

Disclosure of Alternative Performance Measures in European Companies from the Health Care Sector

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Abstract:

In this paper, I examine the discipline of companies in disclosing supplementary information about alternative performance measures (APMs) presented in their annual reports. I investigate the nature of disclosed measures, their location within the annual reports, discipline in differentiating unaudited APMs from audited GAAP measures, signposting to the reconciliation of APMs to their closest GAAP measures and significance of non-GAAP earnings adjustments. I use qualitative methods on hand-collected data from 40 European companies in the *Health Care* sector included in the MSCI EAFE ETF as of March 2023. I find that APMs are used by 95% of the companies but only 20 % of them differentiate APMs from other measures. 75 % of the companies reported non-GAAP earnings with 30 % making significant adjustments.

Keywords:

Alternative performance measures; non-GAAP performance measures; Financial reporting

JEL Classification: M4

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1. Introduction

Alternative performance measures (APMs), also called “non-GAAP” or “non-IFRS” measures, were first adopted by US technological companies during the dot-com period. Traditional accounting models struggled to capture their unprecedented business models – especially regarding investments in intangible assets such as R&D, information technology, trademarks, human capital etc. (Lev and Zarowin, 1999). Since then, these measures have become even more popular. In 2016, 97 % of companies in S&P 500 were disclosing APMs, compared to 59 % in 1996 (Audit Analytics, 2018).

APMs, or non-GAAP measures, are generally defined as indicators of financial performance disclosed in addition to those required by the accounting standards or the legislation. The increasing use of APMs by firms is also reflected in accounting literature. APMs were first studied for their usefulness in forecasting future earnings but also for their possibility of being misused by the management to meet market expectations (Arena et al., 2021). This dual conflicting theoretical framing—enhanced value relevance for investors versus the risk of opportunistic use by the management—constitutes the cornerstone of the APM literature (Brosnan et al., 2024) and is examined in detail in the next section.

Based on empirical evidence, several initiatives have been launched to regulate the disclosure and the use of these measures. For example, in 2002–2003 SEC introduced the first regulation of APMs through *SOX* and *Regulation G*. ESMA and IOSCO followed with their regulation in 2015 and 2016, respectively. One important difference is that totals and subtotals of the income statement are considered APMs by ESMA, as unlike US GAAP, currently adopted IFRS do not define them precisely. Therefore, they are not as comparable and could potentially be misleading to investors. Due to this criticism, IASB issued a new IFRS 18. IFRS 18 is the first accounting standard that introduces regulation of APMs¹. Public Company Accounting Oversight Board (PCAOB) in the US has been considering expanding auditors’ responsibilities to audit non-GAAP measures, since they are not yet fully subject to audit. More recent studies explore the impact of corporate governance and auditing on the quality of non-GAAP reporting (e.g. Lamoreaux et al. (2024), Feng et al. (2023), Anderson et al. (2022)).

Since overwhelming amount of research has been done on US companies using “street earnings” and mostly quantitative approach, there is an opportunity in studying APM reporting in other regulatory and institutional contexts than US as

¹ IFRS 18 uses the term “Management-defined Performance Measures” which has a narrower definition compared to APMs.

well as using more qualitative approach for analyzing “proforma earnings”², their disclosure characteristics and assessing the adherence to regulation (Brosnan et al., 2024), (Marques, 2017). This paper expands the current research by studying qualitative characteristics of APM-related information disclosure, such as the nature of disclosed APMs as well as reporting of supplementary information about presented APMs in annual reports of European companies.

In particular, this paper analyzes the annual reports for FY2022 of 40 European companies from the Health Care sector included in the MSCI EAFE ETF as of March 2023. Using qualitative analysis of hand-collected data, I examine the types of performance measures disclosed on the “frontpage” of annual reports. Moreover, the potential risk of misleading of unsophisticated users are examined, by observing whether the unaudited APMs are differentiated from the audited GAAP measures. Moreover, I study the discipline of companies in providing sign postings to the reconciliations of the presented APMs, the nature of the disclosed APMs, their location within the annual reports and the significance of non-GAAP earnings adjustments.

This paper provides a contribution to the regulators and academics, as it expands the literature on qualitative characteristics of APM reporting in European markets. It highlights the areas, where APM reporting could improve – either through stricter regulation or increased discipline of the management. This paper confirms the pressing need for further regulation, not only to protect the increasing number of unsophisticated investors which could be misled by them, but to also improve the informativeness of APMs for the stakeholders.

2. Background

2.1 Economic rationale for APMs reporting

The Conceptual Framework for Financial Reporting defines the objective of general-purpose financial reporting as providing useful information to a wide range of users. In practice, however, the primary users of financial statements are current and potential investors and creditors (IASB, 2018). These user groups may have different, and at times conflicting, information needs. For this reason, IFRS allow entities to disclose additional information which may benefit a specific group of users (IASB, 2018), such as APMs.

A growing body of literature emphasizes these informational benefits of APMs to the users. The proponents argue that APMs provide an enhanced view of the

² “Street earnings” are non-GAAP measures calculated by external analysts and could be found in various databases, whereas „proforma earnings” are calculated by the management of the company and presented in earnings announcements or annual reports.

underlying business performance and may be more value relevant than traditional accounting measures (Brown and Sivakumar, 2003), (Landsman et al., 2007), (Ribeiro et al., 2019), (Black et al., 2021). For example, the adjustments for non-reoccurring items are beneficial for forecasting future earnings. Davern et al. (2019) also find their timely availability to be a factor in investment decisions.

Several factors have contributed to the increasing use of APMs. Dechow et al. (2024) identify structural changes in the economy, including a shift towards technology-driven and human capital-intensive industries, where the firm value is less closely aligned with the GAAP earnings. Additionally, certain GAAP components may exhibit mixed attributes, such as expensing investments with future benefits (e.g. R&D), the presence of transitory items, or differing views on the treatment of specific components such as stock-based compensation. Finally, increased business volatility, including mergers and acquisitions, restructuring activities, and asset write-offs, has led to a greater prevalence of non-recurring items affecting GAAP earnings.

In a similar way, according to CFA Institute's (2016) survey, over half of professional investors use non-GAAP measures to assess the quality of GAAP earnings and find non-GAAP earnings valuable for analyzing trends and predicting future economic performance. The XRB's (2017) survey finds that non-GAAP reporting helps investors to acquire information that would not be possible to obtain from the traditional financial statements. This ties back to the different or opposing information requirements of the primary users of financial statements – as the standard setters focus more on valuation in the balance sheet (which is useful for the creditors) while the investors are interested in understanding the earnings power of the business.

Interesting perspectives provide studies of standardized non-GAAP adjustments – e.g. requirement of S&P about uniform computation of *Core earnings* measures from 2002 (Wieland et al., 2013) or South African companies reporting earnings adjusted for precisely defined items (Venter et al., 2014), where the non-GAAP earnings were observed to be more value-relevant than the GAAP earnings. Despite the good results, adoption of unified adjustments across all companies would be challenging due to the different business models and economic backgrounds.

2.2 Opportunistic use of APMs

Despite their potential benefits, APMs have been widely criticized for their susceptibility to opportunistic use. Due to the less strict regulation, managers may present non-GAAP measures in a way that is misleading or strategically aligned with market expectations (Curtis et al., 2014), (Isidro and Marques, 2015), (Laurion and Sloan, 2021).

Marques (2017) identifies key strategies, through which opportunistic behavior may be manifested, including:

- disclosure of non-GAAP measures that exceed earnings benchmarks – when GAAP earnings are worse than expected (Heflin and Hsu, 2008), (Black et al., 2017),
- adjusting non-GAAP earnings for recurring items (Kolev et al., 2007), (Shiah-Hou and Teng, 2016), (Zudana and Opare, 2025),
- strategic prominence of non-GAAP measures in annual reports and press releases (Allee et al., 2007), (Guillamon-Saorin et al., 2017).

Importantly, the impact of opportunistic reporting varies across investors. Bhattacharya et al. (2007), Johnson et al. (2014), Reimsbach, (2014) suggest that sophisticated investors are less likely to be misled by opportunistic non-GAAP reporting compared to unsophisticated investors, moreover they penalize firms for their opportunistic use (Guillamon-Saorin et al., 2017). Allee et al. (2007) find that the prominence of APMs in annual reports and press releases play a role in misleading of unsophisticated investors. The possible motivators may not only relate to stock valuation, but they can also be dependent on personal benefit in the form of management bonuses (Curtis et al., 2021) or insider trading (Shiah-Hou and Teng, 2016).

2.3 Regulatory responses to APM reporting

Given the observed misuse of APMs, securities regulators have developed several measures to protect the users from manipulative practices. For example, the regulations by (SEC, 2003, ESMA, 2015, IOSCO, 2016) prohibit APMs to be emphasized over GAAP measures and labelled in a way that could be misleading to the users (e. g. using terms such as “guaranteed profits” or labels that could result in mistaking APMs for GAAP measures). Management should justify the usefulness of the APMs presented to the investors and disclose their reconciliation to the closest GAAP measure. In the reconciliation, they must identify and separate each type of adjustment and explain the reason why it was made. The management should also ensure that the presented APMs are computed consistently throughout the reporting periods and provide comparable APMs for the previous periods.

Black et al. (2012), Chen (2010), Zhang and Zheng (2011) find that the *SOX* and the *Regulation G* adoption increased the quality of non-GAAP reporting and improved its trustworthiness in the eyes of investors (Black et al., 2012). Frankel et al. (2011) observed that boards with more independent directors are less likely to make adjustments reflecting opportunism – which was also improved with introduction of the *SOX* and the *Regulation G*. Moreover, high-quality

reconciliations increase the quality of non-GAAP reporting (Elliott, 2006) and help to reduce market mispricing (Aubert and Grudnitski, 2014).

Despite the overall positive impact of the *SOX* and the *Regulation G*, some companies continued disclosing non-GAAP earnings that could be misleading (Black et al., 2017). Kolev et al. (2007) found that managers started shifting recurring expenses into special items more often than prior to the regulations. Bond et al., (2017) and Kyung and Weintrop, (2016) observed higher levels of aggressive non-GAAP reporting after the introduction of *C&DIs*³ by the SEC in 2010, partially reversing the positive outcomes of the *SOX* and the *Regulation G*.

At this time, there are not many studies on the effects of the regulation introduced by ESMA in 2015. ESMA required the guidelines to be implemented by the competent national authorities into their regulatory frameworks. In France, Grégoire and Guillaume (2024) observed a decrease in the relevance of non-GAAP earnings after the implementation, however they found that it helped to reduce the information asymmetry between managers and investors. In Germany, Jana and McMeeking (2020) studied APM disclosure and concluded that there is a significant room for improvement to meet the ESMA's requirements.

2.4 Development of research questions

To address this research gap, this paper focuses on four interrelated research questions to be examined in the European context. Unsophisticated investors are often misled by APMs due to their prominence in the annual reports (Allee et al., 2007) (Guillamon-Saorin et al., 2017). I examine what types of performance measures are presented at the beginning of annual reports. ESMA (2015) requires that APMs are presented in a way that they could not be mistaken for GAAP measures – consequently, I assess whether APMs could be easily distinguished. CFA Institute (2016) and IASB (2020) found that the investors would welcome better discipline of companies including the signposting and the location of the reconciliation next to the presented APMs. I examine the difficulty of obtaining this reconciliation by the users. My first research question is formulated as follows:

³ In 2010, SEC issued new *Compliance and Disclosure Interpretations (C&DIs)* to relax the regulatory environment and help to eliminate the “administrative burden” associated with exclusion of recurring items.

RQ1: What types of performance measures are presented at the beginning of annual reports? Could the APMs and GAAP measures be easily distinguished? Is it easy to obtain the reconciliation of the APMs to their closest GAAP measure?

APM reporting in Europe differs from non-GAAP reporting in the US. Non-GAAP reporting is not permitted in the financial statements and notes prepared according to US GAAP. As the currently adopted IFRS do not define totals and subtotals of the income statement, the comparability of this financial statement is limited. For this reason, these totals and subtotals are considered APMs by ESMA.

If APMs are indeed opportunistically used by the management as many studies suggest, their presentation in the IFRS income statement could present an additional risk of misleading the investors. However, as APMs are helpful to the investors (CFA Institute, 2016), (XRB, 2017), their presentation in the “*Management view of the business performance*” part of the annual reports is appropriate.

ESMA requires that companies disclose all APMs used in their annual reports. As the definition of APMs is partly subject to entity’s own interpretation, one company may consider a specific measure to be APM while another may not. This creates a problem of incomparability. I compare the APM disclosures based on a uniform definition with the mandatory APM disclosure in the annual reports. I also examine the nature of APMs that were disclosed. My second research question is:

RQ2: Where in the annual reports are the APMs usually presented? Do companies disclose all APMs presented in annual reports? What kind of APMs are usually presented?

IFRS 18 aims to make non-GAAP earnings adjustments more transparent to stakeholders. Non-GAAP earnings adjustments may be influenced by industry specifics. Consequently, I focus specifically on one sector. Due to the appropriateness of each adjustment being best assessed on case-by-case basis, I focus only on their nature and significance. My third research question is:

RQ3: What kind of adjustments do companies make to non-GAAP earnings? Are these adjustments significant?

Lastly, I study the relationships among the collected data and assess any impact of business model and country on APM reporting. Studies such as Cheng et al. (2024), Black et al. (2018), Isidro and Marques (2021) find varying popularity of APM reporting across different industries. Perhaps this could be due to accounting models not being “one size fits all” for each industry and business model. Even within the health care sector, there are different business models with various levels of uncertainties and strictness of regulation. Moreover, local specifics of accounting regulation in Europe may impact APM reporting. My fourth research question is:

RQ4: What relationships could be observed from the collected data? Does business model influence APM reporting? Does country of the firm impact APM reporting?

3. Methodology

The sample was selected from the *Health Care* sector of MSCI EAFE ETF index as of March 2023. The analyzed annual reports were for the financial year 2022. As the APM disclosure quality was assessed based on regulation from ESMA, only European companies were considered, amounting to 40 companies (Tab. 1 contains overview by countries). The information about APMs was hand-collected from the annual reports and categorized and coded as described further.

Tab. 1: Overview of the sample by country

Country	Country Code	Count
Belgium	BE	1
Switzerland	CH	7
Germany	DE	7
Denmark	DK	4
Spain	ES	1
Finland	FI	1
France	FR	6
United Kingdom	UK	5
Italy	IT	3
Netherlands	NL	3
Sweden	SE	2
Total		40

As the definition of APMs could be subject to entity's own interpretation – one company may consider a specific measure to be APM while another may not, I assess the types of performance measures at the beginning of annual reports based on a uniform definition. I consider APMs as all financial performance measures not defined by the accounting regulations including financial ratios. I view GAAP measures as the measures defined by the accounting regulators, totals and subtotals of the income statement (despite not being defined by IFRS in 2022) and margins calculated from sales and operating results determined in accordance with the accounting framework. Non-financial measures are considered operational or statistical indicators such as the number of employees, the number of branches,

etc. The year-on-year % growth of individual indicators is not considered as any measure. In case a measure was stated for several periods, it is counted as one measure. Tab. 2 contains examples of different measure types as well as examples of APM categories used in the second analysis.

Tab. 2: Use of categories of APMs in this paper

Type of measure	Category	Example
APM	Conversion of GAAP measures to constant exchange rates (CER)	Sales (or earnings) converted to constant exchange rate
	Earnings adjusted for extraordinary items	<i>Core Operating Income, Core EBITDA, Core ESP, Core Margin</i>
	Revenue related	<i>EBIT Margin, EBITDA Margin</i>
	Profit related	<i>EBIT, EBITDA, NOPAT</i>
	Profitability related	<i>ROIC, ROE, ROA, ROCE</i>
	Cash related	<i>Free cash flow</i>
	Asset related	<i>CAPEX, Working Capital</i>
	Liquidity, financial stability and financing related	<i>Net debt, Debt/Equity, WACC</i>
GAAP measures	Classic	Revenues, profit, R&D expenditure
	Relative	<i>EPS, margin computed from GAAP measures (e.g. Gross Margin)</i>
Non-financial		Number of projects in 2 nd or 3 rd phase of clinical trials, number of countries of operation, number of countries of distribution, number of employees, % of women in leadership positions

I examine whether the companies in the sample utilized labels such as “APM”, “non-IFRS” or “non-GAAP” anywhere on the page containing presented APMs at the beginning of annual reports. Moreover, I assess the difficulty of accessing reconciliations of the APMs to their closest GAAP measure through monitoring whether the companies in the sample indicated (e.g. via footnote):

- the chapter and page number,
- only the title of the chapter,
- none of the above,

containing the reconciliation to the closest GAAP measure.

Based on a uniform definition of APMs mentioned above, I investigate where in the annual reports were APMs usually presented – beginning (e.g. chapters “*Financial highlights/At Glance*”), “middle” as business performance through eyes of the management (e.g. chapters “*Management/Financial review*”) or in the financial statements and notes. I compare my findings of APMs located in the annual reports based on a uniform definition with the mandatory APM disclosure required by ESMA. I also track the nature of the mandatory disclosed APMs as specified in Tab. 3.

The nature and the significance of non-GAAP earnings adjustments is examined in the following ways. I consider an adjustment to be significant when its amount surpasses 50 % of the GAAP measure to which the APM is reconciled. The nature of the non-GAAP earnings adjustments are tracked in the categories below:

- Restructuring,
- Amortization and impairment of intangible assets,
- Acquisition and business combination,
- Legal expenses and provisions for litigation,
- Tax-related adjustments or impacts of adjustments on taxes,
- Other.

Tab. 3: Use of categories of APMs in this paper

Tracking	Type of APM
Occurrence	CER
	Core
	EBITDA
	EBIT
	Net debt
Count per group	FCF
	Revenue-related
	Profit-related
	Profitability-related
	Cash-related
	Asset-related
	Fin. stability/financing-related

Lastly, I study the relationships between the collected data and assess the possible impact of different business models and countries on APM reporting. First, I examine the relationship between the number of APMs reported at the beginning of annual reports and other factors using OLS regression and logistic regression as implemented in the statsmodels library in python (Seabold and Perktold, 2010) – for more detail see Tab. 4.

From the perspective of the signaling theory, where APMs are seen as providing useful information to stakeholders, disclosure of more APMs could be associated with increased reporting quality. This means increased likelihood of distinguishing APMs from GAAP measures, signposting to reconciliations and reporting more GAAP and non-financial measures at the beginning of annual reports. From the perspective of managerial opportunism, more APM disclosure could mean higher non-GAAP earnings adjustments⁴ and the presence of APMs in the financial statements and notes (assuming this could be potentially misleading to investors).

Tab. 4: Relationship between the number of APMs at the beginning of annual reports and other factors

Line	Test	Y variable	X variable	Y variable type	X variable type	Method
1	Number of APMs at the beginning of annual reports and labelling of APMs	Labelling of APMs	APMs at the beginning of annual reports	0/1	Number	Logistic regression
2	Number of APMs at the beginning of annual reports and signposting to reconciliation	Signposting to reconciliation	APMs at the beginning of annual reports	0/1	Number	Logistic regression
3	Number of APMs at the beginning of annual reports and presence of APMs in the financial statements and notes	Presence of APMs in financial statements and notes	APMs at the beginning of annual reports	0/1	Number	Logistic regression
4	Number of APMs at the beginning of annual reports and GAAP and non-financial measure at the beginning of annual reports	APMs at the beginning of annual reports	GAAP and non-financial measure at the beginning of annual reports	Number	Number	Linear regression

⁴ In this analysis the total non-GAAP earning adjustments were expressed as a percentage of the closest GAAP measure

Line	Test	Y variable	X variable	Y variable type	X variable type	Method
5	Number of APMs at the beginning of annual reports and the total amount of non-GAAP earnings adjustments	APMs at the beginning of annual reports	Total amount of non-GAAP earnings adjustments	Number	Number	Linear regression
6	The total amount of non-GAAP earnings adjustments and presence of APMs in financial statements and notes	Presence of APMs in financial statements and notes	Total amount of non-GAAP earnings adjustments	0/1	Number	Logistic regression

To assess the impact of different business models on APM reporting, the sample was divided into two groups (Tab. 5) – *Pharmaceuticals and Biotechnology (P&B)* and *Medical Technology and Specialized Services (MT&SS)*. Due to a stricter regulation and lengthier approval process of pharmaceutical products, I hypothesize *P&B* make higher non-GAAP earnings adjustments compared to *MT&SS* firms. In contrast, I expect that the type of business model does not influence the number of APMs at the beginning of annual reports. This was tested by the two-sample T-tests and two one-sided tests as implemented in scipy library in python (Virtanen et al., 2020) as summarized in **Tab. 6**.

Tab. 5: Dividing the sample based on the business model

Group	Characteristic	Example	Number of companies
Pharmaceuticals and Biotechnology	Companies whose core business is the discovery, development and commercialization of therapeutic drugs and vaccines.	Astra Zeneca, Novartis, GSK	19
Medical Technology and Specialized Services	Companies that focus on physical medical hardware, diagnostic tools or specialized B2B services.	Alcon, Cochlear, Eurofins	21

Tab. 6: Impact of the business model on APM reporting

Line	Test	H ₀	Method
1	Number of APMs at the beginning of annual reports	Groups have equal means	Two one-sided tests

Line	Test	H ₀	Method
2	Presence of APMs in the financial statements and notes	Groups have different means	Two sample T-test
3	Total amount of non-GAAP earnings adjustments	Groups have different means	Two sample T-test

To study how firms' country may influence APM reporting, I used the Kruskal-Wallis test as implemented in scipy library in python (Virtanen et al., 2020). As this test requires at least 5 observations in each category, the analysis was performed only for Swiss, German, French and UK companies (Tab. 1).

4. Results and discussion

At the beginning of the annual reports, 95 % of the companies in the sample disclosed at least one performance measure, 93 % at least one GAAP measure, 88 % at least one non-financial measure and 78 % at least one APM (Tab. 7). As APMs were reported by the least number of companies, it does not seem to reflect the theory that APMs are popularly used to mislead the stakeholders⁵, as some studies suggest.

On average, each company disclosed 5–6 measures in each category and 16 measures in total. Each type of measure was represented almost equally (35 % GAAP measures, 34 % non-financial measures, 31 % APMs) – with APMs slightly less represented compared to other measures.

Tab. 7: Analysis of nature of measures reported at the beginning of annual reports

	GAAP	APM	Non-financial	All measures
Total measures observed in the sample	223	201	216	640
Ratio of measure types	35%	31%	34%	100%
Number of companies disclosing the measure type	37	31	35	38
Number of companies disclosing each measure type as % of the sample	93%	78%	88%	95%
Average	5,58	5,03	5,40	16,00

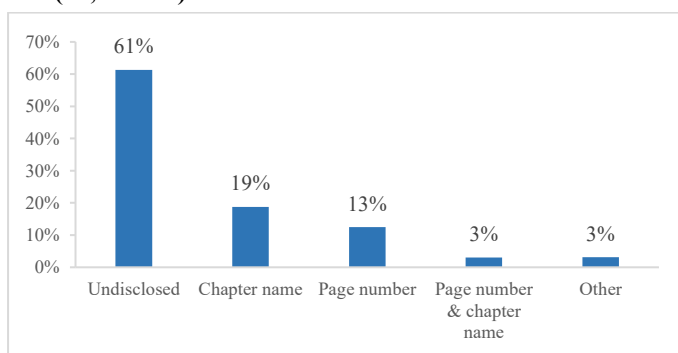
⁵ Assuming a company wanting to mislead users of their annual report would likely report more APMs compared to other performance measures.

Median	6	4	4	14
Minimum	0	0	0	0
Maximum	17	15	27	41
Standard deviation	4,58	4,11	5,38	9,61

Out of 31 companies which disclosed APMs at the beginning of their annual report, approximately 20 % distinguished APMs from the other measures using terms “APM”, “non-GAAP” or “non-IFRS”. Assuming the risk of potential misleading of unsophisticated investors exists, if a company does not distinguish APMs from other measures, this risk may exist in 80 % of companies.

From FY2027, IFRS 18 will require firms to inform their stakeholders in one note about all APMs used by the company. The note must also state that APMs are internally used performance measures that may not be comparable with similar measures reported by other companies. My findings confirm the validity of this new requirement.

Fig. 1: Disclosure of signposting to reconciliation of APMs to their closest GAAP measure (% , N = 31)



61% of the companies disclosing APMs at the beginning of annual reports did not include any sign posting (e.g. a link or a footnote) to the reconciliation of the APMs to their closest GAAP measures (**Fig. 1**). 19 % of the companies indicated via a footnote the name of the chapter containing the reconciliation, 13 % included a page number and one (3 %) a page number along with the name of the chapter. One company (3 %) included the reconciliation at the beginning of their annual report alongside the APMs disclosed. Since only 19 % of the companies enable users' quick access to the reconciliation⁶, the wish of investors concerning higher

⁶ Assuming it is easier to locate the reconciliation using a page number than a name of the chapter.

discipline in including sign posting to reconciliation (CFA Institute, 2016), (IASB, 2020) still seems relevant.

95 % of the companies in the sample presented at least one APM in their annual report (**Tab.8**). 90 % presented at least one APMs in the section informing about the business performance from the management perspective, 78 % at the beginning of annual report and 58 % in the notes to the financial statements. This could mean that most companies use APMs to inform users about the business performance from management's perspective – which is the proper use. Still, over half of the companies also presented APMs in the financial statements and notes, which could signal a need for higher comparability with the IFRS financial statements.

Tab. 8: Location of APMs within the annual reports of analyzed companies, $N = 40$

Chapters of annual reports	Disclosed
"Financial highlights/At Glance"	78%
"Management/Financial review"	90%
Financial Statements and Notes	58%
At least one APM within annual report	95%

Per the ESMA's requirement, 80 % of the companies in the sample reported using at least one APM. Comparing this finding with the previous analysis which tracked APMs based on a uniform definition, I found that 15 % of the companies presented APMs without reporting their use as required by ESMA. This difference may be attributed to the loose definition of APMs within the regulation.

75 % of the companies in the sample reported at least one *Core* measure⁷. Measures converted to constant exchange rates were disclosed by 63 % of the companies (Tab.9). The most frequently used APMs were *EBITDA* (55 %) and *Free cash flow* (50 %), followed by *Net debt* (45 %) and *EBIT* (18 %). Other frequently reported measures were related to *profitability* (40 %), *liquidity*, *financial stability and financing* (40 %) and *revenues* (33 %). Considering that most companies in the sample utilized adjusted earnings or similar measures, it seems reasonable that the new regulation introduced by IFRS 18 specifically targets the subtotals of income and expenses.

Tab. 9: Analysis of nature of APMs reported to be used by companies in the sample

Occurrence					
CER	Core	EBIT	EBITDA	FCF	Net debt

⁷ A measure of adjusted earnings or a measure calculated from adjusted earnings.

Count	25	30	7	22	20	18	
% of sample (N=40)	63%	75%	18%	55%	50%	45%	
Count of measures in each category except those tracked separately							
	Asset- related	Cash- related	Fin. stability & financing- related	Profit- related	Profitability- related	Revenue- related	Disclosed at least one APM
Count	11	4	16	7	16	13	32
% of sample (N=40)	28%	10%	40%	18%	40%	33%	80%

Almost a third of the companies in the sample made a significant adjustment to earnings computed in accordance with GAAP⁸ (**Tab. 10**). Apart from *Other adjustments* (77 %), the most frequent adjustment category was *Restructuring* adjusted by 70 % of companies, followed by *Acquisition and business combinations* (67 %) and *Amortization and impairment of intangible assets* (57 %). Adjustments related to legal expenses and taxes were made by less than one third of the companies.

The *Other* category of adjustments in the analyzed sample included items such as disinvestments (reported by 13 % of the companies), fair value remeasurement (13 %), provisions (e.g. related to termination, geopolitical situation, remediation etc.) (10 %), adjustments of items unrelated to the principal activity of the business (e.g. gains from financial investments) (7 %) and items already included in the previous categories (often aggregated and less significant in amount).

On average, the most notable adjustments measured by their ratio to the closest GAAP measure were *Amortization and impairment of intangible assets* amounting to 17 %, followed by *Acquisition and business combinations* (8 %), *Restructuring* (6 %) and *Other* (5 %). Adjustments related to legal expenses and taxes made up only about 1 % of the closest GAAP measure.

On the individual level, the largest adjustments were made by Astra Zeneca (255 % of the closest GAAP measure), Bayer (155 %) and Alcon (134 %). Five companies (17 %) made a significant adjustment in the *Amortization and impairment of intangible assets* category (between 115–60 % of the closest GAAP measure), followed by two companies in *Other* (between 55–51 %) and one in *Acquisition and business combinations* (121 %, Astra Zeneca).

⁸ An adjustment was considered significant when its amount surpassed 50 % of the GAAP measure to which the APM was reconciled.

To review the appropriateness of each earnings adjustment, it is necessary to have enough information about the context, explanation and economic rationale that led to it. According to CFA Institute (2016) and IASB (2020) many investors do not find the amount of information provided to be sufficient. Despite this being out of scope of this research, I agree that the information provided could be more detailed.

Tab. 10: Nature of the non-GAAP earnings adjustments

	Acquisition/business combination	Intangible amortization	Restructuring	Legal provisions	Tax-related adjustments	Other items	Total
Count	20	17	21	8	4	23	30
% of sample (N=30)	67%	57%	70%	27%	13%	77%	100%
Adjustments as % of total adjustments							
Average	29%	57%	33%	36%	-20%	24%	n/a
Median	21%	61%	29%	7%	-21%	21%	n/a
Min	-170%	3%	4%	-26%	-24%	-26%	n/a
Max	167%	81%	84%	270%	-15%	100%	n/a
Standard deviation	65%	24%	24%	95%	4%	28%	n/a
Adjustments as % of the closest GAAP measure							
Count of significant adj.	1	5				2	9
% of sample (N=30)	3%	17%				7%	30%
Average significant adjustment	121%	88%				53%	82%
Average	11%	28%	8%	4%	2%	6%	36%
Median	2%	18%	5%	3%	-2%	3%	20%
Min	-17%	-107%	-13%	0%	-13%	-56%	-153%
Max	121%	115%	23%	13%	23%	55%	255%
Standard deviation	27%	50%	8%	5%	16%	21%	67%

Lastly, I studied the relationship between the collected data and considered the possible impact of the business models and countries on APM reporting. I found evidence that companies disclosing more APMs at the beginning of annual reports are more likely to include signposting to reconciliation of the APM to its closest GAAP measure. Higher APM disclosure also correlates with reporting more GAAP

measures at the beginning of annual reports (Tab. 11). This may suggest that companies use APM reporting to provide better information to stakeholders.

I did not find any statistically significant correlation between the number of APMs at the beginning of annual reports and the labelling of APMs, the presence of APMs in the financial statements and notes or the amount of non-GAAP earnings adjustments. Neither did I find any statistically significant correlation between the amount of non-GAAP earnings adjustments and the presence of APMs in the financial statements and notes – although the result would suggest that higher adjustments lead to a less likely presence of APMs in the financial statements and notes (Tab. 11).

Tab. 11: Relationship between the number of APMs at the beginning of annual reports and other factors

Test	Method	Y variable	R ² Pseudo	/ R ² Model coefficient	Std Error of Model Coefficient	P-value ^A
Number of APMs at the beginning of annual reports and labelling of APMs	Logistic regression	Labelling of APMs	0,009414	0,0693	0,129	0,590
Number of APMs at the beginning of annual reports and signposting to reconciliation *	Logistic regression	Signposting to reconciliation	0,2258	0,3922	0,155	0,011
Number of APMs at the beginning of annual reports and presence of APMs in the financial statements and notes	Logistic regression	Presence of APMs in financial statements and notes	0,009864	0,0596	0,084	0,48
Number of APMs at the beginning of annual reports and GAAP measures at the beginning of annual reports *	Linear regression	APMs at the beginning of annual reports	0,173	0,3728	0,136	0,009
Number of APMs at the beginning of annual reports and the total amount of non-GAAP earnings adjustments	Linear regression	APMs at the beginning of annual reports	0,033	1,2562	1,369	0,368

Test	Method	Y variable	R ² Pseudo	/ R ²	Model coefficient	Std Error of Model Coefficient	P-value ^A
The total amount of non-GAAP earnings adjustments and presence of APMs in financial statements and notes	Logistic regression	Presence of APMs in financial statements and notes	0,07193		-1,1846	0,804	0,140

^A P-value of t-test that the model coefficient is equal to zero.

The symbol * indicates statistical significance at a 5 % confidence level.

Regarding the business models, I found weak evidence that *P&B* and *MT&SS* firms' mean total non-GAAP earnings adjustments are not equal (Tab. 12). In the sample *P&B* firms made on average 36 p.p. higher non-GAAP earnings adjustments compared to *MT&SS* firms. *P&B* firms' business is characterized by long-term high investments in R&D and lengthier and stricter approval process of new products compared to *MT&SS*. Consequently, higher non-GAAP earnings adjustments would be expected (perhaps also due to higher R&D costs that would have to be expensed according to GAAP). I could not reject any null hypotheses for any specific non-GAAP earnings adjustment category at 10 % confidence level.

Tab. 12: The impact of the business model on non-GAAP earnings adjustments (as a percentage of closest GAAP measure)

	Group	Acquisition/bu- ss combination	Intangible amortization and	Restructuring	Legal provisions	Tax-related adjustments	Other items	Total	N/A
Count	MT&SS	11	7	6	10	1	10	15	6
	P&B	10	10	2	10	2	11	14	5
Average	MT&SS	4%	21%	5%	8%	2%	7%	25%	
	P&B	18%	46%	2%	10%	-9%	11%	61%	
Standard deviation	MT&SS	12%	35%	5%	7%	N/A	15%	36%	
	P&B	37%	38%	3%	7%	5%	18%	71%	
P-value of T-test		0,2615	0,1845	0,4417	0,5034	N/A	0,6182	0,0958*	

The symbol * indicates statistical significance at a 10 % confidence level.

(The total number of companies for MT&SS is 21 and P&B 19.)

The mean APMs disclosed at the beginning of annual reports appear to be equal for both groups. Similarly, the mean presence of APMs in the financial statements

is equal in both groups. This may suggest companies seek to inform stakeholders using APM reporting regardless of their business model (Tab. 13).

Tab. 13: The impact of the business model on APM reporting

	Group	APMs at the beginning of annual reports	Presence of APMs in financial statements and notes
Count	MT&SS	15	21
	P&B	14	19
Average	MT&SS	5,2	0,667
	P&B	5,38	0,474
Standard deviation	MT&SS	4,06	0,48
	P&B	4,15	0,51
P-value of T-test		0,8880	0,2280
P-value of TOST		0,0915*	0,0358*

The symbol * indicates statistical significance at a 10 % or 5 % confidence level.

The values for presence of APMs in financial statements and notes were coded as 1 (present) and 0 (not present).

(The total number of companies for MT&SS is 21 and P&B 19.)

Lastly, using Kruskal-Wallis test I found evidence that the mean APMs disclosed at the beginning of annual reports differ among the countries analyzed. In the sample, on average, the most APMs were reported by the German companies (8,72), followed by the UK (6) and the Swiss (5,8). The French companies reported on average only 2,33 APMs (Tab. 14).

Tab. 14: The impact of the country on APM reporting

Country	CH	DE	FR	UK
Count	5	7	6	5
Average	5,80	8,72	2,33	6,00
Standard deviation	2,04	4,8	2,65	4,6
P-value of Kruskal-Wallis test		0,0637*		

The symbol * indicates statistical significance at a 10 % confidence level

To summarize, 95% of the companies in the sample disclosed at least one APMs in their annual report. At the beginning of the annual reports APMs were disclosed by 78 % of the companies, however GAAP measures and non-financial measures were

more prevalent. I found a positive correlation between the amount of APMs disclosed at the beginning of annual reports and signposting to the reconciliation. There was also a positive correlation between the amount of APMs and amount of GAAP measures at the beginning of annual reports. These results may suggest that companies use APM reporting to provide more information to stakeholders, not necessarily to mislead them. This is further supported by the fact that most companies disclosed APMs in the chapter of annual report informing about the business performance from the management perspective – which is the proper use.

The mean amount of APMs disclosed at the beginning of annual reports may vary by country, however it seems to be equal for *P&B* and *MT&SS* firms. The business model seems to play a role in the amount of non-GAAP earnings adjustment (with *P&B* firms making higher adjustments compared to *MT&SS* firms). Overall, 30 % of companies made significant non-GAAP earnings adjustments.

I find there is room for improvement in distinguishing APMs from other measures and including signposting to the reconciliation of the APMs to their closest GAAP measures. Moreover, I agree with the studies of CFA Institute (2016) and IASB (2020) that the amount of information provided about the non-GAAP earnings adjustments is often not sufficient. The fact that 58 % of the companies disclosed APMs in the financial statements and notes may signal a need for higher comparability of IFRS financial statements. I also found 95 % of the companies reporting APMs, however only 80 % self-reported their use in the annual reports (this may be due to the looser definition of APMs by ESMA). Based on these findings, I regard the firms' use of APM reporting to be more informative rather than misleading to stakeholders. Even so, I believe that the regulation of APM reporting should be more precise (e.g. less broad definition of APMs, better specification of what supplementary information should be provided, increased comparability of the IFRS financial statements) and enforceable. I believe these shortcomings in the regulation may be offset by the new IFRS 18.

5. Conclusion

Alternative performance measures (APMs) have been reported by companies for over 20 years to inform about their business performance through the eyes of the management. Many investors rely on APMs, as they can be useful for forecasting future earnings (CFA Institute, 2016). APMs could also be more value-relevant than the traditional accounting measures (Ribeiro et al., 2019), (Black et al., 2021). Nonetheless, APMs are often criticized for their possibility to be opportunistically used by the managers (Curtis et al., 2014), (Isidro and Marques, 2015), (Laurion and Sloan, 2021). Prior research such as Black et al. (2012) and Chen (2010) shows that

the SEC's regulation improved non-GAAP reporting, while evidence on the impact of the ESMA's 2015 guidelines on APM reporting is still limited.

This paper adds to the literature by examining APM disclosure among European companies in a single industry. I found that 95 % of the companies in the sample presented at least one APM, while only 80 % of the companies informed the user about using APMs in their annual reports. I believe this could be caused by the looser definition of APMs within the current regulation. Moreover, as 58 % of the firms disclosed APMs in the financial statements and notes, I believe the further regulation brought by IFRS 18 may improve the comparativeness of financial statements and potentially reduce risk of APMs imposed on the stakeholders.

Similarly to Jana and McMeeking (2020) and Grégoire and Guillaume (2024), I conclude that there is still room for improvement in the disclosure of supplementary information about the presented APMs – such as the rationale of non-GAAP earnings adjustments, the labelling of APMs and the providing signposting to reconciliation of the APMs to their closest GAAP measures. Almost one third of the companies in the sample made a significant non-GAAP earnings adjustment.

Despite the opportunity for improvement, I observed that the number of disclosed APMs correlates positively with including the signposting to the reconciliation of the APMs to their closest GAAP measures. There is also a positive correlation between the number of APMs and the GAAP measures reported at the beginning of annual reports. This may suggest that companies use APMs to provide more information to stakeholders, as explained by the signaling theory.

This paper provides evidence that could be useful to standard setters as well as academics, as there are less studies on APM reporting in the European context. It could also help managers identify the possible blind spots in corporate disclosures. An interesting topic for future research would be studying the effect of IFRS 18 on the quality of APM reporting – moreover, as it will also provide further verification of non-GAAP earnings adjustments with the external audit.

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