59$), excluding the control variable *ROA* in Equation (1.5) might reduce any effect of multicollinearity and increase the reliability of the regression results (Gujarati and Porter, 2009; Blalock 1963). Multicollinearity occurs when the correlation between two or more independent variables is strong and significant and might lead to less precise regression coefficients (Gujarati and Porter, 2009). The coefficients for the control variable *ANALYST_FOLLOWING* are positive and statistically significant in Equations (1.4) through (1.9), except for Equation (1.8), in which it was left out as a control variable. This also corroborates the results from the main regression in Equation (1).

The pseudo- R^2 values for Equations (1.4), (1.5), (1.6), (1.8) and (1.9) are all lower than the pseudo- R^2 value from the main logit regression in Equation (1). This indicates that Equation (1) possesses higher model quality. The pseudo- R^2 value for Equation (1.7) is at 0.540, which is higher than the pseudo- R^2 value for Equation (1) at 0.533. However, the coefficients of the independent and the control variables in Equation (1.7) mirror the coefficients of the same variables in Equation (1) regarding their signs and significance levels, thus suggesting the same conclusions from the results.

9.2. Non-IFRS earnings from audited sections in highlights

1. Main analysis

Table 9: Empirical results of main analysis for H2a, H2b and H2c

	Equation (2) H2a, H2b and H2c
	HIGHLIGHTS_AUDITED
STATUTORY	2.783*** (4.19)
BEAT_IFRS	2.776*** (3.62)
BEAT_ANALYST	1.530** (2.24)
SIZE	-0.0217 (-0.07)
ROA	1.125 (0.75)
LOSS	0.377 (0.83)
LEVERAGE	-0.0131 (-1.47)
ANALYST_FOLLOWING	0.162* (1.82)
BIG4	2.706 (1.11)
Constant	-11.55*** (-3.39)
Year FE	Yes
Industry FE	Yes
Pseudo-R ²	0.393
N	225

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in Table 9 show that firms are more likely to present non-IFRS earnings from audited sections in the highlights section when the statutory net income is in the highlights section, when non-IFRS earnings beat the statutory net income or when the non-IFRS earnings beat the analyst earnings estimate.

Table 9 displays the results for the multivariate logit regression for *H2a*, *H2b* and *H2c*. My prediction for *H1a* is corroborated by the result, as the coefficient for *STATUTORY* ($\beta=2.783$, $p<0.01$) is positive and statistically significant. It means that firms that disclose statutory net income in the highlights section are more likely to report non-IFRS earnings from audited sections in the highlights section.

The aim of external audit is to ensure independently that the financial statements are reliable, and that the disclosure of the financial performance is not influenced by bias (e.g., Becker et al., 1998; Francis et al., 1999; Lin et al., 2006; Kent et al., 2010). Especially the size of the external audit firm has been shown to be associated with the successful detection of earnings management and lower absolute abnormal accruals (e.g., Becker et al., 1998; Francis et al., 1999; Krishnan, 2003; Jackson et al., 2008; Wilson, 2011). Auditor size is also positively related with earnings persistence and predictability (Sumiadjji et al., 2019). This corresponds with the findings from Feng et al. (2019) which shows that high-quality auditors are associated with more transitory non-GAAP exclusions and thus less aggressive non-GAAP earnings. Thus, external audit can be taken as an indication for reliability and informativeness and it can be assumed that non-IFRS earnings from audited sections might be informative rather than misleading. This means that the firm disclosing non-IFRS earnings from audited sections in the highlights when statutory net income is disclosed in the highlights section might be motivated to provide additional earnings information that complements the statutory net income. As non-IFRS earnings provide managers the opportunity to incorporate their view about the persistence of earnings components and to exclude transitory items, they might provide incremental information on permanent earnings to investors (Bhattacharya et al., 2004). This also coincides with findings from Ribeiro et al. (2019) that suggest non-GAAP earnings

are on average more persistent, smoother, more value relevant, and have higher predictive power than their closest GAAP equivalent.

The outcome of *H2a* shows that when firms present non-IFRS earnings in addition to the comparable statutory net income in the highlights, they choose to display non-IFRS earnings from the audited sections of the annual report. This indicates that non-IFRS earnings might be used to complement statutory net income by providing reliable earnings information from the audited sections of the annual report. It suggests that the reporting incentive of firms for the highlights section of annual reports might be informative.

The outcome for *H2b* is also as expected. The coefficient of the *BEAT_IFRS* ($\beta=2.776$, $p<0.01$) is positive and statistically significant, confirming my expectation that firms are more likely to present non-IFRS earnings measure from audited sections in the highlights section of their annual reports when the non-IFRS earnings measure exceeds the statutory net income. My prediction concerning *H2c* is also supported as indicated by the positive and statistically significant coefficient of the *BEAT_ANALYST* ($\beta=1.530$, $p<0.05$). This suggests that firms are more likely to present non-IFRS earnings measures from audited sections in the highlights section of their annual reports when the non-IFRS earnings measure exceeds the analyst earnings estimate.

The results indicate that although firms rely on non-IFRS earnings that beat earnings benchmarks to communicate their financial performance in the highlights section, they are more likely to use non-IFRS earnings from audited sections such as the notes to the financial statements. Taking up the interpretation of the previous results for *H1b* and *H1c* where the ambiguity regarding the reporting incentives for the highlights section remained, the results for *H2a* and *H2b* point more towards the incentive to emphasize reliable earnings information in the form of non-IFRS earnings which possibly reflect managers' view on permanent earnings performance. This reflects the findings by Bradshaw et al. (2018) which shows that firms more commonly exclude transitory items rather than recurring items to beat analyst earnings

estimates, indicating non-IFRS earnings are calculated in an informative way. My results for *H2b* and *H2c* also suggest that the intention behind disclosing non-IFRS earnings that beat the statutory net income or analyst earnings estimates in the highlights section might not be to primarily mislead the reader but rather to guide their attention and focus to reliable non-IFRS earnings that complement the statutory net income and to provide the reader with additional information on the firms' financial performance. This again points towards an informative reporting incentive for the highlights section of the annual reports.

The coefficient for the control variable *ANALYST_FOLLOWING* ($\beta=0.162$, $p<0.10$) remains positive and statistically significant, suggesting that firms with a higher number of analysts following are more likely to present non-IFRS earnings from audited sections in the highlights. This matches expectations as a higher level of scrutiny from analysts following the firm might be associated with firms providing earnings information that is more transparent. With a McFadden's pseudo- R^2 value of 0.393 for Equation (2), the logit regression model also has a good model fit.

2. Robustness tests

Table 10: Empirical results of robustness tests for H2a, H2b and H2c

	Equation (2.1) H2a	Equation (2.2) H2b	Equation (2.3) H2c
	HIGHLIGHTS_ AUDITED	HIGHLIGHTS_ AUDITED	HIGHLIGHTS_ AUDITED
STATUTORY	2.300*** (3.54)		
BEAT_IFRS		1.508** (2.21)	

BEAT_			1.405*
ANALYST			(1.86)
SIZE	0.0639	0.0887	0.0271
	(0.22)	(0.36)	(0.11)
ROA	0.955	2.160	0.793
	(0.74)	(1.24)	(0.63)
LOSS	0.224	0.327	0.319
	(0.49)	(0.61)	(0.65)
LEVERAGE	-0.0117*	-0.0123**	-0.00966*
	(-1.67)	(-1.96)	(-1.85)
ANALYST_	0.160*	0.196**	0.220**
FOLLOWING	(1.91)	(2.15)	(2.53)
BIG4	2.188	0.850	0.891
	(1.05)	(0.50)	(0.54)
Constant	-7.237***	-7.555***	-7.014***
	(-2.78)	(-3.01)	(-2.81)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Pseudo-R ²	0.336	0.247	0.252
N	225	225	225

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the first column of Table 10 show that firms are more likely to have non-IFRS earnings from audited sections in the highlights of their annual reports when there is also statutory net income in the highlights. The results in the second column show that firms are more likely to have non-IFRS earnings from audited sections in the highlights when the non-IFRS earnings exceed statutory net income. The results in the third column show that firms are more likely to have non-IFRS earnings from audited sections in the highlights when the non-IFRS earnings exceed analyst earnings estimate.

Table 10 displays the results for the multivariate logit regressions in Equations (2.1) through (2.3). They all confirm the findings of the main logit regression in Equation (2). The coefficients for the independent variables *STATUTORY* ($\beta=2.300$, $p<0.01$), *BEAT_IFRS* ($\beta=1.508$, $p<0.05$) and *BEAT_ANALYST* ($\beta=1.405$, $p<0.10$) are positive and statistically significant respectively. Taken together, these results corroborate the previous findings that firms

are more likely to present non-IFRS earnings from audited sections in the highlights section of the annual report when non-IFRS earnings beat earnings benchmarks. These results further suggest that firms use non-IFRS earnings from audited sections in the highlights section provide more comprehensive information on earnings and bring attention to non-IFRS earnings as a supplement earnings measure to statutory net income.

Furthermore, in Equations (2.1) through (2.3), the coefficients of the control variable *LEVERAGE* are negative and statistically significant. This suggests that firms with a higher leverage ratio are less likely to present non-IFRS earnings from audited sections in the highlights section. As in the results from Equation (2), the coefficients of the control variable *ANALYST_FOLLOWING* in Equations (2.1) through (2.3) are also positive and statistically significant, corroborating the findings from the main logit regression. The pseudo- R^2 values for Equations (2.1) through (2.3) are all lower than the pseudo- R^2 value from the main logit regression in Equation (2). This indicates that Equation (2) possesses higher model quality than the robustness tests presented in Equations (2.1) through (1.3).

Table 11: Empirical results of robustness tests for H2a, H2b and H2c

	Equation (2.4) H2a, H2b and H2c	Equation (2.5) H2a, H2b and H2c	Equation (2.6) H2a, H2b and H2c
	HIGHLIGHTS_ AUDITED	HIGHLIGHTS_ AUDITED	HIGHLIGHTS_ AUDITED
STATUTORY	2.781*** (4.14)	2.779*** (4.19)	2.784*** (4.20)
BEAT_IFRS	2.773*** (3.59)	2.716*** (3.71)	2.739*** (3.61)
BEAT_ ANALYST	1.517**	1.581**	1.541**

	(2.06)	(2.29)	(2.23)
SIZE		-0.0231	-0.0241
		(-0.07)	(-0.07)
ROA	1.136		0.187
	(0.76)		(0.14)
LOSS	0.379	0.188	
	(0.83)	(0.45)	
LEVERAGE	-0.0131	-0.0131	-0.0131
	(-1.52)	(-1.48)	(-1.48)
ANALYST_ FOLLOWING	0.159**	0.165*	0.162*
	(2.38)	(1.84)	(1.80)
BIG4	2.667	2.692	2.707
	(1.23)	(1.12)	(1.12)
Constant	-11.65***	-11.51***	-11.42***
	(-4.06)	(-3.43)	(-3.36)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Pseudo-R ²	0.393	0.393	0.392
N	225	225	225

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the three columns of Table 11 all confirm that firms are more likely to present non-IFRS earnings from audited sections in the highlights section when the statutory net income is in the highlights section, when non-IFRS earnings beat the statutory net income or when the non-IFRS earnings beat the analyst earnings estimate.

Table 12: Empirical results of robustness tests for H2a, H2b and H2c

	Equation (2.7) H2a, H2b and H2c	Equation (2.8) H2a, H2b and H2c	Equation (2.9) H2a, H2b and H2c
	HIGHLIGHTS_ AUDITED	HIGHLIGHTS_ AUDITED	HIGHLIGHTS_ AUDITED
STATUTORY	2.839*** (4.21)	2.902*** (4.38)	2.405*** (2.75)

BEAT_IFRS	2.753*** (3.47)	2.871*** (3.85)	2.562*** (3.40)
BEAT_ ANALYST	1.558** (2.30)	1.536** (1.98)	1.359* (1.92)
SIZE	-0.0210 (-0.06)	0.132 (0.48)	0.131 (0.41)
ROA	1.516 (0.92)	1.518 (1.09)	1.009 (0.60)
LOSS	0.424 (0.92)	0.310 (0.72)	0.383 (0.80)
LEVERAGE		-0.0131 (-1.56)	-0.00685*** (-4.66)
ANALYST_ FOLLOWING	0.163* (1.84)		0.191** (2.11)
BIG4	2.387 (0.99)	2.797 (1.27)	
Constant	-11.38*** (-3.22)	-10.24*** (-2.72)	-10.91** (-2.53)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Pseudo-R ²	0.399	0.379	0.370
N	230	225	225

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the three columns of Table 12 all confirm that firms are more likely to present non-IFRS earnings from audited sections in the highlights section when the statutory net income is in the highlights section, when non-IFRS earnings beat the statutory net income or when the non-IFRS earnings beat the analyst earnings estimate.

Table 11 and Table 12 display the results for the multivariate logit regressions in Equations (2.4) through (2.9). The results corroborate the findings from the main analysis in Equation (2). For Equations (2.4) through (2.9), the coefficients for the independent variables *STATUTORY*, *BEAT_IFRS* and *BEAT_ANALYST* are all positive and statistically significant, confirming the results from Equation (2) that suggest firms are more likely to present non-IFRS earnings from audited sections in

the highlights section when the statutory net income is in the highlights section or when non-IFRS earnings beat earnings benchmarks.

There are slight variations in the coefficients of the control variables. The coefficient for the control variable *LEVERAGE* ($\beta=-0.00685$, $p<0.01$) is negative and statistically significant in Equation (2.9) while the coefficients of the control variable *ANALYST_FOLLOWING* are consistently positive and statistically significant in Equations (2.4) through (2.9), except for Equation (1.8), in which it was left out as a control variable. The pseudo- R^2 values for Equations (2.6), (2.8), and (2.9) are all lower than the pseudo- R^2 value from the main logit regression in Equation (2). This indicates that Equation (2) possesses higher model quality. The pseudo- R^2 values for Equation (2.4) and (2.5) are at 0.393, the same as the pseudo- R^2 value for Equation (2) and the pseudo- R^2 values for Equation (2.7) is at 0.399, which is slightly higher than the pseudo- R^2 value for Equation (2). At the same time, the coefficients of the independent and the control variables in Equation (2.7) mirror the coefficients of the same variables in Equation (2) regarding their signs and significance levels, thus suggesting the same conclusions from the results.

9.3. Earnings-before measures in highlights

1. Main analysis

Table 13: Empirical results of main analysis for H3a, H3b and H4

	Equation (3) H3a, H3b	Equation (4) H4
	EB_HIGHLIGHTS	AFE
RATIO_EB		-2.113* (-1.66)
STATUTORY	1.180*** (2.93)	-2.498 (-1.07)

nonIFRS_HIGHLIGHTS	0.307 (0.79)	
SIZE	0.0306 (0.17)	-0.700 (-0.83)
ROA	6.985*** (2.86)	-23.63 (-0.93)
LOSS	0.913** (2.56)	-6.523 (-0.97)
LEVERAGE	0.0606 (0.57)	-0.00540 (-0.88)
ANALYST_FOLLOWING	-0.984** (-2.16)	0.569 (1.39)
BIG4		0.461 (0.44)
Constant	-2.078 (-1.19)	4.935 (1.09)
Year FE	Yes	No
Industry FE	Yes	No
R ²		0.019
Pseudo-R ²	0.516	
N	458	238

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the first column of Table 13 show that firms have more earnings-before measures in the highlights section when the statutory net income is in the highlights section. The coefficient for the second independent variable *nonIFRS_HIGHLIGHTS* is insignificant. The results in the second column show that the analyst forecast error is lower when the highlights section contains a higher proportion of earnings-before measures than non-IFRS earnings.

Table 13 displays the results for the multivariate poisson regression for *H3a* and *H3b* in Equation (3) and the results for the multivariate ordinary least squares regression for *H4* in Equation (4). My prediction for *H3a* is corroborated by the results of Equation (3) since the coefficient for the independent variable *STATUTORY* ($\beta=1,180$, $p<0.01$) is positive and statistically significant. It indicates that firms present more earnings-before measures in the highlights section when statutory net income is in the highlights section. Showing earnings-before measures in addition to the statutory net income allows for a more disaggregated view of earnings

performance. Since the disaggregation of earnings benefits investors through more transparency and comparability of earnings information, presenting a more disaggregated view in the highlights section suggests that firms might have the intention to communicate their earnings performance in an informative way (Tarca et al., 2008; Libby and Brown, 2013). Together with the results from *H1a* and *H2a*, this finding further points towards the suggestion that that statutory net income by itself does not sufficiently communicate earnings performance and that firms might use non-IFRS earnings and earnings-before measures to complement the statutory net income with more entity specific and disaggregated earnings information. This also reflects the results from *H2a*, *H2b* and *H2c* which indicate that firms might present their earnings performance informatively in the highlights section of annual reports.

My prediction for *H3b* is not supported by the results of Equation (3). The coefficient for the independent variable *nonIFRS_HIGHLIGHTS* is statistically insignificant. Hence, there is insufficient evidence in the sample to support the existence of a relationship between the dependent variable *EB_HIGHLIGHTS* and the independent variable *nonIFRS_HIGHLIGHTS*. Based on the evidence on hand, it is not possible to conclude whether firms present more earnings-before measures in the highlights section when non-IFRS earnings are in the highlights section. Thus, it is also not possible to affirm or deny whether firms provide earnings-before measures in addition to non-IFRS earnings in the highlights to increase the uniformity and thus comparability of the earnings information. The insignificance of the result might be ascribed to the limited sample size or to the previously indicated strong and significant correlation between the independent variables *STATUTORY* and *nonIFRS_HIGHLIGHTS* ($r = 0.52$), which might lead to multicollinearity and influence the regression results. I will have a closer look at this possibility in the following robustness tests for Equation (3).

My prediction concerning *H4* is corroborated by the results of Equation (4) as the coefficient for the independent variable *RATIO_EB* ($\beta = -2.113$, $p < 0.10$) is negative and statistically significant. For an ordinary least squares regression, the value of the coefficient equals how much the mean of the dependent variable changes

given a one unit change in the independent variable while holding the other variables in the regression model constant (Angrist and Pischke, 2009). As predicted in *H4*, the coefficient for the independent variable *RATIO_EB* indicates that analyst forecast error is lower when the highlights section contains a higher number of earnings-before measures than non-IFRS earnings measures. This result supports the findings of previous studies that show that accounting comparability increases the accuracy of analyst earnings estimates because it lowers their cost of acquiring information and allows them to make fewer adjustments to accounting numbers within peer groups when analyzing firms' historical and current financial performance (Bhojraj and Lee, 2002; De Franco et al., 2011; Kim et al., 2013; Brochet et al., 2013). As earnings-before measures are more comparable than non-IFRS earnings, putting more emphasis on earnings-before measures than non-IFRS earnings in the highlights might be associated with more accurate analyst earnings estimates. In addition, firms with greater accounting comparability are found to have more informative earnings (Stallings, 2017; Choi et al., 2019; Chen et al., 2020). Thus, it cannot be ruled out that firms which put more emphasis on earnings-before measures than non-IFRS earnings in their highlights might also be associated with more informative earnings reporting. This would also not contradict the previous results for *H2a*, *H2b*, *H2c* and *H3a* which support the possibility for informative reporting incentives behind the communication of earnings performance in the highlights section of annual reports. The result for *H4* alludes to the suggestion that earnings reporting is more informative when the focus of earnings communication, mirrored through the presence in the highlights section, is on more comparable earnings-before measures than entity specific non-IFRS earnings.

In Equation (3), the coefficients for the control variables *ROA* ($\beta=6.985$, $p<0.01$) and *LOSS* ($\beta=0.913$, $p<0.05$) are positive and statistically significant. This indicates that firms have more earnings-before measures in the highlights section when they have a higher profitability ratio or when they have a loss. In both instances, firms might be motivated to more earnings information that is entity specific but also comparable with their peers. The coefficient for the control variable

ANALYST_FOLLOWING ($\beta=-0.984$, $p<0.05$) is negative and statistically significant. This suggests that firms with less analyst following present more earnings-before measures in the highlights section. With a McFadden’s pseudo- R^2 value of 0.516 for Equation (3), the logit regression model has a good model fit.

In Equation (4), the coefficients for the control variables are all statistically insignificant. This might be due the small sample size of 238 observations. The R^2 value works as a goodness-of-fit measure for ordinary least squares regressions. It indicates the percentage of the variance in the dependent variable that is explained collectively through the independent variables (Angrist and Pischke, 2009). Explained graphically, the R^2 value evaluates the scatter of the data points around the fitted regression line (Angrist and Pischke, 2009). Comparing regressions based on the same data set, higher R^2 values means that the difference between the observed data and the fitted values is smaller (Angrist and Pischke, 2009). This means that higher R^2 values points towards a better fit between the regression model and the observations in the sample.

2. Robustness tests

Table 14: Empirical results of robustness tests for H3a and H3b

	Equation (3.1) H3a	Equation (3.2) H3b
	EB_HIGHLIGHTS	EB_HIGHLIGHTS
STATUTORY	1.287*** (3.19)	
nonIFRS_HIGHLIGHTS		0.769* (2.08)
SIZE	0.0213 (0.12)	-0.134 (-0.55)
ROA	6.798*** (2.81)	6.765** (2.34)

LOSS	0.957*** (2.64)	0.564 (1.63)
LEVERAGE	0.0585 (0.52)	0.0504 (0.45)
ANALYST_ FOLLOWING	-0.0862* (-1.87)	-0.114** (-2.34)
Constant	-2.066 (-1.14)	0.0908 (0.05)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Pseudo-R ²	0.515	0.496
N	458	458

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the first column of Table 14 show that firms have more earnings-before measures in the highlights section when the statutory net income is in the highlights section. The results in the second column show that firms have more earnings-before measures in the highlights section when non-IFRS earnings are in the highlights section.

Table 14 displays the results for the multivariate poisson regressions in Equations (3.1) and (3.2). They corroborate my hypotheses *H3a* and *H3b* and complement the findings from the main regression in Equation (3). Like in Equation (3), the coefficient for the independent variable *STATUTORY* ($\beta=1.287$, $p<0.01$) is positive and statistically significant in Equation (3.1), indicating that firms have more earnings-before measures in the highlights section when the statutory net income is in the highlights section. Unlike in Equation (3), the coefficient for the independent variable *nonIFRS_HIGHLIGHTS* ($\beta=0.769$, $p<0.10$) is positive and statistically significant in Equation (3.2), indicating that firms disclose more earnings-before measures in the highlights section when non-IFRS earnings are disclosed in the highlights section. This suggests that while firms might emphasize firm-specific and individualized non-IFRS earnings measures in their communication of firm performance, they also provide more uniform earnings-before measures in the highlights section that aids in the comparability to other firms. This outcome indicates

that earnings-before measures are presented complementarily to non-IFRS earnings. Since higher accounting comparability is linked with reduced uncertainty and more informativeness for valuation decisions, firms presenting earnings-before measures with high comparability in addition to less comparable non-IFRS earnings might suggest that firms might present their earnings performance in an informative way in the highlights of annual reports (Kim et al., 2013; Stallings, 2017; Chen et al., 2020). The deviation in Equation (3.2) from the main poisson regression in Equation (3) for the coefficient of the independent variable *nonIFRS_HIGHLIGHTS* could be ascribed to the strong and significant correlation between the independent variables *STATUTORY* and *nonIFRS_HIGHLIGHTS* ($r = 0.52$) since this might have led to multicollinearity in the regression model and influenced the regression results in Equation (3).

As in the results from Equation (3), the coefficients of the control variables *ROA* ($\beta=6.789$, $p<0.01$), *LOSS* ($\beta=0.957$, $p<0.01$) and *ANALYST_FOLLOWING* ($\beta=-0.0862$, $p<0.10$) in Equation (3.1) are statistically significant. *ROA* and *LOSS* have positive coefficients while *ANALYST_FOLLOWING* ($\beta=-0.0862$, $p<0.10$) has a negative coefficient, all corroborating the results from Equation (3). In Equation (3.2), the coefficients of the control variables *ROA* ($\beta=6.765$, $p<0.05$) and *ANALYST_FOLLOWING* ($\beta=-0.114$, $p<0.05$) continue to be statistically significant, with *ROA* having a positive coefficient and *ANALYST_FOLLOWING* having a negative coefficient. The pseudo- R^2 values for Equation (3.1) and (3.2) are both lower than the pseudo- R^2 value for the main regression in Equation (3). This points towards Equation (3) possessing higher model quality than the robustness tests presented in Equations (3.1) and (3.2).

Table 15: Empirical results of robustness tests for H3a and H3b

	Equation (3.3) H3a, H3b	Equation (3.4) H3b
	EB_HIGHLIGHTS	EB_HIGHLIGHTS
STATUTORY	1.122*** (3.03)	
nonIFRS_ HIGHLIGHTS_QUANT	0.237 (1.54)	0.394* (2.30)
SIZE	0.00917 (0.05)	-0.167 (-0.68)
ROA	7.837*** (3.07)	8.024*** (2.75)
LOSS	0.931*** (2.59)	0.639* (1.89)
LEVERAGE	0.0576 (0.52)	0.0553 (0.47)
ANALYST_ FOLLOWING	-0.103** (-2.25)	-0.111** (-2.20)
Constant	-1.777 (-1.01)	0.363 (0.18)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Pseudo-R ²	0.518	0.500
N	458	458

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the first column of Table 15 show that firms have more earnings-before measures in the highlights section when the statutory net income is in the highlights section. The results in the second column show that firms have more earnings-before measures in the highlights section the more non-IFRS earnings are in the highlights section.

Table 15 display the results for the multivariate poisson regressions in Equations (3.3) and (3.4). The results complement the findings from the main analysis in Equation (3). In Equation (3.3), the coefficient for the independent variable *STATUTORY* ($\beta=1.122$, $p<0.01$) is positive and statistically significant while the coefficient for independent variable *nonIFRS_HIGHLIGHTS_QUANT* is statistically insignificant. This corroborates the findings from the main regression in Equation (3). In Equation (3.4), *nonIFRS_HIGHLIGHTS_QUANT* is presented as the sole independent variable. Here, its coefficient ($\beta=0.394$, $p<0.10$) is positive and statistically significant. This result corroborates the results from Equation (3.2) and further indicates that firms have more earnings-before measures in the highlights section the more non-IFRS earnings measures are in the highlights section. Like the results from Equation (3.2), the results from Equation (3.4) suggest that the statistical insignificance of the coefficient *nonIFRS_HIGHLIGHTS_QUANT* in Equation (3) is likely influenced by the relationship between the two independent variables *STATUTORY* and *nonIFRS_HIGHLIGHTS_QUANT*.

The coefficients of the control variables *ROA*, *LOSS* and *ANALYST_FOLLOWING* in Equations (3.3) and (3.4) are all statistically significant. Like the results in the main regression in Equation (3), the coefficients of the control variables *ROA* and *LOSS* are positive while the coefficients of the control variable *ANALYST_FOLLOWING* are negative. The pseudo- R^2 value for Equation (3.3) is at 0.518, which is slightly higher than the pseudo- R^2 value for the main regression in Equation (3) at 0.516. However, the coefficients of the independent and the control variables in Equation (3.3) mirror the coefficients of the same variables in Equation (3) regarding their signs and statistical significance, thus suggesting the same conclusions from the results. The pseudo- R^2 value for Equation (3.4) is lower than the pseudo- R^2 value for the main regression in Equation (3), indicating that Equation (3) possesses higher model quality than the robustness test presented in Equations (3.4).

Table 16: Empirical results of robustness tests for H3a and H3b

	Equation (3.5) H3a, H3b	Equation (3.6) H3a, H3b	Equation (3.7) H3a, H3b
	EB_HIGHLIGHTS	EB_HIGHLIGHTS	EB_HIGHLIGHTS
STATUTORY	1.167*** (2.86)	1.183*** (2.94)	1.027** (2.43)
nonIFRS_HIGHLIGHTS	0.303 (0.77)	0.248 (0.64)	0.398 (1.05)
SIZE		-0.0315 (-0.18)	-0.00805 (-0.04)
ROA	6.868*** (2.80)		2.795* (1.73)
LOSS	0.903** (2.52)	0.263 (0.94)	
LEVERAGE	0.0660 (0.59)	0.0542 (0.49)	0.102 (1.01)
ANALYST_ FOLLOWING	-0.0943** (-2.12)	-0.0738* (-1.75)	-0.0983** (-2.29)
Constant	-1.866* (-1.70)	-1.638 (-1.03)	-1.446 (-0.89)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Pseudo-R ²	0.516	0.508	0.510
N	458	458	458

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the three columns of Table 16 all confirm that firms present more earnings-before measures in the highlights section when the statutory net income is in the highlights section. The coefficients of the independent variable *nonIFRS_HIGHLIGHTS* is insignificant in all columns.

Table 17: Empirical results of robustness tests for H3a and H3b

	Equation (3.8) H3a, H3b	Equation (3.9) H3a, H3b
	EB_HIGHLIGHTS	EB_HIGHLIGHTS
STATUTORY	1.181*** (2.91)	1.288*** (3.81)
nonIFRS_HIGHLIGHTS	0.304 (0.77)	0.479 (1.24)
SIZE	0.0450 (0.25)	0.0863 (0.52)
ROA	6.972*** (2.86)	4.730*** (2.77)
LOSS	0.937*** (2.64)	0.821*** (2.66)
LEVERAGE		0.0312 (0.36)
ANALYST_ FOLLOWING	-0.103** (-2.30)	
Constant	-2.034 (-1.19)	-4.764** (-2.51)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Pseudo-R ²	0.518	0.464
N	463	607

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the two columns of Table 17 confirm that firms present more earnings-before measures in the highlights section when the statutory net income is in the highlights section. The coefficients of the independent variable *nonIFRS_HIGHLIGHTS* is insignificant in both columns.

Table 16 and Table 17 display the results for the multivariate passion regressions in Equations (3.5) through (3.9). The results corroborate the findings from

the main regression in Equation (3) as the coefficients for the independent variable *STATUTORY* are all positive and statistically significant while the coefficients for the independent variable *nonIFRS_HIGHLIGHTS* are all insignificant. This confirms the results from Equation (3) that suggest firms present more earnings before-measures in the highlights section when the statutory net income is in the highlights section.

Regarding the control variables in Equations (3.5) through (3.9), the signs of their beta coefficients and their statistical significance are also mostly in accordance with the corresponding coefficients from the main regression in Equation (3). The only variance is to be found in Equation (3.6), in which the coefficient of the control variable *LOSS* is statistically insignificant, deviating from the results in Equation (3). The pseudo- R^2 value for Equation (3.8) is at 0.518, which is slightly higher than the pseudo- R^2 value for the main regression in Equation (3) at 0.516. However, as pointed out, the coefficients of the independent and the control variables in Equation (3.8) mirror the coefficients of the same variables in Equation (3), suggesting the same conclusions from the results. The pseudo- R^2 values for the remaining Equations (3.5) through (3.9) are either equal to or lower than the pseudo- R^2 value for the main regression in Equation (3), indicating that Equation (3) possesses higher model quality than these robustness tests.

Table 18: Empirical results of robustness tests for H4

	Equation (4.1) H4	Equation (4.2) H4	Equation (4.3) H4
	AFE	AFE	AFE
RATIO_EB	-1.996 (-1.57)	-2.038* (-1.67)	-2.716* (-1.85)
STATUTORY		-2.590 (-1.12)	-2.427 (-1.02)

SIZE	-0.735 (-0.87)		-0.432 (-0.62)
ROA	-23.14 (-0.90)	-20.64 (-0.92)	
LOSS	-6.406 (-0.94)	-5.971 (-0.97)	-3.329 (-0.89)
LEVERAGE	-0.00517 (-0.85)	-0.00774 (-0.86)	-0.00221 (-0.49)
ANALYST_ FOLLOWING	0.589 (1.42)	0.447 (1.53)	0.550 (1.41)
BIG4	0.507 (0.46)	0.251 (0.27)	0.867 (0.81)
Constant	3.075 (0.62)	0.590 (0.26)	1.127 (0.36)
Year FE	No	No	No
Industry FE	No	No	No
R ²	0.015	0.015	0.010
N	238	238	238

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The coefficient of the independent variable `RATIO_EB` in the first column of Table 18 is statistically insignificant. The results in the second and third columns confirm that the analyst forecast error is lower when the highlights section contains a higher proportion of earnings-before measures than non-IFRS earnings.

Table 19: Empirical results of robustness tests for H4

	Equation (4.4) H4	Equation (4.5) H4
	AFE	AFE
RATIO_EB	-2.445* (-1.92)	-2.110* (-1.67)
STATUTORY	-2.269 (-0.97)	-2.497 (-1.07)

SIZE	-0.417 (-0.67)	-0.709 (-0.83)
ROA	-1.738 (-0.19)	-23.41 (-0.92)
LOSS		-6.539 (-0.97)
LEVERAGE	-0.00238 (-0.52)	
ANALYST_ FOLLOWING	0.522 (1.40)	0.579 (1.40)
BIG4	0.434 (0.50)	0.434 (0.41)
Constant	1.136 (0.50)	4.883 (1.08)
Year FE	No	No
Industry FE	No	No
R ²	0.014	0.019
N	238	242

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the two columns of Table 19 confirm that the analyst forecast error is lower when the highlights section contains a higher proportion of earnings-before measures than non-IFRS earnings.

Table 20: Empirical results of robustness tests for H4

	Equation (4.6) H4	Equation (4.7) H4
	AFE	AFE
RATIO_EB	-2.541* (-1.92)	-2.104* (-1.66)
STATUTORY	-2.597 (-1.12)	-2.505 (-1.07)
SIZE	-0.0673 (-0.13)	-0.693 (-0.82)

ROA	-21.71 (-0.91)	-23.82 (-0.94)
LOSS	-6.035 (-0.95)	-6.509 (-0.98)
LEVERAGE	-0.00755 (-0.99)	-0.00537 (-0.88)
ANALYST_ FOLLOWING		0.572 (1.40)
BIG4	1.561 (1.30)	
Constant	5.880 (1.20)	5.258 (1.17)
Year FE	No	No
Industry FE	No	No
R ²	0.016	0.019
N	238	238

T-statistics in brackets. Standard errors clustered by firm. Mc Fadden's R² as pseudo-R². *p<0.10, **p<0.05, ***p<0.01

The results in the two columns of Table 20 confirm that the analyst forecast error is lower when the highlights section contains a higher proportion of earnings-before measures than non-IFRS earnings.

Table 18, Table 19, and Table 20 display the results for the multivariate ordinary least squares regressions in Equations (4.1) through (4.7). Apart from the statistically insignificant coefficient in Equation (4.1), all other coefficients in Equations (4.2) through (4.7) for the independent variable *RATIO_EB* are negative and statistically significant, strengthening the findings from the main regression in Equation (4). They suggest that the analyst forecast error is lower when firms highlight proportionally more earnings-before measures rather than non-IFRS earnings. As earnings-before measures are more comparable than the firm-specific non-IFRS earnings, the results suggest that more comparable earnings measures might be associated with higher forecast accuracy. As in the main regression in Equation (4), the coefficients of the control variables in Equations (4.1) through (4.7) are all statistically insignificant. The pseudo-R² values for the Equations (4.1) through (4.7)

are all either equal or lower than the pseudo- R^2 value from the main regression in Equation (4), indicating that Equation (4) possesses comparably higher model quality.

10. Conclusion

In conclusion, I examine non-IFRS earnings and earnings-before measures in the highlights section through descriptive and empirical methods. The highlights section at the beginning of the annual report offers firms the opportunity to emphasize specific earnings measures, including the statutory net income, earnings-before measures and non-IFRS earnings. Since it sets the tone for the following sections and direct the readers' attention to specific earnings measures, it warrants a closer examination (Bowen et al., 2005; Elliott, 2006).

The content of the highlights section can be freely determined by management. With this flexibility comes the possibility to emphasize earnings measures that reflect the true firm-specific financial performance. On the flip side, it is also possible to make use of this reporting discretion and select earnings measures more strategically to influence investors' judgement and decision-making (Libby and Emett, 2014). Non-IFRS earnings have a similar dichotomy. You can say that they can provide a cleaner description of recurring performance by excluding transitory items. Another perspective is that as managers determine the items to be excluded, non-IFRS earnings provide an opportunity for management to make strategic adjustment and present the firm in the best possible light.

I find that firms are more likely to disclose non-IFRS earnings in the highlights section when statutory net income is presented in the highlights section. This means that firms might use non-IFRS earnings as a complementary earnings information to statutory net income in the highlights section since non-IFRS earnings allow for manager to infuses their view of true financial performance. The observation that firms are more likely to present non-IFRS earnings in addition to statutory net income instead of presenting non-IFRS earnings by themselves suggests an

informative motivation for the reporting of non-IFRS earnings in the highlights. In support of this interpretation, I also find that firms that disclose statutory net income in the highlights section are more likely to report non-IFRS earnings from audited sections in the highlights section. Previous studies show external audit to be generally associated with the detection of earnings management, lower absolute abnormal accruals, increased earnings persistence, and earnings predictability (Becker et al., 1998; Francis et al., 1999; Krishnan, 2003; Jackson et al., 2008; Wilson, 2011; Sumiadjji et al., 2019). In relation to non-IFRS earnings, external audit is associated with more transitory exclusions and thus less aggressive non-IFRS earnings (Feng et al., 2019). Assuming external audit to be an indication for reliability and informativeness, firms that present non-IFRS earnings from audited sections in the highlights might provide incremental earnings information which reflects management's view on permanent earnings and complements the information contained in the statutory net income.

Apart from non-IFRS earnings, my findings also suggest earnings-before measures might be used to complement the statutory net income in highlights of annual reports. Whereas non-IFRS earnings might allow management to freely make firm-specific adjustments to reflect management's view on permanent earnings performance, more earnings-before measures allow for a more disaggregated and comparable view of statutory net income. My findings indicate that firms present more earnings-before measures in the highlights section when statutory net income is in the highlights section. Since the disaggregation of earnings is associated with more transparency and comparability, presenting a more disaggregated view in the highlights section suggests that firms might have the intention to communicate their earnings performance in an informative way (Tarca et al., 2008; Libby and Brown, 2013; Davern et al., 2019).

The complementary function of non-IFRS earnings and earnings-before measures suggests that statutory net income alone is not enough for firms to fully communicate their financial performance and that more firm-specific and disaggregated earnings information are needed to complete the picture. These findings

correspond with findings in Ribeiro et al. (2019) which indicate that non-IFRS earnings are more persistent, smoother, more value-relevant and have higher predictive power than their closest statutory equivalent. They also correspond with the increasing prevalence of the reporting of non-IFRS earnings in annual reports and other communication channels.

The results of the empirical analysis further suggest that firms are more likely to rely on non-IFRS earnings to communicate their financial performance in the highlights section when non-IFRS earnings exceed the statutory earnings or the analyst earnings estimate. One possible explanation for this observation is that firms strategically emphasize benchmark beating non-IFRS earnings to present the earnings performance in the best possible light right at the start of the annual report and to direct the readers' attention to the more favorable non-IFRS earnings, assuring them of the firm's underlying strength (Graham et al., 2005; Brown and Caylor, 2005; Bentley et al., 2018). At the same time, it is also possible to argue that firms highlight non-IFRS earnings to provide earnings information that in their view reflects their true financial performance. These non-IFRS earnings might be higher than the statutory net income and the analyst earnings estimates due to the exclusion of income-decreasing transitory items which means that non-IFRS earnings might provide an informative measure of recurring performance (Johnson and Schwartz, 2005; Bradshaw et al., 2018).

The examination of non-IFRS earnings in highlights depending on whether they are from the audited section of the annual report shows that firms are more likely to present non-IFRS earnings measures from audited sections in the highlights section of their annual reports when the non-IFRS earnings measure exceeds the statutory net income. They are also more likely to present non-IFRS earnings measures from audited sections in the highlights section of their annual reports when the non-IFRS earnings measure exceeds the analyst earnings estimate. This means that the non-IFRS earnings presented in the highlights might not have the purpose to mislead the reader but rather to guide their attention to firm-specific financial information that can also be found in the audited sections of the annual report and thus can be expected to

possess a certain level of reliability and informativeness (Jackson et al., 2008; Sumiadjji et al., 2019; Feng et al., 2019). Both observations point towards the argument that firms might emphasize reliable and informative non-IFRS earnings which reflect managers' view on permanent earnings performance. Taken together, the results suggest an informative reporting incentive for the non-IFRS earnings in the highlights section of the annual report.

The results from the robustness tests show that while non-IFRS earnings and statutory earnings complement each other, earnings-before measures and non-IFRS earnings might also complement each other to strike a balance between firm-specific information and comparability. The results indicate that firms disclose more earnings-before measures in the highlights section when non-IFRS earnings are disclosed in the highlights section. As earnings-before measures are more uniform than non-IFRS earnings measures, they likely aid in the comparability to other firms. Emphasizing earnings-before measures in addition to non-IFRS earnings in the highlights might suggest that firms are likely to present comparable earnings measures in addition to firm-specific earnings measures to reduce uncertainty and increase informativeness for investors (Kim et al., 2013; Stallings, 2017; Chen et al., 2020).

Finally, I find that analyst forecast error is lower when the highlights section contains a higher number of earnings-before measures than non-IFRS earnings measures. This result supports the previous interpretation that firms might present earnings-before measures in addition to non-IFRS earnings in the highlights with the incentive to increase informativeness. Higher accounting comparability allows analysts to make fewer adjustments for comparison purposes and lowers their cost of acquiring information (Bhojraj and Lee, 2002; De Franco et al., 2011; Kim et al., 2013; Brochet et al., 2013). Higher comparability is also associated with more informative earnings (Stallings, 2017; Choi et al., 2019; Chen et al., 2020). Thus, the results suggest that emphasizing earnings-before measures which allow for a better comparability than non-IFRS earnings, is associated with higher accuracy of analyst earnings estimates. It supports the possibility for informative reporting incentives

behind the communication of earnings performance in the highlights section of annual reports.

It is necessary to acknowledge potential limitations of the above analyses. The sample size I use for the analyses is limited due to two factors. One is the realistic scale of a manual data collection from annual reports, which restricts the number of firms. Another factor is the focus on the highlights section of the annual report, thus narrowing down our observations. The data sample consisting of the top ASX 200 companies, the most economically important ones in the Australian economy, may also limit the generalizability of the results across different geographic jurisdictions. Future studies may consider different jurisdictions where flexibility in narrative reporting is higher (lower) and where assurance provided by external auditors is not as valued, for example due to enforcement issues.

Despite the limitations, a close examination of non-IFRS and earnings-before measures in the highlights of annual reports is warranted since the placement of non-IFRS earnings in annual reports might affect the judgments of investors, especially of retail and individual investors (Frederickson and Miller, 2004; Bowen et al., 2005; Elliott, 2006; Allee et al., 2007; Johnson et al., 2014; ASX, 2020). The insights I have gained on non-IFRS earnings and earnings-before measure in the highlights of annual reports contribute to the understanding of the complementary relationship between statutory net income, earnings-before measures and non-IFRS earnings. They also contribute to the discussion around the incentives behind reporting non-IFRS earnings.

Appendix: Examples of non-IFRS earnings in Annual Reports

Example 1: Highlights containing non-IFRS earnings (Mayne Pharma Annual Report 2017)

FY17 Business Highlights

- First generic to market launch of butalbital acetaminophen tablets, generic BUPAP® (50mg/300mg) in the US, for the treatment of tension headaches
- First generic to market launch of methylphenidate extended-release (ER) capsules (60mg) in the US, indicated for attention deficit hyperactivity disorder
- Entered into a strategic alliance with Australian based development platform, Formulytica, in medical dermatology, accessing their foam technology expertise to further strengthen the pipeline
- Signed co-development agreement with Douglas Pharmaceuticals (NZ) for a generic dermatology cream

MARCH 2017

- Acquired US marketing rights to the fentanyl transdermal delivery system (25 mcg/hr, 50 mcg/hr, 75 mcg/hr and 100mcg/hr) indicated for the management of pain in opioid-tolerant patients, severe enough to require daily treatment
- Type C meeting request granted by FDA concerning further guidance from FDA for HPPi's ongoing, open-label Phase 2(b) clinical trial studying the effect of SUBA-Itraconazole oral capsules in patients with Gorlin Syndrome

APRIL 2017

- Metrics Contract Services completes and opens a new 1,580 square metre (17,000 square feet) stand-alone stability storage facility, tripling the Company's previous stability storage capacity

- Received tentative approval for ethynyl estradiol/levonorgestrel, generic Quartette® tablet for the prevention of pregnancy

MAY 2017

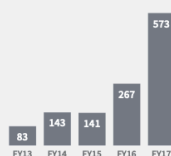
- Approval of Urorec® (silodosin) capsule in Australia indicated for relief of lower urinary tract symptoms associated with benign prostatic hyperplasia in adult men
- Metrics Contract Services supported first-ever NDA filing for a client with future manufacturing from Greenville operations
- Fluid bed spray coater (SPCG-10) qualified in development laboratories in the US to expand capabilities in multi-particulate coating technology
- Extended the supply agreement with Boryung Pharmaceutical for Astrix in Korea for an additional 20 year term

JUNE 2017

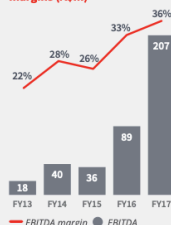
- Approval and launch of doxycycline hyclate immediate release (IR) tablets – first generic alternative to Acticlate® (75mg and 150mg) tablets, indicated for the treatment of a number of infections, including adjunctive therapy for severe acne
- Signed an exclusive global licensing agreement with Nestlé Skin Health (Galderma) to develop and commercialise trifarotene in rare skin disease indications

Key Financials

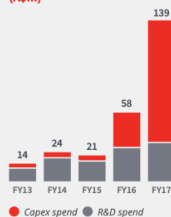
Revenue (A\$m)



Underlying EBITDA¹ and margins (A\$m)

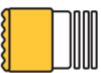


Capex and Gross R&D spend (A\$m)



1. Refer to results announcement for underlying adjustments to EBITDA

Example 2: Highlights containing non-IFRS earnings, statutory earnings and earnings-before measures (Bega Cheese Limited Annual Report 2017)

KEY HIGHLIGHTS		
	2017	2016
REVENUE (\$'000) 	1,226,663	1,195,967
PRODUCTION VOLUME (TONNES) 	236,928	238,156
EBITDA (\$'000) 	70,620 NORMALISED 228,850 STATUTORY	66,009 NORMALISED 65,405 STATUTORY
PROFIT AFTER TAX (\$'000) 	30,331 NORMALISED 138,748 STATUTORY	29,202 NORMALISED 28,779 STATUTORY
BASIC EARNINGS PER SHARE (CENTS) 	19.9 NORMALISED 90.9 STATUTORY	19.1 NORMALISED 18.9 STATUTORY
TOTAL DIVIDEND PER SHARE (CENTS) 	10.0	9.5

Normalised results exclude the impact of significant events occurring during the year.

Example 3: Non-IFRS earnings in the audited notes to the financial statements (AGL Energy Limited Annual Report 2017)

Notes to the Concise Financial Statements continued

Note 3 – Segment information continued

	Energy Markets \$m	Group Operations \$m	Investments \$m	Other \$m	Total \$m
2017					
Revenue					
Total segment revenue	12,210	455	–	1	12,666
Inter-segment revenue	(16)	(66)	–	–	(82)
External revenue	12,194	389	–	1	12,584
Underlying earnings before interest, tax, depreciation and amortisation (Underlying EBITDA)	2,508	(462)	17	(211)	1,852
Depreciation and amortisation	(95)	(363)	–	(26)	(484)
Underlying EBIT	2,413	(825)	17	(237)	1,368
Net financing costs					(228)
Underlying profit before tax					1,140
Income tax expense					(338)
Underlying profit after tax					802
Segment assets	5,530	7,403	109	121	13,163
Segment liabilities	1,472	771	1	161	2,405
Other segment information					
Share of profits of associates and joint ventures	–	1	18	–	19
Investments in associates and joint ventures	–	2	78	–	80
Additions to non-current assets	115	531	43	46	735
Other non-cash expenses	(76)	–	–	(7)	(83)
2016					
Revenue					
Total segment revenue	10,969	238	–	1	11,208
Inter-segment revenue	(13)	(45)	–	–	(58)
External revenue	10,956	193	–	1	11,150
Underlying earnings before interest, tax, depreciation and amortisation (Underlying EBITDA)	2,374	(494)	25	(216)	1,689
Depreciation and amortisation	(100)	(348)	–	(30)	(478)
Underlying EBIT	2,274	(842)	25	(246)	1,211
Net financing costs					(222)
Underlying profit before tax					989
Income tax expense					(287)
Non-controlling interests					(1)
Underlying profit after tax					701
Segment assets	5,196	7,695	68	101	13,060
Segment liabilities	1,555	984	–	168	2,707
Other segment information					
Share of profits of associates and joint ventures	–	1	25	–	26
Investments in associates and joint ventures	–	2	68	–	70
Additions to non-current assets	62	504	30	22	618
Other non-cash expenses	(73)	–	–	(6)	(79)

Example 4: Earnings-before measures in the income statement (Sydney Airport Annual Report 2017)

Consolidated statements of comprehensive income

for the year ended 31 December 2017

	Note	SAL Group		SAT1 Group	
		2017 \$m	2016 \$m	2017 \$m	2016 \$m
Revenue					
Aeronautical revenue		670.6	614.2	-	-
Aeronautical security recovery		91.3	87.3	-	-
Retail revenue		333.1	295.6	-	-
Property and car rental revenue		221.4	204.2	-	-
Parking and ground transport revenue		159.5	156.1	-	-
Other revenue		7.4	7.2	-	-
Total revenue		1,483.3	1,364.6	-	-
Other income					
Gain on disposal of non-current assets		0.1	-	-	-
Total revenue and other income		1,483.4	1,364.6	-	-
Operating expenses					
Employee benefits expense		(57.5)	(54.5)	-	-
Services and utilities expense		(84.2)	(68.9)	-	-
Property and maintenance expense		(31.4)	(30.9)	-	-
Security recoverable expense		(83.6)	(78.9)	-	-
Other operational costs		(27.8)	(24.6)	(1.9)	(1.7)
Total operating expenses		(284.5)	(257.8)	(1.9)	(1.7)
Other expenses					
Business acquisition costs	10	(1.9)	-	-	-
Western Sydney Airport project costs expensed		(0.6)	(21.0)	-	-
Loss on disposal of non-current assets		-	(0.1)	-	-
Total other expenses		(2.5)	(21.1)	-	-
Total expenses before depreciation, amortisation, net finance costs and income tax		(287.0)	(278.9)	(1.9)	(1.7)
Profit/(loss) before depreciation, amortisation, net finance costs and income tax (EBITDA)		1,196.4	1,085.7	(1.9)	(1.7)
Depreciation	11	(300.4)	(271.0)	-	-
Amortisation	12	(85.3)	(85.5)	-	-
Profit/(loss) before net finance costs and income tax (EBIT)		810.7	729.2	(1.9)	(1.7)
Finance income	6	8.1	8.3	244.7	246.5
Finance costs	6	(429.5)	(439.3)	-	-
Change in fair value of swaps	6	(0.2)	22.0	-	-
Net finance costs		(421.6)	(409.0)	244.7	246.5
Profit before income tax expense		389.1	320.2	242.8	244.8
Income tax expense	13	(40.5)	(0.6)	-	-
Profit after income tax expense		348.6	319.6	242.8	244.8
Profit after income tax expense attributable to:					
Security holders		349.8	320.9	242.8	244.8
Non-controlling interest		(1.2)	(1.3)	-	-
		348.6	319.6	242.8	244.8

The above consolidated statements of comprehensive income should be read in conjunction with the accompanying notes.

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