Proper Accounting for Leases?

A Study of Why Preparers Produce and Analysts Use Alternative Performance Measures that Reverse the Effects of IFRS 16

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Abstract

The introduction of IFRS 16 aimed to improve transparency by bringing lease obligations onto the balance sheet. However, evidence in this study shows that firms continue to report alternative performance measures (APMs) that explicitly aim to neutralize these effects. As prior evidence on such practices is very limited, little is known about their prevalence and implications in a broader setting. This thesis therefore examines the extent to which firms use APMs to offset IFRS 16 and how such adjustments affect capital market outcomes. Using a sample of large European listed firms, the study identifies numerous APM adjustments that reverse IFRS 16 effects, particularly for debt and leverage-related metrics. The analysis combines hand-collected APM disclosures with financial and analyst forecast data. Cross-sectional regressions and a dynamic difference-in-differences design are used to examine both the determinants and consequences of these adjustments. The results show that IFRS 16-neutralizing APMs are widespread and more prevalent among firms with higher lease intensity. However, there is no evidence that these adjustments impact analyst forecast accuracy, attainability or dispersion. Instead, their selective application raises concerns about reduced transparency and comparability, with potential implications for regulatory oversight.

Keywords:

Alternative Performance Measures, IFRS 16, Lease Accounting, Analyst Forecasts, Forecast Accuracy, Forecast Dispersion, Forecast Attainability, Financial Reporting, Capital Markets

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List of Abbreviations

Abbreviation	Full Term
APM	Alternative Performance Measure
ASC 842	Accounting Standards Codification Topic 842 (Leases, U.S.)
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht (German Federal Financial Supervisory Authority)
CESR	Committee of European Securities Regulators
DCF	Discounted Cash Flow
DiD	Difference-in-Differences
DPR	Deutsche Prüfstelle für Rechnungslegung
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EPS	Earnings per Share
ESFS	European System of Financial Supervision
ESMA	European Securities and Markets Authority
EV	Enterprise Value
FASB	Financial Accounting Standards Board
FCF	Free Cash Flow
FI	Finansinspektionen (Swedish Financial Supervisory Authority)
FTSE	Financial Times Stock Exchange Index
GAAP	Generally Accepted Accounting Principles
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IBES	Institutional Brokers' Estimate System
IFRS	International Financial Reporting Standards
IPO	Initial Public Offering
ROA	Return on Assets
ROE	Return on Equity
SEC	U.S. Securities and Exchange Commission
U.S.	United States
YoY	Year-on-Year

1. **Introduction**

"These new accounting requirements bring lease accounting into the 21st century, ending the guesswork involved when calculating a company's often-substantial lease obligations" (Hoogervorst, 2016, cited in PwC, 2016).

Despite these strong claims made by the then Chairman of the International Accounting Standards Board (IASB) about IFRS 16 *Leases*, emerging evidence suggests that not all stakeholders fully embrace the implications of this reform in practice. In fact, many firms present alternative performance measures (APMs) that adjust or reverse the effects of the new standard (IASB, 2025; Molina-Sánchez et al., 2024; CPA Australia, 2021). At the core of this issue lies a long-standing debate about the proper accounting treatment of leases. One view treats leases as executory contracts, allowing a classification approach in which only leases that transfer substantially all risks and rewards of ownership are recognized on the balance sheet. Under this approach, reflected in the standards IAS 17 *Leases* and Topic 840, operating leases remained off-balance-sheet and were accounted for as straight-line rental expenses. In contrast, an alternative perspective argues that leases give rise to assets and liabilities, as lessees obtain the right to use an asset and incur an obligation to make future payments. From this perspective, all leases contain financing elements that should be recognized in the financial statements (IASB, 2016a). Concerns related to the lack of transparency and comparability in the former approach led the IASB and Financial Accounting Standards Board (FASB) to initiate a joint project to improve lease accounting, agreeing on the principle that leases give rise to assets and liabilities, which resulted in IFRS 16 and Topic 842, albeit with some divergence in implementation.

The conceptual rationale underlying IFRS 16 is grounded in the core principles of financial reporting. Central to this approach is the view that leasing is economically similar to borrowing in order to acquire an asset: at the inception of a lease, the lessee obtains a right-of-use asset and incurs a liability to make future payments. By requiring the recognition of most lease obligations on the balance sheet, IFRS 16 aims to provide a more complete and transparent representation of firms' financial position and to improve comparability across firms (IASB, 2016a). In doing so, the standard was also expected to reduce the need for investors and analysts to adjust reported figures or rely on non-GAAP measures related to leases. Reflecting the significance of this reform, the IASB undertook an extensive and cautious standard-setting process, including multiple consultation rounds, over 1,700 comment letters, and numerous public discussions before finalizing the standard (IASB, 2016b).

Despite these strong conceptual arguments and the extensive effort underlying its development, an important gap remains. While IFRS 16 seeks to improve transparency and reduce reliance on alternative measures, emerging evidence suggests that firms continue to adjust voluntarily reported performance measures in ways that neutralize its effects (IASB, 2025; Molina-Sánchez et al., 2024; CPA Australia, 2021). These so-called alternative

performance measures, defined by the European Securities and Markets Authority (ESMA) as financial measures of performance, financial position, or cash flows not specified by the applicable reporting framework (ESMA, 2015), include commonly used metrics such as EBITDA, net debt, or free cash flow. They provide a mechanism through which firms can adjust reported figures to reflect alternative interpretations of economic reality. Against this backdrop, this study focuses on APMs that neutralize or reverse the accounting effects of IFRS 16, for example by excluding lease liabilities from debt measures or by adjusting cash flow metrics, such as free cash flow, to reflect lease principal repayments as operating cash flows, despite their classification as financing cash flows under IFRS 16. Such adjustments may preserve time-series comparability by aligning post-adoption figures with historical metrics, but they can also obscure economically relevant changes in leverage and financial risk, particularly when lease liabilities are excluded from debt-related measures. Regulators have explicitly acknowledged this ambiguity, with ESMA noting the need to closely monitor the impact of IFRS 16 on APM usage (ESMA, 2019). Limited existing evidence suggests that firms adopt heterogeneous approaches in this regard (IASB, 2025; Molina-Sánchez et al., 2024; CPA Australia, 2021), although systematic evidence on the extent, determinants and consequences of such adjustments remains limited. This behavior highlights a broader tension between standard-setter objectives and actual reporting practices. Understanding this tension requires considering both how firms use APMs and how users of financial statements interpret them.

Prior literature on APMs explains their use from both a supply and a demand perspective, with managerial reporting choices often characterized by a trade-off between informativeness and opportunism. On the supply side, managers may use APMs to isolate recurring components of performance and improve the predictive value of reported earnings (informative), but they may also use them strategically to present performance more favorably (opportunistic) (Choi et al., 2007; Frankel, McVay and Soliman, 2011; Herr, Lorson and Pilhofer, 2022). On the demand side, research shows that capital market participants such as financial analysts often rely on APMs because such measures can reduce information processing costs and provide simplified representations of firm performance (Hirshleifer and Teoh, 2003; Asquith, Mikhail and Au, 2005; Imam, Barker and Clubb, 2008). However, this reliance is not unconditional: when APMs appear opaque or opportunistic, analysts discount them or exhibit greater disagreement (Jennings and Marques, 2011).

At the same time, a growing body of literature also shows that firms respond actively to lease capitalization. Studies on IFRS 16 and its U.S. counterpart ASC 842 document effects not only on reported accounting outcomes but also on real decisions such as investment, financing, and contract design (Kim and Xie, 2023; Ma and Thomas, 2023; Heese, Shin and Wang, 2025). Yet, despite the expanding literature on both APMs and the consequences of lease capitalization, only limited work has explored the interaction between these two domains. In particular, little is known about the extent to which firms use APMs as a

reporting-based mechanism to reinterpret the effects of IFRS 16, and how users of the financial statements process these adjusted metrics.

This study addresses this gap by examining the role of IFRS 16-neutralizing APM adjustments in a European setting. Specifically, it investigates three research questions. First, it analyzes which types of APMs are most frequently adjusted to neutralize the effects of IFRS 16 and whether certain measures are more likely to be adjusted than others. Second, it examines the determinants of such adjustments, with a particular focus on lease intensity as a measure of firms' exposure to the accounting change. Third, it evaluates the capital market consequences of these adjustments by analyzing their impact on analyst forecast properties, including forecast accuracy, attainability and dispersion.

By addressing these questions, the study contributes to multiple strands of literature. It extends research on APM reporting by examining how firms use APMs in response to a major accounting reform. It contributes to the literature on the economic consequences of IFRS 16 by identifying APM adjustments as a potential behavioral response channel. Finally, it contributes to the literature on the analyst information environment by examining how analysts process competing performance measures in the presence of accounting-induced ambiguity. From a regulatory perspective, the findings have important implications for the ongoing debate on the role and oversight of APMs. If IFRS 16-neutralizing adjustments are found to reduce transparency or reflect more opportunistic reporting behavior, they may warrant increased regulatory scrutiny. In particular, such practices may undermine the objective of IFRS 16 to provide a faithful representation of firms' financial position and to enhance comparability across firms. More broadly, they echo long-standing regulatory concerns that firm-defined performance measures, when presented without sufficient consistency and transparency, can confuse rather than inform investors, as already highlighted by the SEC (1973).

To address the research questions, this study analyzes a sample of European listed firms and combines hand-collected data on APM disclosures with financial and analyst forecast data. The empirical design includes cross-sectional analyses, regression models, matching techniques, and a dynamic difference-in-differences framework to examine both the determinants and consequences of APM adjustments.

2. Institutional Background

This section provides institutional background on the regulation of GAAP and non-GAAP measures, starting with the U.S., where such frameworks first emerged. Although the study focuses on Europe, U.S. evidence is frequently referenced due to the limited availability of EU-based research, making it important to consider differences in institutional settings when interpreting prior findings. Building on this, the section then turns to an overview of the European regulatory environment.

2.1 GAAP and Non-GAAP Regulation in the US

In the U.S., the U.S. Securities and Exchange Commission (SEC) is the main authority enforcing local GAAP for publicly listed companies (SEC, 2002). The SEC requires public companies to prepare financial statements in accordance with U.S. GAAP, which is then enforced through a combination of regulatory oversight by the SEC and the Public Company Accounting Oversight Board (PCAOB), auditing and private litigation (Leuz, 2010; Files, 2012). The SEC also reviews filings and can impose sanctions in cases of misreporting, including issuing comment letters that require firms to revise or clarify disclosures. Non-GAAP reporting, on the other hand, has experienced relatively low levels of intervention (Black et al., 2018; Doyle, Jennings and Soliman, 2013), but regulatory scrutiny intensified during the late 1990s and various concerns (e.g. Black et al., 2018; Pizzo, 2020) soon led to formal regulations. With the Sarbanes-Oxley Act of 2002, companies were required to provide reconciliation between non-GAAP and GAAP measures to improve transparency (Section 401(b), U.S. Congress, 2002). Shortly after, the SEC introduced Regulation G, requiring public companies that share non-GAAP measures to reconcile them with the best comparable GAAP measure. The SEC also amended several regulations, including Item 10 of Regulation S-K, Form 20-F, Form 8-K, and Item 10 of Regulation S-B (SEC, 2003). Furthermore, management must justify the use of non-GAAP financial measures and explain their relevance to investors (SEC, 2002). They further refined these guidelines through Compliance & Disclosure Interpretations (SEC, 2022). Given that much of the APM related literature originates from the U.S., it is important to consider differences in institutional settings when interpreting prior findings. The following section therefore turns to the EU regulatory framework.

2.2 GAAP Regulation in the EU

To harmonize different accounting standards and financial reporting worldwide, the IASB was formed in 2000. The IFRS, issued by the IASB, prescribe how companies report financial performance and position (IASB, 2018). In contrast to the U.S., where enforcement is centrally administered by the SEC at the federal level, IFRS enforcement in the EU is decentralized, with EU-level guidance complemented by enforcement at the national level through securities regulators, audit oversight bodies, and local legal systems. Following IFRS adoption, many European countries significantly strengthened their national enforcement mechanisms, for example by establishing new enforcement bodies and supervisory authorities to ensure the application of the new standards. Although IFRS provide a common set of accounting standards, reporting quality ultimately depends on the effectiveness of the country-specific enforcement (Christensen, Hail and Leuz, 2013; O Cualain and Tawiah, 2023; Byard, Li, and Yu, 2011). Germany for instance, has a strong regulatory and enforcement environment with a two-tier enforcement system which combines financial statement review by the Financial Reporting Enforcement Panel (FREP) with the supervisory oversight by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin), as well as stringent

audit oversight and legal implementation mechanism (Daske et al., 2013; Hitz et al., 2012; Wieczynska, 2016).

2.3 Non-GAAP Regulation in the EU

Within the financial statements, performance measures are regulated through IFRS (European Parliament and Council, 2002). Though *IAS 1 Presentation of Financial Statements* specifies minimum line items and allows for additional subtotals if necessary for comprehending performance, IFRS allows for some flexibility in presentation and disclosure in the income statement (IAS 1.85). Even though the new standard *IFRS 18 Presentation and Disclosure in Financial Statements* which has been issued in April 2024 and will become effective in January 2027 and thereby replace IAS 1, will introduce more structured income statement categories, existing standards like *IAS 33 Earnings per Share* and *IFRS 8 Operating Segments* continue to permit the presentation of adjusted earnings per share and management-based segment results, allowing space within financial statements for APM-like measures under certain conditions (Herr, Lorson and Pilhofer, 2022; IAS 33.73; IFRS 8.23).

The use of APMs outside the financial statements is governed by ESMA's Guidelines on Alternative Performance Measures (ESMA, 2015), succeeding previous CESR guidelines (CESR, 2005). The guidelines do not restrict firms from presenting APMs but impose disclosure discipline by requiring issuers to (i) define each APM and explain its purpose, (ii) provide a reconciliation to the most directly comparable IFRS line item, and (iii) present measures consistently over time, explaining and restating any changes in definition or calculation. While in the U.S., non-GAAP reporting is regulated directly at the company level by the SEC, in the EU, guidelines apply to all competent authorities under the Transparency Directive or the Market Abuse Regulation or the Prospectus Directive (ESMA 2015). "Competent authorities" are the national financial regulators in each EU Member State (the guidelines are addressed to the authorities rather than directly to companies as in the U.S.), requiring them to apply the guidelines when supervising APM disclosures in periodic reports under the Transparency Directive, in ad hoc and earnings disclosures under the Market Abuse Regulation, and in prospectuses for IPOs, capital increases, or bond issuances under the Prospectus Directive (ESMA, 2015). However, the guidelines do not apply to APMs that are reported in financial statements or disclosed in accordance with applicable legislation, other than the applicable financial reporting framework[1] (ESMA, 2015). The guidelines themselves are not legally binding, but as they operate within the European System of Financial Supervision (ESFS) under Regulation (EU) No 1095/2010, national authorities and market participants are required to make every effort to follow the guidelines under a comply-or-explain mechanism (European Parliament and Council, 2010).

[1] EU-endorsed IFRS, national accounting standards derived from the European Accounting Directives, or equivalent third-country GAAP recognized by the EU (ESMA, 2015).

The ESMA report on sanctions and measures imposed in Member States (2024) reveals clear discrepancies in how different member states exercise their sanctioning powers with no uniform level of stringency across the region. Hungary, for instance, reported the highest number of actions (182) compared to for example Italy (84) while France imposed the highest aggregate fine amount (EUR 29,395,000). This cross-country heterogeneity in enforcement intensity implies that both the prevalence of APM disclosures and their capital market consequences are likely to vary across institutional settings. Consequently, evidence from the U.S. or individual European jurisdictions cannot be transferred directly to a broader European context without considering variation in supervisory practices, sanctioning regimes, and disclosure monitoring.

3. Literature Review and Hypotheses Development

Building on the institutional background, the following section reviews the literature on non-GAAP reporting and develops the hypotheses of this study. As prior research uses different concepts of non-GAAP performance measures, the section begins by clarifying the terminology used in the subsequent analysis.

3.1 Different Concepts of Non-GAAP Measures

In non-GAAP literature, different names emerged to describe non-GAAP measures, which often refer to conceptually different constructs and reflect different underlying incentive structures, limiting the direct transferability of empirical findings. Thus, the most common concepts should be clarified before reviewing further literature.

One construct is the so-called *street earnings*, which are independent earnings measures that modify GAAP earnings and are provided by external service providers rather than the companies themselves and are thus to be distinguished by company reported measures like pro forma earnings or APMs (Gu and Chen, 2004; Hitz, 2010). They are typically calculated by combining the forecasts of various analysts into a consensus estimate (Thomson Reuters, 2009). *Pro forma earnings* on the other hand, while closely related to street earnings (Gu and Chen, 2004) are company defined earnings measures that adjust GAAP earnings for items that are viewed as non-recurring or unusual (Hitz, 2010; Bhattacharya et al., 2003). Especially in early studies, pro forma earnings and street earnings are often used interchangeably[2] (Gu and Chen, 2004; Bhattacharya et al., 2003). These measures are reported voluntarily and not audited, but regulated (Hitz, 2010). Aside from pro forma earnings there are also *pro forma statements*, that companies sometimes publish to present for instance the effects of changes in accounting methods or mergers and acquisitions to portray

[2] Street earnings were originally used in early studies as proxy for company-reported pro forma earnings (e.g., Bradshaw and Sloan 2002), primarily because databases like I/B/E/S provided machine-readable data that was easier to analyze for large samples than hand-collecting individual company press releases (Herr, Lorson and Pilhofer, 2022; Black et al., 2018).

a view as if those events had not transpired (Hitz, 2010). Lastly, for the purposes of this study, *APMs* are defined in accordance with the ESMA (2015) guidelines as financial measures of historical or future performance, financial position, or cash flows that are not specified within the applicable financial reporting framework. This definition anchors the analysis in the European regulatory context and ensures conceptual consistency throughout the thesis. When referring to pro forma earnings or APMs, it is important to also distinguish between (a) presentation-related deviations from GAAP such as labeling subtotals like "operating profit" beyond what IAS 1 formally prescribes and (b) substantive deviations that modify GAAP numbers by excluding or adjusting underlying items, with the latter constituting the more economically meaningful departure from GAAP.

Although all of the above are non-GAAP measures, they represent conceptually distinct constructs (i.e. pro forma earnings being a subset of non-GAAP earnings, while APMs constitute a broader category that also includes adjusted cash flow and balance sheet measures), meaning that findings from pro forma earnings studies are only partially transferable to research on APMs or other non-GAAP metrics because evidence on e.g. earnings manipulation may not generalize to non-earnings APMs that may operate under different incentive structures.

3.2 History of APMs

Having clarified the conceptual distinctions between different non-GAAP measures, the following section outlines the historical development of APM reporting to provide context for their increasing prevalence and regulatory attention over time. APMs have their origins in the U.S.. While certain APMs like EBITDA were commonly used and reported before the mid-1990s, a specific trend of reporting pro-forma earnings started around that time (Bhattacharya et al., 2003). Starting in the mid-1990s, analyst tracking services began actively redefining "actual" earnings to exclude certain items, often to ensure the reported numbers were consistent with the forecasts analysts had provided to investors (Bradshaw and Sloan, 2002). By the late 1990s, the use of the redefined earnings increased significantly. Following this increase in adjustments made to GAAP figures, regulators like the SEC and FASB issued cautionary advice, expressing that these adjusted figures could be issued in the self-interest of managers and companies. Despite this regulatory backlash, Bhattacharya et al. (2003) suggest that during this period, market participants generally perceived adjusted pro forma earnings to be more informative than standard GAAP operating income and hence the disclosure of such adjusted statements grew. Following the U.S., European firms increasingly adopted pro forma reporting from the 2000s onward, with the majority disclosing at least one non-GAAP metric by 2013 (Pizzo, 2020; Isidro and Marques, 2013).

3.3 Motivations for the Adoption of APMs

While the previous section documents the increasing prevalence of APM reporting over time, it remains unclear why firms modify performance measures despite the additional costs

associated with voluntary reporting. Addressing this question requires considering the economic motivations underlying such adjustments. To explain these practices, research discusses two main (though not mutually exclusive) motives: informative signalling and opportunistic earnings management (e.g. Herr, Lorson and Pilhofer, 2022).

3.3.1 Motivation of Companies

Under the informative perspective, management uses APMs to provide decision-useful information by isolating persistent or core earnings components. Based on an archival analysis of UK firms, Choi et al. (2007) find that many adjustments in non-GAAP earnings appear economically reasonable and consistent with an informational motive. Similarly, Charitou et al. (2018), recognize that better-governed firms and firms with weaker financial performance are more likely to disclose non-GAAP earnings. Logically, if the goal were to mislead users of the information, strong corporate governance would typically act as a barrier to such behavior. Acknowledging the limitations of drawing direct inferences from U.S.-based research for a study focused on APMs in the EU, this perspective is nonetheless supported by evidence from the U.S.. For example, Bhattacharya et al. (2003), employing large-sample archival data, find that pro forma earnings may be more informative and more permanent than GAAP operating earnings suggesting that certain exclusions may indeed improve the predictive content of earnings.

In contrast, the opportunistic perspective emphasizes the strategic incentives embedded in voluntary performance reporting. Conceptual and analytical work, such as Hitz (2010) and Sellhorn et al. (2014), highlights the potential for selective emphasis and presentation effects. A European study, researching usage of APMs and the impact of ESMA guidelines, revealed mostly positive adjustments, which the authors cautiously interpreted as evidence that companies utilize APM reporting to improve performance (Vinciguerra, Cappellieri and Gravante, 2020). Similarly, the CFA Society in the UK (2015), based on archival report analysis, find that most companies in the sample reported an adjusted earnings figure, which was higher than the IFRS figure and that APMs are likely systematically to overstate their earnings potential. U.S.-based archival studies reinforce this benchmark-meeting interpretation. Doyle, Jennings and Soliman (2013) show that firms are more likely to disclose non-GAAP earnings when GAAP earnings fall short of analyst forecasts, which is supported by similar findings from Cain, Kolev, and McVay (2020). Further, Frankel, McVay and Soliman (2011) find that weaker governance structures are associated with more aggressive exclusions of recurring items from GAAP earnings. Investor surveys echo similar concerns, with the CFA Institute (2018) noting that APMs are sometimes perceived as presenting firms “in a better light than actual, regulated accounting”, warranting professional caution.

Taken together, empirical evidence is mixed and some research such as the EU-focused study by Aubert and Grudnitski (2014) also suggests that non-GAAP reporting is not inherently opportunistic or informative, but that rather factors such as reconciliation quality determine

whether a disclosure acts informatively or opportunistically. Nonetheless, the balance of findings leans toward a more critical view of APM reporting.[3] The two motives can also coexist within the same disclosure, so they are empirically hard to differentiate separately (Herr, Lorson and Pilhofer, 2022).

3.3.2 Motivation of Analysts

While APM reporting is driven by managerial reporting choices, their relevance ultimately depends on how they are interpreted and incorporated by market participants. In line with information acquisition and processing theory, analysts can be viewed as information intermediaries who seek to extract valuation-relevant signals while economizing on information acquisition and processing costs (Lang and Lundholm, 1996; Bloomfield, 2002; Hirshleifer and Teoh, 2003). Given that investors and analysts face cognitive processing constraints and therefore rely on simplified metrics (Hirshleifer and Teoh, 2003), the use of APMs can be interpreted as a rational response to both valuation and cost considerations.

3.3.2.1 APM Utilization in Valuation Models

Both, literature from the U.S. and the EU note that, while earnings forecasts remain a foundational element of security analysis, standard earnings are increasingly supplemented or even replaced by other accounting-based economic profitability "methodologies" (Asquith, Mikhail, and Au, 2005, p.278) such as EBITDA multiples (Asquith, Mikhail, and Au, 2005; Imam, Barker, and Clubb, 2008; Demirakos, Strong, and Walker, 2004). Evidence from the U.S. hints at the usage of earnings multiples for valuation purposes. According to Asquith, Mikhail, and Au (2005), 99.1% of analysts use some form of earnings multiple which explicitly includes EBITDA multiples.

Similarly, in the EU research suggests that more elaborate valuation models are being supplemented with APMs and that analysts use APMs as partial analytical support for valuations multiples (Imam, Barker and Clubb, 2008; Demirakos, Strong and Walker, 2004). For instance, they find that analysts project EBITDA forward to a sustainable level and then apply a benchmark multiple to find a firm's fundamental value. Under the lens of valuation efficiency, analysts' usage of APM-based valuation techniques reflects an effort to derive valuation-relevant signals more efficiently, as adjusted measures are perceived to better capture sustainable earnings without requiring a full reconstruction of GAAP figures.

Despite this evidence on the usage of multiples for valuation purposes, the integration of APMs involves a tension between the perceived informativeness and the technical requirements of accounting. While analysts view APMs as helpful supplements to measure performance, their inclusion in formal forecasting models is constrained by the necessity for

[3] A key limitation to this conclusion is, that with the exception of Vinciguerra, Cappellieri and Gravante (2020), the empirical studies predominantly examine non-GAAP earnings rather than APMs more broadly, and much of the evidence is U.S.-based, which may limit transferability to the EU APM context due to conceptual and regulatory differences discussed above.

internal accounting consistency (CFA Institute, 2016). From a rigorous perspective, if an analyst excludes specific transitory or non-recurring items from earnings forecasts to derive cash flows, those items must still be accounted for elsewhere to ensure the balance sheet remains in balance. Otherwise, forecast results will fail to match the changes in the equity accounts assuming a clean-surplus relationship. This requirement implies that for a valuation to be truly robust and integrated, analysts would theoretically need to forecast the entire income statement and its impact on the balance sheet instead of focusing solely on adjusted bottom-line figures.

3.3.2.2 Determinants of APM Utilization

Experimental evidence by Andersson and Hellman (2007) indicates that analysts exposed to both GAAP and pro forma information produce higher earnings forecasts than those receiving GAAP information alone, suggesting that alternative presentations can influence professional judgement. However, this influence is not unconditional. Guillamon-Saorin, Isidro and Marques (2017) suggest that, while European analysts value the informativeness of APMs, they can recognize opportunistic behavior. Thus, professional investors in sophisticated European markets tend to discount APMs when they perceive high levels of impression management. Furthermore, experimental evidence shows that analysts place greater weight on APMs when they are clearly reconciled to GAAP figures, while lacking transparency reduces consensus, and although professional analysts are more resistant to misleading adjustments than less sophisticated investors, they are not fully immune to framing effects (Tam, Schultze and Zhao, 2018). Adding to that, Doyle, Jennings and Soliman (2013) document that firms are more likely to report positive non-GAAP earnings surprises when GAAP earnings miss forecasts although market participants partially discount such exclusions. Together, these findings suggest that analysts incorporate APMs into their models but adjust their reliance depending on perceived incentives and transparency.

A related debate concerns whether analysts primarily adopt management-defined exclusions or construct their own adjusted figures. Using archival regression analyses, Doyle, Jennings and Soliman (2013) show that I/B/E/S actual earnings often coincide with management-defined non-GAAP figures, although analysts still adjust exclusions that deviate from the consensus reporting basis. Similarly, Gu and Chen (2004) conduct an empirical study using regression analysis to show that analysts selectively adjust for non-persistent items rather than mechanically accepting management exclusions, while Kolev, Marquardt and McVay (2008) show that analyst reliance increases when non-GAAP definitions are consistent over time. Further, Doyle, Lundholm and Soliman (2003) utilized an empirical archival design, finding that analysts partially reverse aggressive exclusions. In the European context, Choi et al. (2007), employing an empirical archival approach, find that analyst “street” earnings and management adjustments largely coincide, although disagreement arises regarding persistence classifications. This indicates that UK analysts independently evaluate which earnings components are transitory versus permanent for valuation purposes.

Taken together, this evidence suggests that analysts do not passively adopt APMs but use them selectively as inputs in their information processing. Their reliance reflects a trade-off between valuation efficiency (using measures that better capture underlying performance) and information costs (reducing the effort required to extract and process relevant information from complex financial reports).

Finally, research on forecast accuracy suggests that the quality and consistency of APMs are more important than their mere existence. In the U.S. context, Frankel, McVay, and Soliman (2011) utilized an empirical archival design to show that forecast errors are lower when exclusions are less aggressive. Similarly, Jennings and Marques (2011) show that analysts discount APMs when disclosure quality is low and that such measures can increase forecast dispersion when they generate disagreement about true earnings. Together, the literature demonstrates that analysts incorporate APMs into their models, but their reliance is conditional on credibility.

3.4 Adjustment of APMs Following Accounting Shocks

While the previous sections focused on the general incentives underlying the supply and use of APMs, accounting standard changes provide a useful setting to observe these incentives in practice. Major accounting shocks such as the introduction of IFRS 16 alter key performance metrics mechanically and create incentives for firms to adjust reported figures. Although the IASB expected IFRS 16 to reduce the need to adjust numbers reported in the financial statements (IASB, 2025), whether this materializes depends on firms' behavioral responses.

3.4.1 Evidence on the Behavioral Effects of IFRS 16 and ASC 842

Although the present study focuses on APMs, reviewing this broader evidence is essential as it demonstrates that lease capitalization triggered not only mechanical accounting changes but also meaningful behavioral responses such as adapting financing choices or contract structures to adjust for the effects of the new leasing standards like IFRS 16 or ASC 842 in the U.S. (Kim and Xie, 2023; Heese, Shin, and Wang, 2025; Ma and Thomas, 2023), suggesting that voluntary performance reporting may represent an additional, complementary adjustment channel.

The body of published literature focusing on behavioral effects of IFRS 16 is very limited. Lau (2023) shows that the effects of IFRS 16 started before actual implementation as their study finds that managers of UK companies proactively reduced their reliance on operating leases in the years leading up to the effective date of IFRS 16. Extending the review to emerging research, a working paper by Hartmann-Wendels, Hendriock and Kußmaul (2025) focusing on German firms, found that the IFRS-reporting firms in the sample showed a significant increase in leasing intensity relative to the control group post-IFRS 16. This increase was more pronounced for firms with executive compensation explicitly tied to EBIT and EBITDA and with high-lease intensity. Notably, these findings contrast with evidence from the U.S., where firms appear to have reduced leasing or altered lease design following

ASC 842 adoption (e.g. Ma and Thomas, 2023)[4]. Overall, this divergence suggests that caution is warranted when relying on U.S. ASC 842 literature and that more research is required in the European realm to either corroborate or refute the findings from Hartmann-Wendels, Hendriock and Kußmaul (2025). Working papers mentioned in the IASB Post-implementation Review (2025) highlight a variety of effects: Onie, Spiropoulos and Wells (2025, cited in IASB, 2025) report improvements in value relevance and comparability for a sample of 155 Australian listed companies and Hanlon et al. (2024, cited in IASB, 2025) find improvements in analyst forecast accuracy and reductions in disagreement for lease-intensive firms for IFRS reporting entities from 19 different jurisdictions, suggesting enhanced information quality despite behavioral adaptation.

Due to limited research on IFRS 16, the review extends to studies researching ASC 842, the standard regulating lease reporting in the U.S. as IFRS 16 and ASC 842 were introduced almost simultaneously and pursue similar objectives. The economic shock is fundamentally similar and research on Topic 842 provides additional evidence on how firms respond to lease capitalization reforms more generally. We recognize that Topic 842 retains a dual presentation model and other important implementation differences limit the direct transferability of findings.

Prior to adoption, concerns arose that recognizing operating lease liabilities would increase leverage, worsen credit ratings, and raise borrowing costs. However, evidence shows no systematic rating decline, suggesting creditors had already incorporated lease commitments (Ma and Thomas, 2023). Likewise, Heese, Shin and Wang (2025) find only moderate changes in equity betas and ratings under ASC 842, mainly reflecting mechanical leverage effects rather than new information about the economic risk. In contrast, Jung and Scarlat (2024) document higher bond yields for firms with previously underestimated lease liabilities, while Milian and Lee (2024) report negative share price reactions for such firms. Beyond market effects, the reform also induced behavioral responses. Kim and Xie (2023) document faster adjustments toward target leverage ratios following ASC 842, while Ferreira, Landsman and Rountree (2025) show that firms reduced non-lease debt as lease liabilities increased, particularly when covenant constraints were binding. Christensen, Linsmeier and Wangerin (2025) further document contract structuring to mitigate balance sheet effects. Firms also altered lease design itself. Heese, Shin and Wang (2025) report an increase in variable lease payments, and Ma and Thomas (2023) document shifts toward shorter-term leases and capital expenditures.

[4] Likely, regulatory differences between IFRS 16 and ASC 842 play a role. Institutional differences between the U.S. and German corporate governance systems may influence incentive structures, the contractual environment may differ, particularly regarding debt covenant design and the prevalence of accounting-based covenants, potentially reducing balance sheet pressure in the German setting. The study design likely also affects the outcomes, particularly the use of an unaffected control group (Hartmann-Wendels, Hendriock and Kußmaul, 2025) versus exposure-based treatment classification (Ma and Thomas, 2023).

3.4.2 Evidence on Adjustments of APMs Following IFRS 16

Despite extensive documentation of these mechanical and behavioral responses, relatively little attention has been paid to voluntary performance reporting adjustments. As mentioned, the introduction of IFRS 16 was accompanied by the expectation from the IASB to reduce the need for entities to provide APMs (IASB, 2025). ESMA (2019) however seems to anticipate a more complex outcome. ESMA specifically urged issuers to consider including lease-related financial commitments within net financial debt measures and also announced that it would pay particular attention to the impact of IFRS 16 on APM use. Based on ESMA's emphasis on lease-related adjustments and its explicit guidance, it is the authors' interpretation that the authority anticipated heterogeneous reporting responses and the continued use of APMs to adjust or neutralize IFRS 16 effects.

The IASB feedback analysis in the Post-implementation Review (2025) provides limited insight evidence on IFRS 16-neutralizing APMs. Stakeholders in retail and telecommunications sectors in Latin America criticized the classification of lease repayments as financing cash outflows. In response, some firms reportedly used APMs to reclassify lease cash flows as operating. This pattern is reinforced by more recent evidence from the IASB (2026) staff paper, which documents widespread stakeholder concerns that the classification of lease payments as financing activities does not reflect their operating nature, is inconsistent with internal performance measures such as free cash flow, and has led to the increased use of APMs. A separate staff review of FTSE 100 companies found lease-related adjustments to be common in APMs, especially in net debt measures (IASB, 2025). Additionally, an exploratory field study of Spanish firms suggests that 33% exclude lease liabilities from debt and frequently retain IAS 17-based EBITDA presentations (Molina-Sánchez, Morales-Díaz, and Zamora-Ramírez, 2024). These observations stem from an analysis with a limited sample size and geographical focus on Spain. Furthermore, a joint report by academics and a professional accounting organization highlights some heterogeneity in the treatment of lease liabilities within performance metrics (CPA Australia, 2021) following the IFRS 16 implementation in Australia.

Although direct evidence remains scarce, prior research on accounting shocks provides a theoretical anchor. Institutional changes have been shown to influence usage of non-GAAP earnings by firms (Isidro and Marques, 2015). Studies of earlier accounting reforms, document that firms frequently used non-GAAP reporting to undo the perceived impact of new rules on core earnings. Coulton et al. (2016) observe a significant upward trend in non-GAAP reporting following mandatory IFRS adoption in Australia. Similarly, Shibasaki and Toyokura (2020) conducted an empirical investigation in Japan post IFRS implementation and noted an increased usage of APMs. This usage of APMs did not decline in the years after implementation, instead it increased by 4 percentage points from the year of adoption to the following year. In an international context, Visani, Di Lascio and Gardini (2020) conducted an empirical study analyzing 120 companies and found that after switching to IFRS, companies show an increase in the disclosure of APMs. Similarly to the findings in the

Japanese context, they note behavioral persistence of former accounting behaviors. In a European context, Hoeven, Borelli and van Vlijmen (2024) conducted an analysis focused on the first-year application of IFRS 17 and found that in the first year of implementation, half of the sample companies present an adjusted operating result as an APM.
The sustained and growing usage of APMs in the years following adoption, as observed by Shibasaki and Toyokura (2020) and Visani, Di Lascio and Gardini (2020), may hint at opportunism or earnings management, particularly if managers selectively use these measures to highlight income-increasing adjustments. Alternatively, if such usage were confined strictly to the immediate post-reform period and subsequently declined, it might support an informative perspective of time series maintenance, suggesting APMs serve as a temporary bridge to help users reconcile historical performance with the new reporting requirements.

3.4.3 Supply and Demand Dynamics of IFRS 16-Neutralized APMs

The emergence of IFRS 16-neutralized APMs can be understood as the outcome of interacting supply and demand forces in alternative performance reporting. Following this logic, IFRS 16-neutralized measures should not be viewed solely as managerial choices but as outcomes shaped by both firm-side incentives and analyst-side preferences.

3.4.3.1 Why Firms Provide IFRS 16-Neutralized APMs (Supply Side)

Within the broader informative vs. opportunistic motives framework discussed earlier, IFRS 16-neutralized APMs can be interpreted through both lenses. As aforementioned, research on APM adjustments post-IFRS 16 is limited, however, the article from Molina-Sánchez, Morales-Díaz, and Zamora-Ramírez (2022) offers first insight into potential motives behind APM adjustments. The authors interpret the retainment of IAS 17 style APMs as an effort to preserve time-series and peer comparability, support covenant and multiple-based analyses, and isolate the mechanical effects of IFRS 16. Notably, this is one of the first studies of this kind and its geographical focus on Spain and limited sample size, warrants further research and cautious interpretation of the results.
Research from the U.S. provides a theoretical anchor to build upon. As accounting changes that alter measurement without changing cash flows can impair comparability across periods (DeFond and Hung, 2003), companies might have an incentive to improve comparability by supplementing key measures with an additional pre-IFRS 16 version in the first year after implementation, supporting the informative view on APMs. Prior research further suggests that firms use non-GAAP disclosures more intensively when reported performance is weak (Doyle, Jennings and Soliman, 2013) or when governance constraints are lower (Frankel, McVay and Soliman, 2011). Thus, IFRS 16-neutralization could serve to mitigate adverse benchmark effects or to anchor investors to pre-standard leverage levels, though this argument would likely not hold for adjustments to e.g. EBITDA, which has been mechanically increased through IFRS 16.

Next, leverage occupies a central role in the lease-related literature, as ASC 842 introduced substantial mechanical effects on leverage ratios and covenant metrics (Ma and Thomas, 2023) and leverage-based measures are widely used in debt agreements, making restrictive covenants a key driver of firms' incentives to manage reported leverage (Christensen, Linsmeier and Wangerin, 2025). This could indicate that firms might also adjust their performance measures accordingly. However, the scope for discretionary adjustment of leverage-related APMs may be more constrained than for other performance measures, as covenant calculations are typically defined contractually and often based on "frozen GAAP," meaning that lease liabilities introduced under IFRS 16 may be excluded from covenant ratios unless renegotiated (IASB, 2016). At the same time, there is evidence that debt covenants already incorporated off-balance-sheet lease obligations for a number of firms even prior to capitalization reforms, as documented in a study of U.S. credit agreements conducted by Moody's (2011, as cited in IASB, 2016), suggesting that the contractual impact of lease recognition may have been anticipated in some cases; nevertheless, because leverage metrics also function as capital market signals beyond covenant compliance, firms may still have incentives to adjust externally reported APM definitions, although the current evidence remains inconclusive.

3.4.3.2 Analyst Incentives to Incorporate IFRS 16-Neutralized Measures (Demand Side)

At the same time, the supply of IFRS 16-neutralized APMs is unlikely to persist without demand or acceptance from capital market participants. Building on the role of analysts as information intermediaries, the demand for IFRS 16-neutralized APMs can be understood as a response to both valuation considerations and the costs of processing accounting changes. Research from the U.S. notes that analysts play a central role in translating reported performance into market expectations (Bradshaw and Sloan, 2002; Gu and Chen, 2004). Although this evidence is largely U.S.-based, the underlying mechanisms are not jurisdiction-specific. Analysts in European markets similarly act as information intermediaries who rely on globally standardized valuation frameworks such as EBITDA-based multiples, leverage ratios, and discounted cash flow models[5] (CFA Institute, 2016).

Evidence from the U.S. further suggests that analysts already incorporated operating lease obligations into valuation and risk assessments prior to their capitalization under IFRS 16. Dhaliwal, Lee, Neamtiu (2011) show that firms' cost of capital, measured using analyst consensus long-term earnings growth forecasts, reflects the risks associated with lease commitments, indicating that market participants attribute the economic risks of leased assets primarily to lessees irrespective of accounting classification. Similarly, Altamuro et al. (2014) document that sophisticated lenders incorporate operating lease information into loan pricing

[5] Nevertheless, institutional differences between the U.S. and Europe as enforcement intensity and regulatory oversight of non-IFRS measures may affect the extent to which analysts incorporate such adjustments. The predominance of U.S. evidence therefore constitutes a limitation and underscores the need for empirical evidence in the European IFRS context.

even when leases remain off balance sheet, suggesting that such obligations are not ignored in forward-looking assessments. Taken together, this literature indicates that analysts and other sophisticated market participants had already incorporated operating lease obligations into valuation and risk assessments prior to their formal capitalization. This suggests that IFRS 16 is unlikely to fundamentally change analysts' underlying assessments but may instead affect how lease-related information is incorporated into forecasts and valuation models. In this context, differences in how lease effects are presented such as through APMs may still influence analysts' outputs. Furthermore, the usefulness of such measures depends on the credibility and consistency of the exclusions (Doyle, Lundholm and Soliman, 2003; Choi et al., 2007). In the context of IFRS 16, IFRS 16-neutralized APMs may be incorporated when they restore valuation-relevant metrics and maintain continuity in valuation models.

However, heterogeneous treatment of lease effects creates ambiguity about the appropriate earnings definition, potentially increasing interpretation costs and leading to greater forecast dispersion. Additionally, structural reporting changes such as IFRS 16 can affect the comparability and forecasting properties of accounting numbers. Literature shows that managers use APMs to improve year-on-year comparability to tell a consistent performance story (CFA Institute, 2016; Pizzo, 2020; Tam, Schulze and Zhao, 2018) and De Franco, Kothari and Verdi (2011) suggest that financial statement comparability increases the quality of information available to analysts and thus lowers the cost of acquiring information.

A reporting change that introduces a break in time-series comparability, such as IFRS 16, therefore increases information acquisition and processing costs by requiring analysts to adjust their models to maintain consistency over time. IFRS 16-neutralizing APMs may partially mitigate these costs by restoring pre-adoption comparability within firms, but at the same time may reduce cross-firm comparability if adjustment practices differ. At the same time, the literature suggests that analysts also value cross-firm comparability, which might get impaired through IFRS 16 neutralizing adjustments. De Franco, Kothari and Verdi (2011) show that greater financial statement comparability is associated with higher analyst following, improved forecast accuracy, and lower forecast dispersion, indicating that comparability reduces information acquisition costs. Similarly, Ramnath (2002) argues that brokerage houses assign analysts to groups of similar firms because peer firms serve as important informational benchmarks. Prior to IFRS 16, the classification flexibility under IAS 17 was widely criticized for reducing comparability across firms with different leasing strategies (Dameski and Gjorgieva-Trajkovska, 2023). Taken together, this suggests that while IFRS 16-neutralized APMs may improve time-series comparability and reduce processing costs within firms, heterogeneous adjustment practices across firms may impair cross-firm comparability, thereby increasing information costs and reducing the overall usefulness of such measures for analysts.

Furthermore, prior literature indicates that analysts employ different modeling styles, incentives and valuation methodologies. This suggests that they may also handle IFRS 16 adjustments in systematically different ways. Driven by economic incentives, some analysts

are more inclined to use income-increasing non-GAAP adjustments to promote glamour stocks, while for stocks, where these incentives are lower, they focus only on non-persistent items (Baik, Farber and Petroni, 2009). In addition, certain analysts follow consistent and predictable forecasting biases, such as "lowballing" earnings to create signals that can be interpreted by sophisticated investors (Hilary and Hsu, 2013, p.273). Within this framework, differences in how analysts incorporate IFRS 16-neutralized APMs reflect variation in both valuation approaches and information processing strategies. While literature does not provide evidence on analyst acceptance of IFRS 16-neutralized APMs, the broader evidence on analyst reliance on APMs and the importance of comparability provides a theoretical basis for examining whether such measures are incorporated into analysts' forecasts.

3.5 Hypotheses Development

To contribute to the literature and address the identified research gap, this study examines (i) which APMs are most likely to be IFRS 16-neutralized, (ii) which firms are more likely to provide such adjustments, and (iii) the capital market consequences of these adjustments.

3.5.1 Extent and Determinants of APM Adjustments

To examine which APMs are most likely adjusted following IFRS 16, we turn to ESMA`s report on the use of APMs. ESMA (2019) documents that the most frequently disclosed APMs in Europe include EBIT, EBITDA, EPS, net debt, net debt-to-EBITDA, and free cash flow among others. However, the mechanical effects of IFRS 16 on these APMs are not uniform. Leverage-based measures are directly and negatively affected[6]. By contrast, several operating-based measures like EBITDA are mechanically inflated. Similarly, free cash flow increases because the principal portion of lease repayments is reclassified from operating to financing cash flows, while total cash flows remain unchanged (IASB, 2016). Other metrics appear less affected as for example net profit and EPS are influenced primarily through timing effects due to the front-loaded interest component, but over the lease term total expense remains unchanged, and in steady-state portfolios the aggregate impact is typically modest and economically small (Ma and Thomas, 2023; Heese, Shin and Wang, 2025).

Under an informative interpretation, firms may adjust all APMs equally to preserve comparability across time. However, IFRS 16 constitutes a permanent change rather than a non-recurring shock, as the previous standard IAS 17 will not return. Consequently, while firms may justify adjusting measures for IFRS 16 as preserving time-series comparability, such adjustments postpone rather than resolve the accounting shift, raising the question of whether maintaining pre-IFRS 16 benchmarks remains informative in a post-adoption environment. From an opportunistic perspective, firms are more likely to adjust those APMs that are adversely affected by the reform, particularly leverage-based metrics. Practitioner

[6] Although EBITDA also increases due to the removal of lease expenses, the proportional increase in recognized lease liabilities typically exceeds the EBITDA uplift, leading to higher net debt-to-EBITDA ratios (IASB, 2016).

evidence also highlights concerns about asymmetrical adjustment behavior. The CFA Institute (2016) documents concern about so-called cherry picking, whereby firms exclude negative effects while retaining favorable components, resulting in upward-biased performance measures. Discretion over leverage-related APMs may be constrained by contractually defined, often "frozen GAAP" covenant terms, and evidence suggests that off-balance-sheet leases were already reflected in many credit agreements prior to IFRS 16 (IASB, 2016; Moody's, 2011, as cited in IASB, 2016), though such covenant terms typically apply within creditor-specific reporting and may not extend to general-purpose financial statements. Due to lack of conclusive evidence, consistent with the opportunistic perspective established in the APM literature, we expect that firms are more likely to adjust those performance measures that are most negatively affected by lease capitalization.

H1: Alternative performance measures that are mechanically adversely affected by IFRS 16, particularly debt-based measures such as net debt and leverage ratios, are more likely to be adjusted following adoption.

While H1 focuses on *which measures* are adjusted, the question of *which firms* engage in such adjustments remains open. Prior research on behavioral responses to ASC 842 demonstrates that firms do not respond uniformly to the accounting shock. Studies document deleveraging behavior (Kim and Xie, 2023; Ferreira, Landsman and Rountree, 2025), increased use of variable lease payments (Heese, Shin and Wang, 2025), shifts towards short-term leases and capital expenditures (Ma and Thomas, 2023), and lease-versus-buy substitutions (Li and Venkatachalam, 2024; Christensen, Linsmeier and Wangerin, 2025). Importantly, these responses are stronger among firms with higher pre-adoption lease intensity (Ma and Thomas, 2023). Firms with high lease intensity experience larger increases in reported leverage and more pronounced changes in performance metrics. At the same time, a single Germany-based study documents opposite behavioral patterns that suggest that companies lean into the mechanical effects of IFRS 16, by increasing leases to further boost earnings measures rather than attempting to reduce leverage. And this trend was even more pronounced for firms with higher pre-existing leasing volumes (Hartmann-Wendels, Hendriock and Kußmaul, 2025). Thus, creating tension as to how high lease intensity affects firm behavior. Given the limited overall evidence (especially within the IFRS and EU context) this tension provides motivation for further empirical investigation.

Although several firm characteristics could influence APM adjustment behavior, such as industry affiliation or financial constraints, lease intensity directly measures exposure to the standard's mechanical effects and therefore provides a theoretically grounded predictor. Building on the evidence of heterogeneous real responses to IFRS 16 and ASC 842 and the central role of lease intensity in shaping these responses, we propose:

H2: Firms with higher lease intensity are more likely to adjust alternative performance measures to neutralize the effects of IFRS 16.

3.5.2 Analyst Adoption and Capital Market Consequences

IFRS 16-neutralizing APMs require analysts to choose between alternative earnings definitions. From an information acquisition and processing perspective, this choice reflects a trade-off between valuation efficiency and information processing costs. While some analysts may view neutralized measures as enhancing comparability and preserving continuity in valuation benchmarks, others may consider IFRS-based measures more informative about leverage, risk, and cash flow dynamics. Against this theoretical background, IFRS 16-neutralizing APMs represent a distinct type of adjustment, as the effects of IFRS 16 are not temporary but recurring. Neutralizing the effects IFRS 16 involves for example excluding lease liabilities from leverage measures, reflecting changes in classification rather than recurrence.

An adjustment that neutralizes IFRS 16 in EBITDA or free cash flow would therefore restore the pre-adoption treatment of lease payments. Such an adjustment may plausibly contain predictive content if analysts consider lease payments economically operating in nature. However, because these effects are recurring and relate to classification rather than elimination of an underlying obligation, analysts must decide whether the IFRS-based or neutralized measure better reflects performance and financing structure. From an information-processing perspective, this creates ambiguity rather than a clear improvement in information quality, as analysts must evaluate competing representations of the same underlying economic activity. Some analysts may view IFRS 16-neutralizing adjustments as enhancing intertemporal comparability (e.g. aligning post-adoption performance with pre-IFRS 16 reporting) or to better reflect the nature of lease payments within the free cash flow. Others may regard the adjustments as removing economically relevant recurring components that affect leverage, risk, and cash flow dynamics.

The introduction of IFRS 16 neutralizing APMs may therefore generate uncertainty, particularly at the time of first introduction. Consistent with prior literature showing that higher comparability and clearer disclosure environments improve forecast accuracy and reduce dispersion (Lang and Lundholm, 1996; De Franco, Kothari and Verdi, 2011), such ambiguity is expected to impair analysts' ability to form precise and consistent expectations. A further factor influencing the behavior of forecast dispersion are the modeling styles, incentives and valuation methodologies of analyst and hence how they incorporate APMs into their forecast and valuation.

If analysts differ in whether they incorporate or reverse IFRS 16 effects in their share price forecasts, cross-sectional variation in forecasts should widen. This mechanism is consistent with established evidence that divergence in earnings definitions is associated with higher forecast dispersion and potential mispricing (Jennings and Marques, 2011; Young, 2014). Accordingly, we expect:

> **H3:** Following the first introduction of an IFRS 16-neutralizing APM, analyst forecast error and forecast dispersion increase.

4. Methodology

Chapter 4 outlines the research design and methodology used to test these hypotheses.

4.1 Sample Construction

Our sample consists of the largest (measured by market capitalization) listed non-financial firms from EU countries. As summarized in Table 1 (Appendix), the initial Capital IQ sample of European public firms is restricted to EU countries and excludes financial firms due to their distinct business models and regulatory environments, as well as firms with IPOs during or after 2019 to ensure data availability. The remaining firms are then sorted by market capitalization at the beginning of the sample period (LSEG Refinitiv), and the largest firms are selected for the final dataset.

We also considered an alternative sampling approach based on stratified random sampling. However, this would have required a substantially larger dataset to ensure sufficient observations per stratum and hence was not feasible given the manual data collection of APM disclosures. Moreover, focusing on large firms is consistent with prior non-GAAP literature (e.g. Ribeiro, Shan and Taylor, 2019; Choi et. al, 2007; Entwistle, Feltham, Mbagwu, 2005; Isidro and Marques, 2015) as these firms have greater analyst coverage and more frequent APM disclosure. Focusing on large firms may limit generalizability, as their more sophisticated reporting environments and higher analyst scrutiny can influence APM usage, requiring caution when extending results to smaller firms.

4.2 Data Extraction Process

The primary data source for this study is the annual report of each issuer. The annual report contains the consolidated IFRS financial statements and accompanying narrative disclosures used for capital market communication.

Our analysis focuses on the period following the mandatory adoption of IFRS, which became effective for reporting periods beginning on or after 1 January 2019. We examined two reference years: 2019 as the first year of mandatory adoption and 2024 reflecting more mature reporting practices after several years of implementation, excluding intermediate years due to feasibility constraints. While firms may adjust APMs temporarily in the initial adoption year, observing adjustments both at adoption and several years later indicates a sustained reporting choice rather than a one-off response. Accordingly, firms that report IFRS 16-neutralizing APMs in both 2019 and 2024 are assumed to apply this adjustment consistently in the intervening period. Similarly, firms that do not adjust in either year are unlikely to adopt such adjustments intermittently.

To identify APMs that neutralize the accounting effects of IFRS 16 we conducted a structured screening procedure for each issuer's reporting documents. First, all reports were systematically searched for lease-related keywords such as "IFRS 16", "lease", "right-of-use", "ROU", using manual text searches to identify potential adjustments across

management commentary, KPI sections, reconciliation tables, and footnotes. While ESMA guidelines encourage transparent labeling of adjustments (e.g. “EBIT before IFRS 16”), firms might not always follow consistent terminology. Hence, some adjustments may be embedded in definitions or reconciliations without explicit reference to IFRS 16, creating a risk of under-detection. To mitigate such risk, additional targeted searches were conducted for APMs that are economically most affected by IFRS 16 and frequently adjusted in practice (see discussion in section 3.5.1). These include net debt, EBITDA and free cash flow (FCF). Table 2 in Appendix A lists the specific key words employed in the search and Appendix B illustrates the identified APM adjustments using numerical examples. For such measures, adjustments may be embedded in the calculation logic without explicit lease-related wording. As a supplementary screening tool to flag potentially relevant passages and validate the completeness of the manual search, large language models (LLMs) were used (see Appendix C for the prompt employed). However, all final coding and classification decisions were made manually based on direct examination of the source documents.

An APM was classified as IFRS 16-adjusted only if the report explicitly stated that the metric excluded or neutralized IFRS 16 effects, or if the calculation logic clearly removed lease-related impacts (see numerical examples in Appendix B). In ambiguous cases, a conservative approach was applied, and the metric hence was classified as unadjusted.

Finally, financial statement data used in the analysis of Hypotheses 2 and 3 were obtained from the S&P Capital IQ Pro database. Further data used for Hypothesis 3 were obtained from the I/B/E/S database. Specifically, we extracted weekly median analyst target prices, the corresponding weekly actual closing prices for the firms in the sample and the standard deviation of the target prices. This data was used to construct measures of analyst forecast accuracy, attainability and dispersion.

4.3 Hypothesis 1

4.3.1 Test Design

To test whether firms selectively adjust debt-related APMs consistent with opportunistic “cherry-picking” behavior, we test Hypothesis 1 (H1) using cross-sectional analyses for fiscal years 2019 and 2024 separately. The analysis is conducted at two levels: the APM level and the firm level. The APM level focuses on individual performance measures and therefore identifies which types of metrics are most frequently adjusted aiming directly at answering H1. In contrast, the firm level reflects overall reporting behavior by examining whether firms systematically adjust debt-related APMs relative to other categories. On both levels, the analysis of H1 answers complementary questions: the APM-level analysis identifies which APM types are most frequently adjusted while the firm-level identifies how firms behave overall and tests whether firms systematically priorities debt-related measures relative to other categories. We classify firms based on their adjustment behavior into four mutually exclusive categories: debt-related-only, non-debt-related-only, mixed adjustments, and no

adjustments. On both levels, we examine whether debt-related APMs are more likely to be adjusted than non-debt-related APMs by comparing the proportion of adjusted APMs across the different categories. These differences are evaluated using difference-in-proportions tests with z-tests for equality of proportions. This approach follows standard statistical procedures for comparing binary outcomes and is consistent with prior accounting research using tests of proportions to analyze disclosure behavior (Curtis, McVay and Whipple, 2014). The null hypothesis states that the proportion of debt-related adjustments (p1) equals the proportion of non-debt-related adjustments (p2) ($H_0: p_1 = p_2$). The alternative hypothesis is a one-tailed test which states that the proportion of debt-related adjustments is greater than non-debt-related adjustments ($H_A: p_1 > p_2$).
Finally, we examine disclosure transparency by distinguishing between adjusted APMs disclosed exclusively and those disclosed alongside an unadjusted counterpart.

4.3.2 Variable Construction

To operationalize the analysis on the two levels, we construct a set of firm-year indicator variables that capture whether firms adjust debt-related APMs and/or debt-based ratios (ADJ_DoL_APM$_{i,t}$). Additionally, we construct variables that capture whether those adjustments are disclosed exclusively in adjusted form (ADJ_APM_EXCL$_{i,t}$) or together with an unadjusted number (ADJ_APM_RECON$_{i,t}$), distinguishing between debt-only, non-debt-only, mixed, and no adjustments. These variables allow us to measure both the prevalence of adjustments to specific APM categories and the broader adjustment strategies pursued by firms. The full set of indicator variables used to implement these classifications is described in Table 3.

4.4 Hypothesis 2

4.4.1 Test Design

To test whether firms with higher lease intensity are more likely to adjust APMs to neutralize the accounting effects of IFRS 16, we examine Hypothesis 2 (H2) using both a regression analysis and nearest neighbor matching.

4.4.1.1 Regression Analysis

Since the setup and context of this analysis is relatively novel, there is no established benchmark paper that examines the exact same empirical setting. Hence, we rely on prior literature with similar research designs to guide our methodological choices. To test H2, we estimate a baseline and an adjustment intensity-based model.
For the baseline model we use APM Adjustment (ADJ_APM$_{i,t}$) as dependent (binary) variable. The main independent variable being lease intensity (LEASE_INTENS$_{i,t}$), allows us to examine whether lease intensity influences the likelihood of such adjustments. Given the binary nature of the dependent variable of this model specification, nonlinear probability

models such as a logit or probit model could be used (Wilke, 2011). However, we estimate the baseline model using a linear probability model (LPM) estimated via ordinary least squares (OLS). The LPM allows for a straightforward interpretation of coefficients as marginal effects and facilitates the inclusion of multiple fixed effects and clustered standard errors (Christensen, Hail and Leuz, 2013; Wilke, 2011). In our setting, including industry and year fixed effects, as described in the following section, is particularly important as firms` lease intensity and reporting practices may vary across industry (Ribeiro, Shan and Taylor, 2019; Pizzo, 2020; Isidro and Marques, 2015). Nonlinear models with many fixed effects can lead to estimation difficulties and unstable coefficients in samples of moderate size. Therefore, we follow the empirical approach of estimating the model using OLS with heteroskedasticity-robust standard errors clustered at the firm level to account for potential within-firm correlation in the error terms between the two observation years, as the same firm appears in both 2019 and 2024.

In the adjustment intensity model, we use APM Adjustment intensity ($ADJ\_APM\_INTENS_{i,t}$) as dependent variable. It captures the amount of APMs that are adjusted to neutralize IFRS 16 effects and thus allows us to examine whether the intensity of APM adjustment is influenced by lease intensity. In this specification of the model, the dependent variable is not binary but captures the intensity of APM adjustments. To estimate this relationship, we employ an OLS regression model. This model allows us to estimate the conditional relationship between lease intensity and the level of APM adjustments while incorporating firm characteristics and fixed effects.

We define lease intensity as lease liabilities over total assets, consistent with methodological precedents for intensity and leverage variables (Isidoro and Marques, 2015; Erkilet, Janke and Kasperzak, 2021). Based on our hypothesis, we anticipate lease intensity to exhibit a positive coefficient, suggesting that higher lease intensity is associated with a higher likelihood and intensity of APM adjustment.

The baseline regression equation is specified in (1) and the lease intensity regression equation is specified in (2), with control variables and fixed effects explained and justified in the following subchapter. $\varepsilon_{i,t}$ represents the error term.

(1) $APM\ Adjustment_{i,t} = \alpha + \beta_1 Lease\ Intensity + \beta_2 Controls + \gamma_{Industry} + \delta_{Year} + \varepsilon_{i,t}$

(2) $APM\ Adjustment\ Intensity_{i,t} = \alpha + \beta_1 Lease\ Intensity + \beta_2 Controls + \gamma_{Industry} + \delta_{Year} + \varepsilon_{i,t}$

4.4.1.2 Nearest Neighbor Matching

While the regression analysis examines whether lease intensity drives APM adjustments, we complement it with a matching approach to analyze determinants beyond lease exposure and ensure comparability between adjusting and non-adjusting firms. Specifically, we apply nearest-neighbour matching (Abadie and Imbens, 2006) within the same fiscal year based on lease intensity, performed without replacement so that each control firm is used only once

(Rosenbaum, 1995, as cited in Abadie and Imbens, 2006). Following the matching procedure, we assess the balance between treated and control groups across the control variables defined in the following subchapter, interest coverage, market-to-book ratio, capital expenditure intensity, intangible intensity and cash-to-sales ratio have been added to the matching test to assess balance between treated and control groups.

Treatment is set to 1 for firms that report IFRS 16-neutralizing APM in both observation years (2019 and 2024). The control group consists of firms that report no such adjustment in either year. Firms that switch behavior between the two observation years are excluded from the treatment classification.

Following the matching procedure, differences in means between treated and control firms are evaluated using paired t-tests. This provides descriptive evidence on the characteristics associated with APM adjustment and ensures that the matching procedure achieves a reasonable level of comparability across groups. However, while the matching procedure provides insights into differences between treated and control firms, it does not allow for the identification of the independent effect of individual firm characteristics. To address this, a regression analysis is conducted on the matched sample. The dependent variable is an indicator for APM adjustment.

To assess the robustness of the results, three model specifications are estimated. The first model includes baseline firm characteristics, namely ROE, sales growth, firm size, leverage, volatility, and analyst following. The second model extends this specification by adding industry and year fixed effects. The third model represents the full specification by including the baseline firm characteristics, additional financial control variables, namely interest coverage, market-to-book ratio, capital expenditure intensity, intangible intensity, and cash-to-sales ratio, as well as industry and year fixed effects. This stepwise approach allows for a comparison across model specifications and makes it possible to assess how coefficient sizes and significance levels change once additional controls and fixed effects are introduced.

$$(3)\ APM\ Adjustment_{i,t} = f(Size, Leverage, Profitability, Volatility, \dots)$$

4.4.2 Control Variables and Fixed Effects

To address endogeneity concerns that may arise when estimating the relationship between lease intensity and APM adjustments, we include multiple firm-level control variables commonly used in the literature on non-GAAP reporting and financial disclosure. (e.g., Marques, 2006; Frankel, McVay and Soliman, 2011; Doyle, Jennings and Soliman, 2013; Guillamon-Saorin, Isidro and Marques, 2017). Specifically, we control for firm size, growth opportunities, profitability, volatility, leverage, and analysts following to mitigate potential omitted variable bias. Control variables are measured contemporaneously rather than lagged to better capture the information environment and managerial incentives prevailing at the time the APM disclosure decision is made allowing us to reflect the conditions under which managers decide whether and how to adjust APMs.

Firm size accounts for the information environment, as larger firms face greater investor scrutiny and regulatory attention (e.g., Doyle, Jennings and Soliman, 2013; Guillamón-Saorín et al., 2017; Ma and Thomas, 2023). It is proxied by market capitalization rather than total assets to avoid direct overlap with the independent variable and to mitigate potential mechanical effects of IFRS 16 on balance sheet-based size measures.

Growth opportunities are proxied by sales growth following Doyle, Jennings and Soliman, (2013), as expanding firms may exhibit different financing choices and disclosure practices.

Profitability is captured using return on equity (ROE), reflecting firms' incentives to present APMs. While prior literature on GAAP exclusions typically relies on return on assets (ROA) (e.g., Doyle, Jennings and Soliman, 2013; Guillamón-Saorín et al. 2017), we refrain from using ROA due to its direct mechanical overlap with our main independent variable, which is also scaled by total assets. ROE therefore provides a more suitable proxy in our setting. Although ROE is mechanically related to firms' capital structure and thus partially overlaps with leverage and lease intensity, it remains the most informative and widely used proxy for profitability available. Business risk is proxied by ROE volatility over the previous three years, as firms with more volatile performance may be more likely to use non-GAAP exclusions (Frankel, McVay and Soliman, 2011).

Furthermore, leverage controls for firms' capital structure and financing incentives (similar to Ma and Thomas, 2023), as highly leveraged firms face stronger creditor scrutiny, rating agency monitoring, and investor attention, which may influence disclosure behavior (Armstrong, Guay and Weber, 2010). Ideally, leverage would be scaled by total assets; however, this would introduce a mechanical overlap with the main explanatory variable, lease intensity, which is also defined relative to total assets. We therefore measure leverage as financial debt excluding lease liabilities scaled by equity. This specification isolates conventional debt financing from lease exposure while acknowledging that it may understate firms' total leverage following IFRS 16. It avoids direct overlap with the independent variable, although it introduces a conceptual link with ROE, which shares the same denominator. We consider this trade-off preferable, as overlap between control variables is less problematic than overlap between a control and the main explanatory variable. Moreover, both profitability and leverage are key determinants of disclosure behavior and analyst outcomes and cannot be omitted (e.g., Doyle, Jennings and Soliman, 2013; Guillamón-Saorín et al. 2017). To ensure that this conceptual overlap does not distort inference, we assess pairwise correlations and variance inflation factors (VIF) and confirm that multicollinearity remains within acceptable bounds.

Moreover, we include analyst following to capture variation in the information environment and external monitoring, as firms with greater analyst coverage are subject to increased scrutiny and may exhibit different disclosure incentives. All continuous variables are winsorized at the 1st and 99th percentile to mitigate the influence of outliers without excluding observations from the sample.

Reverse causality is not major concern because lease intensity is largely determined by firms' operating structures and leasing decisions, which typically precede financial reporting choices regarding APM presentation. Lastly, the models include industry, and year fixed effects to control for unobserved heterogeneity across industries, institutional environments, and time. Industry fixed effects account for structural differences across sectors, as IFRS 16 exposure differs structurally across industries (e.g., Ribeiro, Shan and Taylor, 2019; Black and Pizzo, 2020; Isidro and Marques, 2015) and with that potentially the likelihood of adjusting APMs. Year fixed effects are included to control for time-varying macroeconomic conditions, regulatory developments, and aggregate reporting trends. Given that our sample comprises two cross-sectional observations the year fixed effect effectively captures any systematic difference in APM reporting behavior between the two periods that is common across all firms, rather than firm specific.
Despite these mitigation strategies, some endogeneity concerns may remain if unobserved firm characteristics that are not captured by the control variables or fixed effects simultaneously affect both lease intensity and firms' incentives to adjust APMs.

4.4.3 Robustness Tests

To assess the robustness of our regression results, we conduct additional robustness tests. First, we re-estimate the models using lagged control variables. This reduces concerns that the estimated relationships are affected by simultaneity or reverse causality. Secondly, for the baseline model with the binary dependent variables, we replace the linear probability model with a logit specification. This allows us to examine whether the results remain consistent when applying a nonlinear estimator. Lastly, we assess robustness by adding country fixed effects to control for time-invariant differences across countries, such as institutional environments, enforcement intensity, and reporting practices. Country fixed effects are not included in the main regressions because the baseline model already includes industry and year fixed effects, and the inclusion of country fixed effects would substantially reduce the remaining cross-sectional variation given the relatively limited sample size. This may lead to imprecise estimates of the coefficients of interest. To ensure that our results are not driven by omitted country-level heterogeneity, we instead report specifications including country fixed effects as a robustness check.

4.5 Hypothesis 3

4.5.1 Test Design

To examine the effect of IFRS 16 related APM adjustments on analysts` forecasts we employ a dynamic difference-in-differences (DiD) specification with leads and lags around the treatment event. A standard DiD approach relies on parallel trends assumptions which may be restrictive in our setting given substantial heterogeneity across firms (e.g., industry affiliation, lease intensity, and information environments). Moreover, treatment is not driven by a purely

exogenous shock, but by firms' discretionary reporting choices following IFRS 16 adoption, raising concerns about endogenous selection into treatment.

To address these issues, we estimate the following event-study specification:

$$(4)\ Y_{it} = \alpha + \sum_{k \neq -1} \beta_k \cdot (Treatment_i \times D_{t=k}) + \phi \cdot (LeaseIntensity_i \times Post_t) + \gamma_i + \delta_t + \mathbf{X}'_{it}\theta + \varepsilon_{it}$$

where Y_{it} denotes forecast accuracy and/or dispersion and/or forecast attainability for firm i in year t. $\gamma_i$and δ_t represent firm and time fixed effects, and $\mathbf{X_{it}}$ is a vector of control variables. The control variables and fixed effects will be clarified in the next section. The indicators $D_{t=k}$capture time relative to treatment, with $k < 0$ denoting pre-treatment periods 2013-2018 (leads) and $k > 0$ post-treatment periods 2019-2024 (lags), treating 2019 as the effective adoption year despite potential early APM adoption. The period k= $-1$is omitted as the reference category. The coefficients on the lead terms, $\beta_k$for $k < 0$, capture differences between treatment and control firms prior to treatment and provide a formal test of the parallel trends assumption. The lag coefficients, $\beta_k$for $k > 0$, measure the dynamic effects of APM adjustments on forecast accuracy following IFRS 16 adoption.

To account for heterogeneous effects of IFRS 16 across firms, we further include an interaction between lease intensity and the post-adoption period, $LeaseIntensity_i \times Post_t$. IFRS 16 is expected to have a stronger mechanical impact on firms with higher exposure to operating leases, implying that post-adoption changes in analyst forecasts may vary systematically with lease intensity. Since treatment firms exhibit higher average lease intensity, controlling only for the level of lease intensity (as we do through a regular control) would be insufficient, as it would not capture differential post-adoption effects across firms. The interaction term therefore allows us to isolate the incremental effect of APM adjustments from broader IFRS 16-induced changes that are driven by firms' underlying lease exposure. For H3, treatment is set to 1 for firms that report at least one IFRS-16-neutralizing APM in exclusion-only format in both observation years (2019 and 2024). The control group consists of firms that report no such adjustments in either year as well as firms that report adjustments only in dual-presentation form in both years. Firms that change their reporting behavior between the two years i.e., firms that report IFRS 16-neutralizing APM adjustments in only one of the two years are excluded from the treatment classification.[7]

This model specification offers two key advantages over a standard DiD. This specification allows for time-varying treatment effects and an explicit assessment of pre-treatment

[7] A simpler classification would define the treatment group as all firms that report IFRS-16-neutralizing APM adjustments in both years, and the control group as all firms that do not adjust APMs in either year as was done for hypothesis 2. However, this approach would treat exclusion-only adjustments and dual-presentation adjustments as equivalent, even though the two formats differ in transparency. When firms present both the adjusted and non-adjusted metric, analysts can directly observe the IFRS 16 effect and reconcile the adjustment. In contrast, exclusion-only presentation reports the adjusted metric without the IFRS benchmark, which may obscure the magnitude of the adjustment. Because Hypothesis 3 examines whether IFRS-16-neutralizing APMs interfere with the transparency objective of IFRS 16, we classify exclusion-only adjustments as the treatment condition, while firms reporting only dual-presentation adjustments are included in the control group.

dynamics, helping to address concerns related to heterogeneous firm characteristics and endogenous treatment selection. Identification relies on the assumption that, conditional on controls and fixed effects, treated and control firms would have followed similar trends absent treatment; while the event-study design allows us to assess this through pre-treatment coefficients, it does not fully eliminate endogeneity concerns.

Following prior literature on analyst forecast properties, we use analyst forecast accuracy, attainability and dispersion as indicators of how well sophisticated market participants interpret financial reporting information and assess firm performance (Bradshaw, Brown and Huang, 2013; Bourveau et al., 2024; Choi, Hu and Karim, 2020; Hellman et al., 2025). We focus on analyst target price forecasts, as they reflect analysts' overall valuation assessments and rely on valuation inputs such as EBITDA multiples, enterprise value-to-EBITDA ratios, and leverage measures that are directly affected by IFRS 16. In contrast, IFRS 16 has only limited economic effects on other forecast measures such as net income or earnings per share (EPS) due to timing differences in lease accounting (Ma and Thomas, 2023; Heese, Shin and Wang, 2025). Hence target prices are more suitable for capturing analysts' ability to process IFRS 16-related adjustments.

We measure analyst forecast accuracy based on the deviation between the analyst consensus target price and the realized share price twelve months after the forecast is issued, consistent with prior literature (Bradshaw, Brown and Huang, 2013). Specifically, accuracy is calculated as:

$$ACCURACY_{i,t} = -1 * \left| \frac{TP_{i,t} - P_{i,t+12}}{P_{i,t}} \right|$$

where $TP_{i,t}$ denotes the median analyst consensus target price issued at time t. In our setting, *t* corresponds to approximately one month after the publication of the firm's annual report for the preceding fiscal year, allowing analysts time to incorporate the newly disclosed information into their valuation models. To reduce noise from subsequent information releases (notably Q1 earnings announcements) we condition the timing of the target price selection on the occurrence of interim disclosures. To illustrate, if the first quarterly results are released more than four weeks after the annual report, we use target prices issued four weeks after the annual report publication. If, however, quarterly results are announced within this four-week window (e.g., after three weeks), we instead use the latest target price issued immediately prior to the quarterly release. Given that target prices and share prices are available at a weekly frequency, this approach ensures that the selected forecasts predominantly reflect information from the annual report rather than subsequent interim disclosures. $P_{i,t+12}$denotes the realized share price twelve months after the forecast, and $P_{i,t}$is the share price at the time the forecast is issued. The absolute forecast error is multiplied by −1 so that higher values (closer to zero) indicate greater forecast accuracy. In addition, we incorporate an attainability-based metric. Prior research emphasizes that target prices are not necessarily intended to match the realized price exactly at the end of the forecast horizon, but rather to represent a price level that is expected to be reached within a specified period

(Asquith, Mikhail and Au, 2005; Bradshaw, Brown and Huang, 2013). Accordingly, we define a target price as *attained* if the realized stock price meets or exceeds the target at any point during the 12-month horizon, calculated as:

$$ATTAINABILITY_{i,t} = \begin{cases} 1, & \text{if } \max_{\tau \in [t,t+12]} P_{i,\tau} \geq TP_{i,t} \\ 0, & \text{otherwise} \end{cases}$$

where $TP_{i,t}$ denotes the analyst consensus target price issued at time t, and $P_{i,\tau}$ the realized stock price at any point τ within the subsequent 12-month horizon, where the attainability metric equals 1 if the target price is reached or exceeded at any time during this period and 0 otherwise.

We measure analyst forecast dispersion as the cross-sectional standard deviation of analysts' target price forecasts scaled by the share price at the time the forecasts are issued:

$$DISPERSION_{i,t} = \frac{SD(TargetPrice_{analysts})}{P_{i,t}}$$

where $SD(TargetPrice_{analysts})$ represents the standard deviation of analysts' target price forecasts issued at time t. Higher dispersion reflects greater disagreement among analysts and thus a lower level of information precision in the analyst forecasting environment.

4.5.2 Control Variables and Fixed Effects

In the model to test for H3, we include firm and year fixed effects in the difference-in-differences specification. Firm fixed effects absorb all time-invariant firm characteristics, including industry and country affiliation, thereby controlling for persistent differences across firms. Year fixed effects capture macroeconomic shocks and time-specific changes in the analyst forecasting environment.

We include the same set of firm-level control variables as in the analysis of H2 to account for firm characteristics that may influence both disclosure practices and the analyst information environment. To capture the heterogeneous impact of IFRS 16 across firms, we included an interaction term between lease intensity and a post-adoption indicator (as mentioned above). While this interaction captures time-varying effects of IFRS 16 related to lease exposure, we additionally include lease intensity as a control variable to account for baseline cross-sectional differences between firms. Firms with higher lease intensity are both more likely to report IFRS 16-neutralizing APMs and may differ systematically in their financial and informational characteristics. Including both the interaction term and the level control therefore allows us to separate general IFRS 16-induced effects from the incremental effect of firms' reporting choices.

4.5.3 Robustness Tests

To assess the robustness of our empirical results and ensure that our results are not driven by model specification choices or differences in observable firm characteristics, we conduct several robustness tests.

First, we re-estimate the models using lagged control variables. Next, we address the timing between filing date, target and share price issue by using a model specification that measure forecast accuracy and dispersion using the share and target price observed at the closest available date to filing date instead of one month after filing date as in the baseline model.

Lastly, we apply entropy balancing to make treatment and control groups more comparable by matching them on firm characteristics using the control variables previously used for H2 and H3. We use APM adjustment as the treatment indicator that defines treatment and control group. We use the same definition for treatment and control group as we did previously. As covariates that serve as balancing variables, we use the same characteristics as above. The outcome variables observed are forecast accuracy, dispersion, and target price attainability.

5. Results and Analysis

5.1 Summary Statistics

The sample consists of 301 listed firms observed in both 2019 and 2024. Table 4 in the appendix reports summary statistics based on manually collected data on APM adjustments. **Panel A** (see below) presents an overview of APM adjustment behavior in the sample. In 2019, 158 firms (52,5%) disclosed at least one adjusted APM. In 2024, this number decreases to 142 firms (47,2%), indicating a moderate decline in the overall use of adjusted APMs over time. Of the total sample, 126 firms adjusted APMs in both years, while 127 firms did not report any adjusted APM in either year. A smaller subset adjusted only in one year, suggesting some degree of temporal variation in practices. The adjustment intensity among firms that report adjusted APMs averages 2,67 APMs in 2019 and 2,16 APMs adjusted in 2024. The decline in adjustment intensity suggests that although APM adjustments remain prevalent, firms appear to rely on slightly fewer adjusted APMs per firm in 2024 than in 2019. Beyond the prevalence of adjustments, it is important to distinguish between disclosure formats. Adjusted APMs may be presented exclusively in adjusted form (EXCL) or together with the corresponding unadjusted figure (RECON). This distinction captures differences in transparency and comparability. In 2019, the balance between EXCL and RECON presentations is relatively balanced; 101 firms disclose at least one adjustment in EXCL format while 100 firms present at least one RECON adjustment. In 2024, the distribution of EXCL versus RECON presenters shifted slightly; the number of EXCL adjustments increased slightly to 110 firms while the number of RECON presentations decreased to 78 firms. A subset of firms chose to present both EXCL and RECON APM presentations. In 2019, 43 firms report at least one adjustment in each format, increasing slightly to 46 firms in 2024.

This indicates that some firms employ multiple presentation approaches within the same reporting period. Overall, among firms that report adjusted APMs, the EXCL format appears to be more prevalent than the RECON format in both 2019 and 2024.

Table 4. Panel A – APM Adjustment Behavior Overview

Variable	2019	2024	2019 and 2024
Total Firms (N)	301	301	301
ADJ_APM (N)	158	142	126
ADJ_APM (share of total firms)	0.53	0.47	0.50
ADJ_APM_EXCL (N)	101	110	211
ADJ_APM_EXCL (share of adjusting firms only)	0.64	0.78	0.70
ADJ_APM_RECON (N)	100	78	178
ADJ_APM_RECON (share of adjusting firms only)	0.63	0.55	0.59
ADJ_APM_BOTH (N)	43	46	89
ADJ_APM_BOTH (share of adjusting firms only)	0.27	0.32	0.30
ADJ_APM_INTENS (mean, all firms)	1.40	1.02	1.21
ADJ_APM_INTENS (mean, adjusting firms only)	2.67	2.16	2.43
ADJ_APM_INTENS (median, adjusting firms only)	2	2	2

Note: All numbers are reported on firm level meaning ADJ_APM etc. refer to the number of firms adjusting APMs, not the number of adjusted APMs.

Taken together, these descriptive statistics suggest two preliminary patterns. First, the overall use of adjusted APMs remains widespread, although slightly declining over time. Second, exclusive disclosure appears at least as prevalent as reconciled disclosure and becomes relatively more common among adjusting firms in 2024.

Panel D reports the country distribution of the sample firms. The largest shares of firms in the sample originate from Germany (19,6%), France (17,6%), Sweden (14,3%), and Italy (8,3%). The remaining firms are distributed across a range of smaller European markets. Taking a closer look at adjustment behavior reveals that, among the most represented countries, the majority exhibit a higher number of adjusting than non-adjusting firms. However, Germany represents a notable exception where non-adjusters dominate. Adjustment intensity among adjusting firms is relatively concentrated across countries. It generally ranges between around 1 and 4 for the pooled 2019 and 2024 sample, with most countries clustering around values of 2. This suggests a homogeneous adjustment magnitude conditional on engaging in adjustments. Consistent with this observation, results from an ANOVA test indicate that cross-country differences in adjustment intensity are statistically significant only when considering all firms (test 2), but not when restricting the sample to adjusting firms (test 1). This implies that observed cross-country variation is primarily driven by differences in the likelihood of adjustment rather than differences in the intensity of adjustments among firms that do adjust. In addition, a decline in adjustment intensity in 2024 suggests a temporal normalization following the initial adoption period. Overall, these findings point to

meaningful cross-country heterogeneity in adjustment propensity, while the magnitude of adjustments among adopters appears relatively stable across jurisdictions.

As presented in **Panel E**, the sample consists of a broad range of industries. Capital Goods represent the largest share (19.6%), followed by Materials (12.0%), and Utilities (8.0%), while the remaining firms are distributed across several additional sectors. Adjustment behavior varies markedly across industries. Specifically, Capital Goods consistently exhibits a higher number of adjusting than non-adjusting firms across both years, whereas other major industries, including Materials and Utilities, show the opposite pattern, with substantially more non-adjusters than adjusters. This indicates differences in adjustment propensity across industries, a finding that is statistically supported by the chi-square test. In contrast to the country-level results, variation in adjustment intensity is more pronounced across industries. While adjustment intensity declines in 2024, suggesting a normalization effect over time, significant differences persist across sectors. The results from an ANOVA test confirm that industry-level differences in adjustment intensity are statistically significant both when considering all firms (test 2) and when restricting the sample to adjusting firms (test 1; for 2019 and the full sample period). This implies that, unlike the country dimension, industry heterogeneity is driven not only by differences in the likelihood of adjustment but also by differences in the magnitude of adjustments among firms that do adjust. Overall, these findings highlight that industry characteristics play a more substantial role than country affiliation in shaping both the propensity and intensity of APM adjustments.

5.2 Hypothesis 1

Table 5 in the appendix presents the results for H1. We analyzed APM adjustments on two levels: on APM level and firm level. The former describes how many APMs are adjusted or not adjusted, independent of firms[8], while the latter describes how many firms adjust or do not adjust their APMs. Panels A to D of table 5 present the results on APM level analysis while Panels E to J present the test results on firm level.

5.2.1 Descriptive Statistics

Panel A shows that over both years, the most frequently adjusted APM is debt (195; 27.7%) followed by FCF (151; 21.4%) and leverage ratios (111; 15.8%). Total counted APM adjustments for both years are 704 over 15 different categories of APMs, 306 being adjustments of debt related (Debt and leverage) APMs and 398 being related to non-debt related APMs (**Panel C**). Across both years combined, APM adjustments are disclosed slightly more often without reconciliation (367) than alongside an unadjusted counterpart (361), indicating an insignificant tendency toward exclusive disclosure. However, the pattern differs across years. In 2019, adjustments are more frequently presented with reconciliation

[8] Hence, if a firm adjusted two or more measures, it will be double counted.

(247) than without (175), suggesting higher transparency in that year. In 2024, this pattern reversed, indicating a shift toward more exclusive disclosure of adjusted APMs.

Table 5. Panel C – Distribution of Adjusted APMs by Adjustment Cluster

Category	2019	2024	2019 and 2024
Debt / Leverage (DoL)	162	144	306
Cash Flow (CF)	112	94	206
Earnings (EARN)	82	36	118
Other	54	20	74
TOTAL	**410**	**294**	**704**

Across all three key APM categories (debt, free cash flow, and leverage) the overall number of adjustments remains relatively stable or slightly declines between 2019 and 2024. However, a consistent shift in disclosure format emerges: the share of adjustments presented without reconciliation increases over time. This pattern is particularly pronounced for FCF (overall 20 dual presentation and 131 exclusive adjustments over both years), but is observable across all three measures, indicating a broader move toward less transparent, exclusive APM reporting.

Overall, these descriptive results at the APM level indicate that debt-related APMs are among the most frequently adjusted metrics in the sample, supporting the expectation that debt-related measures play a prominent role in adjustment practices. While non-debt APMs collectively still account for a larger share of total adjustments, the observed patterns provide initial evidence consistent with H1 and motivate further firm-level analysis and statistical testing to more precisely assess these relationships.

Panel E presents the classification of firm-level APM adjustment behavior across the categories defined in **Panel B**. It shows that debt-related-only adjustments occur more frequently than other single-category adjustments, such as cash-flow-only or earnings-only adjustments. In 2019, 40 firms adjusted only debt-related APMs, compared to 32 firms adjusting only cash-flow APMs and 4 firms adjusting only earnings-based APMs. A similar pattern appears in 2024, with 43 firms adjusting only debt-related APMs, 34 adjusting only cash-flow APMs, and 1 adjusting only earnings-based APMs. This suggests that when firms adjust only one type of APM, it is most commonly a debt-related metric, which is consistent with the expectation that leverage measures are particularly affected by IFRS 16. Overall, the descriptive results provide initial support for H1.

5.2.2 Results Analysis

5.2.2.1 General Results Analysis

Building on the descriptive overview of the dataset, the next section presents the analysis and interpretation of the key findings.

While **Panel A** of Table 5 already provided a preliminary overview over APM adjustment patterns, APMs are next grouped into four economically related clusters: debt/leverage, cash

flow, earnings, and other measures (**Panel B**). We then test whether adjustments to debt/leverage APMs occur more frequently than adjustments to other clusters using difference-in-proportions tests with corresponding z-statistics and p-values (**Panel D**).

The difference-in-proportions test shows that, across both years combined, debt/leverage APMs are adjusted significantly more frequently than other APM clusters. In 2019, the difference relative to cash-flow measures is 12.2 percentage points ($z = 3.02$, $p < 0.001$), and even larger around 19.51 and 26.33 percentage points compared to earnings measures and other APM categories each ($z = 5.12$ and $z = 7.35$, respectively; $p < 0.001$). This pattern holds across years. Disclosure formats also differ: debt-related APMs are predominantly reconciled, whereas cash-flow APMs are mostly disclosed without reconciliation, with exclusive disclosures increasing over time.

Overall, the analysis confirms that the descriptive patterns are not driven by random variation. Instead, the results provide statistical evidence that debt/leverage APMs are adjusted more frequently than other APMs. The results also indicate that the difference in adjustment frequency becomes more pronounced over time, as the gap between debt/leverage APM adjustments and other APM clusters widens in 2024 compared to 2019. While APM-level tests may violate independence due to clustering within firms, qualitatively similar results at the firm level suggest that the observed patterns are not driven by this issue.

For the firm-level analysis (Panels E-J), we examine the frequency of adjustments by comparing the number of firms that adjust only debt-related APMs with the number that adjust only other APM categories. As already shown in **Panel E**, across all periods, debt-related APM adjustments occur more frequently than other APM types across. The difference-in-proportions test in **Panel F** shows that when both years are combined, the difference in adjustment frequency is statistically significant relative to earnings-based APMs (difference = 48.75 percentage points, $z = 8.31$, $p < 0.001$) and other APM categories (difference = 48.13 percentage points, $z = 8.162$, $p < 0.001$). In contrast, the difference relative to cash-flow-based APMs is smaller (10.63 percentage points) and weakly significant ($z = 1.39$, $p = 0.08$). The same pattern holds when examining the years separately. In both years, debt-related APMs are adjusted significantly more often than earnings-based and other APMs (all $p < 0.001$), while differences relative to cash-flow measures remain statistically insignificant. That said, some categories (earnings-only and other-only adjustments) contain few firms, making results sensitive to small sample changes. The two-proportion z-test relies on a normal approximation that may be less reliable with small counts, although this is partly addressed by also calculating exact binomial p-values.

Taken together, the results provide overall support for H1. At the APM level, debt and leverage measures are adjusted significantly more frequently than cash-flow, earnings, and other APMs, with the difference becoming even more pronounced in 2024. This pattern is consistent with exploratory evidence by Molina-Sánchez, Morales-Díaz and Zamora-Ramírez (2024), who document that firms frequently exclude lease liabilities from debt measures and retain IAS 17-style presentations in metrics such as EBITDA, which is consistent with

concerns about “cherry picking” in APM reporting, whereby firms selectively exclude unfavorable accounting effects while retaining favorable ones (CFA Institute, 2016). While such adjustments may preserve time-series comparability and support covenant or valuation analyses (Molina-Sánchez, Morales-Díaz and Zamora-Ramírez, 2024), their persistence several years after adoption raises questions about whether they primarily serve an informative purpose, given that IFRS 16 represents a permanent accounting change. Similar evidence is documented by Shibasaki and Toyokura (2020), who find that the use of non-GAAP measures in Japan did not decline following IFRS adoption but instead increased by 4 percentage points in the year after implementation. This pattern suggests that such measures may not merely facilitate a temporary transition to new accounting standards but can become embedded in firms’ reporting practices, consistent with a more persistent, potentially strategic use of APMs rather than a purely informational role.

The observed decline in reconciled disclosures between 2019 and 2024 may reflect increasing acceptance of adjusted metrics that reverse IFRS 16 effects as the more decision-useful representation of performance. As these adjusted measures become more embedded in reporting practice, firms may perceive less need to reconcile them, leading to a shift toward more standalone presentation formats. The low transparency is particularly pronounced for FCF APMs. As shown in the descriptive statistics, FCF APMs are most frequently adjusted without reconciliation to an unadjusted version, indicating comparatively lower transparency relative to other APM categories. This is consistent with IASB stakeholder feedback (2025, 2026), which documents that stakeholders often view the IFRS 16 classification of lease payments as financing within the cash flow statement and the FCF calculation as misaligned with operating performance metrics and therefore rely on adjusted measures. This behavior can be interpreted in light of the design choices underlying IFRS 16. Unlike U.S. GAAP under ASC 842, which retains a dual presentation model and allows a classification of lease-related expenses as operating in the cash flow and income statement, IFRS 16 adopts a single-model approach that consistently treats lease obligations as financing. While this enhances conceptual consistency, it apparently also creates frictions with established cash flow-based measures.

Interestingly, stakeholder feedback documented by the IASB primarily focuses on concerns regarding the classification of lease payments in the statement of cash flows, whereas comparatively little criticism is directed at the recognition of lease liabilities as financial debt in the feedback published by the IASB (IASB, 2026a; IASB, 2026b; IASB, 2025). Despite this, the empirical results show that leverage-related APMs are among the most frequently adjusted measures. This may indicate that users accept the conceptual treatment of lease liabilities as debt, yet still prefer to present performance metrics more favorably, suggesting that APM adjustments reflect both perceived decision-usefulness and reporting incentives.

At the firm level (Panels D-F), the results remain directionally supportive of H1: firms are more likely to adjust debt-related APMs than earnings-based or other APMs, although the difference relative to cash-flow adjustments is weaker. This discrepancy arises because the

APM-level analysis counts each adjusted metric separately, allowing firms that adjust multiple metrics to contribute several observations. In contrast, the firm-level analysis relies on more restrictive categorizations (e.g., firms adjusting only specific types of APMs), which reduces the effective sample size and, in turn, statistical power. This explains why the APM-level analysis shows stronger support for the hypothesis than the firm-level analysis: debt-related measures are often part of the adjustment set, but not necessarily the only metrics being adjusted. As a result, multi-metric adjustment behavior and the smaller, more segmented firm-level samples weaken the relative differences and associated statistical significance, even though debt-related measures remain the most frequently adjusted metrics overall.

5.2.2.2 Country and Industry-Level Results Analysis

After Panel D and E of Table 4 already showed that there is significant variation of adjustment behavior across countries and industries, we decided to also map the firm level analysis to countries and industries allowing for a comparison of whether cash-flow-only or debt-only adjustment behavior is more prevalent across different countries or industries (Panel G and H) and to formally test these distributional differences using chi-square tests of independence (Panel I and J).

Panel G shows the general distribution of debt- and cashflow APM-adjusting firms across countries. There is substantial heterogeneity in adjustment preferences across countries, with some countries exhibiting a clear dominance of debt-related adjustments (e.g. Austria = 83,3%, Italy = 83,3%, Spain = 76.9%, Sweden = 70%), while others rely more heavily on cash flow adjustments (e.g. Denmark = 92,3%, Germany = 60.7%). Overall, the descriptive evidence indicates that firms' adjustment preferences vary across countries, particularly in the choice between cash flow and debt-related metrics. **Panel I** shows that the overall distribution of adjustment types does not differ significantly across countries in 2019 ($\chi^2 = 103.13$, $p = 0.27$), but becomes statistically significant in 2024 ($\chi^2 = 126.81$, $p = 0.016$) and highly significant in the pooled sample ($\chi^2 = 192.83$, $p < 0.001$), indicating that cross-country differences in APM usage emerge over time. **Panel J** further shows that these differences are primarily driven by debt-related adjustments. The likelihood of debt-only adjustments varies significantly across countries in all specifications (e.g. pooled $\chi^2 = 55.87$, $p < 0.001$), while cash flow adjustments show weaker and less consistent variation, becoming significant only in the pooled sample ($\chi^2 = 44.48$, $p < 0.001$).

Panel H shows the general distribution of debt- and cashflow APM-adjusting firms across industries. Industry patterns are more polarized than country patterns. The descriptive analysis reveals pronounced differences in adjustment behavior across industries. Several industries exhibit a clear dominance of either cash flow or debt-related adjustments. Importantly, even in industries with relatively small sample sizes (e.g. 13 transportation companies in the entire sample and 10 observations of cash flow-only adjusting firms or 16 energy companies in the entire sample and 9 observations of debt-only adjusting firms), these

patterns are highly concentrated, suggesting that the observed differences reflect systematic industry characteristics rather than random variation. **Panel I** indicates significant differences in the overall distribution of adjustment types across industries in 2019 ($\chi^2 = 147.28$, $p = 0.001$) and in the pooled sample ($\chi^2 = 215.99$, $p < 0.001$), while results for 2024 are not statistically significant ($\chi^2 = 111.66$, $p = 0.20$). **Panel J** shows that these differences are primarily driven by cash flow adjustments. In 2019, the likelihood of cash-flow-only adjustments varies significantly across industries ($\chi^2 = 39.26$, $p < 0.01$), whereas debt-only adjustments do not ($\chi^2 = 13.18$, $p = 0.87$). This pattern persists in the pooled sample, where cash flow adjustments remain highly significant ($\chi^2 = 59.71$, $p < 0.001$), while debt-related adjustments continue to show no significant variation. This suggests that industry heterogeneity is primarily driven by the use of cash flow-based measures, with debt adjustments being more uniformly applied across sectors.

Taken together, the results therefore support H1: debt-related APMs play a central role in firms' adjustment behavior and are significantly more likely to be adjusted than other APM categories, even if these adjustments are often implemented alongside adjustments to additional performance metrics.

5.3 Hypothesis 2

5.3.1 Descriptive Statistics

Table 6 reports the test results for H2. **Panel A** shows the summary statistics for the variables used in the OLS regression and the matching analysis. Approximately 50% of firm-year observations report at least one IFRS 16-neutralizing APM adjustment (mean = 0.50), while firms report on average slightly more than one adjustment per year (mean = 1.21). The main explanatory variable, lease intensity, which measures the relative magnitude of lease liabilities has a mean of 0.05, indicating that lease liabilities correspond on average to approximately 5% of total assets.

The median value of the lease intensity variable suggests that the distribution is slightly right skewed with some firms exhibiting comparatively higher lease exposure. The control variables show no unusual findings.

Panel B of Table 6 presents the Pearson Correlation Matrix for the variables used in the models. The dependent variable APM adjustment is positively and significantly correlated with lease intensity (0.33) and leverage (0.17), suggesting that firms with higher lease exposure and higher leverage are more likely to report IFRS 16 neutralized APM adjustments. A similar pattern can be observed for adjustment intensity. It shows a positive and significant correlation with lease intensity (0.38), leverage (0.15).

The correlations among control variables are generally moderate, suggesting limited concerns regarding multicollinearity. The strongest association is observed between firm size and analyst following (0.69). However, subsequent variance inflation factor (VIF) tests do not indicate severe multicollinearity. Despite this correlation, both variables are retained, as they

capture conceptually distinct dimensions of the information environment: firm size reflects overall scale, while analyst following proxies for external monitoring and information intermediation.

A similarly strong positive correlation is observed between profitability and the market-to-book ratio (0.62), consistent with more profitable firms receiving higher market valuations. While relatively high, this relationship reflects underlying economic fundamentals rather than redundancy, as profitability captures current performance, whereas the market-to-book ratio reflects forward-looking growth expectations and market perceptions. Leverage is negatively correlated with profitability (−0.05) and interest coverage (−0.29), as expected, while CAPEX intensity is negatively related to leverage (−0.29). Most other correlations are relatively small, indicating that the control variables capture distinct firm characteristics.

Panel C of Table 6 reports the variance-inflation factor (VIF) to assess potential multicollinearity concerns. Although there is no universally accepted cutoff value, literature commonly considers VIF values above ten as suggesting severe collinearity problems (Alauddin and Nghiem, 2010; Franke, 2010). The VIF values range from 1.08 to 2.09. The variables exhibit relatively low VIF values, indicating only weak correlations among the explanatory variables. Hence, the overall VIF statistics and the correlation matrix suggest that (multi-)collinearity is unlikely to materially affect the regression estimates.

5.3.2 Regression and Matching Results

5.3.2.1 Regression Results Baseline Model

The results of the OLS regression examining the impact of lease intensity on APM adjustment are displayed in **Panel D**. Column (4) presents the results with both year and industry fixed effects. Column (1) to (3) present the regression without control variables and fixed effects, without fixed effects and with industry fixed effects only respectively.

Starting with the independent variable, lease intensity has a positive coefficient with significance at the 1% level. This result indicates a positive relation between lease intensity and APM adjustments and hence supports H2. It suggests that firms with greater lease exposure are more likely to adjust APMs for IFRS 16 effects. The positive association between lease intensity and APM adjustments is observed across all model specifications and the significance of the coefficient remains at the 1% level once industry and year fixed effects are included. At the same time, the increase of R-squared across specifications indicates that the inclusion of control variables and fixed effects improves the overall explanatory power of the model.

Among the control variables, as predicted, leverage has a positive coefficient (0.15) significant at the 1% level. It implies that firms with higher levels of leverage are more likely to adjust their APMs to neutralize IFRS 16. The remaining control variables Size, Profitability, Growth, Volatility, and Analysts are not statistically significant and hence are not associated with APM adjustment.

Table 6. Panel D – Regression Results Baseline Model

Variable	Expected Results	(1)	(2)	(3)	(4)
LEASE_INTENS	+	2.511***	2.576***	1.638***	1.632***
		(0.376)	(0.389)	(0.453)	(0.451)
SIZE	+/-		0.024	0.037	0.047
			(0.031)	(0.031)	(0.033)
LEVERAGE	+		0.138***	0.146***	0.146***
			(0.038)	(0.044)	(0.044)
PROFITABILITY	+/-		0.138	0.144	0.112
			(0.180)	(0.191)	(0.193)
GROWTH	+/-		0.001	0.001	-0.000
			(0.001)	(0.001)	(0.001)
VOLATILITY	+		-0.450**	-0.214	-0.175
			(0.197)	(0.194)	(0.197)
ANALYSTS	+/-		-0.002	-0.004	-0.005
			(0.005)	(0.005)	(0.005)
Industry FE		No	No	Yes	Yes
Year FE		No	No	No	Yes
Observations		594	594	594	594
R-squared		0.087	0.121	0.288	0.291
Adj. R-squared		0.086	0.110	0.220	0.222

Note: Coefficients are reported with clustered standard errors in parentheses.

5.3.2.2 Regression Results Intensity Model

The results of the OLS regressions examining the impact of lease intensity on the intensity of APM adjustment are displayed in **Panel E** of Table 6. Column (4) presents the results with both year and industry fixed effects. Column (1) to (3) follow the same logic as for the previous specification. Starting with the independent variable, lease intensity is significant at the 1% level with a positive correlation (5.78). This again strengthens our hypothesis and implies that firms with higher levels of lease intensity are more likely to report a higher number of IFRS 16 neutralized APMs. Similar as in the previous model, the positive association between lease intensity and intensity of APM adjustment is observed across all model specifications. Regarding the control variables, as expected leverage has a positive coefficient (0.32) that is significant at the 1% level. This indicates that firms with higher leverage are more likely to adjust a higher number of IFRS 16-related APMs. The remaining control variables are not statistically significant and hence are not associated with the intensity of APM adjustment.

Table 6. Panel E – Regression Results Intensity Model

Variable	Expected Results	(1)	(2)	(3)	(4)
LEASE_INTENS	+	10.236***	10.372***	5.814***	5.780***
		(1.774)	(1.789)	(1.522)	(1.505)
SIZE	+/-		-0.021	-0.024	0.038
			(0.080)	(0.072)	(0.073)
LEVERAGE	+		0.386***	0.317**	0.322***
			(0.140)	(0.124)	(0.124)
PROFITABILITY	+/-		0.161	0.314	0.109
			(0.565)	(0.493)	(0.492)
GROWTH	+/-		0.005	0.005	0.001
			(0.004)	(0.004)	(0.003)
VOLATILITY	+		-1.553**	-0.397	-0.138
			(0.691)	(0.548)	(0.556)
ANALYSTS	+/-		-0.012	-0.007	-0.015
			(0.013)	(0.012)	(0.012)
Industry FE		No	No	Yes	Yes
Year FE		No	No	No	Yes
Observations		594	594	594	594
R-squared		0.137	0.167	0.388	0.402
Adj. R-squared		0.136	0.157	0.329	0.343

5.3.2.3 Matching Results

The summary statistics from the matching test are reported in **Panel F**. They indicate that after nearest neighbor matching based on lease intensity, treated and control firms still differ in other firm characteristics. Firms in the treatment group have statistically significantly higher lease intensity (0.03) than firms in the control group.[9] Additionally, treated firms have significantly higher size (0.26), exhibit higher levels of leverage (0.23), higher interest coverage (–9.99) and higher intangible intensity (0.02). Given the inherent high variability of the variables interest coverage and market-to-book (see Panel A), the differences between control and treatment group are comparably large (Panel F). No statistically significant differences are observed for the remaining variables. The imbalances will be addressed by the subsequent regression analysis, where the variables are included as controls to isolate their association with the likelihood of APM adjustment.

[9] Although the firms were matched based on lease intensity, the variable is not perfectly balanced after matching, as nearest neighbor matching without replacement selects the closest available control rather than an exact counterpart.

Panel G reports the regression results with matching of model specification 3 (with control variables and industry and year fixed effects). The results indicate that several firm characteristics are significantly associated with the likelihood of reporting adjusted APMs within the matched sample. Specifically, firm size shows a positive and significant coefficient (0.77). The leverage coefficient (1.45) is likewise positive and highly significant, implying that larger and more leveraged firms have a greater probability of reporting adjusted APMs. Among the additional control variables, analysts following shows a negative and significant coefficient of –0.09, indicating that firms followed by more analysts may be less likely to report APM adjustments. By contrast, the remaining control variables are not statistically significant. Interest coverage and intangible intensity, while showing significant mean differences in the matching summary, do not retain independent explanatory power in the multivariate regression, likely due to their overlap with leverage and firm size respectively, which absorb their effects once included simultaneously. Conversely, analyst following does not differ significantly between groups in the matching summary but emerges as a significant negative predictor in the regression, suggesting its association with APM adjustment is only visible after controlling for firm size, with which it is strongly correlated. Overall, the findings suggest that APM adjustment in the matched sample is most strongly associated with firm size, leverage, and analyst following, while most additional financial controls do not show robust independent explanatory power once fixed effects are included.

5.3.3 Regression and Matching Analysis

The empirical results of the baseline and the intensity of adjustment models provide consistent evidence that lease intensity plays a central role in explaining firms` incentives to adjust IFRS 16-neutralizing APMs. Our analysis suggests that a one standard deviation increase in lease intensity is associated with approximately an 9.6 percentage point increase in the probability of reporting an IFRS 16-neutralizing APM adjustment, holding other variables constant. Economically, this means that firms with higher lease exposure appear both more likely to report IFRS 16-neutralizing APMs and to report more of those. This pattern is economically intuitive given the mechanical effects of IFRS 16 on key financial metrics. Hence firms with greater lease exposure experience larger shifts in such metrics and thus face stronger incentives to supplement IFRS figures with APMs that neutralize these effects.

The confirmation of H2 aligns with the broader logic that firms with the highest exposure to an accounting shock have the strongest incentives to mitigate its effects (Ma and Thomas, 2023). Prior literature suggests that lease capitalization triggered not only mechanical accounting changes but also behavioural responses (Kim and Xie, 2023; Heese, Shin, and Wang, 2025; Ma and Thomas, 2023). Our results identify APM reporting as a complementary adjustment channel used by firms to manage the perceived impact of lease recognition next to adapting financing choices or contract structures to adjust for the effects of the new leasing as

noted by researchers from the US (Kim and Xie, 2023, Heese, Shin, and Wang, 2025; Ma and Thomas, 2023).

The confirmation of H2 can be interpreted through both an informative and an opportunistic lens. From an informative view, lease-intensive firms are most affected by IFRS 16 and may use APM adjustments to restore comparability and preserve time-series consistency (Molina-Sánchez, Morales-Díaz and Zamora-Ramírez, 2024). In this sense, the higher frequency of adjustments among lease-intensive firms may reflect a systematic effort to maintain a coherent performance narrative in the presence of accounting-induced discontinuities. At the same time, the persistence of IFRS 16-neutralizing adjustments beyond the transition period (Table 4 Panel A) suggests that these adjustments are not merely transitional. If their primary purpose were to facilitate the shift from IAS 17, their use should decline as users adapt (DeFond and Hung, 2003). Instead, firms continue to rely on IFRS 16-neutralizing APMs beyond the initial transition phase and rather use them to present performance measures that attenuate the perceived impact of lease capitalization on leverage and profitability metrics. Lastly, the matching regression results provide tentative support for this opportunistic interpretation. The fact that size and leverage are significant predictors of APM adjustment in both the matching summary and the post-matching regression, suggests that the propensity to adjust APMs is not solely driven by lease exposure but is also shaped by broader financing structure and capital market visibility. Larger and more leveraged firms face greater scrutiny from market participants and may therefore have stronger incentives to present performance metrics that soften the effects of IFRS 16, consistent with a strategic rather than purely informative use of APM adjustments.

5.3.4 Robustness Test Results

Panel A and Panel B of Table 8 report the results of the robustness tests for hypothesis 2. Across all specifications, the coefficient of lease intensity remains positive and statistically significant in both the baseline model (Panel A) and the adjustment intensity model (Panel B). This confirms our finding, that firms with higher lease intensity are consistently more likely to report IFRS 16 neutralized APMs.

In Panel A, the coefficient of lease intensity is significantly higher in specification (3). This is due to the use of a logit model. In a logit model, coefficients are reported in log-odds rather than probability units. Hence, they are not directly comparable in magnitude to the linear probability model estimates for the three prior tests. Importantly, the highly significant positive coefficient remains unchanged. This confirms the robustness of the main finding across all estimation specifications.

For both, Panel A and B, leverage remains positive and statistically significant in all specifications across both panels. This suggests that more leveraged firms are more likely to adjust APMs. The other control variables remain insignificant as in the main model.

Overall, the robustness tests confirm that the systematic relationship between lease intensity and both the likelihood and the intensity of IFRS 16 neutralizing APM adjustments remains stable across different model specification.

5.4 Hypothesis 3

5.4.1 Descriptive Statistics

Table 7 in Appendix A provides an overview of the empirical diagnostics. The correlations have been included in **Panel C** of Table 4 which reports pairwise correlations among forecast accuracy, dispersion, and attainability, treatment status, and control variables. Overall, correlations are low to moderate for control variables, suggesting limited concerns regarding multicollinearity. The highest correlations occur between firm size and analyst following (0.704) and between leverage and profitability (−0.162). Treatment status is positively correlated with the APM adjustment and intensity variable, for obvious reasons and is further correlated with lease intensity (0.170). Forecast accuracy and dispersion are negatively correlated (−0.366), consistent with higher analyst disagreement being associated with lower forecast quality. Forecast attainability is positively correlated with forecast accuracy (0.251) and negatively correlated with dispersion (−0.052).

Variance inflation factors (VIFs) indicate low levels of multicollinearity across most regressors (Panel A, Table 7), with values generally below 2.5. Higher VIFs are observed for Lease Intensity (VIF ≈ 7.88) and its interaction with the post-adoption indicator (VIF ≈ 8.14), reflecting the mechanical correlation introduced by the interaction term in the full model. Additional tests excluding the interaction term did not produce materially different coefficient estimates or standard errors, suggesting that multicollinearity does not materially affect the results.

Figures 1, 2 and 3 present pre-treatment trends in forecast accuracy, dispersion and attainability. For forecast dispersion (figure 2) as well as forecast attainability (figure 3), trends are largely parallel prior to IFRS 16. In contrast, forecast accuracy (figure 1) exhibits only limited parallelism: while both groups evolve similarly between 2013 and 2016, they begin to diverge from 2016 onwards, indicating potential violations of the parallel trends assumption or reflecting potential limitations of target price accuracy as an outcome measure as mentioned by Bonini et al. (2010). Even though visual inspection suggests approximate parallel trends for two of the three outcome measures, this evidence alone is insufficient to support the identification strategy, as treatment in our setting reflects a discretionary reporting choice rather than an exogenous shock. Firms that voluntarily introduce IFRS 16-neutralizing APMs are therefore likely to differ systematically from non-adopters, for example in terms of lease intensity, industry composition, investor base, investor relations practices, and analyst coverage. Accordingly, we do not rely on visual inspection alone and instead implement a dynamic difference-in-differences specification with leads and lags, firm and year fixed

effects, and lease-related controls to formally assess, and account for pre-treatment differences.

5.4.2 Regression Results

Panel B presents the results from the baseline difference-in-differences specification, which does not yet account for the partially non-parallel trends. The estimated treatment effects are small and statistically insignificant for forecast accuracy ($\beta \approx 0$, $p > 0.10$), forecast dispersion ($\beta \approx 0$, $p > 0.10$) and forecast attainability ($\beta \approx 0$, $p > 0.10$), indicating no evidence of an average effect of IFRS 16-related APM adjustments on analyst forecast outcomes. **Panel C** reports the dynamic event-study estimates.

Table 7. Panel C – Dynamic Event-Study Estimates

	event_time	coef	std_err	ci_low_95	ci_high_95
FC_ACCURACY	t–6	0.015	0.037	-0.057	0.087
FC_ACCURACY	t–5	0.038	0.036	-0.032	0.107
FC_ACCURACY	t–4	-0.005	0.044	-0.091	0.081
FC_ACCURACY	t–3	0.007	0.038	-0.081	0.067
FC_ACCURACY	t–2	0.025	0.033	-0.039	0.089
FC_ACCURACY	t0	-0.036	0.040	-0.114	0.043
FC_ACCURACY	t+1	0.018	0.038	-0.057	0.093
FC_ACCURACY	t+2	0.016	0.040	-0.063	0.094
FC_ACCURACY	t+3	0.016	0.046	-0.074	0.106
FC_ACCURACY	t+4	-0.014	0.041	-0.095	0.067
FC_ACCURACY	t+5	0.035	0.046	-0.056	0.125
FC_DISPERSION	t–6	–0.007	0.010	–0.027	0.013
FC_DISPERSION	t–5	–0.002	0.010	–0.022	0.017
FC_DISPERSION	t–4	0.001	0.011	–0.020	0.022
FC_DISPERSION	t–3	–0.004	0.008	–0.020	0.012
FC_DISPERSION	t–2	–0.006	0.007	–0.020	0.008
FC_DISPERSION	t0	0.000	0.014	–0.028	0.027
FC_DISPERSION	t+1	–0.009	0.011	–0.030	0.012
FC_DISPERSION	t+2	–0.018*	0.010	–0.037	0.002
FC_DISPERSION	t+3	–0.014	0.014	–0.042	0.014
FC_DISPERSION	t+4	–0.010	0.013	–0.035	0.016
FC_DISPERSION	t+5	–0.023*	0.013	–0.049	0.003
FC_ATTAINABILITY	t–6	0.036	0.076	–0.114	0.185
FC_ATTAINABILITY	t–5	0.014	0.064	–0.111	0.138
FC_ATTAINABILITY	t–4	–0.101	0.070	–0.237	0.036
FC_ATTAINABILITY	t–3	–0.020	0.055	–0.127	0.087
FC_ATTAINABILITY	t–2	–0.149**	0.073	–0.292	–0.006
FC_ATTAINABILITY	t0	–0.135**	0.058	–0.248	–0.022
FC_ATTAINABILITY	t+1	–0.084	0.064	–0.210	0.043
FC_ATTAINABILITY	t+2	–0.049	0.081	–0.208	0.110
FC_ATTAINABILITY	t+3	–0.008	0.066	–0.136	0.121
FC_ATTAINABILITY	t+4	–0.102	0.064	–0.227	0.024
FC_ATTAINABILITY	t+5	–0.110	0.071	–0.249	0.028

The pre-treatment coefficients for forecast accuracy are generally small, ranging from $\beta = -0.005$ to 0.04 (p-values: 0.29 to 0.90), and show no systematic pattern. Post-treatment coefficients remain insignificant, ranging from $\beta = -0.04$ to 0.03 (p-values: 0.37 to 0.73), indicating the absence of a consistent dynamic treatment effect. For forecast dispersion, coefficients are likewise small and insignificant throughout, ranging from $\beta = -0.023$ to 0.001 (p-values: 0.08 to 0.98). For forecast attainability, pre-treatment coefficients vary between $\beta = -0.15$ and 0.04 (p-values: 0.04 to 0.83), while post-treatment coefficients range from $\beta = -0.14$ to -0.01 (p-values: 0.02 to 0.91). Similar to the other outcome variables, no consistent pattern emerges. Notably, coefficients for forecast accuracy are generally positive, whereas coefficients for both forecast dispersion and attainability are predominantly negative, although almost none of these effects (with the exception of four single coefficients) are statistically significant across periods. **Panel D** reports joint Wald tests of the pre-treatment coefficients. For forecast accuracy, the test yields a Wald statistic of 2.85 ($p = 0.72$), while for forecast dispersion the statistic is 1.89 ($p = 0.86$). For forecast attainability, the Wald statistic is higher at 9.88 ($p = 0.08$). The Wald test fails to reject the null hypothesis of no pre-treatment differences for forecast accuracy and dispersion, but rejects it for forecast attainability, indicating evidence of differential pre-treatment trends for this outcome. This suggests that the parallel trends assumption holds for accuracy and dispersion but may be violated for attainability. Overall, results across Panels B-D consistently show no statistically significant effect of IFRS 16-related APM adjustments on forecast accuracy or dispersion.

5.4.3 Regression Analysis

Across all specifications, IFRS 16-neutralizing APM adjustments have no statistically significant effect on analyst forecast accuracy, dispersion or attainability. Thus, the results do not support H3. This finding contrasts with the ex-ante prediction that the first introduction of such adjustments would increase forecast error and dispersion by creating uncertainty about the appropriate treatment of lease effects.

The absence of statistically significant treatment effects could be explained by several, not mutually exclusive, mechanisms. First, forecast error and dispersion are inherently noisy and driven by a broad information environment in which firm disclosures are only one input (Lang and Lundholm, 1996). Consequently, the incremental effect of IFRS 16-neutralizing APMs may be too small relative to the many other factors influencing analyst forecasts to produce statistically detectable effects. Second, analysts do not mechanically adopt management-provided figures but condition their use on credibility, reconciliation quality, and managerial incentives, potentially discounting IFRS 16-neutralizing APMs (Gu and Chen, 2004; Choi et al., 2007; Tam, Schulze and Zhao, 2018). In particular, when adjustments appear to reverse a mandatory accounting change, analysts may interpret them as opportunistic rather than informative and place less weight on them in their valuation models. Third, such adjusted APMs may generate offsetting effects: while they can enhance intertemporal comparability, they may simultaneously reduce cross-firm comparability, which

is crucial for analyst forecasts (De Franco, Kothari and Verdi, 2011; Ramnath, 2002). If these two responses coexist, the average treatment effect in the regression may be close to zero even though the disclosures are not irrelevant. Finally, consistent with the Incomplete Revelation Hypothesis, sophisticated analysts may already extract lease-adjusted information from disclosures, limiting the incremental value of formally reported adjusted APMs (Bloomfield, 2002). Given the magnitude and visibility of the standard, analysts had strong incentives likely prompting analysts to pay particular attention to lease-related adjustments and carefully incorporate their effects into valuation models, independently of firm-provided APMs.

While potentially explained by several reasons, the absence of effects on forecast accuracy and dispersion raises the question why firms provide IFRS 16-neutralizing APMs at all. If voluntary disclosure is costly, firms are likely to expect some benefit in return. Rather than improving the precision of analyst forecasts, IFRS 16-neutralizing APMs may instead be used to influence the direction of those forecasts, which would not necessarily be captured by accuracy or dispersion measures. Supporting this interpretation, the difference-in-proportions test for H1 shows that firms are more likely to adjust debt- and leverage-related APMs, i.e., those negatively rather than positively affected by IFRS 16 measures. While this pattern is suggestive of opportunistic behavior, causality cannot be inferred from a simple difference-in-proportions test. To explore this avenue, we extended the DiD analysis by examining directional bias, defined as the share of forecasts where target prices exceed realized prices after 12 months. We employ the same dynamic DiD specification as before, with the outcome variable defined accordingly. The results are included in Panels E and F of Table 7.

Panel E reports summary statistics, while Figure 4 illustrates the evolution over time. Prior to IFRS 16 adoption, treatment firms exhibit a higher share of positive forecast deviations (61.4%) than control firms (54.8%), indicating higher baseline optimism. However, this gap slightly narrows in the post-treatment period (65.7% vs. 61.8%), suggesting convergence rather than divergence. The descriptive convergence should not be interpreted as a causal effect of IFRS 16-neutralizing APMs as the comparison of raw means does not account for systematic differences between treatment and control firms or for common time trends affecting both groups. However, the dynamic DiD results provides no evidence either that IFRS 16-neutralizing APMs increase optimistic forecasting behavior (**Panel F)**. The estimated coefficients are predominantly negative across both pre- and post-treatment periods, indicating that treatment firms are, if anything, less likely to exhibit positive forecast deviations relative to control firms. However, the effects are economically small and statistically insignificant and do not display a consistent pattern over time.

5.4.4 Robustness Test Results

We conduct three robustness tests to examine the sensitivities of our models. The results can be found in Table 8 in the appendix.

5.4.4.1 (Target) Price Closest to Filing Date Model Specification

First, we relax the assumption that analysts require time to incorporate new information and instead use forecasts issued immediately after the annual report publication. Specifically, we re-estimate the dynamic DiD using target prices and dispersion measured at the closest date following the filing. This tests whether the results are sensitive to the assumed adjustment lag in analyst forecasts. The results are presented in **Panel C**. Overall, findings are consistent with the baseline specification, suggesting that the results are not sensitive to the assumed adjustment lag in analyst forecasts. For forecast accuracy, coefficients remain largely insignificant and show no systematic pattern, although the coefficients now turned negative and two isolated coefficients are statistically significant, unlike in the baseline. For forecast dispersion, results are very similar to the baseline, with coefficients remaining small and mostly insignificant, except for a temporary negative effect at the treatment year ($t0$). For forecast attainability, some differences emerge compared to the baseline, with and additional significant negative coefficient at $t-4$, t. However, as these effects are not persistent, they do not alter the overall conclusion that IFRS 16-neutralizing APMs do not have a consistent impact on analyst forecast properties. Overall, whether forecasts are measured shortly after the filing date or with a lag allowing for analyst processing, there is no evidence that IFRS 16-neutralizing APM adjustments affect analyst forecast accuracy or dispersion.

5.4.4.2 Lagging of Control Variables

Re-estimating the dynamic DiD specification with lagged control variables yields results that are highly comparable to the baseline model. For all three outcome variables, the pattern of coefficients remains similar across specifications. In both periods, coefficients remain mostly small and insignificant in both models. Overall, the magnitude, sign, and statistical significance of the coefficients are largely unchanged when using lagged controls. These results confirm that the baseline findings are robust and not driven by the timing convention applied to firm-level control variables.

5.4.4.3 Entropy Balancing Results

As a last robustness check, we use entropy balancing to make treatment and control group more comparable by matching them on firm characteristics (**Panel D**). We examine differences in analyst forecast accuracy, dispersion and attainability. The results for both the four-week model and the model using forecasts observed immediately following the filing date indicate no significant difference in forecast dispersion, accuracy and target price attainability between the treated and control firms suggesting that APM adjustment is not associated with changes in any of these measures.

Overall, these findings align with the baseline DiD and event-study results, reinforcing the conclusion that IFRS 16-neutralizing APM adjustments do not have statistically significant impact on analyst forecast accuracy, dispersion or target price attainability. Taken together, the consistency of results across alternative specifications, timing assumptions and matching

procedures strengthen the robustness of the main inference that the usage of such adjustment does not materially alter analyst forecast properties. The stability across models suggests that the absence of effects is unlikely to be driven by specification choices or sample imbalances.

6. Conclusion

6.1 Findings and Contributions

IFRS 16 aimed to improve transparency by bringing lease obligations onto the balance sheet. However, evidence in this study shows that firms continue to report APMs that explicitly neutralize their effects. Prior literature documents that market participants frequently rely on such non-GAAP measures in valuation (e.g. Bhattacharya et al., 2003; Young, 2014; Asquith, Mikhail and Au, 2005; Imam, Barker and Clubb, 2008), and that firms often use them to offset the perceived impact of new accounting rules (Coulton et al., 2016; Shibasaki and Toyokura, 2020). Despite a plethora of literature focusing on the behavioral responses induced by the implementation of new leasing standards such as ASC 842 in the U.S. and IFRS 16 in the EU, only little research has been done in studying the effect of IFRS 16 on the voluntary reporting of APMs as well as the consequences of such behavior. By utilizing hand-collected APM disclosure data from 301 firms across Europe and combining it with financial data from Capital IQ Pro and I/B/E/S, this study aimed to close this gap and research the effect of IFRS 16 on APM reporting, explore potential reasons behind APM adjustments as well as research effects of such behavior on analyst forecast attributes. Evidence shows that IFRS 16-neutralizing APMs remain widely used 5 years after the implementation of IFRS 16 with only limited decline over time, and that adjustment behavior varies across firms, with industry differences being more pronounced than country differences.

Through difference-in-proportion tests (H1) we find a consistent tendency for firms to adjust debt-related APMs more frequently than other APM types. This aligns with exploratory evidence by Molina-Sánchez, Morales-Díaz and Zamora-Ramírez (2024) and overall supporting hypothesis 1. Interestingly, this finding contrasts with user feedback collected by the IASB, highlighting concerns primarily around the classification of lease cash flows rather than debt measures, raising the question of why firms still disproportionately adjust leverage-related APMs despite no recorded criticism of their IFRS treatment. One possible explanation is that, while stakeholders may conceptually accept lease liabilities as debt-like, firms may still exclude them from leverage-related APMs to present a more favorable view of capital structure. There is also substantial heterogeneity in adjustment preferences across countries, with some countries exhibiting a clear dominance of debt-related adjustments, while others rely more heavily on cash flow adjustments. The analysis reveals pronounced differences in adjustment behavior across industries, with stronger polarization than observed at the country level. Several industries exhibit a clear dominance of either cash flow or debt-related adjustments.

Regression results (H2) unveil that adjustment behavior is systematically concentrated among lease-intensive firms. Also, matching tests indicate that APM adjustment is most strongly associated with firm size and leverage. This indicates that the propensity to use APM adjustments appears to be linked more closely to broad firm characteristics and financing structure than to short-term growth, cash intensity, or investment intensity.
Lastly, the thesis explored the effects of the observed behavior focusing on analysts (H3). While direct evidence on IFRS 16-neutralizing APMs is limited, prior literature suggests that analysts rely on such measures to reduce information processing costs and incorporate them into valuation, particularly when they capture underlying performance (Lang and Lundholm, 1996; Bloomfield, 2002; Asquith, Mikhail, and Au, 2005). However, in our dynamic DiD we found no evidence that IFRS 16-neutralizing APMs affect analyst forecast error or dispersion. An additional analysis of potential directional bias finds no evidence that IFRS 16-neutralizing APMs increase optimistic forecasting behavior.

6.2 Limitations

This study is subject to several limitations. First, while the overall sample size is adequate, certain sub-analyses rely on smaller subsamples (e.g., firms adjusting only specific APM categories), making these results more sensitive to variation. At the same time, the focus on large listed firms ensures a relatively comparable information environment but may limit generalizability to smaller firms. Second, the manual extraction of APM data introduces the risk of incomplete capture, particularly as many adjustments are not clearly labeled, potentially leading to measurement error. Finally, the analysis of capital market effects is limited to analysts as one user group, due to data availability and standardization advantages. This should be considered when interpreting the results, as the absence of observable effects on analyst forecasts does not imply that IFRS 16-neutralizing APMs are inconsequential in other contexts, but rather reflects the specific dimension of outcomes examined.

6.3 Implications and Grounds for Further Research

Despite its limitations, this thesis provides several avenues for future research. First, future studies could examine the effects of IFRS 16-neutralizing APMs on other stakeholders, such as creditors, credit rating agencies, or covenant design, as well as alternative capital market outcomes including cost of debt, bond spreads, or valuation effects, which may be more sensitive to debt-related adjustments. Next, further research could aim to distinguish between informative and opportunistic APM adjustments by analyzing adjustment types, persistence, and firm incentives in greater detail. In addition, the strong industry heterogeneity observed suggests that business models play a key role in shaping both the propensity and type of APM adjustments. While prior research and the IASB (2016) indicate that industries are differently affected by IFRS 16, the pronounced variation in specific adjustment patterns across sectors highlights the need for more in-depth, industry-specific analyses. Finally, the introduction of Management Performance Measures under IFRS 18 provides a natural setting for future

research to assess whether increased standardization and mandatory reconciliation improve the transparency and comparability of APMs, particularly for adjustments that neutralize the effects of accounting standards.

The findings also carry implications for regulators such as ESMA and the IASB. Although ESMA (2019) explicitly encourages clear labeling and reconciliation of APMs, the data extraction process showed that IFRS 16-neutralizing adjustments remain difficult to identify in practice and results showed that reconciliation-based disclosures decline and exclusive presentations become more prevalent, indicating reduced transparency over time. This points to a potential need for more explicit and standardized disclosure requirements, particularly when APMs reverse the effects of mandatory accounting standards.

The cross-sectional results carry further implications. While country-level differences primarily affect the likelihood of adjustment, industry characteristics influence both the propensity and the intensity of adjustments. In light of prior evidence on heterogeneous enforcement across European jurisdictions (ESMA, 2024), this suggests that differences in supervisory practices translate into observable variation in in IFRS 16-related APM reporting, implying that the current "comply-or-explain" framework may result in inconsistent application across countries. At the same time, strong industry effects suggest that even with harmonized enforcement, firms' reporting choices remain driven by underlying economic factors. Moreover, the concentration of adjustments among lease-intensive firms indicates that those most affected by IFRS 16 are also most likely to neutralize its effects, potentially undermining comparability and reinforcing the need for transparent, reconciled disclosures.

However, the absence of measurable effects on analyst forecast properties weakens the case for strong regulatory intervention aimed at sophisticated users. While this does not imply that IFRS 16-neutralizing APMs are inconsequential, as analysts may be able to look through such adjustments, the effects may be more pronounced in other contexts such as credit assessments. Analysts` forecasts capture only one dimension of capital market consequences, the effects may be more pronounced in other contexts, such as credit assessments or covenant evaluation. Overall, the findings support a more proportionate, disclosure-focused regulatory response aimed at improving transparency and comparability rather than restricting the use of APMs.

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Appendices

Appendix A
Empirical Results and Research Design Details

Figure 1. Forecast Accuracy Trends (2013-2024)

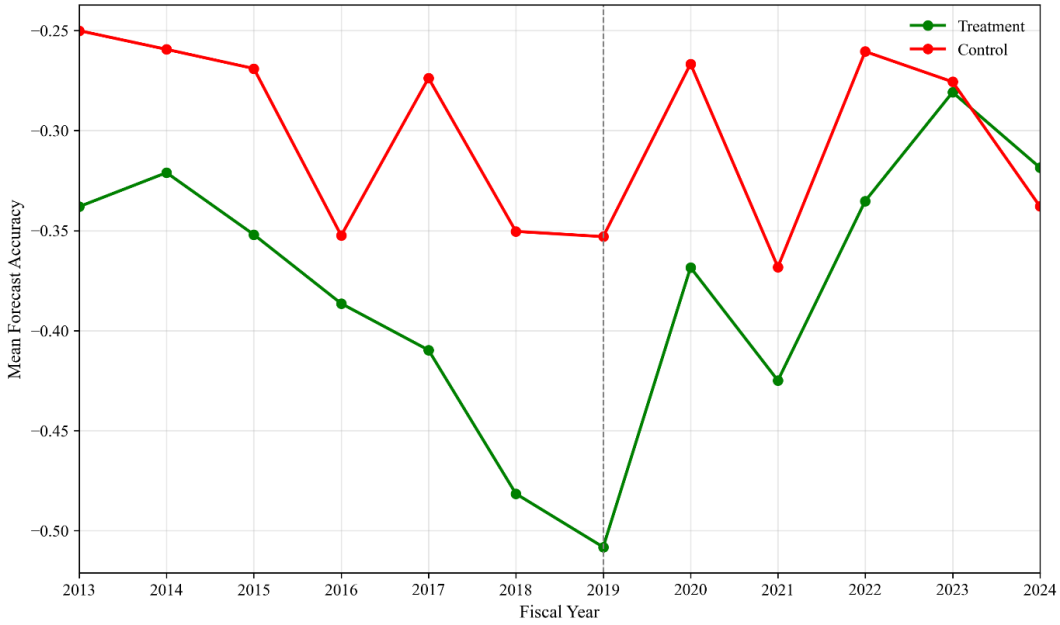

Figure 1 plots the average forecast accuracy of treatment and control firms from 2013 to 2024 using raw data.

Figure 2. Forecast Dispersion Trends (2013-2024)

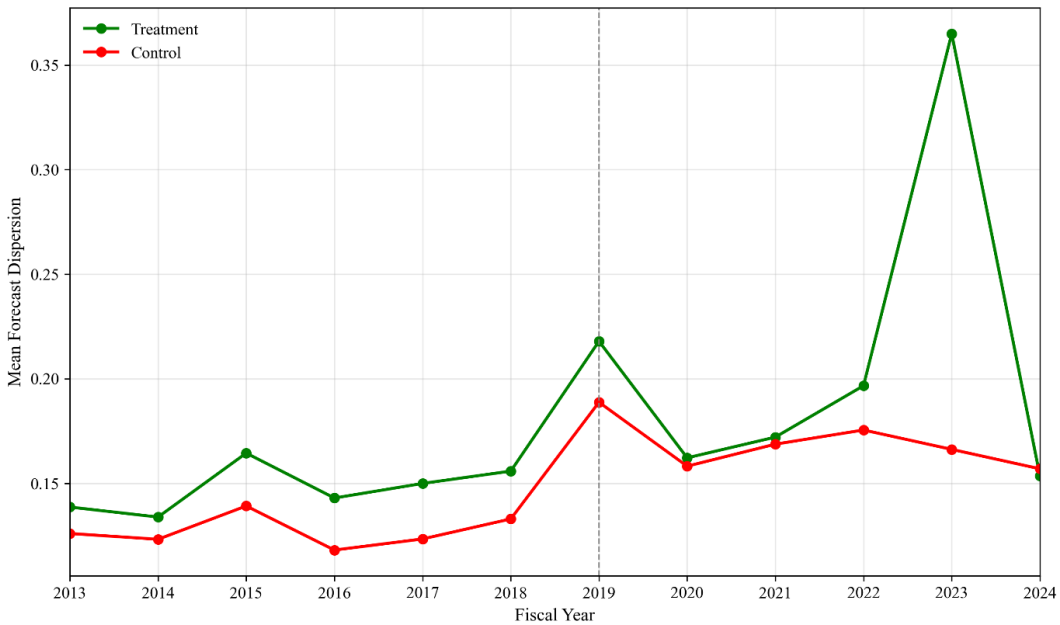

Figure 2 plots the average forecast dispersion of treatment and control firms from 2013 to 2024 using raw data.

Figure 3. Forecast Attainability Trends (2013-2024)

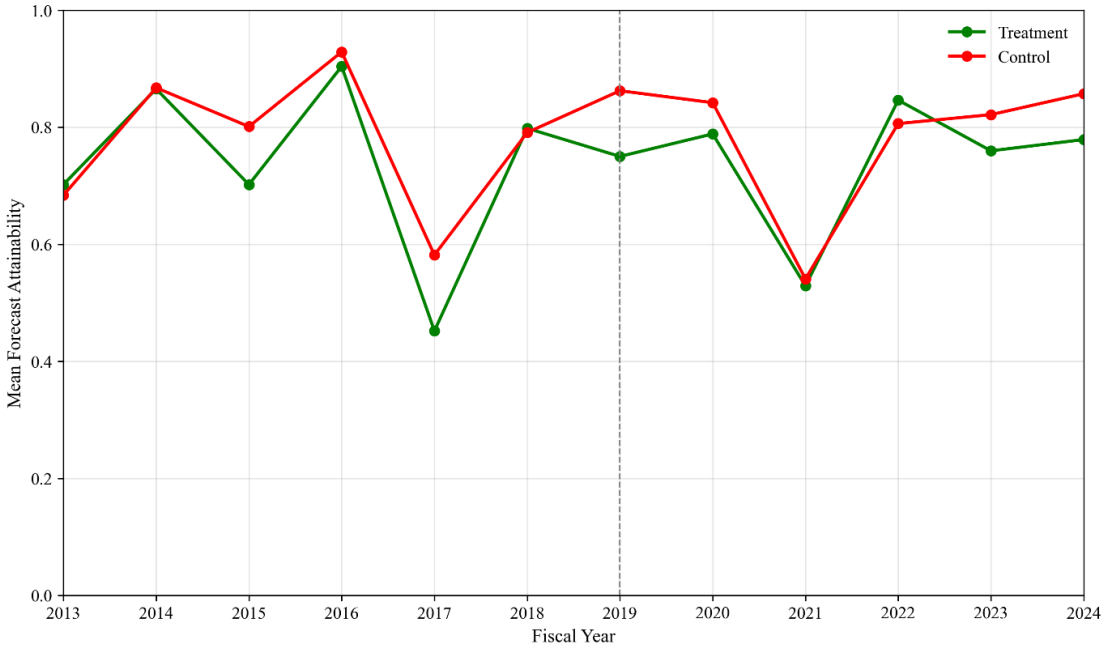

Figure 3 plots the average forecast attainability of treatment and control firms from 2013 to 2024 using raw data.

Figure 4. Share of Positive Forecast Deviations (2013-2024)

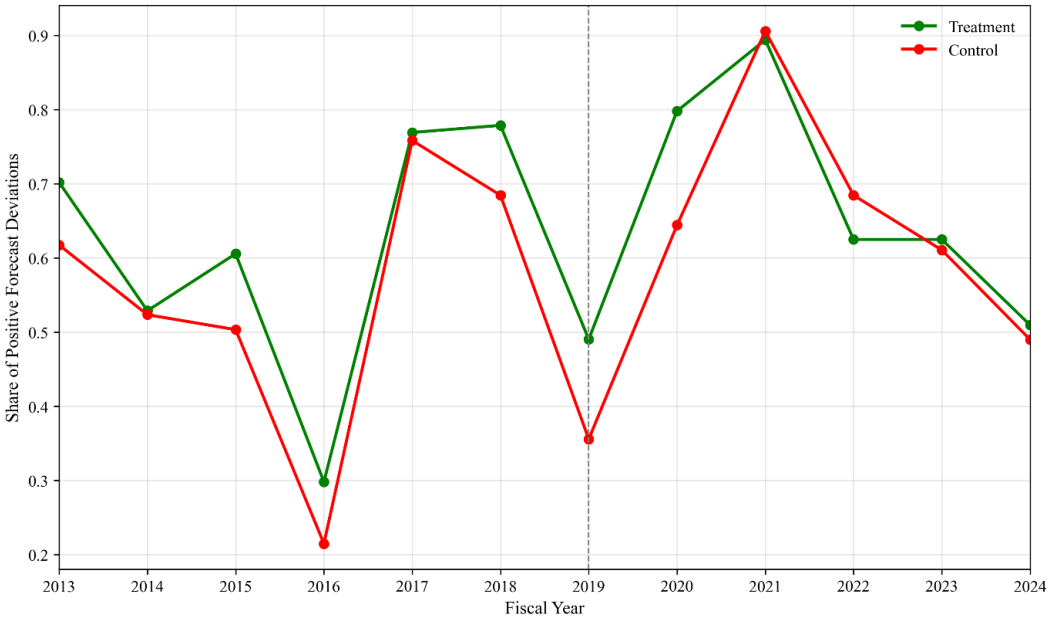

Figure 4 plots the annual share of positive forecast deviations for treatment and control firms from 2013 to 2024, where a positive deviation indicates that the analyst target price exceeds the realized price 12 months after target price issuance.

Table 1. Sample Construction Process

Step	Sample Selection Procedure	Firms Remaining
1	Initial universe of companies extracted from Capital IQ Pro using the following screening criteria: (i) Geography: Europe, (ii) Company status: Operating, (iii) Company type: Public company.	6609
2	Excluded firms located in countries outside the European Union.	4500
3	Excluded financial firms using Capital IQ sector classifications (IQ Sector: Financials), including the industry groups Financial Services, Banks, Insurance, and the IQ Industry REITs.	3924
4	Excluded firms with IPO during or after 2019. Note: This information was not reliably maintained for all firms and thus some firms were later excluded manually.	3323
5	Sorted remaining firms by market capitalization using data from the LSEG Refinitiv terminal (no filtering).	3323
6	Selected the largest firms by market capitalization for the final sample.	**301**

Note: In cases where economically related entities are listed separately (e.g., a listed parent and subsidiary), each issuer is retained as an independent observation, as each entity publishes its own annual report and communicates with investors separately under the ESMA Guidelines on APMs. 9 companies were manually excluded from the final sample (between step 5 and 6) because they a) they were either listed after 2019 or delisted before 2024 (5) or b) annual reports were only available in local language (2) or c) annual reports could not be located (2).

Table 2. Key Word Search Table

Indicator	Keywords
Net Debt	Debt Leverage Net Borrowings Net Debt Net Financial Debt Net Financial Position Net Interest-Bearing (Debt/Liabilities) Net Indebtedness
EBITDA	EBITDA Earnings Before
Free Cash Flow	Cash Flow Free Cash Flow Free Cash (Generation) Cash Inflow

Note: The keywords listed below were used to identify adjustments to key APMs within the reports. Multiple variations were included to capture differences in naming conventions and terminology used by firms when referring to comparable performance measures.

Table 3. Variable Definitions

Variable Name	Variable Definition
General Descriptive Statistics	
ADJ_APM_ $_{i,t}$	Dummy variable equal to 1 if the firm reports at least one adjusted APM in year t.
ADJ_APM_EXCL_ $_{i,t}$	Dummy variable equal to 1 if the firm reports at least one adjusted APM in year t for which no corresponding unadjusted version is disclosed.
ADJ_APM_RECON_ $_{i,t}$	Dummy variable equal to 1 if the firm reports at least one adjusted APM in year t and discloses the corresponding unadjusted version.
ADJ_APM_INTENS_ $_{i,t}$	Count variable measuring the total number of distinct APMs adjusted by the firm in year t.
ADJ_APM_EXCL_INTENS_ $_{i,t}$	Count variable measuring the number of distinct APMs in year t disclosed exclusively in adjusted form.
ADJ_APM_RECON_INTENS_ $_{i,t}$	Count variable measuring the number of distinct APMs in year t disclosed together with their unadjusted counterparts.
Hypothesis 1 – Key Variables	
ADJ_DoL_ONLY_ $_{i,t}$	Dummy variable equal to 1 if the firm adjusts at least one debt-related APM and does not adjust any non-debt-related APMs in year t.
ADJ_NONDEBT_ONLY_ $_{i,t}$	Dummy variable equal to 1 if the firm adjusts at least one non-debt-related APM and does not adjust any debt-related APMs in year t.
ADJ_APM_MIXED_ $_{i,t}$	Dummy variable equal to 1 if the firm adjusts both debt-related and non-debt-related APMs in year t.
ADJ_CF_ONLY_ $_{i,t}$	Dummy variable equal to 1 if the firm adjusts at least one cash flow-related APM and does not adjust any other types of APMs in year t.
ADJ_EARN_ONLY_ $_{i,t}$	Dummy variable equal to 1 if the firm adjusts at least one earnings-related APM and does not adjust any other types of APMs in year t.
ADJ_OTHER_ONLY_ $_{i,t}$	Dummy variable equal to 1 if the firm adjusts at least one other type of APM (neither debt-, cash flow-, nor earnings-related) and does not adjust any debt-, cash flow-, or earnings-related APMs in year t.
ADJ_APM_NONE_ $_{i,t}$	Dummy variable equal to 1 if the firm does not adjust any APMs in year t.
Hypothesis 2 – Key Variables	
ADJ_APM_ $_{i,t}$	Dummy variable equal to 1 if the firm reports at least one adjusted APM in year t.
ADJ_APM_INTENS_ $_{i,t}$	Count variable measuring the total number of distinct APMs adjusted by the firm in year t.
LEASE_INTENS_ $_{i,t}$	Ratio of lease liabilities to total assets in year t, measuring the firm's exposure to lease financing. Winsorized at the 1st and 99th percentiles. Source: Capital IQ Pro.
Hypothesis 3 – Key Variables	
FC_ACCURACY	The negative absolute value of the difference between the analyst consensus target price issued four weeks (or right before the Q1 earnings announcement) after the release of the annual report for year t−1 and the realized share price twelve months later, scaled by the share price at the time the forecast is issued. Winsorized at the 1st and 99th percentiles. Source: I/B/E/S.

FC_DISPERSION	Standard deviation of analysts' target price forecasts issued four weeks (or right before the Q1 earnings announcement) after the release of the annual report for year t−1, scaled by the share price at the time the forecasts are issued. Winsorized at the 1st and 99th percentiles. Source: I/B/E/S.
FC_ATTAINABILITY	Indicator variable equal to one if the analyst consensus target price issued four weeks (or right before the Q1 earnings announcement) after the release of the annual report for year t−1 is reached or exceeded at any point during the subsequent twelve months, and zero otherwise. Source: I/B/E/S.
Control Variables	
ANALYSTS_ $_{i,t}$	Analyst coverage is measured as the number of analysts covering firm i at the end of year t. Source: I/B/E/S.
GROWTH_ $_{i,t}$	Growth opportunities are proxied by sales growth, calculated as the percentage change in sales between year t−1 and year t. Source: Capital IQ Pro.
INT_COVERAGE_ i,t	Interest coverage is measured as earnings before interest and taxes (EBIT) divided by interest expense in year t. Source: Capital IQ Pro.
LEVERAGE_ $_{i,t}$	Leverage is measured as total financial debt excluding lease liabilities divided by total equity in year t. Source: Capital IQ Pro.
PROFITABILITY_ $_{i,t}$	Profitability is measured as return on equity, defined as net income in year t divided by average equity in year t and t-1 (ROE). Source: Capital IQ Pro.
SIZE_ $_{i,t}$	Firm size is measured as the natural logarithm of market capitalization in year t. Source: I/B/E/S.
VOLATILITY_ $_{i,t}$	Business risk is proxied by ROE volatility, calculated as the standard deviation of ROE over the previous three years. Source: Capital IQ Pro.
M/B_ $_{i,t}$ (Market-to-Book Ratio)	Market-to-book ratio is measured as the market value of equity divided by the book value of equity in year t. Source: I/B/E/S and Capital IQ Pro.
CASH_SALES_ $_{i,t}$ (Ratio)	Cash-to-sales is measured as cash and cash equivalents divided by total sales in year t. Source: Capital IQ Pro.
CAPEX_SALES_ i,t (Ratio)	Capital expenditure intensity is measured as capital expenditures divided by total sales in year t. Source: Capital IQ Pro.

Note: all continuous variables are winsorized at the 1st and 99th percentiles.

Fixed Effects	
Country FE	Country fixed effects to capture differences in institutional environments, enforcement regimes, and disclosure practices across countries.
Firm FE	Firm fixed effects to control for time-invariant firm characteristics such as industry affiliation, country of incorporation, business model, and persistent disclosure practices.
Industry FE	Industry fixed effects based on two-digit SIC codes to control for structural differences across industries.
Year FE	Year fixed effects to control for macroeconomic conditions, regulatory developments, and time-specific reporting trends.

Table 4. Summary Statistics

Table 4 presents details on the composition of the sample and the key descriptive statistics used in the analysis. **Panel A** summarizes firms' APM adjustment behavior for the fiscal years 2019 and 2024 and is included in the text. **Panel B** presents summary statistics for the main financial variables used in the subsequent analyses, reported in EUR using observations from 2013-2024. **Panel C** reports the pairwise correlation matrix for the main variables using observations from 2013-2024. **Panel D** presents the country distribution of firms in the sample, reporting the number of firms and their relative shares by country. **Panel E** reports the industry distribution of firms based on Capital IQ industry group classifications, including the number of firms and the corresponding industry shares. All variables are defined in the Appendix.

Panel B – Variable Distribution

Variable	N	Mean	StD	Min	Median	Max
(1) FC_ACCURACY	3600	-0.373	0.305	-2.064	-0.325	-0.006
(2) FC_DISPERSION	3600	0.150	0.092	0.000	0.131	0.607
(3) FC_ATTAINABILITY	3600	0.767	0.423	0.000	1.000	1.000
(4) ADJ_APM	602	0.498	0.500	0.000	0.000	1.000
(5) ADJ_APM_INTENS	602	1.209	1.713	0.000	0.000	12.000
(6) TREATMENT	3600	0.347	0.476	0.000	0.000	1.000
(7) LEASE_INTENS	3575	0.027	0.050	0.000	0.007	0.303
(8) ANALYSTS	3588	16.561	8.794	0.000	17.000	36.000
(9) GROWTH	3555	7.157	18.247	-36.747	4.914	87.194
(10) LEVERAGE	3575	0.7430	0.658	0.000	0.571	3.529
(11) PROFITABILITY	3559	0.132	0.149	-0.386	0.123	0.784
(12) SIZE	3496	22.661	1.149	19.938	22.518	25.494
(13) VOLATILITY	3521	0.069	0.105	0.002	0.034	0.747

Panel C – Pearson Correlation Matrix for Key Variables

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) FC_ACCURACY	1.000												
(2) FC_DISPERSION	-0.366***	1.000											
(3) FC_ATTAINABILITY	0.251***	-0.052***	1.000										
(4) ADJ_APM	-0.073*	0.008	-0.072*	1.000									
(5) ADJ_APM_INTENS	-0.143***	0.073*	-0.122***	0.708***	1.000								
(6) TREATMENT	-0.035**	0.029*	-0.048***	0.731***	0.586***	1.000							
(7) LEASE_INTENS	-0.043**	0.179***	0.029*	0.294***	0.349***	0.170***	1.000						
(8) ANALYSTS	-0.000	0.190***	-0.097***	0.035	-0.032	0.095***	0.032*	1.000					
(9) GROWTH	-0.093***	-0.018	-0.043**	0.012	0.040	-0.017	0.028*	-0.138***	1.000				
(10) LEVERAGE	0.033**	0.037**	-0.043***	0.163***	0.158***	0.126***	0.044***	0.077***	-0.039**	1.000			
(11) PROFITABILITY	-0.014	-0.151***	-0.008	0.031	0.005	-0.000	-0.031*	-0.019	0.156***	-0.162***	1.000		
(12) SIZE	0.019	0.050***	-0.099***	0.008	-0.077*	0.106***	0.029*	0.704***	-0.049***	0.007	0.080***	1.000	
(13) VOLATILITY	-0.087***	0.181***	0.020	-0.027	-0.020	-0.040**	0.156***	0.010	0.089***	0.094***	0.008	-0.025	1.000

Note: TREATMENT is defined according to the specification used in Hypothesis 3 and is based on the format of IFRS 16-neutralizing APM reporting rather than their mere presence. Specifically, only firms consistently reporting exclusion-only adjustments are classified as treated, while firms reporting no adjustments or only dual-presentation adjustments are assigned to the control group. In contrast, ADJ_APM captures whether firms report IFRS 16-neutralizing APMs irrespective of presentation format. As a result, the two variables are not expected to be perfectly correlated. See Methods section for a detailed description of the treatment classification. For all tables in this appendix, ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel D – Country Distribution Statistics

		DE	FR	SE	IT	DK	NL	ES	FI	AT	BE	LU	PL	IE	GR	HU	Other	**Total**
	N_Firms	59	53	43	25	18	18	18	16	12	9	7	7	4	3	3	6	**301**
	% Firms	19.60	17.60	14.30	8.30	6.00	6.00	6.00	5.30	4.00	3.00	2.30	2.30	1.30	1.00	1.00	1.90	**100.00**
2019	ADJ_FIRM	27	41	25	13	10	8	12	3	4	2	1	4	3	1	1	3	**158**
	ADJ_INTENS_ADJ	2.37	2.51	2.52	3.54	2.60	3.38	2.75	2.67	1.50	5.50	1.00	2.00	5.00	3.00	1.00	1.40	**2.67**
	ADJ_INTENS_ALL	1.09	1.94	1.47	1.84	1.44	1.50	1.83	0.50	0.50	1.22	0.14	1.14	3.75	1.00	0.33	1.10	**1.40**
	N_ADJ_TOTAL	64	103	63	46	26	27	33	8	6	11	1	8	15	3	1	7	**422**
	%_ADJ_TOTAL	15.20	24.40	14.90	10.90	6.20	6.40	7.80	1.90	1.40	2.60	0.20	1.90	3.60	0.70	0.20	0.34	**100.00**
2024	ADJ_FIRM	22	39	21	11	7	9	13	2	4	2	4	1	3	1	0	3	**142**
	ADJ_INTENS_ADJ	1.64	2.26	2.29	2.18	1.14	2.33	2.77	2.00	1.50	2.50	2.75	1.00	3.00	2.00	0.00	1.40	**2.16**
	ADJ_INTENS_ALL	0.61	1.66	1.12	0.96	0.44	1.17	2.00	0.25	0.50	0.56	1.57	0.14	2.25	0.67	0.00	1.10	**1.02**
	N_ADJ_TOTAL	36	88	48	24	8	21	36	4	6	5	11	1	9	2	0	7	**306**
	% ADJ_TOTAL	11.80	28.80	15.70	7.80	2.60	6.90	11.80	1.30	2.00	1.60	3.60	0.30	2.90	0.70	0.00	0.48	**100.00**
2019 and 2024	ADJ_FIRM	49	80	46	24	17	17	25	5	8	4	5	5	6	2	1	6	**300**
	ADJ_INTENS_ADJ	2.04	2.39	2.41	2.92	2.00	2.82	2.76	2.40	1.50	4.00	2.40	1.80	4.00	2.50	1.00	1.40	**2.43**
	ADJ_INTENS_ALL	1.70	3.60	2.58	2.80	1.89	2.67	3.83	0.75	1.00	1.78	1.71	1.29	6.00	1.67	0.33	2.20	**2.42**
	N_ADJ_TOTAL	100	191	111	70	34	48	69	12	12	16	12	9	24	5	1	14	**728**
	%_ADJ_TOTAL	13.70	26.20	15.20	9.60	4.70	6.60	9.50	1.60	1.60	2.20	1.60	1.20	3.30	0.70	0.10	0.36	**100.00**

Note: This table reports the 15 countries with the highest number of firms in the sample. To maintain readability, the remaining five countries are aggregated under "Other." Country identifiers follow ISO 3166-1 alpha-2 codes: DE (Germany), FR (France), SE (Sweden), IT (Italy), DK (Denmark), NL (Netherlands), ES (Spain), FI (Finland), AT (Austria), BE (Belgium), LU (Luxembourg), PL (Poland), IE (Ireland), GR (Greece), and HU (Hungary). ADJ_FIRM refers to the number of firms adjusting APMs, ADJ_INTENS_ALL measures adjustment intensity across all firms, while ADJ_INTENS_ADJ captures intensity conditional on adjusting firms. ADJ_TOTAL reflects the total number of adjustments.

Chi-square and ANOVA Analyses of Countries and APM Adjustment Status

	Chi-spare Test		**ANOVA 1**			**ANOVA 2**		
Period	Chi_Square	df	F_statistic	N_obs	N_groups	F_statistic	N_obs	N_groups
2019	39.007***	19	1.507	158	18	1.716**	301	20
2024	44.775***	19	0.992	142	17	2.917***	301	20
2019 and 2024	76.025***	19	1.221	300	18	3.062***	602	20

Note: Chi-square tests examine whether APM adjustment behavior is associated with grouping variables; statistical significance indicates that adjustment behavior is not independent of the respective grouping variable. In addition, ANOVA tests examine differences in mean country-level adjustment intensity, with ANOVA (1) based on adjusting firms only and ANOVA (2) including all firms. The reported F-statistics test the null of equal means across countries; statistical significance indicates differences across groups.

Panel E – Industry Distribution Statistics

		CG	MT	UT	EN	PBLS	REMD	HC	TS	AC	TR	CDA	FBT	ME	CPS	SS	Other	**Total**
	N_Firms	59	36	24	16	15	15	14	14	13	13	12	12	11	10	8	29	**301**
	%_Firms	19.60	12.00	8.00	5.30	5.00	5.00	4.70	4.70	4.30	4.30	4.00	4.00	3.70	3.30	2.70	9.70	**100.00**
2019	ADJ_FIRM	33	12	6	9	7	7	9	11	5	7	10	5	7	9	7	14	**158**
	ADJ_INTENS_ADJ	3.27	2.08	1.83	2.67	1.86	2.57	4.22	3.09	1.60	1.29	3.60	2.00	2.14	3.67	1.86	1.71	**2.67**
	ADJ_INTENS_ALL	1.83	0.69	0.46	1.50	0.87	1.20	2.71	2.43	0.62	0.69	3.00	0.83	1.36	3.30	1.63	0.87	**1.40**
	N_ADJ_TOTAL	108	25	11	24	13	18	38	34	8	9	36	10	15	33	13	27	**422**
	%_ADJ_TOTAL	25.60	5.90	2.60	5.70	3.10	4.30	9.00	8.10	1.90	2.10	8.50	2.40	3.60	7.80	3.10	1.05	**100.00**
2024	ADJ_FIRM	30	11	6	8	5	6	6	11	4	7	8	3	8	8	5	16	**142**
	ADJ_INTENS_ADJ	2.43	1.64	1.17	2.25	2.00	2.50	3.50	2.82	1.25	1.14	2.13	1.33	2.13	2.75	2.00	1.74	**2.16**
	ADJ_INTENS_ALL	1.24	0.50	0.29	1.13	0.67	1.00	1.50	2.21	0.39	0.62	1.42	0.33	1.55	2.20	1.25	0.96	**1.02**
	N_ADJ_TOTAL	73	18	7	18	10	15	21	31	5	8	17	4	17	22	10	30	**306**
	%_ADJ_TOTAL	23.90	5.90	2.30	5.90	3.30	4.90	6.90	10.10	1.60	2.60	5.60	1.30	5.60	7.20	3.30	1.63	**100.00**
2019 and 2024	ADJ_FIRM	63	23	12	17	12	13	15	22	9	14	18	8	15	17	12	30	**300**
	ADJ_INTENS_ADJ	2.87	1.87	1.50	2.47	1.92	2.54	3.93	2.96	1.44	1.21	2.94	1.75	2.13	3.24	1.92	1.73	**2.43**
	ADJ_INTENS_ALL	3.07	1.19	0.75	2.63	1.53	2.20	4.21	4.64	1.00	1.31	4.42	1.17	2.91	5.50	2.88	1.83	**1.21**
	N_ADJ_TOTAL	181	43	18	42	23	33	59	65	13	17	53	14	32	55	23	57	**728**
	%_ADJ_TOTAL	24.90	5.90	2.50	5.80	3.20	4.50	8.10	8.90	1.80	2.30	7.30	1.90	4.40	7.60	3.20	1.30	**100.00**

Note: This table reports the 15 industry groups with the highest number of firms in the sample. To improve readability, industry group names are abbreviated as follows: CG (Capital Goods), MT (Materials), UT (Utilities), EN (Energy), PBLS (Pharmaceuticals, Biotechnology and Life Sciences), REMD (Real Estate Management and Development), HCES (Health Care Equipment and Services), TS (Telecommunication Services), AC (Automobiles and Components), TR (Transportation), CDA (Consumer Durables and Apparel), FBT (Food, Beverage and Tobacco), ME (Media and Entertainment), CPS (Commercial and Professional Services), and SS (Software and Services). The remaining industries are aggregated under "Other." Industry classifications are based on Capital IQ (GICS-based) industry group definitions.

Chi-square and ANOVA Analyses of Industry Groups and APM Adjustment Status

	Chi-spare Test		**ANOVA 1**			**ANOVA 2**		
Period	Chi_Square	df	F_statistic	N_obs	N_groups	F_statistic	N_obs	N_groups
2019	36.626**	20	1.742**	158	21	3.044***	301	21
2024	32.635**	20	1.134	142	21	2.120***	301	21
2019 and 2024	64.794***	20	2.670***	300	21	4.850***	602	21

Table 5. APM Adjustment Patterns (H1)

Table 5 presents detailed evidence on APM adjustment patterns across firms. **Panel A** provides an overview of adjusted APMs, reporting the frequency and distribution of different adjustment types. **Panel B** groups APMs into clusters and provides their corresponding economic interpretation. **Panel C** (reported in main text) examines the distribution of adjusted APMs within these clusters. **Panel D** reports difference-in-proportions tests for individual APM adjustment types. **Panel E** disaggregates non-debt adjustments into specific APM types, including earnings-based and cash flow-based measures. **Panel F** reports difference-in-proportions tests comparing debt-only firms with non-debt adjustment categories. **Panel G** reports the country-level distribution of firms classified as only debt- and only cash flow APM-adjusting, showing both the number of firms and the relative shares within the combined subgroup. **Panel H** reports the corresponding industry-level distribution, allowing for an intuitive comparison of whether cash-flow-only or debt-only adjustment behavior is more prevalent across industries. **Panel I** reports chi-square tests of independence for the full distribution of firm-level adjustment categories across countries and industries. **Panel J** reports chi-square tests of independence for selected adjustment-type likelihoods across countries and industries.

Panel A – Overview of Adjusted APMs

	2019				2024				2019 and 2024			
APM	EXCL_N	RECON_N	ALL_N	ALL_%	EXCL_N	RECON_N	ALL_N	ALL_%	EXCL_N	RECON_N	ALL_N	ALL_%
Debt	37	62	99	24.10	44	52	96	32.70	81	114	195	27.70
FCF	60	15	75	18.30	71	5	76	25.90	131	20	151	21.40
Leverage	32	31	63	15.40	37	11	48	16.30	69	42	111	15.80
EBITDA	7	44	51	12.40	8	22	30	10.20	15	66	81	11.50
Other	9	32	40	9.80	7	8	14	4.80	16	40	54	7.70
OCF	15	28	32	7.80	11	15	15	5.10	26	43	47	6.70
EBIT	2	11	13	3.20	1	0	1	0.30	3	11	14	2.00
ROCE	3	6	9	2.20	3	1	4	1.40	6	7	13	1.80
Interest Coverage	2	3	5	1.20	3	0	3	1.00	5	3	8	1.10
Capital Employed	1	6	7	1.70	1	0	1	0.30	2	6	8	1.10
Cash Conversion Ratio	4	1	5	1.20	3	0	3	1.00	7	1	8	1.10
Gross Profit	0	5	5	1.20	0	0	0	0.00	0	5	5	0.70
Cost of Debt	1	1	2	0.50	2	0	2	0.70	3	1	4	0.60
ROIC	1	1	2	0.50	1	0	1	0.30	2	1	3	0.40
ROACE	1	1	2	0.50	0	0	0	0.00	1	1	2	0.30
SUBTOTAL DoL	69	93	162	39.50	81	63	144	49.00	150	156	306	43.50
SUBTOTAL Non-Debt	106	154	248	60.50	111	51	150	51.00	217	205	398	56.50
TOTAL	**175**	**247**	**410**	**100.00**	**192**	**114**	**294**	**100.00**	**367**	**361**	**704**	**100.00**

Note: The abbreviated variable labels reported in the table (e.g., EXCL_N and RECON_N) correspond to the full variable definitions presented in the Appendix (e.g., ADJ_APM_EXCL_i,t and ADJ_APM_RECON_i,t). While the Appendix defines these variables at the firm level, the counts reported in this table are calculated at the APM level, meaning that multiple adjusted APMs disclosed by the same firm may be counted separately.

Panel B – Clustering of APM Adjustments

APM	Category	Economic Interpretation
Debt	Debt / Leverage (DoL)	Capital structure and indebtedness
Leverage	Debt / Leverage (DoL)	Leverage and financing structure
FCF	Cash Flow (CF)	Cash generation available to investors
OCF	Cash Flow (CF)	Cash generated from operating activities
Cash Conversion Ratio	Cash Flow (CF)	Cash conversion efficiency
EBITDA	Earnings (EARN)	Operating profitability before depreciation and amortization
EBIT	Earnings (EARN)	Operating profit measure
Gross Profit	Earnings (EARN)	Gross profitability
ROCE	Other	Return on capital employed
ROIC	Other	Return on invested capital
ROACE	Other	Return on average capital employed
Interest Coverage	Other	Financial ratio measuring interest coverage
Capital Employed	Other	Capital employed related metric
Cost of Debt	Other	Cost of debt metric
Other	Other	Miscellaneous or firm-specific APMs

Note: APMs are grouped into categories to facilitate a systematic analysis of adjustment behavior across economically similar measures. The clustering reflects the underlying economic interpretation of each metric (e.g., leverage, cash flow, earnings), allowing us to distinguish whether firms primarily adjust specific types of performance indicators or apply adjustments more broadly across different dimensions of financial performance.

Panel D – Difference-in-Proportions Tests for Adjusted APMs

	Comparison	DoL_N	Comparator_N	Diff_prop	Z_stat_approx
2019	DoL vs CF	162	112	0.122	3.021***
	DoL vs EARN	162	82	0.1951	5.122***
	DoL vs Other	162	54	0.2634	7.349***
2024	DoL vs CF	144	94	0.1701	3.241***
	DoL vs EARN	144	36	0.3673	8.050***
	DoL vs Other	144	20	0.4218	9.683***
2019 and 2024	DoL vs CF	306	206	0.142	4.419***
	DoL vs EARN	306	118	0.267	9.130***
	DoL vs Other	306	74	0.3295	11.901***

Note: The table reports difference-in-proportions tests comparing the frequency of debt/leverage-related (DoL) APM adjustments to other categories. DoL_N and Comparator_N denote the number of observations for each category. Diff_prop is calculated as the difference between the proportion of DoL adjustments and the proportion of adjustments in the comparator category. Z_stat_approx reports the z-statistic from a two-sample test of proportions, testing whether this difference is statistically different from zero. The significance stars summarize whether the z-statistic exceeds conventional critical values, while the magnitude of the z-statistic reflects the strength of statistical evidence rather than the size of the underlying effect.

Panel E – Firm Categories by Period: Non-Debt Adjustments Disaggregated

	2019		2024		2019 and 2024	
Category	N_Firms	%_Firms	N_Firms	%_Firms	N_Firms	%_Firms
ADJ_DoL_ONLY	40	13.30	43	14.30	83	13.80
ADJ_CF_ONLY	32	10.60	34	11.30	66	11.00
ADJ_EARN_ONLY	4	1.30	1	0.30	5	0.80
ADJ_OTHER_ONLY	4	1.30	2	0.70	6	1.00
ADJ_APM_MIXED	78	25.90	62	20.60	140	23.30
ADJ_APM_NONE	143	47.50	159	52.80	302	50.20
TOTAL	**301**	**100.00**	**301**	**100.00**	**301**	**100.00**

Panel F – Difference-in-Proportions Tests for Disaggregated Firm Categories

	Comparison	DoL_N	Comparator_N	Diff_prop	Z_stat_approx
2019	DoL vs CF	40	32	0.100	0.943
	DoL vs EARN	40	4	0.450	5,427***
	DoL vs Other	40	4	0.450	5,427***
2024	DoL vs CF	43	34	0.113	1.026
	DoL vs EARN	43	1	0.525	6,332***
	DoL vs Other	43	2	0.513	6,112***
2019 and 2024	DoL vs CF	83	66	0.106	1,393*
	DoL vs EARN	83	5	0.488	8,315***
	DoL vs Other	83	6	0.481	8,162***

Panel G – Distribution of Debt- and Cash Flow APM-Adjusting Firms across Countries

	ADJ_CF_ONLY		ADJ_DoL_ONLY		
	N	%	N	%	**Total**
France	20	48.80	21	51.20	**41**
Germany	17	60.70	11	39.30	**28**
Sweden	6	30.00	14	70.00	**20**
Denmark	12	92.30	1	7.70	**13**
Spain	3	23.10	10	76.90	**13**
Austria	1	16.70	5	83.30	**6**
Italy	1	16.70	5	83.30	**6**
Netherlands	4	80.00	1	20.00	**5**
Poland	0	0.00	4	100.00	**4**
Luxembourg	0	0.00	3	100.00	**3**
Croatia	0	0.00	2	100.00	**2**
Finland	0	0.00	2	100.00	**2**
Slovenia	0	0.00	2	100.00	**2**
Belgium	1	100.00	0	0.00	**1**
Greece	0	0.00	1	100.00	**1**
Hungary	0	0.00	1	100.00	**1**
Ireland	1	100.00	0	0.00	**1**
Total	**66**	**44.30**	**83**	**55.70**	**149**

Panel H – Distribution of Debt- and Cash Flow APM-Adjusting Firms across Industries

	ADJ_CF_ONLY		ADJ_DoL_ONLY		
	N	%	N	%	**Total**
Capital Goods	13	52.00	12	48.00	**25**
Materials	3	20.00	12	80.00	**15**
Transportation	10	83.30	2	16.70	**12**
Consumer Durables and Apparel	4	36.40	7	63.60	**11**
Energy	0	0.00	9	100.00	**9**
Automobiles and Components	5	62.50	3	37.50	**8**
Comm. and Prof. Services	4	57.10	3	42.90	**7**
Media and Entertainment	2	28.60	5	71.40	**7**
Pharma, Biotechnology and Life Sciences	2	28.60	5	71.40	**7**
Food, Beverage and Tobacco	3	50.00	3	50.00	**6**
Utilities	0	0.00	6	100.00	**6**
Consumer Services	2	40.00	3	60.00	**5**
Health Care Equip. and Services	3	60.00	2	40.00	**5**
Real Estate Mgmt and Dev.	0	0.00	5	100.00	**5**
Software and Services	2	50.00	2	50.00	**4**
Telecommunication Services	3	75.00	1	25.00	**4**
Consumer Discretionary Distribution and Retail	0	0.00	3	100.00	**3**
Consumer Staples Distribution and Retail	3	100.00	0	0.00	**3**
Household and Personal Products	3	100.00	0	0.00	**3**
Semiconductors and Equipment	2	100.00	0	0.00	**2**
Tech. Hardware and Equipment	2	100.00	0	0.00	**2**
Total	**66**	**44.30**	**83**	**55.70**	**149**

Panel I – Chi-square Tests of Independence: Full Adjustment-Category Distribution

	Period	Chi_Square	df
Country	2019	103.13	95
	2024	126.814**	95
	2019 and 2024	192.829***	95
Industry	2019	147.280***	100
	2024	111.658	100
	2019 and 2024	215.995***	100

Note: Chi-square tests examine whether APM adjustment behavior is associated with grouping variables; statistical significance indicates that adjustment behavior is not independent of the respective grouping variable. The test in this panel is applied to the full distribution of firm-level adjustment categories, assessing whether the overall mix of adjustment types differs across countries or industries.

Panel J – Chi-square Tests of Independence: Debt-Only and Cash-Flow-Only Adjustment Likelihood

	Period	Target_Category	Chi_Square	df
Country	2019	ADJ_DoL_ONLY	33.732**	19
		ADJ_CF_ONLY	22.808	19
	2024	ADJ_DoL_ONLY	30.103*	19
		ADJ_CF_ONLY	27.048	19
	2019 and 2024	ADJ_DoL_ONLY	55.865***	19
		ADJ_CF_ONLY	44.482***	19
Industry	2019	ADJ_DoL_ONLY	13.181	20
		ADJ_CF_ONLY	39.258***	20
	2024	ADJ_DoL_ONLY	20.055	20
		ADJ_CF_ONLY	26.220	20
	2019 and 2024	ADJ_DoL_ONLY	26.554	20
		ADJ_CF_ONLY	59.711***	20

Note: Chi-square tests examine whether APM adjustment behavior is associated with grouping variables; statistical significance indicates that adjustment behavior is not independent of the respective grouping variable. The test in this panel is applied to selected adjustment-type likelihoods, assessing whether firms are more or less likely to report specific adjustment types across countries or industries, rather than testing the full category distribution.

Table 6. Lease Intensity and APM Adjustment (H2)

Table 6 presents the main empirical results for the analysis of lease intensity and APM adjustment (intensity) for 2019 and 2024. **Panel A** presents the descriptive statistics for dependent, independent, and control variables. **Panel B** reports the correlation matrix for all variables measured in 2019 and 2024. **Panel C** complements Panel B and reports multicollinearity diagnostics based on variance inflation factors (VIF) for the variables included in the regression specifications. **Panel D** (reported in the main text) reports the regression results for our baseline model with APM Adjustment as dependent variable. **Panel E** (reported in the main text) reports the regression results for the adjustment intensity specification of our model with APM Adjustment Intensity as dependent variable. **Panel F** reports the matching summary of the matching test for H2. It reports the mean of treatment and control group, the difference of the two, the accompanying t-statistic and p-value. **Panel G** reports the regression results of the matching test.

Panel A – Descriptive Statistics (2019, 2024)

	N	Mean	StD	Min	Median	Max
Dependent Variables						
(1) ADJ_APM	602	0.498	0.500	0.000	0.000	1.000
(2) ADJ_APM_INTENS	602	1.209	1.713	0.000	0.000	12.000
Independent variable						
(3) LEASE_INTENS	597	0.047	0.059	0.000	0.028	0.286
Control variables						
(4) SIZE	600	22.759	1.116	19.364	22.556	26.632
(5) LEVERAGE	597	0.719	0.621	0.000	0.553	3.534
(6) PROFITABILITY	597	0.128	0.127	-0.389	0.117	0.784
(7) GROWTH	597	4.917	13.658	-36.779	4.273	87.452
(8) VOLATILITY	598	0.070	0.113	0.002	0.033	0.748
(9) ANALYSTS	598	15.530	7.309	0.000	16.000	35.000
(10) INT_COVERAGE	588	23.931	61.954	-2.939	7.515	438.309
(11) M/B	530	3350.029	3799.189	308.307	2077.612	23142.965
(12) CAPEX_SALES	572	-0.070	0.085	-0.533	-0.045	-0.002
(13) INTANG_INTENS	580	0.086	0.097	0.000	0.049	0.472
(14) CASH_SALES	589	0.190	0.262	0.010	0.121	1.842

Note: This table reports descriptive statistics for the subsample used in the H2 analysis. While the general sample summary (Panel B, Table 4) is based on the full sample period from 2013–2024, the H2 analysis is restricted to 2019 and 2024, as data on IFRS 16-neutralizing APM adjustments is only available for these two years. In H2, APM adjustment and APM adjustment intensity serve as dependent variables, requiring the analysis to be limited to periods in which these data are observed. In contrast, for H3, APM adjustments are used only to define the treatment classification, allowing the use of the full sample period. Accordingly, this table provides additional descriptive statistics tailored to the H2 sample.

Panel B – Pearson Correlation Matrix (2019, 2024)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) ADJ_APM	1													
(2) ADJ_APM_INTENS	0.728***	1												
(3) LEASE_INTENS	0.332***	0.378***	1											
(4) SIZE	0.042	-0.063	-0.015	1										
(5) LEVERAGE	0.170***	0.151***	0.012	0.019	1									
(6) PROFITABILITY	0.034	0.008	0.053	0.112**	-0.052	1								
(7) GROWTH	0.016	0.024	0.007	-0.064	-0.115***	0.214***	1							
(8) VOLATILITY	-0.051	-0.025	0.114**	0.018	0.173***	0.070	0.070	1						
(9) ANALYSTS	0.041	-0.02	0.122***	0.693***	0.068	0.005	-0.066	0.033	1					
(10) INT_COVERAGE	-0.092**	-0.104**	-0.137***	-0.056	-0.288***	0.356***	0.205***	-0.051	-0.106**	1				
(11) M/B	-0.037	-0.023	0.035	0.146***	-0.077*	0.623***	0.403***	0.053	0.07	0.393***	1			
(12) CAPEXSALES	0.051	0.086*	0.094**	-0.068	-0.292***	0.073	0.144***	-0.002	-0.052	0.053	0.068	1		
(13) INTANG_INTENS	0.119***	0.04	-0.058	0.121***	0.222***	0.054	0.135***	-0.080*	0.056	-0.106**	0.080*	0.009	1	
(14) CASH_SALES	-0.042	-0.089**	-0.134***	-0.02	0.165***	-0.073*	0.154***	0.032	-0.001	0.022	0.124***	-0.240***	0.000	1

Panel C – Multicollinearity Statistics (VIF) (2019, 2024)

Variance-Inflation Factor (VIF)			1.11	2.09	1.35	1.78	1.31	1.08	2.03	1.4	2.07	1.19	1.15	1.19

Panel F – Matching Summary

Variable	treated_mean	control_mean	Difference	t_stat
LEASE_INTENS	0.067	0.039	0.028***	7.071
PROFITABILITY	0.134	0.125	0.009	0.761
GROWTH	4.947	3.928	1.019	0.870
SIZE	22.909	22.648	0.261**	2.437
LEVERAGE	0.840	0.613	0.227***	3.941
VOLATILITY	0.066	0.070	-0.005	-0.406
ANALYSTS	16.266	15.155	1.111	1.636
INT_COVERAGE	17.267	27.261	-9.993*	-1.706
M/B	3148.114	3344.141	-196.027	-0.510
CAPEX_SALES	-0.073	-0.065	-0.008	-0.930
INTANG_INTENS	0.097	0.080	0.017*	1.868
CASH_SALES	0.169	0.155	0.014	0.806

Note: This panel reports covariate balance statistics for the matched sample used in the H2 analysis. Specifically, it compares the mean values of the matching variables between the treatment and control groups after matching. The reported differences indicate the magnitude of remaining imbalance and the accompanying t-statistics test whether these mean differences are statistically different from zero.

Panel G – Regression Results post Matching

Variable	coef	std_err	z_stat	ci_low_95	ci_high_95
CONSTANT	-16.853***	4.417	-3.816	-25.510	-8.196
PROFITABILITY	0.853	1.934	0.441	-2.937	4.643
GROWTH	0.014	0.014	1.009	-0.013	0.041
SIZE	0.772***	0.210	3.676	0.360	1.183
LEVERAGE	1.1446***	0.385	2.975	0.391	1.899
VOLATILITY	-0.145	1.420	-0.102	-2.928	2.639
ANALYSTS	-0.086***	0.032	-2.669	-0.148	-0.023
INT_COVERAGE	-0.001	0.003	-0.498	-0.006	0.004
M/B	0.000	0.000	-1.605	0.000	0.000
CAPEX_SALES	-2.864	2.451	-1.169	-7.667	1.940
INTANG_INTENS	-0.906	1.733	-0.523	-4.302	2.490
CASH_SALES	0.355	1.038	0.342	-1.680	2.389
industry_15	-0.487	1.186	-0.411	-2.813	1.838
industry_16	-0.034	1.098	-0.031	-2.185	2.117
industry_20	-0.195	1.027	-0.190	-2.208	1.818
industry_23	1.732	1.259	1.376	-0.736	4.201
industry_26	-1.352	1.117	-1.210	-3.541	0.837
industry_28	0.754	0.846	0.892	-0.904	2.412
industry_29	0.732	0.946	0.774	-1.122	2.587
industry_34	0.595	1.023	0.581	-1.410	2.599
industry_35	-0.933	0.934	-0.999	-2.764	0.897
industry_36	-0.423	0.935	-0.453	-2.255	1.409
industry_37	-0.263	0.932	-0.282	-2.089	1.564
industry_38	-1.474	1.178	-1.251	-3.783	0.835
industry_39	1.553	1.223	1.270	-0.844	3.950
industry_42	-0.010	1.362	-0.007	-2.679	2.659
industry_44	-0.064	1.275	-0.050	-2.564	2.436
industry_45	-0.735	1.083	-0.678	-2.858	1.389
industry_48	1.320	1.010	1.307	-0.659	3.299
industry_49	-3.412***	1.131	-3.017	-5.629	-1.196
industry_50	0.838	1.096	0.764	-1.311	2.986
industry_51	1.567	1.104	1.420	-0.597	3.731
industry_54	-0.417	1.172	-0.356	-2.714	1.880
industry_73	1.064	0.876	1.215	-0.653	2.782
year_2024	-0.259	0.294	-0.879	-0.835	0.318

Note: Industries are based on SIC codes. Industries are excluded from the regression when, after removing observations with missing regression variables, they contain only treated firms or only control firms, because such industries perfectly predict treatment status and therefore cannot be separately estimated.

Table 7. APM Adjustments and Forecast Outcomes (H3)

Table 7 presents the main empirical results for the analysis of APM adjustments and analyst forecast outcomes for 2013-2024. **Panel A** reports multicollinearity diagnostics based on variance inflation factors (VIF) for the variables included in the regression specifications. A correlation matrix is not reported in this table, as it is already presented in Table 4, Panel C, based on the same sample period. **Panel B** presents the baseline difference-in-differences estimates of the effect of APM adjustments on forecast accuracy and dispersion. **Panel C** (reported in the main text) reports the dynamic event-study estimates, allowing for a flexible assessment of treatment effects over time. **Panel D** presents joint Wald tests of the pre-treatment coefficients to assess the presence of differential pre-trends. **Panel** reports summary statistics for directional bias by treatment status and period, showing the mean positive deviation and mean signed deviation separately for treatment and control firms in the pre- and post-adoption periods. **Panel F** presents the dynamic event-study estimates for positive forecast deviation, allowing for a flexible assessment of how directional bias evolves over time relative to the omitted pre-treatment benchmark period.

Panel A – Multicollinearity Statistics (VIF) (2013-2024)

	VIF Baseline Model	VIF Full Model
ANALYSTS	2.080	2.140
SIZE	2.040	2.120
PROFITABILITY	1.080	1.080
VOLATILITY	1.050	1.050
LEVERAGE	1.060	1.060
LEASE_INTENS	1.030	7.880
GROWTH	1.060	1.060
Treatment x Post		1.270
Lease Intensity x Post		8.140

Note: VIF statistics for the control variables are computed on the common non-missing regression sample, while specification-specific VIF statistics including treatment terms are computed on the respective estimation samples. Adding these regressors changes the linear relationships among the included explanatory variables, especially for Lease Intensity, whose VIF rises mechanically because it is closely related to the interaction term Lease Intensity x Post.

Panel B – Baseline Difference-in-Differences Estimates

	label	coef	std_err	ci_low_95	ci_high_95
FC_ACCURACY	Treatment x Post	-0.005	0.0212	-0.0465	0.0366
FC_DISPERSION	Treatment x Post	-0.009	0.008	-0.025	0.006
FC_ATTAINABILITY	Treatment x Post	-0.044	0.034	-0.111	0.023

Note: All specifications include an interaction between lease intensity and the post-adoption period as a control for firms' exposure to IFRS 16. Coefficients are omitted for brevity.

Panel D – Joint Test of Pre-Treatment Trends (Wald Test)

	null_hypothesis	n_restrictions	wald_stat
FC_ACCURACY	All pre-treatment coefficients = 0	5	2.851
FC_DISPERSION	All pre-treatment coefficients = 0	5	1.889
FC_ATTAINABILITY	All pre-treatment coefficients = 0	5	9.878*

Note: The Wald statistic measures the extent to which the estimated coefficients deviate from this null hypothesis, taking into account their joint variance. Larger Wald statistics indicate greater joint deviation from zero, while smaller values suggest that the coefficients are collectively close to zero. Statistical significance is assessed based on the associated p-values: low p-values (typically below 0.10, 0.05, or 0.01) lead to rejection of the null hypothesis, whereas high p-values indicate that the null cannot be rejected. Accordingly, even relatively large Wald statistics do not imply statistical significance if the corresponding p-values remain above conventional thresholds.

Panel E – Directional Bias Summary Statistics by Treatment Status and Period

	period	mean_positive_deviation	mean_signed_deviation	n_obs	n_firms
Control	*Post*	0.618	0.035	1176	196
Control	*Pre*	0.548	0.001	1176	196
Treatment	*Post*	0.657	0.082	624	104
Treatment	*Pre*	0.614	0.064	624	104

Note: Mean_positive_deviation reports the average magnitude of forecast deviations considering only positive deviations (i.e., cases where forecasts exceed actual outcomes), capturing the extent of optimistic bias. Mean_signed_deviation reports the average of all forecast deviations, preserving the sign, and therefore reflects the overall directional bias, where positive values indicate optimism and negative values indicate pessimism.

Panel F – Dynamic Treatment Effects on Positive Forecast Deviation

	event_time	coef	std_err	ci_low_95	ci_high_95
Positive Deviation	t-6	-0.038	0.080	-0.196	0.120
Positive Deviation	t-5	-0.085	0.080	-0.242	0.071
Positive Deviation	t-4	0.013	0.078	-0.141	0.166
Positive Deviation	t-3	-0.029	0.073	-0.173	0.115
Positive Deviation	t-2	-0.073	0.069	-0.207	0.062
Positive Deviation	t0	0.060	0.074	-0.085	0.205
Positive Deviation	t+1	0.066	0.068	-0.068	0.200
Positive Deviation	t+2	-0.054	0.063	-0.177	0.070
Positive Deviation	t+3	-0.090	0.075	-0.236	0.057
Positive Deviation	t+4	-0.051	0.079	-0.205	0.104
Positive Deviation	t+5	-0.057	0.082	-0.218	0.104

Table 8. Robustness Tests for Hypothesis 2 and 3 Testing

Table 8 presents robustness tests for the main empirical results related to Hypotheses 2 and 3. **Panel A** reports the robustness checks for the baseline regression of H2, including: (1) Main Regression Results, (2) Lagged control variables, (3) Logit Model and with (4) Country FEs. **Panel B** presents the robustness test results for the adjustment intensity model of H2 (1) Main Regression Results, (2) Lagged control variables and including (3) Country FEs. **Panel C** presents dynamic difference-in-differences estimates for H3 using forecast measures based on target prices closest to the filing date (1), thereby relaxing the assumption that analysts require time to incorporate new information and reports dynamic DiD results with lagged control variables (2). **Panel D** presents results based on entropy balancing to address potential differences in covariate distributions between treatment and control groups.

Panel A – Robustness Check I (H2): Baseline Model

Variable	Expected Results	(1)	(2)	(3)	(4)
LEASE_INTENS	+	1.632***	1.747***	11.042***	1.744***
		(0.451)	(0.444)	(3.934)	(0.426)
SIZE	+/-	0.047	0.047	0.269	0.021
		(0.033)	(0.035)	(0.179)	(0.033)
LEVERAGE	+	0.146***	0.163***	0.870***	0.129***
		(0.044)	(0.039)	(0.296)	(0.041)
PROFITABILITY	+/-	0.112	-0.033	0.713	0.090
		(0.193)	(0.161)	(1.106)	(0.187)
GROWTH	+/-	-0.000	0.001	-0.000	-0.001
		(0.001)	(0.001)	(0.008)	(0.001)
VOLATILITY	+	-0.175	-0.143	-0.907	-0.108
		(0.197)	(0.166)	(1.296)	(0.182)
ANALYSTS	+/-	-0.005	-0.005	-0.032	-0.004
		(0.005)	(0.005)	(0.028)	(0.005)
Industry FE		Yes	Yes	Yes	Yes
Year FE		Yes	Yes	Yes	Yes
Country FE		No	No	No	Yes
Observations		594	591	547	594

Note: In the robustness specification (3), firm-level characteristics that may shape disclosure choices and forecast outcomes are lagged by one period. Analyst following is not lagged, as it reflects the contemporaneous external information environment rather than an internal firm characteristic underlying the reporting decision.

Panel B – Robustness Check II (H2): Adjustment Intensity Model

Variable	Expected Results	(1)	(2)	(3)
LEASE_INTENS	+	5.780***	5.987***	6.300***
		(1.505)	(1.449)	(1.417)
SIZE	+/-	0.038	-0.016	-0.001
		(0.073)	(0.083)	(0.078)
LEVERAGE	+	0.322***	0.366***	0.274**
		(0.124)	(0.112)	(0.118)
PROFITABILITY	+/-	0.109	-0.003	-0.112
		(0.492)	(0.397)	(0.481)
GROWTH	+/-	0.001	-0.002	-0.001
		(0.003)	(0.003)	(0.004)
VOLATILITY	+	-0.138	-0.242	0.018
		(0.556)	(0.500)	(0.509)
ANALYSTS	+/-	-0.015	-0.011	-0.016
		(0.012)	(0.013)	(0.014)
Industry FE		Yes	Yes	Yes
Year FE		Yes	Yes	Yes
Country FE		No	No	Yes
Observations		594	591	594

Note: In the robustness specification (3), firm-level characteristics that may shape disclosure choices and forecast outcomes are lagged by one period. Analyst following is not lagged, as it reflects the contemporaneous external information environment rather than an internal firm characteristic underlying the reporting decision.

Panel C – Robustness Check I + II (H3): Dynamic DiD Results for Target Price Closest to Filing Data Specification (1) and with Lagged Control Variables (2)

			(1)		(2)	
	event_time	label	coef	std_err	coef	std_err
FC_ACCURACY	-6	t-6	-0.048	0.035	0.024	0.037
FC_ACCURACY	-5	t-5	-0.047	0.036	0.037	0.039
FC_ACCURACY	-4	t-4	-0.055	0.036	0.049	0.041
FC_ACCURACY	-3	t-3	-0.045	0.046	0.070*	0.042
FC_ACCURACY	-2	t-2	-0.081**	0.035	0.004	0.033
FC_ACCURACY	0	t0	-0.001	0.038	0.012	0.042
FC_ACCURACY	1	t+1	-0.041	0.035	0.038	0.038
FC_ACCURACY	2	t+2	-0.039	0.043	0.038	0.048
FC_ACCURACY	3	t+3	-0.095**	0.040	0.014	0.044
FC_ACCURACY	4	t+4	-0.012	0.045	0.061	0.047
FC_ACCURACY	5	t+5	-0.015	0.059	0.044	0.054
FC_DISPERSION	-6	t-6	-0.016*	0.009	-0.007	0.011
FC_DISPERSION	-5	t-5	-0.012	0.009	-0.003	0.010
FC_DISPERSION	-4	t-4	-0.004	0.010	0.003	0.011
FC_DISPERSION	-3	t-3	-0.004	0.009	-0.002	0.008
FC_DISPERSION	-2	t-2	-0.007	0.008	-0.002	0.007
FC_DISPERSION	0	t0	-0.028***	0.011	0.003	0.014
FC_DISPERSION	1	t+1	-0.011	0.011	-0.011	0.011
FC_DISPERSION	2	t+2	-0.015	0.010	-0.017*	0.010
FC_DISPERSION	3	t+3	-0.012	0.014	-0.012	0.014
FC_DISPERSION	4	t+4	-0.013	0.013	-0.007	0.013
FC_DISPERSION	5	t+5	-0.020	0.013	-0.022*	0.013
FC_ATTAINABILITY	-6	t-6	-0.028	0.073	0.040	0.076
FC_ATTAINABILITY	-5	t-5	-0.045	0.064	0.003	0.065
FC_ATTAINABILITY	-4	t-4	-0.145**	0.070	-0.085	0.074
FC_ATTAINABILITY	-3	t-3	-0.036	0.056	-0.017	0.056
FC_ATTAINABILITY	-2	t-2	-0.161**	0.070	-0.133*	0.073
FC_ATTAINABILITY	0	t0	-0.152**	0.059	-0.108*	0.060
FC_ATTAINABILITY	1	t+1	-0.097	0.068	-0.055	0.068
FC_ATTAINABILITY	2	t+2	-0.009	0.084	-0.020	0.084
FC_ATTAINABILITY	3	t+3	-0.011	0.067	0.033	0.067
FC_ATTAINABILITY	4	t+4	-0.041	0.067	-0.074	0.064
FC_ATTAINABILITY	5	t+5	-0.089	0.071	-0.092	0.073

Note: In the robustness specification (2), firm-level characteristics that may shape disclosure choices and forecast outcomes are lagged by one period. Analyst following is not lagged, as it reflects the contemporaneous external information environment rather than an internal firm characteristic underlying the reporting decision.

Panel D – Robustness Check III (H3): Entropy Balancing Results

Outcome	n_Treated	n_Control	treated_mean weighted	control_mean weighted	treatment effect	std_error	ci_low_95	ci_high_95
4-Week Model								
FC_ACCURACY	1305	1825	-0.298	-0.293	-0.005	0.014	-0.031	0.022
FC_DISPERSION	1305	1825	0.180	0.156	0.024	0.016	-0.008	0.055
FC_ATTAINABILITY	1305	1825	0.747	0.773	-0.026	0.018	-0.061	0.008
Direct Model								
FC_ACCURACY	1284	1808	-0.292	-0.287	-0.004	0.014	-0.031	0.022
FC_DISPERSION	1284	1808	0.181	0.152	0.029	0.018	-0.006	0.064
FC_ATTAINABILITY	1284	1808	0.759	0.778	-0.019	0.017	-0.053	0.015

Note: The table reports entropy balancing results as a robustness check for H3. Control firms are reweighted to match the covariate means of the treated group across several firm characteristics The 4-Week Model measures forecast outcomes using target prices and share prices observed four weeks after the annual report filing date; the Direct Model uses prices observed at the closest available date to filing. The significance stars summarize whether the treatment effect exceeds conventional critical values, while the treatment effect denotes the estimated difference in each outcome variable between treated and control firms after reweighting.

Appendix B
APM Adjustment Definitions and Examples

This appendix explains how firms adjust key APMs to neutralize the effects of IFRS 16. The analysis focuses on three commonly adjusted metrics: net debt, EBITDA, and FCF. To illustrate these effects, we refer to an example published in the IASB effects analysis (IASB, 2016), on which the numerical illustrations are based. Below are the lease-related components used to construct the APM adjustments in the numerical example.

Principal portion of lease liability	1,761
Interest portion of lease liability	791
ROUA depreciation	1,766
Recognition of new ROUA	1,430
Lease liabilities	25,277

Net Debt Adjustments: Before IFRS 16, operating lease obligations were off-balance sheet and therefore not included in financial debt and net debt. With the introduction of IFRS 16, lease liabilities are recognized on the balance sheet and are to be classified as financial debt according to ESMA (ESMA, 2019). To maintain comparability with pre-IFRS 16 reporting or internal leverage targets, firms frequently adjust net debt by excluding lease liabilities. This adjustment reverses the accounting-induced increase in debt and restores a measure that is more consistent with historical definitions of financial leverage.

Net debt	IAS 17	IFRS 16	Adj. Scenario 1	Delta
Borrowings	9,430	9,430	9,430	-
Lease liabilities	-	25,277	-	25,277
Cash and cash equivalents	(8,114)	(8,114)	(8,114)	-
Net debt	**11,832**	**26,593**	**11,832**	**25,277**

EBITDA Adjustments: Under IAS 17, operating lease liability repayments were treated as operating expenses and included within operating costs. Following the adoption of IFRS 16, the former operating lease expense is replaced by depreciation of the right-of-use asset and interest expense on the lease liability. Because both depreciation and interest are reported below EBITDA, lease-related expenses are no longer included in operating costs. To neutralize this effect, firms typically adopt one of two approaches, as observed in our sample. The first approach deducts the depreciation amount from EBITDA, thereby partially reversing the mechanical EBITDA increase introduced by IFRS 16. The second approach reintroduces an estimate of operating lease expenses, often based on lease payments disclosed in the cash flow statement or notes, to approximate the expense that would have been recognized under IAS 17. While Scenario 1 does not fully restore EBITDA to its IAS 17 level, the adjustment is nevertheless designed to reverse the mechanical effects of IFRS 16. As such, we classify it as an IFRS 16-neutralizing adjustment.

EBITDA	IAS 17	IFRS 16	Adj. Scenario 1	Delta	Adj. Scenario 2	Delta
Revenue	67 272	67 272	67 272	-	67 272	-
Operating costs (*excluding depreciation & amortisation*)	(60 893)	(58 340)	(58 340)	-	(58 340)	-
Lease payment	-	-	-	-	(2 553)	2 553
Depreciation and amortisation RUA	-	-	(1 766)	1 766		-
EBITDA	**6 379**	**8 932**	**7 166**	**1 766**	**6 379**	**2 553**
Depreciation and amortisation	(3 908)	(5 674)	(3 908)	(1 766)	(3 908)	(1 766)
Operating profit	2 471	3 258	3 258	-	2 471	787

FCF Adjustments: Prior to IFRS 16, operating lease payments reduced the FCF. Under IFRS 16, lease payments are no longer treated as a single operating expense. While interest may be classified as either operating or financing cash flow depending on firm policy, the principal repayment is reported within financing activities. At the same time, depreciation of the right-of-use asset reduces profit but is added back in the calculation, as it is a non-cash expense. This reclassification leads to a mechanical increase in FCF under IFRS 16. To neutralize this effect, firms often adjust FCF by deducting the repayment of the lease liability principal (scenario 1) or the repayment as well as the interest of lease liabilities (scenario 2). These adjustments effectively treat lease payments as operating cash outflows, thereby approximating the pre-IFRS 16 treatment. A further variation (scenario 3) involves reclassifying leasing activities entirely, by treating the recognition amount of new right-of-use assets as capital expenditure within investing activities. While only Scenario 2 fully reconstructs free cash flow as it would have been reported under IAS 17, all three approaches are conceptually aimed at reversing the mechanical effects of IFRS 16 and approximating a pre-adoption measure. In our sample, Scenario 1 is the most commonly observed adjustment, whereas Scenarios 2 and 3 are applied only rarely.

Free cash flow	IAS 17	IFRS 16	Adj. Scenario 1	Delta	Adj. Scenario 2	Delta	Adj. Scenario 3	Delta
Net cash from operating activities	5 474	8 026	8 026	-	8 026	-	8 026	(8 026)
Capital expenditures	(1 356)	(1 356)	(1 356)	-	(1 356)	-	(2 786)	2 786
Purchase of intangible assets	(305)	(305)	(305)	-	(305)	-	(305)	305
Acquisition-related costs	6	6	6	-	6	-	6	(6)
Repayment of principal portion of lease liabilities	-	-	(1 761)	1 761	(1 761)	1 761	-	1 761
Repayment of interest portion of lease liabilities	-	-	-	-	(791)	791	-	-
Free cash flow	**3 819**	**6 371**	**4 610**	**1 761**	**3 819**	**2 552**	**4 941**	**1 430**

Appendix C

Statement on the Use of Artificial Intelligence

Artificial intelligence tools were used selectively throughout the preparation of this thesis to improve efficiency in literature identification, coding support, language refinement, and document screening. Their use was limited to supportive functions.

Identification of academic sources

In addition to conventional literature search methods, including Google Scholar and the SSE library, we used ChatGPT, Claude, and NotebookLM to identify potentially relevant academic sources and to obtain preliminary summaries of papers and research streams. We were aware of the risk that AI tools can generate inaccurate summaries, mischaracterize findings, or suggest sources that are not suitable for academic use. To mitigate these risks, we did not rely on AI-generated summaries as evidence. Whenever a source appeared relevant, we located the original article and reviewed it directly before deciding whether to include it in the thesis. This procedure ensured that all cited references were validated against the original source material and helped us avoid the risk of hallucinated or misrepresented academic content.

Grammar, spelling, and academic readability

AI tools were also used to improve grammar, spelling, conciseness, and academic readability. In particular, ChatGPT supported the revision of sentence structure, tone, and wording, and helped identify redundancies or formulations that lacked clarity. These tools were used to refine already drafted text rather than to generate substantive arguments or empirical claims independently. The risks associated with this type of use were considered limited, since the purpose was primarily linguistic improvement rather than content creation. Nevertheless, all revisions were reviewed by the authors to ensure that the intended meaning, analytical nuance, and academic precision of the text were preserved.

Coding and statistical analysis

Premium ChatGPT and its VS Code add-in, Codex, were used to support coding, code troubleshooting, and the interpretation of statistical procedures and outputs. These tools were particularly helpful for drafting and revising Python code for data cleaning, variable construction, table generation, and statistical testing, as well as for identifying possible coding errors and improving workflow efficiency. The use of AI in coding and statistical analysis introduces potential risks, particularly related to incorrect prompts or erroneous outputs. Even when prompts are correctly specified, AI-generated code and interpretations may still contain inaccuracies or misleading elements. To mitigate these risks, all code was manually reviewed and validated against the underlying dataset, the intended methodological design, and the expected behavior of the outputs. In addition, statistical procedures and interpretations were cross-checked using methodological references, prior literature, and other external sources where appropriate. Final analytical decisions were only made after ensuring consistency between the code, results, and research design.

Support in APM document screening

ChatGPT was used as a supplementary tool in the document analysis process. Using a consistent prompt, it was applied to review annual reports and identify passages that might contain adjusted APMs. In practice, ChatGPT was more likely to miss relevant adjustments

than to incorrectly flag non-existent ones. Therefore, all documents were independently reviewed by the researchers, and ChatGPT outputs were used only as an additional verification layer. The prompt used is provided below for transparency.

Prompt: "*I am analyzing a company's annual report (PDF) to identify the use of Alternative Performance Measures (APMs) that explicitly neutralize or reverse the accounting effects of IFRS 16. Please support this process by scanning the attached annual report for APMs that have been adjusted to neutralize the effects of IFRS 16.*

I am not interested in APMs that merely:

- *include or deduct lease-related items as part of a consistent cash flow or investment concept or*
- *clarify the scope of a metric (e.g. net cash positions that naturally exclude long-term lease liabilities).*

I am only interested in APMs where:

- *the calculation logic is explicitly designed to exclude, reverse, or neutralize IFRS 16 effects, or*
- *the metric is presented on a "pre-IFRS 16", "excluding IFRS 16", or "excluding leases" basis, or*
- *the use of comparative or pro-forma columns that reverse IFRS 16 effects in KPIs, highlights, or consolidated results tables, or*
- *the FCF includes the repayment of lease liabilities (FCF=OCF-CapEX, because if treated correctly post-IFRS 16, then payment of lease liabilities should not be included in the FCF)*

We classify an APM as IFRS 16–neutralizing not only when firms explicitly label metrics as "pre-IFRS 16" or "excluding IFRS 16", but also when firms redefine balance-sheet-based APMs to explicitly exclude lease liabilities recognized under IFRS 16 even when not explicitly labelling them as such. Instructions:

1. *Search the entire report*
2. *Identify only those APMs that meet the above IFRS 16 exclusion criteria.*

Output format (strict):
• APMs identified: Yes / No
• IFRS 16 exclusion/neutralization involved: Yes / No
• APM name(s): (if yes)
• Exact wording used in the report: (short quotation)
• Page number(s): (as shown in the report)
• Location in report: (e.g. KPI overview, management discussion, footnote, reconciliation table)

Important:
• Do not classify standard IFRS metrics as APMs.
• Do not classify APMs as IFRS 16–adjusted unless the intent is clearly to exclude or neutralize IFRS 16 effects.
• If uncertain, answer "No" and briefly explain why."