

INFORMATION ASYMMETRY AND FAIR VALUE ACCOUNTING: INSIGHTS FROM RESIDENTIAL REAL ESTATE IN THE UK, GERMANY, AND SPAIN

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ARTICLE INFO	ABSTRACT
Keywords: international accounting standard, valuation standard, information asymmetry, residential real estate, liquidity of stock market, behavioral finance	This study investigates the impact of international accounting and valuation standards (IFRS 13, IVS 2020, IVS 2022, RICS 2022, IPSM 2023) on information asymmetry in the residential real estate markets of the UK, Germany, and Spain. Given the frequent use of subjective inputs in fair value measurements, this sector is particularly susceptible to higher levels of information asymmetry, making it an apt context for analysis. The research analyses changes in selected standards and includes control variables such as company size and market capitalization, using two indicators over the period 2019–2023. Revisions to IFRS 13, IVS 2022, RICS 2022, and IPSM 2023 significantly reduced valuation variability (as measured by the VCVT indicator), confirming their positive effect on market transparency. In contrast, the IVS 2020 update was associated with an increase in the bid–ask spread, suggesting a rise in perceived uncertainty. By jointly examining the bid–ask spread and VCVT, the study provides a comprehensive assessment of how accounting and valuation standards influence liquidity and information asymmetry in the residential property sector - a field that has received limited attention in prior literature. The findings are consistent with earlier research indicating that reduced disclosure requirements can enhance stock market liquidity. Practical implications include recommendations for stricter guidance on Level 3 fair value models and the adoption of best practices from EPRA and REIT frameworks to enhance transparency and credibility in capital markets.
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1. Introduction

Over the past decade, the valuation and accounting environment for real estate and financial assets has been shaped by a sequence of revisions to international accounting and valuation standards, most notably IFRS 13, IVS, RICS, and the integrative framework of IPMS (2023). These standards jointly define how fair value is determined, disclosed, and communicated to market participants. Their objective is to enhance valuation consistency, comparability, and reliability, thereby reducing estimation subjectivity and information asymmetry.

Information asymmetry, the unequal access to relevant information among market participants, remains a central challenge in financial and real-estate

markets. Following Akerlof's (1970) foundational work, research has shown that asymmetry distorts prices, impairs trust, and increases transaction costs. In asset-heavy sectors such as real estate, where properties are heterogeneous and valuations are often opaque, this issue becomes even more pronounced. Mwanypedza and Mishi (2024) show that asymmetry in the willingness-to-pay drives market inefficiencies in real-estate transactions.

To improve transparency, international frameworks such as IFRS 13 Fair Value Measurement, IAS 40 Investment Property, and the valuation standards IVS, RICS, and IPMS were developed. These aim to enhance consistency in fair-value reporting, reduce valuation subjectivity, and ultimately lower information asymmetry. This theoretical alignment with Spence's

(1973) signaling theory suggests that greater disclosure should improve trust and market efficiency. Vanags et al. (2024) further argue that housing heterogeneity raises information gaps, underscoring the need for standardized fair-value frameworks across markets.

Beyond these transparency objectives, recent amendments have also introduced specific mechanisms through which accounting and valuation standards influence investors' perception of risk and, consequently, market liquidity. Changes in disclosure depth, valuation-input hierarchy, and the handling of unobservable (Level 3) inputs reshape the information environment in which investors operate. These mechanisms function through two complementary channels.

Amendments to IFRS 13 refined the documentation of valuation methodologies and expanded the scope of fair-value notes, which could generally reduce estimation uncertainty and narrows bid-ask spreads when transparency improves. Conversely, where guidance increases interpretive flexibility, such as within certain IVS 2022 valuation bases, perceived model risk can possibly rise, widening spreads and increasing volatility.

Second, a valuation-reliability and behavioral-response mechanism. The integrative IPMS 2023 framework, which harmonized several prior standards into a single structure, strengthened the internal coherence of definitions and measurement bases. This harmonization could improve perceived valuation reliability, stabilize liquidity, and lower the coefficient of variation in trading volume (VCVT). However, when discretion remains high, perceived uncertainty persists, raising trading volatility and information asymmetry. Heldak et al. (2022) find that less liquid property segments suffer greater valuation uncertainty, validating the importance of fair-value standard updates in improving market reliability.

Collectively, these mechanisms explain how the design of financial-reporting and valuation standards can translate into observable market outcomes. Enhanced disclosure and harmonization mitigate information risk and improve liquidity, while excessive complexity or discretionary flexibility can have the opposite effect. The empirical part of this study tests these relationships using bid-ask spread and VCVT as complementary indicators of information asymmetry and market liquidity.

However, evidence from prior research paints a more nuanced picture. Studies in the banking and real estate sectors offer mixed findings:

- Fair value reporting has been shown to reduce information asymmetry under certain conditions (Muller et al., 2011; Ghosh et al., 2020), particularly when voluntarily applied.
- Conversely, high reliance on Level 3 inputs and internal valuation models may intensify uncertainty (Dignah et al., 2016; Weiss & Shon, 2016), especially where disclosure complexity overwhelms users.
- Excessive or inconsistent application across firms and jurisdictions may paradoxically increase asymmetry (Kothari & Lester, 2011; Vergauwe & Gaeremynck, 2019).

Sectoral and regional disparities further complicate the issue. While IFRS adoption is generally associated with greater transparency in developed markets (Liang & Riedl, 2014), its effects vary significantly across jurisdictions, firm size, and governance contexts (Chatham, 2004). In emerging or transitioning markets, the lack of robust data infrastructure and institutional enforcement can reduce the intended benefits of fair value measurement (Surianti & Yadiati, 2017).

This study addresses a gap in the literature by focusing on how recent updates to accounting standard IFRS 13 and valuation standards IVS, RICS, and IPMS affect information asymmetry and market liquidity in the residential real estate sector, a domain representing over 35% of European real estate (Pekdemir, 2023), yet underexplored in valuation research. Moreover, it contributes to the debate on whether standardized fair value reporting enhances information quality, or whether complexity and subjectivity may instead limit its effectiveness.

We focus on three European countries (UK, Germany, Spain), and empirically examine, whether these standards influence key liquidity and return indicators; how Level 3 inputs and disclosure transparency impact investor perceptions; and to what extent the presence of reputable auditors or valuers moderates market responses.

By integrating literature on fair value reporting, valuation practices, and governance, this research offers a more complete picture of how information asymmetry is shaped not only by standards themselves, but also by their institutional interpretation, implementation, and perceived credibility.

2. Material and methods

2.1. Data

The empirical analysis covers publicly listed residential real-estate companies in the United Kingdom,

Germany, and Spain reporting investment property under IAS 40 Investment Property. These markets were selected for their relevance to the European residential sector:

- UK: highest share of residential assets in total market capitalization, enabling analysis of valuation and accounting standards on market liquidity (Pekdemir, 2023).
- Germany and Spain: high concentration of property firms and distinct regional patterns.

The residential focus reflects long-term structural trends such as population ageing, urbanisation, and rising housing demand, that magnify both the sector's economic role and its exposure to information asymmetry.

From an initial pool of 57 firms, those using local GAAP, lacking a separate investment-property classification, or without accessible annual reports were excluded. The final sample includes 45 companies, providing 225 firm-quarter observations for 2019–

2023.

All figures were converted to EUR using European Central Bank exchange rates on reporting dates. Quarterly frequency standardized reporting intervals; where non-financial variables were annual, values were carried forward unless a change in investment-property valuation policy was disclosed. Data sources:

- Financial and non-financial data: Company annual reports; ORBIS database.
- Market data (share price, trading volume): ORBIS, Bloomberg; supplemented by London and Frankfurt stock-exchange disclosures.
- Standard changes: official publications of IASB, RICS, and IVSC on IFRS 13, IVS, RICS, and IPMS revisions.

2.2. Variable Definitions

The main variables employed in the analysis are summarized in Table 1.

Table 1

Overview of Key Variables Used in the Analysis		
Variable	Description	Source
Bid-ask spread	Difference between the best ask and bid prices	Bloomberg, own calculations
VCVT	Coefficient of variation of trading volume, proxy for liquidity volatility	Orbis, own calculations
Fair value reporting	Dummy variable indicating the reporting method for fair value measurements	Annual reports
Changes in standards	Dummy capturing timing of IFRS 13, IVS, RICS, and IPMS change	Official publications, own processing
Control variables	Firm size (total assets, market capitalization); profitability (ROA, ROCE, ROE); fair-value estimation method (external valuer, valuation technique, input- or model-based fair value)	Orbis, annual reports, own calculations

Source: own study.

To ensure interpretability and comparability of coefficients in Models, continuous variables (e.g., total assets, market capitalization, trading volume) were transformed using the natural logarithm. This mitigates skewness and allows coefficients to be interpreted as elasticities or semi-elasticities, providing directly explainable percentage relationships and improving the robustness of econometric interpretation. A detailed description of all variables, definitions, and formulas is provided in Appendix A, B.

2.3. Calculation of the Main Indicators

Two key indicators were used to evaluate the effects of accounting and valuation standards on information asymmetry, liquidity, and stock performance: the bid-ask spread and the trading volume coefficient of variation (VCVT). Their combined application provides a comprehensive view of market transparency and investor behavior, consistent with prior research.

1) Bid-Ask Spread

The bid-ask spread, one of the most established proxies for information asymmetry, measures the percentage difference between the best bid and ask prices. It reflects both market liquidity and the degree of informational imbalance among investors (Muller et al., 2011; Ball, Jayaraman & Shivakumar, 2012; Fontes, Panaretou & Peasnell, 2018; Liao et al., 2013). A wider spread generally signals higher asymmetry, especially in volatile or uncertain markets. Lower spreads indicate greater transparency and reduced information asymmetry (Ryan, 2008; Laux & Leuz, 2010). The spread for firm i in quarter t was computed as:

$$bid - ask\ spread\ i, t = \frac{1}{D_{i,t}} * \sum_{t=1}^{D_{i,t}} \frac{(Best\ Ask_{i,t} - Best\ Bid_{i,t})}{\frac{(Best\ Ask_{i,t} + Best\ Bid_{i,t})}{2}} * 100 \quad (1)$$

where:

- $Best\ Ask\ i, t$ = best available asking price.

- *Best Bid* i, t = best available bid price.
- $D_{i, t}$ = number of trading days in the quarter.

2) Trading Volume Coefficient of Variation (VCVT)

The VCVT measures volatility in trading activity, capturing fluctuations in liquidity and information flow. Lower VCVT values indicate more stable trading volumes and thus greater market transparency (Lof & Bommel, 2016; Ghosh et al., 2020). It is defined as:

$$VCVT_{i,t} = \frac{\text{Standard Deviation of Daily Trading Volume}_{i,t}}{\text{Mean of Daily Trading Volume}_{i,t}} \quad (2)$$

This indicator complements the bid–ask spread by incorporating behavioral responses to information quality. Its interpretation aligns with evidence from Ball (2006), Ryan (2008), Laux and Leuz (2010), and Gaio and Raposo (2011).

2.4. Models and Methods

Two panel-data models were applied to test the relationship between the dependent variables and the key accounting and valuation standards. The variables IFRS 13, IVS 2020, IVS 2022, and RICS 2022 capture the timing and effect of regulatory updates on information asymmetry and market liquidity. Control variables account for firm- and market-specific characteristics that may influence these relationships. All continuous variables were log-transformed to normalize their distributions and enable interpretable coefficients in terms of proportional changes (elasticities or semi-elasticities).

1) Model 1: Bid–Ask Spread

This model estimates the impact of accounting and valuation standards on the bid–ask spread, representing information asymmetry:

$$\begin{aligned} \text{Spread}_{i,t} = & \beta_0 + \beta_1 \text{Enterprise value}_{i,t} + \\ & \beta_2 \text{MarketCap}_{i,t} + \beta_3 \text{Size}_{i,t} + \beta_4 \text{Return}_{i,t} + \\ & \beta_5 \text{Valuation}_{i,t} + \beta_6 \text{InputFV}_{i,t} + \beta_7 \text{Group}_{i,t} + \\ & \beta_8 \text{FVrep}_{i,t} + \beta_9 \text{IFRS13}_{i,t} + \beta_{10} \text{IVS2020}_{i,t} + \\ & \beta_{11} \text{IVS2022}_{i,t} + \beta_{12} \text{RICS2022}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (3)$$

2) Model 2: VCVT (Volume Coefficient of Variation of Trading)

The second model assesses the same explanatory variables against liquidity volatility, using the VCVT as the dependent variable:

$$\begin{aligned} VCVT_{i,t} = & \beta_0 + \beta_1 \text{Enterprise value}_{i,t} + \\ & \beta_2 \text{MarketCap}_{i,t} + \beta_3 \text{Size}_{i,t} + \beta_4 \text{Return}_{i,t} + \\ & \beta_5 \text{Valuation}_{i,t} + \beta_6 \text{InputFV}_{i,t} + \beta_7 \text{FVrep}_{i,t} + \\ & \beta_8 \text{IFRS13}_{i,t} + \beta_9 \text{IVS2020}_{i,t} + \beta_{10} \text{IVS2022}_{i,t} + \\ & \beta_{11} \text{RICS2022}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (4)$$

2.5. Modeling Approach

Given the panel structure of the data, panel-data econometric techniques were employed. The choice between fixed effects (FE) and random effects (RE) models was determined using the Hausman test at a 5% significance level (performed in Gretl). Given evidence of heteroskedasticity and serial correlation in the residuals (confirmed by Breusch–Pagan and Wooldridge tests), the models were estimated using Generalized Least Squares (GLS). This approach provides efficient and unbiased coefficient estimates under such conditions, as it corrects for non-constant error variance and potential autocorrelation within firms over time.

- For the bid–ask spread, the random effects model was selected.
- For the VCVT, the fixed effects model was deemed appropriate.

2.6. Robustness and Limitations

Model robustness was enhanced by including control variables such as ROA, ROE, and debt ratios, consistent with prior empirical studies. However, several limitations must be acknowledged:

- Data availability: Missing data for certain firms reduced the effective sample size.
- Regional specificities: Cross-country variations may affect comparability. The UK and Germany represent more mature, liquid markets than Spain, where lower liquidity may amplify valuation-related asymmetries.

3. Results

This section presents the main findings from the panel data analysis of listed residential real estate companies in the UK, Germany, and Spain for 2019–2023. The analysis focused on two key indicators, bid–ask spread and VCVT, as proxies for information asymmetry and market liquidity. The results reflect the effects of revisions to accounting standards IFRS 13, and valuation standards IVS, RICS, and IPMS, and their implications for market transparency and investor behavior.

3.1. Bid–Ask Spread

Model 1 identifies IVS 2020, firm size, and EPRA/REIT membership as the main determinants of the bid–ask spread.

The IVS 2020 coefficient is positive and significant ($\beta = 2.98$, $p = 0.0066$), indicating that the regulation update in standard IVS2020 was associated with a

widening of the bid–ask spread. This suggests that increased implementation complexity temporarily heightened market uncertainty, consistent with findings by Kothari and Lester (2011) and Quagli and Avallone (2010), who report that evolving valuation standards can initially increase interpretive risk.

In contrast, firm size exhibits a negative and significant effect on the bid–ask spread ($\beta = -11.56$, $p = 0.0049$), supporting the hypothesis that larger firms benefit from greater market liquidity and lower information asymmetry, in line with findings of Bharath et al. (2009). Similarly, EPRA/REIT membership ($\beta = -25.52$, $p = 0.0397$) reduces the spread, implying that stronger disclosure and governance frameworks enhance transparency, confirming Anglin et al. (2011) and Devos et al. (2018) conclusion.

Table 2

Model 1 – Random Effects			
Variable	Coefficient	Standard Error	p-value
const	50.3778	14.5762	0.0005 ***
size	–11.5575	4.10903	0.0049 ***
IVS2020	2.98058	1.09811	0.0066 ***
DCountry_1	31.9889	11.7221	0.0064 ***
Dgroup_3	–25.5153	12.4020	0.0397 **

Note: *** $p < 0.01$, ** $p < 0.05$

Source: own study.

The UK dummy variable ($\beta = 31.99$, $p = 0.0064$) indicates higher spreads for UK firms compared to Germany and Spain, potentially due to market volatility or post-Brexit uncertainty. Other control variables (e.g., valuation method, Level 3 input detail) were not significant, suggesting limited influence on perceived asymmetry during the study period.

3.2. VCVT Ratio

Model 2 identifies several significant determinants of the volume coefficient of variation of trading (VCVT), which is a proxy for liquidity volatility and information asymmetry. The findings confirm the relevance of both accounting and valuations standards and firm-specific valuation practices.

1) Impact of Standards

Revisions to accounting standard IFRS 13 and valuation standards IVS 2022, RICS 2022, and IPMS 2023 exhibit negative and statistically significant coefficients ($\beta = -0.13$, $p = 0.0035$), indicating that these updates reduced trading-volume volatility. This supports previous evidence (Laux & Leuz, 2010) that enhanced valuation guidance increases transparency and market stability. By contrast, valuation standards IVS 2020 shows no significant effect, likely reflecting its narrow focus on development property, which is less relevant for the sampled firms.

Higher returns are associated with lower VCVT ($\beta = -0.244$, $p = 0.0066$), consistent with greater investor confidence and reduced information asymmetry.

2) Role of Fair Value Inputs and Valuation Methods

Among control variables, reliance on Level 3 inputs (InputFV) significantly increases liquidity volatility ($\beta = 1.13$, $p < 0.0001$), confirming that subjective, model-based estimates increase uncertainty (Liao et al., 2013; Palea, 2014; Weiss & Shon, 2016). Conversely, diversified valuation approaches (modelFV) reduce volatility ($\beta = -3.24$, $p = 0.0003$), suggesting that multiple valuation techniques enhance reliability and market stability.

Table 3

Model 2 – Fixed Effects			
Variable	Coefficient	Std.Error	p-value
const	1.91567	0.380338	<0.0001 ***
Returnabs	0.00556898	0.00223533	0.0129 **
Return	–0.244075	0.0895669	0.0066 ***
specval	–0.413850	0.0980150	<0.0001 ***
inputFV	1.13162	0.280703	<0.0001 ***
modelFV	–3.23569	0.890135	0.0003 ***
size	–0.127219	0.0655949	0.0528 *
IFRS13amnd	–0.130184	0.443966	0.0035 ***
IVS2022	–0.130184	0.443966	0.0035 ***
RICS2022	–0.130184	0.443966	0.0035 ***
IPMS2023	–0.130184	0.443966	0.0035 ***

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: own study.

3) Firm Characteristics

Firm size has a negative, though only marginally

significant, effect on VCVT ($\beta = -0.13$, $p = 0.0528$), again implying that larger firms enjoy greater liquidity and

lower asymmetry.

4. Discussion

This section interprets the empirical results considering existing literature and regulatory implications. The findings confirm that updates to accounting standard IFRS 13 and valuation standards IVS 2022, RICS 2022, and IPMS 2023 significantly enhanced market liquidity and reduced volatility in the residential real estate equity markets of the UK, Germany, and Spain. The only exception is valuation standards IVS 2020, whose implementation led to a temporary widening of bid–ask spreads.

Overall, the results highlight that a balance between disclosure depth and standardization is essential. Focused disclosure under IFRS 13 combined with harmonized IVS and RICS principles reduces market uncertainty, supporting Weiss and Shon (2016) and Vergauwe and Gaeremynck (2019), who note that excessive technical detail may obscure comparability. In line with signaling theory (Spence, 1973), credible valuation rules serve as quality signals, mitigating information asymmetry.

The IVS 2020 anomaly likely reflects transitional implementation costs rather than structural weakness, concerns also raised by Kothari and Lester (2011) and Quagli and Avallone (2010). An effect also observed by McDonough, Panaretou and Shakespeare (2020) in U.S. markets, where the introduction of SFAS 157 increased transparency but temporarily raised volatility during market adjustment.

Firm-level characteristics further reinforce this pattern supported by results Oti et al. (2025). REIT and EPRA members show narrower spreads, reflecting stronger governance and disclosure frameworks (Anglin et al., 2011; Devos et al., 2018), while larger firms exhibit lower VCVT and tighter spreads (Bharath et al., 2009). Results by Oti et al. (2025) further confirm that firm size amplifies responsiveness to regulatory updates. Larger companies also show lower VCVT, narrower bid–ask spreads, reflecting their greater liquidity and investor trust (Bharath et al., 2009).

The use of Level 3 inputs correlates with higher volatility, supporting Liao et al. (2013), Weiss and Shon (2016) and Palea (2014), who link unobservable inputs to managerial discretion and valuation uncertainty. Conversely, multiple valuation methods reduce VCVT, suggesting diversification enhances credibility.

The cross-country comparison aligns with Houqe and Monem (2016), who show that IFRS and fair-value benefits depend on enforcement strength and

institutional experience. Our results mirror this pattern, stronger effects in the UK and Germany, weaker in Spain. Similarly, Andersson and Van Dorsselaer (2021) find that fair-value accounting in Nordic markets amplified cyclical swings, contrasting with our finding that harmonization (IVS 2022, RICS 2022, IPMS 2023) dampened volatility in more integrated settings.

McDonough et al. (2020) note that SFAS 157 implementation in US enhanced transparency but temporarily raised volatility during implementation, analogous to our IVS 2020 effect. Mita et al. (2020) reveal on Asian markets that heterogeneous adoption and limited market depth increase valuation uncertainty and liquidity premium.

Consistent with Laux and Leuz (2010), Liang and Riedl (2014) transparent and harmonized standards generally enhance liquidity and comparability. The contrasting results of Sundgren, Mäki and Somoza (2018) likely reflect sectoral and national differences. Overall, cross-market evidence confirms that harmonization enhances market stability when supported by robust enforcement and informed investors.

4.1. Practical implications

Our findings have several practical implications. To translate these findings into practice, we suggest a concise approach for Level 3 measurements:

- Standardized Level 3 Sensitivity Grid: a one-page table showing the three most influential unobservable inputs, their central estimates, and $\pm 10\%$ / $\pm 20\%$ sensitivities on fair value and P&L/OCI.
- Mandatory Scenario Summary: three valuation scenarios (base, downside, upside) with probability weights and key assumptions.
- Cross-standard alignment: closer coordination between IVS and RICS could further harmonize terminology and hierarchy of inputs, simplifying application across jurisdictions.

Policymakers should consider:

- Introducing stricter transparency requirements for the use of Level 3 inputs.
- Apply proportional disclosure thresholds to prevent overload.
- Encourage methodological diversity to stabilize expectations.
- Align IFRS/IVS/RICS terminology.
- Extend REIT/EPRA transparency principles to non-members via incentives.

4.2. Limitations and Directions for Future Research

This study focuses on three developed European markets and the residential sector, limiting broader generalization. Future research should extend to commercial and mixed-use real estate or compare with U.S. GAAP and Asian IFRS systems. Despite these limits, our evidence confirms that coordinated updates to IFRS and valuation standards play a vital role in shaping information asymmetry, liquidity, and investor confidence.

5. Conclusion

This study offers novel insights into the effects of regulatory updates, specifically IFRS 13, IVS 2022, RICS 2022, and IPMS 2023, on volatility and liquidity in the residential real estate equity markets of the UK, Germany, and Spain. The findings demonstrate that the revisions to accounting standard IFRS 13 and valuation standards IVS 2022, and RICS 2022 significantly contributed to reducing volatility and information asymmetry, thereby enhancing the transparency and credibility of financial reporting. By contrast, the implementation of valuation standard IVS 2020 appears to have increased market uncertainty, likely due to its narrow focus and complexity.

These results underscore the critical role of accounting and valuation standards in capital markets, extending the literature on the relationship between financial reporting quality and information asymmetry. In particular, the findings support signaling theory by illustrating how clear, transparent, and harmonized standards can act as credible signals that reduce investor uncertainty and improve market efficiency.

From a methodological perspective, this study contributes by applying two complementary measures, bid-ask spread and VCVT, to capture different dimensions of information asymmetry. This multidimensional approach enables a more comprehensive synthesis of the interrelated effects of accounting regulation on trading behavior and investor confidence.

The practical implications of the findings are relevant for accounting standard-setters and regulators. Policymakers should consider:

- Mandating the use of multiple valuation methods,
- Strengthening disclosure requirements for Level 3 inputs, and
- Avoiding excessive reporting burdens, which may paradoxically increase uncertainty.

Moreover, firms affiliated with industry organizations such as REITs and EPRA demonstrated lower volatility and greater market liquidity, suggesting

that the wider adoption of these organisations' governance and transparency principles could enhance market credibility more broadly.

Nonetheless, the study is subject to several limitations. The exclusive focus on residential real estate and three major European markets may constrain the generalizability of the findings. Future research should explore:

- The applicability of these conclusions across other real estate sectors (e.g. commercial, retail, industrial),
- The influence of emerging markets with weaker institutional frameworks, and
- The long-term impact of accounting and valuation standard updates across different phases of the business cycle.

Despite these limitations, this study represents an important step toward a deeper understanding of the relationship between accounting regulation, information asymmetry, and capital market performance. It highlights the importance of transparency, harmonization, and institutional design in strengthening market stability—offering valuable contributions to both academic discourse and regulatory practice.

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Appendix A – All used variables

Table A.1

Overview of all used variables in manuscript

Variable	Description	Source
Fair value valuation (FV)	represents the fair value valuation of investment properties at time t	Annual report
Fair value valuation frequency (frqFV)	dummy variable, 1 = annual frequency, 0.5 = semi-annual revaluation frequency, 0.25 = quarterly revaluation frequency	Annual report
Revaluation law (law)	dummy variable, 0 = unpublished, 1 = RICS, 2 = International valuation standard, 3 = combination of RICS + International valuation standard, 4 = other	Annual report
Valuator (valuator)	dummy variable, 0 = not published 1 = internal, 2 = external, 3 = combination of external and internal	Annual report
Specified valuator (specVal)	dummy variable, 0 = not disclosed, 1 = Jones Lang (JLL), 2 = Savillis, 3 = CBRE, 4 = Knight Frank, 5 = combination and other	Annual report
Method of fair value valuation (Valuation)	dummy variable, 0 = do not disclose, 1 = market approach, 2 = cost approach, 3 = income approach, 4 = combination of market and income approach, 5 = other	Annual report
Input in fair value valuation (inputFV)	dummy variable, 0 = not disclosed, 1 = level 1 pyramid, 2 = level pyramid level, 3 = level 3 pyramid level, 4 = combination of level 2 and 3 IFRS 13 pyramid, 5 = other	Annual report
Model of fair value valuation (modelFV)	dummy variable, 0 = not reported, 1 = DCF, 2 = combination of different methods	Annual report
Sensitivity analysis (sensitivity)	dummy variable, 0 = do not disclose, 1 = perform sensitivity analysis on all significant variables, 2 = do not perform, 3 = other cases	Annual report
Auditor	dummy variable, 0 = information not disclosed, 1 = local auditor, 2 = Big 4 auditor (PwC, KPMG, Deloitte, EY)	Annual report
Market capitalisation (MarketCap)	represents the company's market position at time t and is expressed in thousands of EUR. Mega cap (market cap, more than 200 billion); Large cap (market cap, 10-200 billion); Mid cap (market cap, 2-10 billion); Small cap (market cap, 300million-2 billion); Microcap (market cap, less than 300million)	database ORBIS
Volume of trading share (volume):	represents the sum of the volume of the company's shares traded at time t.	database ORBIS
Weighted average cost of capital (WACC)	Amount in %	Database Bloomberg
Company's group (group)	dummy variable, 1 = EPRA companies, 2 = REITs companies, 3 = EPRA companies and REITs at the same time, 4 = ordinary residential listed companies	Own processing
Company size based on market capitalisation (size):	dummy variable, 1 = EPRA companies, 2 = REITs companies, 3 = EPRA companies and REITs at the same time, 4 = ordinary residential listed companies	Own processing

Source: own study.

Appendix B

Table A.2

Overview of changes in international and accounting standards

Standards	Description	Effective day of implementation
IFRS 13	21.10.2021 issued IASBA "Exposure Draft Disclosure Requirements in IFRS Standards-A Pilot Approach". Limit the amount of information published. Now when using level 3 data, valuation methods and inputs must be disclosed (previously this was only applicable for level 2 + level 3).	From 1.1.2022
IVS 2020	The main change was in the development property (IVS 410)	From 31.1.2020
IVS 2022	New definitions, valuations standards	From 31.1.2022
RICS „Red book“	Updates relating to financial reporting, public sector valuations and residential valuations	From 31.1.2022
IPMS: All Buildings (2023)	Harmonisation all information into one standard	From 31.1.2023

Source: own processing based on information from standards IFRS, IVS, RICS, IPMS.