

**Non-GAAP earnings:
International overview and suggestions for future research**

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Abstract

Purpose - The purpose of this paper is to synthesize insights from existing research on the disclosure of non-GAAP earnings, from an international point of view, and suggest several avenues for future research in this area.

Design/methodology/approach - in conjunction with the analysis of existing research, the paper examines how different regulators and accounting standard setters have approached the topic of non-GAAP earnings disclosure.

Findings - The paper shows how non-GAAP earnings have been found to be more informative than GAAP earnings in several scenarios (countries where non-GAAP disclosures are compulsory, countries where these disclosures are voluntary but regulated and countries where they are not regulated). However, in certain circumstances, these disclosures may also mislead investors. Corporate governance mechanisms can curb managers' opportunistic use of these measures.

Originality/value - The paper provides the growing number of academic researchers in this emerging area with a foundation and agenda upon which they can build their research.

Keywords: non-GAAP earnings, pro forma earnings, alternative performance measures, headline earnings.

Paper type: Research paper

1. Introduction

When managers report their firms' financial performance they can simply disclose only the earnings measures that are required by accounting standards, or they can choose to voluntarily disclose additional performance measures, which may not follow generally accepted accounting principles (GAAP). I refer to these other measures as "non-GAAP earnings".¹ Most of the discussion around non-GAAP measures stems from one single question: do managers disclose them to inform capital markets or to mislead stakeholders?

The good news is that prior research has found that non-GAAP measures provide information that is relevant for investors and other stakeholders, beyond that of the GAAP earnings number disclosed in financial statements. This has been identified empirically in the US (e.g. Bhattacharya et al., 2003), in Europe (e.g. Guillamon-Saorin et al., 2017), and in other countries (e.g. Australia). Prior researchers have also analyzed the persistence of these measures. For example, Coulton et al. (2016) find that, in Australia, non-GAAP earnings per share are more persistent and predictable than their GAAP counterparts. Finally, Curtis et al. (2014) explore cases where firms with transitory gains disclose non-GAAP earnings that are lower than GAAP earnings and conclude that the purpose of these disclosures is to inform capital markets. Thus, the disclosure of these measures can reduce information asymmetry and provide investors with an earnings figure that is useful for forecasting and valuation.

Nevertheless, and because the disclosure of non-GAAP earnings can alter investors' perceptions of firms' performance, these disclosures can also be used by managers to attempt to mislead investors. Evidence of opportunistic behavior is usually associated with (i) the

¹ The adjusted measures created by managers are called by different names around the world. For example, in the US, they are generally called "non-GAAP measures". They are referred to as "alternative performance measures" in Europe, "non-IFRS financial information" in Australia, and "headline earnings" in South Africa. For the sake of simplicity, and because most of the studies performed on the disclosure of these measures analyze US data, I refer to them as "non-GAAP measures".

disclosure of non-GAAP measures which beat earnings' benchmarks (when GAAP earnings measures fall short), (ii) managers making adjustments for items that are recurring, and (iii) the attribution of more emphasis to non-GAAP than GAAP earnings (i.e., the strategic prominence of non-GAAP). Evidence of this opportunistic behavior is further discussed subsequently. Furthermore, short sellers' trades suggest that non-GAAP earnings provide them with exploitable information advantages (Christensen et al., 2014). Taken together, prior evidence seems to indicate that although non-GAAP measures are useful for capital markets, there are instances when they can mislead investors (especially less sophisticated users). It is this concern that has motivated some regulators to establish rules about the disclosure of non-GAAP measures.

The objective of this paper is to provide an international overview of this field of study, and suggest possible avenues for future research. I organize the factors associated with non-GAAP disclosure into (i) country-level factors, (ii) factors related to capital markets, (iii), industry-level factors, and (iv) firm-level factors. Next, I include a section on data collection and methodology. I conclude by providing my suggestions for future research and some closing remarks. Young (2014) and Black et al. (2017a) are useful complementary sources of information on non-GAAP disclosures. Young (2014) reviews the academic and professional debate surrounding non-GAAP earnings reporting by management in general, while Black et al. (2017a) provide an overview of the regulatory backdrop to the non-GAAP disclosure environment and summarize the topics with the highest impact in the literature.

2. Country-level considerations: Regulations versus recommendations and institutional settings

There is no uniform standard for the calculation of or disclosure of non-GAAP measures across countries. While in some countries, like the US and Australia, these disclosures are

voluntary and regulated, South Africa has made these disclosures compulsory. Listed firms in Europe, which are monitored by the European Securities and Markets Authority, have to consider a set of recommendations for non-GAAP disclosure. I describe the different settings and some of the prior evidence subsequently.

The US was the first country to regulate the voluntary disclosure of non-GAAP earnings. In 2001 the SEC (Securities and Exchange Commission) issued a cautionary warning. In 2003, as mandated by the Sarbanes-Oxley Act, the SEC issued Regulation G. This regulation established the conditions required for the disclosure of non-GAAP financial measures, and required firms disclosing them to provide a reconciliation between these measures and the most directly comparable GAAP measure. In the aftermath of Regulation G, firms temporarily reduced their disclosure of non-GAAP earnings measures (Marques, 2006), but the frequency of non-GAAP disclosure soon rebounded. In fact, Black et al. (2017b) document that 71% of the S&P500 firms disclose non-GAAP earnings in 2014. Moreover, the mandated reconciliation provides valuable information for capital markets (Elliott, 2006; Marques, 2010, Zhang and Zheng, 2011) and the quality of non-GAAP disclosures increased after the regulation (Kolev et al., 2008; Heflin and Hsu, 2008). Recently, the SEC has issued Compliance and Disclosure Interpretations on the disclosure of non-GAAP financial measures—the most recent one in May of 2016.

Entwistle et al. (2005) compare the disclosure of non-GAAP measures in the US to similar disclosures made in Canada. They find that there are significant differences between the reporting practices of the two countries in the year they analyze.² For example, managers in the US are “far more likely to report” non-GAAP earnings, and to give it more emphasis in the

² Another paper that compares two sets of firms is Epping and Wilder (2011). They compare non-GAAP disclosures of US-listed foreign firms with those of US firms and find that US firms disclose non-GAAP measures more aggressively.

press release. Since the one-year period analyzed (2001 to 2002) was before the introduction of Regulation G, it is now an empirical question whether these differences are still present.

There is no regulation in Europe for the disclosure of non-GAAP earnings. However, IAS 33 – Earnings per share, implicitly allows for the disclosure of these measures, by stating that “if an entity discloses, in addition to basic and diluted earnings per share, amounts per share using a reported component of the statement of comprehensive income other than one required by this Standard, such amounts shall be calculated using the weighted average number of ordinary shares determined in accordance with this Standard”, and that “if a component of the statement of comprehensive income is used that is not reported as a line item in the statement of comprehensive income, a reconciliation shall be provided between the component used and a line item that is reported in the statement of comprehensive income” (Paragraph 73).

In 2002, the International Organization of Securities Commission (IOSCO) issued a cautionary statement which, similarly to the SEC’s 2001 cautionary advice, states that non-GAAP earnings can be useful for investors “if properly used and presented”, but can also mislead investors “if such measures are used in such a way as to obscure the financial results determined according to GAAP or provide an incomplete description of true financial results”. In 2005 the Committee of European Securities Regulators (CESR), the predecessor of the European Securities and Markets Authority (ESMA), issued a set of recommendations for the disclosure of non-GAAP measures, suggesting that firms which choose to disclose these measures do it “in a way that is appropriate and useful for investors’ decision making.” In 2009 the European Financial Reporting Advisory Group (EFRAG) notes that non-GAAP figures referred to by the same name are “calculated differently by different companies” and that in many cases companies do not provide a reconciliation to GAAP information. In 2015 ESMA published its Final Guidelines on Alternative Performance Measures, for listed issuers, with

the objective of encouraging “European issuers to publish transparent, unbiased and comparable information on their financial performance in order to provide users a comprehensive understanding of their performance” (press release, ESMA, 2015).

Most papers that analyze non-GAAP disclosures in Europe use data from one single country. The most studied country is the UK, as Financial Reporting Standard 3 (1993) allows (but does not require) firms to disclose additional earnings per share to the one that is required by the standard. If non-GAAP measures are disclosed, then firms must present them consistently across time, reconcile it to the FRS3 measure and give it as much emphasis as the measures calculated according to the standard. This provision of the standard has led to the use of UK data from before the introduction of the IFRS (2005). Walker and Louvari (2003) study the determinants of the disclosure of non-GAAP measures by quoted companies. Choi et al. (2007) examine the adjustments made both by managers and analysts in their construction of non-GAAP and street earnings measures, identifying the source and properties of the items where there is no agreement.³ Consistent with the general view on non-GAAP disclosures (as discussed in the introduction) they find that most of the adjustments made by managers are valuable, but there is a subset of management adjustments that are consistent with an attempt to mislead investors. This desire to inform capital markets is again discovered in Choi and Young (2015).

In 2003 and 2005 the French market regulator, the Autorité des Marchés Financiers (AMF), issued guidelines on non-GAAP disclosures. These guidelines request the disclosure of a reconciliation between non-GAAP and GAAP measures. Aubert (2010) also states that

³ “Street earnings” are non-GAAP measures created by financial analysts. Non-GAAP and Street earnings were initially seen as one earnings’ category, and sometimes jointly referred to as pro forma earnings (e.g.: Bradshaw and Sloan, 2002). Most studies now distinguish them and do not use analysts’ figures as a proxy for the non-GAAP measures that managers disclose.

“the AMF asserted that this situation stemmed from the 2005 switch to IFRS, which is not well standardized in terms of performance results presentation.” Using data from 1996 to 2006, collected from 116 press releases, Aubert (2010) documents that the most commonly reported non-GAAP measure is “net profit before goodwill amortization”.

In Germany, the Securities Act generally prohibits the disclosure of misleading information but does not specifically refer to non-GAAP measures. Hitz (2010) investigates the disclosure of non-GAAP measures in the press releases of large listed firms of 2005 and 2006. He classifies non-GAAP disclosures into two groups, separating the measures that are reconcilable to net income from those which are reconcilable to operating income (which he calls EB – Earnings Before – measures), and documents that both sets of non-GAAP measures are amply reported.

In 2012 the Irish Auditing and Accounting Supervisory Authority (IAASA) published “Alternative performance measures – A survey of their use together with key recommendations”. In this document IAASA encourages issuers to (i) clearly define each non-GAAP measure disclosed, (ii) explain why they are disclosed and how they are calculated, (iii) disclose all non-GAAP measures in a single location, and (iv) avoid giving it undue emphasis, among other things. In 2015 IAASA published an update to the previous document, based on the 2013 annual financial statements of a selected group of firms. This review found that the disclosure of non-GAAP measures was “universal”, and that differing definitions of apparently similar non-GAAP measures are used by different issuers.

Recent research in European non-GAAP disclosures focuses on the largest firms of Europe, using a continuously increasing set of hand-collected data. Isidro and Marques (2013) report international evidence on the impact of compensation and board quality on the voluntary disclosure of non-GAAP earnings numbers, using data from 2003 to 2005. Isidro and Marques

(2015) assess the role of institutional and economic factors in the strategic use of non-GAAP disclosures to beat several earnings benchmarks, using data from 2003 to 2007. Their results indicate that there is a greater likelihood of disclosure of non-GAAP numbers that meet or beat earnings benchmarks, when the GAAP number misses the target, in countries with efficient laws and law enforcement, strong investor protection, developed financial markets, and good communication and dissemination of information. Thus, in countries where there is more pressure to meet short-term earnings targets and earnings management is more difficult, the disclosure of non-GAAP earnings to meet earnings benchmarks is more frequent. Guillamon-Saorin et al. (2017) use two sets of data hand-collected from the press releases of the largest European firms, from 2003 to 2009: (i) the non-GAAP disclosures made, and (ii) the impression management techniques used in the sections where these disclosures were made. Their results indicate that there is a market reaction to both the disclosure of non-GAAP earnings and the use of high impression management. However, the combination of the two practices is not associated with a market reaction, suggesting that investors interpret it as a possible managerial attempt to mask the persistence of the non-GAAP adjustments. In fact, in countries with more sophisticated market participants and stronger investor protection, the market reaction to the combination of non-GAAP disclosures with high impression management is statistically negative. This result suggests that in more sophisticated markets firms can be penalized for their disclosure choices.

In Australia, non-GAAP disclosures are regulated. In December 2011 the Australian Securities and Investments Commission issued Regulatory Guide 230 – Disclosing non-IFRS financial information. The major requirements of this regulation are the prominence given to non-GAAP earnings, the terminology used by firms, the disclosure of a detailed reconciliation between GAAP and non-GAAP earnings and the consistency, across time, of the adjustments made by managers. One also needs to consider that AASB 133 – Earnings per share (issued in

2004) allows the disclosure of non-GAAP earnings, in a similar way as described previously for IAS 33.

Cameron et al. (2012) observe that the non-GAAP disclosures of Australian firms, from 2007 to 2009, vary considerably, both in the way they were calculated and in the extent to which a reconciliation was provided. This result is consistent with evidence from EFRAG in Europe, and brought concerns to security regulators. Malone et al. (2016) analyze disclosures from 2008 to 2010, investigating non-GAAP earnings adjustments for fair value re-measurements made by companies and analysts, as well as the usefulness of these disclosures for analysts. The only document that exists on Australian non-GAAP disclosures after the 2011 regulation is the report by Coulton et al. (2016). Since this is not a research paper and it provides only descriptive evidence, I look forward to future studies, where the introduction of this regulation is analyzed.

As mentioned previously, South Africa is a special case, when it comes to reporting non-GAAP measures, because beginning in October of 2000, firms listed on the Johannesburg Securities Exchange are required to disclose in their financial statements their “headline earnings” per share, in addition to the earnings per share measures required by IAS 33. These non-GAAP measures exclude many non-recurring items, and thus firms disaggregate their earnings into different components. Firms are also required to include, in their financial statements, a reconciliation between non-GAAP and IFRS earnings, which is subject to audit. As headline earnings are calculated according to a specified decomposition, they are (i) less affected by managers’ discretion and earnings management, and (ii) comparable across firms. Analyzing data from 2001 to 2008 Venter et al. (2013) first assess the persistence of headline earnings adjustments, accruals, and cash flows (splitting the last two categories into the part that is included and the part that is excluded from headline earnings). Next, they analyze whether these persistence levels are reflected in price, and conclude that investors price

earnings components “in a manner that is consistent with the actual levels of persistence of these components.” In a second study, Venter et al. (2014) find that these mandated non-GAAP earnings are more informative than the GAAP earnings, and that headline earnings adjustments are value irrelevant, using data from 2002 to 2009.

In New Zealand, the Financial Markets Authority (FMA), responding to concerns that non-GAAP disclosures could mislead investors, introduced guidelines, to improve firms’ practices, in 2012. There are two studies on non-GAAP disclosures in New Zealand. However, both analyze a period before the introduction of the new guidelines. Rainsbury et al. (2012) examine the disclosure of non-GAAP earnings in the annual reports of New Zealand listed companies from 2004 to 2012, and find evidence that the disclosure of these measures can be made to inform investors, as well as to influence their perception of performance. Xu et al. (2016) analyze annual reports from 2006 to 2010, and find that non-GAAP disclosures are positively associated with share liquidity.

3. Capital markets considerations

The fact that investors and financial analysts react to non-GAAP information creates incentives for managers to use non-GAAP reporting when they want to influence the market’s perception about performance achievements. This association has led to the disclosure of non-GAAP measures which meet/beat earnings benchmarks, that GAAP earnings do not meet, to be seen as an indication of managers’ opportunistic motives (e.g.: Walker and Louvari, 2003). This characterization is especially true if the adjustments made by the firms are for recurring items. Black and Christensen (2009) report that three of the most frequent adjustments in their sample are recurring items: research and development expenses, depreciation and amortization, and share-based compensation. Barth et al. (2012) also analyze the adjustments made for share-based compensation expenses, finding that these adjustments do not predict future GAAP

earnings. They suggest the adjustment for share-based compensation expenses are used by managers not only to beat benchmarks but also to smooth earnings. Moreover, Barth et al. (2012) analyze street earnings and conclude that the adjustments made by financial analysts are associated with an increase in the predictive ability of these measures. Thus, managers and analysts, on average, have different incentives for adjusting GAAP earnings.

As mentioned previously, the practice of giving more emphasis to non-GAAP disclosures than to GAAP figures is also seen as a red flag for potentially misleading intentions. This classification is because the presentation of the non-GAAP measure before the GAAP one may alter investors' perception of the firms' results, and hamper a comparison of the two measures. Thus, several regulations/recommendations require/ask firms to give equal emphasis to the two sets of measures. Elliott (2006) is an example of a paper that analyzes the impact of non-GAAP emphasis. She finds that the influence of emphasis is mitigated by the disclosure of a reconciliation.

Another factor, related to capital markets, that is associated with non-GAAP disclosures, is investors' sentiment. Brown et al. (2012) argue that during optimistic periods, investors will evaluate managers' pro forma disclosures less rigorously and that this reduced investor scrutiny will result in lower disclosure-related costs. Their results indicate that as the level of investor sentiment increases so does (i) the propensity to disclose a non-GAAP measure, (ii) the propensity to disclose a measure that is higher than GAAP earnings, (iii) the value of the adjustments made by managers (both total and for recurring items), and (iv) the emphasis given to the non-GAAP earnings measure in the press release. All these indicators suggest that managers, in optimistic periods, use non-GAAP disclosures with misleading intentions.

4. Industry-level considerations

Most studies on non-GAAP earnings analyze all industries present in their sample, simply describing which ones represent a larger portion of the non-GAAP measures identified, without giving details about industry-specific effects. Zhang and Zheng (2011), for example, find that high-tech firms represent almost 60% of the observations where a non-GAAP earnings figure is disclosed, while Coulton et al. (2016) report that Australian companies in the utilities industry are the most likely to disclose non-GAAP earnings. Black et al. (2017a), while analyzing the disclosures of the S&P500 firms in the US, find one factor that is peculiar about firms in the financial sector: they are the ones which make the smallest number of adjustments, when calculating non-GAAP measures. In fact, on average these firms make two adjustments, while the sector of health care, for example, has an average of almost 4 adjustments.

A few papers focus on the disclosures of a specific industry. The real estate investment funds (REIT) industry is studied by Baik et al. (2008). However, this paper is focused on the disclosure of a non-GAAP measure that does not portray earnings: funds from operations. Sek and Taylor (2011) provide a case study on the non-GAAP disclosures of the four largest Australian banks, from 2003 to 2008. They find evidence that the banks disclose “cash earnings” (the most popular term, also used for ratios’ calculation), as well as “underlying earnings”, but not in a consistent manner. Moreover, the introduction of IFRS is associated with an increase in the number of adjustments made, as well as with a change in the type of adjustments made. The “new” adjustments found are changes in the fair value of hedges and changes in the value of treasury shares.

5. Firm-level considerations

Some prior research on non-GAAP earnings analyzes the determinants of the decision to disclose such measures. Lougee and Marquadt (2004), for example, consider firms' sales growth and book to market ratio (to measure the growth of the firm), the debt to equity ratio (to measure leverage), the standard deviation of return on assets (to measure earnings variability), the existence of special items, size and intangible intensity. These determinants have later been used in other studies, either in models used to test how the probability of non-GAAP disclosure is affected by an event (like the introduction of Regulation G), or in the first step of selection models (e.g.: Marques, 2006). Recently, researchers have found that firms can also change their non-GAAP reporting practices in response to debt covenant violations. Christensen et al. (2017) find that after a debt covenant violation there is a significant decrease in (i) the probability of a firm disclosing non-GAAP earnings, and (ii) the predictive value of the adjustments made.

Corporate governance mechanisms can deter managers' opportunistic behavior. This "gate-keeper" task is especially important in the case of non-GAAP disclosures, because this information is not subject to audit (except in South Africa, as mentioned). While there is only one paper on this topic that uses European data (Isidro and Marques, 2013), there are three papers analyzing the relation of corporate governance and non-GAAP disclosures that analyze data from the US. Isidro and Marques (2013) study how compensation and board quality affect the disclosure of non-GAAP earnings of the largest European firms. They find that compensation contracts of board directors that are linked to firm's market performance are associated with more non-GAAP disclosures and with several reporting practices that are seen as opportunistic: (i) reporting non-GAAP figures in the title of the press release, (ii) making more adjustments for recurring items, and (iii) not including a reconciliation in the press release. However, when the board quality score of the firm is higher, firms disclose non-GAAP earnings less frequently and give them less emphasis.

Using US data, Jennings and Marques (2011) analyze how the introduction of Regulation G, as well as corporate governance, affect non-GAAP disclosures. They consider two corporate governance variables: (i) percent of independent directors present in the board of directors, and (ii) percent of outstanding shares held by institutional investors. Their results indicate that there is a substitution effect between regulation and corporate governance mechanisms, as before Regulation G investors were misled by the adjustments made by firms with weak corporate governance, but after the regulation was issued this effect is no longer present. To provide more direct evidence of private benefits to management Frankel et al. (2011) examine insider selling following earnings announcements where non-GAAP adjustments are associated with meeting analysts' consensus, as well as board independence. They find that managers seem to use non-GAAP disclosures to appear to meet analysts' consensus prior to selling their shares more often in firms with fewer independent board members. Finally, Christensen et al. (2017) explore three monitoring mechanisms when studying the impact of debt covenant violations in non-GAAP disclosures: (i) blockholder ownership, (ii) proportion of independent audit committee members, and (iii) audit quality. They find all three mechanisms are positively associated with an improvement in non-GAAP disclosure quality.

Some papers analyze the association of remuneration practices to non-GAAP disclosures. The main idea is that certain remuneration practices may motivate a strategic (and potentially misleading) disclosure of these measures. Isidro and Marques (2013) has been discussed previously. Grey et al. (2013) study whether the existence of performance targets in executives' remuneration packages is associated with non-GAAP disclosures of the largest listed firms in the UK (in 2002 and 2003), since both EPS targets and non-GAAP figures "typically focus on permanent earnings excluding transitory items". Their results indicate that this association is present when the vesting of executive stock options is contingent on the achievement of growth

in EPS – an economically relevant result if one considers that, in this sample, the majority of executive stock options have 3-year EPS growth targets which have to be met before any options vest.

Three studies analyze how factors related to compensation are associated with non-GAAP disclosures in the US. Black et al. (2016) posit that compensation contracts can change managers' non-GAAP disclosures by leading them to focus on the long-term performance of the firm. Their evidence indicates that long-term plan incentives are negatively associated with the likelihood and magnitude of aggressive non-GAAP reporting. Moreover, data collected from proxy statements indicate that if the compensation contracts explicitly state that managers are evaluated based on non-GAAP earnings there is less aggressive non-GAAP reporting, while discretion of this matter is associated with more aggressive non-GAAP reporting.⁴ However, when controlling for board quality (as in Isidro and Marques, 2013) the impact of long-term payout is no longer significant. The same focus on the long-term is present in Curtis et al. (2015). They find that the majority of S&P firms use adjusted earnings for performance evaluation, but CEO tenure is negatively associated with the use of non-GAAP earnings for this purpose. Their additional evidence points towards efficient contracting. Finally, Kyung et al. (2016) study how clawback provisions, which allow firms to recover compensation based on financial performance that is subsequently invalidated, is associated with non-GAAP disclosures. Using two alternative measures of aggressive non-GAAP reporting (predictive power of adjustments for future operating income and the one used in Black et al, 2016) they find an increase in aggressiveness after the clawback provisions are adopted. They interpret this as evidence that an increase in the cost of manipulating GAAP earnings can cause

⁴ Aggressive reporting of non-GAAP earnings is measured in Black et al. (2016) by an indicator variable, coded as one when the adjustments made by managers are higher than the adjustments made by analysts, and zero otherwise.

opportunistic managers to change their focus to non-GAAP disclosures – which is consistent with the results of Isidro and Marques (2015).

6. Research design considerations

a. Data collection

The terms managers use, when referring to non-GAAP measures, vary greatly. These include recurring earnings, adjusted earnings, core earnings, normalized earnings, underlying earnings, etc. The fact that different firms, across different time periods, use different terms makes machine-reading of texts more inefficient than hand collection when looking for non-GAAP disclosures. However, hand-collection of data often leads to small samples, as the process is time-consuming. For example, Cameron et al. (2012) studies only 50 firms. Moreover, on the face of the need to collect information about a small number of firms, researchers tend to focus on the largest firms of the country/area they are analyzing. Although these firms are economically relevant, it is possible that researchers are missing pertinent information about the disclosure of non-GAAP measures in medium and small firms.

Researchers and regulators have also expressed conflicting views on whether or not EBIT and EBITDA, as well as adjusted versions of these measures, should be considered non-GAAP measures.⁵ For example, while Bowen et al. (2005) mentions in their footnote 9 that only adjusted EBIT and EBITDA measures were considered non-GAAP measures, Marques (2006) collects and analyzes both the adjusted and unadjusted version of these measures, since they are not defined in accounting standards and Reg. G states that EBITDA, can be “calculated using elements derived from GAAP financial presentations but, in any event, is not presented

⁵ EBIT stands for Earnings Before Interests and Taxes, while EBITDA stands for Earnings before Interest, Taxes, Depreciation and Amortization.

in accordance with GAAP”. A recent press release from ESMA (2015) considers that all these measures are non-GAAP, as it states that “examples of APMs most commonly used include EBIT (Earnings Before Interest & Tax), EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortisation), free cash flow, and underlying profit or net-debt.”

While most studies analyze the disclosures made in earnings announcement press releases, some papers analyze the text of annual reports (e.g.: Cameron et al, 2012). Moreover, there are two studies on Australian data that collect information from several sources.⁶ Malone et al. (2016) collect data from annual reports, earnings announcements and investor presentations logged with the Australian Securities Exchange (ASX). They find that from 2008 to 2010 the majority of firms presented the same non-GAAP earnings measure across all media, and that the annual report was the source with a highest percentage of non-GAAP disclosures (89%). Coulton et al. (2016) collect non-GAAP data from firms’ media releases, preliminary financial statements and annual reports, from 2000 to 2014. They find that “media releases and others are found to be the most prevalent medium of initial non-GAAP disclosure, followed by the preliminary financial statements” and interpret this as evidence that firms want to place early focus on non-GAAP earnings. This difference in the main media to disclose non-GAAP earnings in Australia may be due to: (i) different sample, as Malone et al. (2016) study the ASX 200, while Coulton et al. (2016) study the ASX 500, (ii) the fact Malone et al. (2016) have a longer time period, or (iii) the introduction of regulation, as Malone et al. (2016) do not cover data disclosed after the issuance of Regulatory Guide 230.

A final consideration in data collection is that per share non-GAAP measures that may use a number of outstanding shares that is different from the one used in the calculation of GAAP

⁶ One needs to consider that IAS 33 only applies to the non-GAAP figures disclosed in the financial statements. Thus, the measures disclosed in the financial statements may not be directly comparable to the ones discussed in other documents (e.g.: press releases).

EPS, as this would reduce the comparability of the measures. If the denominator used in the calculation of non-GAAP EPS by managers is different from the one used in the calculation of GAAP EPS researchers could make adjustments to increase comparability or flag these observations for further analysis. In fact, Bhattacharya et al. (2003) document that analysts appear skeptical of measures where “managers manipulate the number of shares used in the EPS calculation”. Moreover, when researchers collect aggregated measures (as adjusted net income) and need to calculate an equivalent per share measure they should use the number of outstanding shares used in the calculation of GAAP EPS.

b. Methodological considerations

While most of the studies on non-GAAP disclosure are empirical archival, there are a few experimental papers. These studies have high internal validity, as the researchers can control for the influence of external factors on the results, reducing the impact of systematic error. Moreover, if both archival and experimental studies’ findings are consistent, researchers recognize these findings are robust. Next, I present the findings of four experimental studies on non-GAAP disclosures: the initial two were performed in the US, but the latter ones were performed in Sweden and Australia.

Frederickson and Miller (2004) find that less sophisticated investors’ judgements are affected by the disclosure of a non-GAAP measure which is higher than the GAAP figure, while there is no impact in the calculations of analysts. Elliott (2006) expands on this evidence by considering both the emphasis given to the non-GAAP measures and manipulating whether or not a reconciliation is provided to explain the non-GAAP measures. Her results indicate that analysts react to these two treatments differently than non-sophisticated investors. While non-sophisticated investors react to the emphasis given to the non-GAAP disclosure (a reaction that

is reduced in the presence of a reconciliation), analysts interpret the presence of a reconciliation as a sign of non-GAAP reliability. Allee et al. (2007) directly tests both Frederickson and Miller (2004)'s and Elliott (2006)'s experimental evidence using archival data.

In an experiment with Swedish financial analysts Andersson and Hellman (2007) test their reactions to a setting where the non-GAAP measure is a profit, while the GAAP earnings figure is a loss. They find that the presence of such a non-GAAP measure is associated with higher forecasts of EPS. Thus, analysts can also be affected by these voluntary disclosures. Johnson et al. (2014) perform an experiment in Australia where, like in Andersson and Hellman (2007), non-GAAP is positive, while the GAAP earnings are negative. They find that if non-GAAP earnings are disclosed in the narrative section of the annual report non-sophisticated investors, when asked to identify profitability measures, select this information.

Some of the initial empirical archival studies have found that non-GAAP earnings were more informative than GAAP earnings analyzing earnings surprises. The two sets of earnings surprises (GAAP and non-GAAP) were calculated considering, as the expected value for both non-GAAP earnings and GAAP earnings, analysts' consensus (e.g. Marques, 2016). This was due to the lack of other forecasts. However, analysts' forecasts are not of GAAP earnings, but of street earnings, which are not calculated according to GAAP. Thus, the fact that there was only one set of earnings forecasts available introduced a measurement error in the analyses. This problem is discussed in detail in Cohen et al. (2007). Since I/B/E/S now provides both GAAP forecasts as well as non-GAAP forecasts, these two measures can be used to calculate the GAAP surprise and non-GAAP surprise, respectively. Bradshaw et al. (2016) use these two sets of forecasts to re-assess whether non-GAAP earnings are more informative than GAAP earnings, after correcting for the measurement error. Their conclusions validate previous studies, as non-GAAP earnings remain more informative to investors than GAAP earnings.

7. Suggestions for future research

Although there are several papers published on the topic of non-GAAP earnings, this is a field that can produce information of interest not only for investors, but also for standard setters and regulators. Thus, there is scope for several future studies on non-GAAP earnings disclosure. Some ideas that can be developed in the future are discussed next.

a. Country-level characteristics and across-countries studies

Black et al. (2017a) finish their paper by stating that there is significant room for additional evidence from other (than the US) settings around the world. I agree with this statement. However, future research should avoid pure replications of prior evidence (for example, showing that some effect documented in the US is also present in another country), and strive to analyze characteristics that are unique to the countries studied. A good example of this is Venter et al. (2013, 2014), which takes advantage of the fact that South African non-GAAP disclosures are compulsory. These results could be extended by analyzing how the mandatory non-GAAP measures differ from other non-GAAP measures, which managers disclose voluntarily. Understanding which firms engage in voluntary disclosure of additional non-GAAP measures (and their reasons) could provide insights valuable to regulators. Another example of a potentially interesting open question based on a country's characteristic is whether IAASA's recommendation to disclose all non-GAAP measures in a single location has any impact on how these measures are processed by investors of Irish firms.

Australia, on the other hand, seems to be the ideal setting to study the impact of changes in IFRS on the disclosure of non-GAAP measures, as the country totally converted to

standards that are equivalent to the international standards in 2005 (unlike in Europe, where only listed firms did). This provides researchers with a large sample, including firms of different sizes. However, researchers need to consider the pre-existing differences between local GAAP and IFRS. While the financial press suggested that IFRS adds additional complexity to financial information, which may increase rather than reduce non-GAAP disclosures (e.g.: Bruce, 2007), Isidro and Marques (2015) find that the European firms reporting under IFRS disclose less non-GAAP information. This evidence is consistent with IFRS leading to an improvement in the reporting quality of GAAP information, as suggested by Barth et al. (2008). Thus, while Malone et al. (2016) investigate the setting of IFRS adoption in Australia, focusing on fair value, future studies could study the time of changes in standards, and how those changes relate to non-GAAP earnings disclosures, as this could be of interest to standard setters. Complementary, researchers will be able to assess the impact of the introduction of the 2011 regulation on non-GAAP disclosures.

Moreover, researchers can analyze how country-level characteristics affect already documented associations. Isidro and Marques (2015) analyze the impact of some institutional and economic factors, across several European countries, on the use of non-GAAP measures to beat earnings benchmarks. A future study could, for example, assess the impact of cultural characteristics, as the six identified in Hofstede (2001), or the scores identified by Project Globe (House et al., 2004).

Finally, new research should be done in order to assess what impact ESMA's new set of recommendations has had on the disclosure of non-GAAP performance measures by listed European firms. This new research should not focus exclusively on non-GAAP measures that are comparable to net income, as most papers have done so far, but also consider earnings measures that are closer to operating income. This is because ESMA's press release (2015) states that "examples of APMs most commonly used include EBIT

(Earnings Before Interest & Tax), EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortisation), free cash flow, and underlying profit or net-debt.”

b. Textual analysis

Guillamon-Saorin et al. (2017) manually collect the non-GAAP earnings measures disclosed and code the use of impression management techniques that surround these measures, for a sample of 845 observations. They also analyze, with machine coding, how the tone of the sentences related to non-GAAP is associated with markets’ reaction to earnings announcement. More work should be done on the way managers report non-GAAP measures, so that investors are aware how different reporting practices of these measures can affect their decisions and market outcomes. Machine coding can be used in order to analyze the texts or, at a minimum, to identify a large sample of observations with non-GAAP that later need to be coded by hand. Bentley et al. (2016) and Coulton et al. (2016) have initiated this trend, by using machine coding to find the measures, and future research could further it by using machines to collect more information. The textual analysis could reveal, for example, (i) whether the readability level of press releases with non-GAAP disclosures is similar to those where only GAAP measures are included, (ii) if the sections where non-GAAP measures are disclosed are different from the remaining sections of the text, (iii) what are the topics that are usually disclosed before and after non-GAAP disclosures, in order to explore whether there is a firm-specific structure in the press release.

Textual analysis can also be used to determine the main media for the disclosure of non-GAAP disclosures, since the evidence using Australian data are not consistent (Malone

et al., 2016; Coulton et al., 2016). Furthermore, it would be interesting to know whether the main media used changes across countries, geographical areas, and regulatory systems.

c. Corporate governance

In a recent roundtable on “A governance research agenda for the academy” at Columbia Law School (Bucsescu, 2017) it was argued that a major corporate governance challenge is the “inadequate shareholder commitment to long-term cooperation”, and that two commitment devices are staggered boards and supermajority voting. These mechanisms, analyzed in Cremers and Sepe (2016) and Cremers et al. (2016), should help ensure that managers feel more confident taking long-term value-maximizing decisions. Future research could investigate whether the firms that have these mechanisms in place disclose both non-GAAP earnings and non-GAAP forecasts, as a way to inform investors of their long-term plans.

Swanson and Young (2017) investigate how three types of highly informed market participants (financial analysts, short sellers and institutional investors) respond to activist interventions. They find that financial analysts and short sellers respond to the purchase of shares by activists “as if the increase in stock price at the activist intervention represents real value creation”. Moreover, the ownership by dedicated (long-term) institutional investors increases following an activist intervention. Thus, all three types of informed market participants react positively to activists. Swanson and Young (2017) also provide evidence that an index of financial statement fundamentals improves after activists’ interventions. It would be interesting to analyze whether disclosures (in general, and also considering non-GAAP earnings) also improve after these interventions and whether the effect of disclosure mediates the main results of the paper.

Another point which could be interesting to analyze is how the characteristics of the several parties involved in providing information to capital markets shape the non-GAAP disclosures made. It is not clear which party is more responsible for the style and content of press releases and annual reports. Are they mostly shaped by the investors' relations departments? The chief executive officer? Or the chief financial officer? A future study could assess how the characteristics (risk avoidance, overconfidence, education, etc.) of these three parties are associated with the quality of the non-GAAP earnings disclosed.

d. SEC's interpretation

Elliott (2006) finds that the influence of emphasis given to non-GAAP measures is mitigated by the disclosure of a side-by-side reconciliation, and Marques (2010) finds that the information content of these reconciliations is higher than that of the other ways of explaining the difference between GAAP and non-GAAP earnings. However, the May 2016 SEC interpretation, on paragraph 102.10, states that “presenting a full non-GAAP income statement when reconciling non-GAAP measures to the most directly comparable GAAP measures” is considered by the staff as a practice that gives more prominence to non-GAAP than GAAP earnings. Thus, future research could further investigate if recently capital markets concur with this view, and whether the disclosure of this type of reconciliation disappears after 2016. A related issue that may reveal interesting insights for standard setters is the study of firms that discontinued the disclosure of non-GAAP measures.

In paragraph 103.02 of the same SEC interpretation it is stated that “If a company presents EBIT or EBITDA as a performance measure, such measures should be reconciled to net income”, and not to operating income. It is also stated that “these measures must not

be presented on a per share basis”. Since there is evidence of ample disclosure of these measures, it is an empirical question what the impact of this paragraph will be.

e. Others

It would be worthwhile investigating whether firms, or CEOs, have a specific disclosure pattern or quality. If such firm-level standards of disclosure exist then informative non-GAAP disclosures should be made by firms which also provide capital markets with other useful information voluntarily. This is especially important at a time when there are calls for integrating corporate reporting, like the one made by the Federation of European Accountants (2015).

Finally, and since there is little research done on industry-based effects, I suggest that future studies consider whether there are certain industry-level regulations, practices, or characteristics that may affect the disclosure of non-GAAP earnings. For example, consider that the mining industry is excluded from major standards such as inventories, intangible assets and property, plant and equipment. Is this exclusion associated with more or less disclosure of non-GAAP earnings?

8. Conclusion

The study of non-GAAP earnings disclosures has been growing steadily. Descriptive evidence indicate that the disclosure of these measures is a current practice in several countries, and that it has been increasing. Regulators and standard setters have considered them in their deliberations and continue to discuss them, given their role in financial reporting (Gordon et al., 2015). All of this makes this area an exciting one to work on. This

paper provides an international overview of the main findings in the area and leaves suggestions for questions that remain to be explored. Other questions will emerge as further research is undertaken. All these are opportunities for academics to provide unbiased and rigorous analyses, which can help develop the functioning of capital markets.

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