Valuation of European listed real estate companies

Accounting –based Performance Metrics

February 2026

Final Report

EXECUTIVE SUMMARY

This report examines whether accounting-based performance metrics—Earnings Per Share (EPS), Return on Equity (ROE), and Dividend Per Share (DPS)—serve as effective indicators of value for European listed real estate (LRE) companies, either complementing or improving upon the traditionally dominant Net Asset Value (NAV) metric. Using a sample of 102 companies over the period 2005 and 2024, covering major periods of market disruption including the Global Financial Crisis (2008–2009) and the COVID-19 pandemic and subsequent interest-rate shock (2021–2023). The study provides robust empirical evidence that accounting-based metrics contain significant and actionable information for investors.

Key practical findings are as follows:

1. **EPS emerges as the strongest and most consistent performance signal**. It explains both share price levels and price changes, with its informational value becoming even more pronounced during periods of heightened market volatility.

2. **ROE is the most informative indicator of investor returns**. Improvements in ROE signal enhanced capital efficiency and are systematically rewarded by the market, particularly during crisis period.

3. **DPS exhibits the strongest association with share price levels**. Dividend stability and growth remain central to the valuation of income-oriented real estate equities, reflecting the sector's role as offering predictable cash flows.

These findings have important implications for investor decision-making. By showing that EPS, ROE, and DPS are reliably correlated with market performance, the research supports **a multi-metric valuation approach that integrates both balance-sheet-based and earnings-based measures**. The approach is particularly relevant for generalist investors who may find NAV less intuitive than conventional accounting metrics widely used across sectors. Moreover, the results show that the relevance of each individual metrics varies across market cycles, enabling investors to adapt valuation frameworks to crisis vs. stable conditions.

The report provides a rigorous, data-driven foundation for incorporating accounting-based performance metrics into investment strategies within the European real estate sector. **Investors benefit from clearer insight into operational performance, cross-sector comparability, and more predictable links between financial outcomes and market reactions**. In doing so, the report strengthens transparency, enhances investment decision-making, and supports EPRA's broader objectives of improving reporting quality and market efficiency.

The report provides insights that can indirectly benefit investors by improving their understanding of market pricing dynamics. Specifically, it identifies drivers of valuation. Even if NAV is less relevant today, the analysis shows how certain fundamentals influence share prices. This can **help investors understand which factors markets tend to reward or penalize over time**. The paper does not provide real-time trading advice, but it offers a framework for thinking about valuation beyond short-term cash flow models—useful for institutional investors or those interested in behavioural and structural aspects of pricing.

European Public Real Estate Association

Square de Meeus, 23
1000 Brussels, Belgium

T +32 (0) 2739 1010
F +32 (0) 2739 1020

W www.epra.com
E info@epra.com

Content table

AUTHORS

Dr. Qiulin Ke
University College London, UK

Dr. Song Shi
University of Technology Sydney,
Australia

CONTACT

q.ke@ucl.ac.uk

Song.shi@uts.edu.au

European Public Real Estate Association

Square de Meeus, 23
1000 Brussels, Belgium

T +32 (0) 2739 1010
F +32 (0) 2739 1020

W www.epra.com
E info@epra.com

1: Introduction

Valuing a listed real estate company (LRE) requires assessing its financial performance, the quality of its real estate portfolio, and its growth potential. In Europe, the mark-to-market method is adopted to value property portfolios; therefore, the Net Asset Value (NAV) has become a preferred metric for evaluating the performance of listed real estate companies or funds. NAV reflects the current market value of the underlying real estate assets, aligning with the principle of fair value measurement. Given that real estate companies derive most of their value from physical assets, NAV captures the fair value of those assets. Consequently, the Price-to-NAV ratio (P/NAV) has become a standard benchmark in the European market, indicating how investors value a company relative to the appraised value of its underlying assets.

However, the Price-to-NAV ratio is highly sensitive to investor sentiment, which can distort a company's valuation and obscure its fundamentals—especially during market volatility (Letdin et al., 2022). NAV is also backwards looking, based on historical asset valuations, and can quickly become outdated in fast-moving markets. Moreover, fair value assessments under IFRS 13 often rely on subjective inputs and assumptions, particularly in illiquid markets, leading to significant estimation uncertainty (Sundgren et al., 2018; Nordlund et al., 2022). These limitations, highlighted during the global financial crisis (McDonough et al., 2020), underscore the need for alternative performance metrics—such as earnings, cash flow, and dividend —that better reflect the operational realities of LREs. Despite their relevance, there is limited research on whether these accounting metrics meaningfully correlate with stock performance in European LREs.

In this project, we use accounting-based operational measures of earning per share (EPS), return on equity (ROE) and dividend per share (DPS) as alternatives to the premium/discount to NAV. The project aims to examine whether these accounting metrics contain the information and have a high association with the stock value of European LRE and are reflective of the company's underlying operating results. We investigate whether the accounting metrics, such as net earnings per share (EPS), ROE or Dividend per share (DPS), influence the share price, its changes and stock return. We examine whether these influences vary with the market conditions, especially during the periods of market uncertainty.

This project examines 102 European-listed real estate companies included in the FTSE/EPRA Nareit Index. The study spans 2005 to 2024, following the adoption of IFRS in Europe, which standardised fair value reporting for investment properties across Europe. Two major periods of market uncertainty—the Global Financial Crisis (2008–2009) and the COVID-19 lockdown and interest rate hike (2021–2023) are covered. To assess how share prices and returns respond to accounting performance metrics under varying market conditions, difference-in-difference approach (DID) is employed with the two subperiods as treatment groups in the tests.

The project has great practical implications. Accounting performance metrics offer greater stability and comparability than NAV, particularly during periods of market uncertainty, prompting analysts to adopt a multi-metric approach (McDonough et al., 2020). While NAV is tailored to asset-heavy sectors like real estate, metrics such as EPS, ROE and DPS enable cross-sector comparisons and appeal to generalist investors managing diversified portfolios. Their familiarity and transparency help attract broader investment interest to the listed real estate company sector. Additionally, while Net Asset Value (NAV) tells investors what a property company is worth on paper, generalist investors—especially those not specialized in real estate—often care more about how the company performs financially and what kind of returns they can expect. EPS and ROE reveal how well those assets are being monetized and can assist their investment decision-making as they often seek growth, income, or efficiency—not just asset value.

The report is structured as follows. Section 2 is the literature review. Data and methodology are discussed in Section 3, followed by the discussion of test results in Section 4, and Conclusions are drawn in Section 5.

2. Literature Review

Alternative accounting metrics, such as net earnings or return on equity (ROE), are often overlooked when evaluating listed real estate companies in Europe. This is primarily due to the accounting standards in use. Most European firms report asset fair value under the International Financial Reporting Standards (IFRS), which mandate fair value accounting for investment properties. Under this framework, assets are regularly revalued to reflect current market conditions—commonly referred to as mark-to-market valuation—making Net Asset Value (NAV) a particularly relevant and widely used performance metric.

However, NAV is not without its limitations. It relies heavily on fair value estimates of property assets, which are inherently subjective (Klamer et al., 2018). These valuations depend on assumptions regarding market rents, capitalisation rates, and discount rates, all of which can vary significantly across appraisers and over time (Sundgren, et al. 2018; Mäki, 2020). Moreover, property valuations are typically updated semi-annually or annually, which can result in NAV figures becoming outdated in rapidly changing markets. This lag may mislead investors during periods of economic volatility or sharp price movements (Ernst & Young, 2013; PwC, 2011; Nordlund et al., 2022). Given these limitations, there is a clear need to consider alternative accounting metrics. Yet, research examining the informational value of such metrics—particularly their relationship to share prices in real estate companies—remains limited in Europe. Here, we review the existing studies that explore the link between accounting performance metrics and share prices with the focus on listed real estate firms (REITs) in the U.S.

Accounting information and stock returns have received great attention from academies and practitioner. The study on the value relevance is based on capital market-based accounting research and originated from the studies of Beaver (1968)and Ball and Brown (1968). These studies investigated the correlation between accounting information and stock price using data from the US stock exchange and showed a significant relationship between accounting earnings and stock price. In these studies, the accounting earnings is widely used in share valuation to demonstrate the value relevance of earnings as they reflect cash flow forecasts (e.g., Beaver, 1989; Dechow, 1994) and have a higher correlation with share value than does current cash flow (e.g., Watts, 1977; Dechow, 1994).

In countries where differences in capital markets, accounting standards, disclosure practices, and corporate governance exist, it may lead to significant differences in the usefulness of accounting earnings. Alford et al. (1993) studied the information content of annual accounting earnings across 19 European countries and found that the annual earnings reported are an important element of the valuation process, broadly, though the level of significance varies by country.

The implementation of the International Financial Reporting Standards (IFRS) has probably been one of the most important events in European accounting history. Under this serious undertaking, all member countries of the European Union (EU) simultaneously adopted a single accounting framework from January 2005. The studies of the impact of the post-IFRS on the earnings' information value are inconclusive. Iatridis (2010) studied the firms in the UK and concluded that under IFRS regimes, value relevance of earnings per share was not significantly higher , which was consistent with the findings of Niskanen, et al. (2000), Jarva and Lantto (2011) in Finland and Morais and Curto (2008) in Portugal. On the contrary, Kousenidis et al. (2010) found that earnings' incremental information content increased

**European Public
Real Estate
Association**

Square de Meeus, 23
1000 Brussels, Belgium

T +32 (0) 2739 1010
F +32 (0) 2739 1020

W www.epra.com
E info@epra.com

for the post-IFRS period in Greece. Devalle (2012), who concluded that after IFRS adoption in Germany, the UK, and France, the value relevance of earnings per share increased.

Most of the studies on this topic focus on REITs in the U.S. For example, Vincent (1999) investigated the information contents of cash flow from operation (CFO) and earnings per share (EPS) and found that both are incrementally informative, but EPS provides greater relative information content. Building on this, Graham and Knight (2000) analysed the information content of net income (NI) and funds from operations (FFO) using a sample of 199 U.S. REITs. Three models are used: price model, price difference model and stock return model. They found that both NI and FFO were significantly correlated with stock prices, reinforcing the relevance of these metrics in assessing firm value in the real estate sector. The findings are further confirmed by Feng et al (2022). The study of UK-listed real estate companies by Mostafa (2014) provided similar evidence

Return on equity (ROE) is widely used in the corporate finance-oriented real estate literature to proxy for firm performance and value (Niskanen et al. 2011; Bauer, et al 2010). For example, Hartzell, et al. (2005) incorporate an adjusted ROA and an adjusted ROE as dependent variables in their study of REIT IPOs. Bond and Xue (2017) found that investment and profitability have substantial predictive power for U.S REIT returns. They measured investment with the metric of investment-to-assets (ROA) and profitability as return on equity (ROE). Beracha et al. (2019) found that stock return of REITs is partially explained by operational efficiency measured as ROE.

The relationship between dividend and stock price is grounded in Gordon's (1962) dividend discount model. The original Gordon model, $P_t = D_{t+1} / (R - g)$, relates the asset price measured at time t, P_t, to the discounted value of all future dividends, $\{D_{t+1 \to \infty}\}$, under the assumptions of a constant discount rate (expected return), R, and a constant dividend growth rate, g. This model underpins the widely held belief that changes in expected returns primarily drive variations in dividend yields and can serve as predictors of aggregate stock returns (Fama & French, 1988; Cochrane, 2011; Kallberg et al., 2003).

Empirical studies have supported this theoretical foundation. For instance, Chiang (2015) found a positive predictive relationship between dividend yields and aggregate U.S. REIT returns over the period 1993–2011. Dividend yield is calculated as the dividend value per share. However, dividend yield is calculated in different ways. For example, Kallberg et al. (2003) examined the link between dividend payout ratios—defined as the percentage of funds from operations distributed—and REIT returns, which included both capital gains and cash distributions. Kang et al. (2019) found that there is a significant positive relation between dividend yields and stock returns for all firms listed on the NYSE, AMEX and NASDAQ stock exchanges. Their findings suggest that current dividend payouts can signal a firm's future prospects. However, the strength of this relationship was found to be relatively muted, indicating that while dividend metrics carry informational value, their predictive power may be limited under certain market conditions.

3. Methodology and Data

3.1. METHODOLOGY

To examine the impact of accounting performance on the stock price of LRE, we apply three models proposed by Graham and Knight (2000) to examine the impact of accounting information on stock performance. We expanded the models by incorporating more performance metrics of ROE and DPS as in other similar research (e.g. Kallberg et al. 2003; Kang, et al. 2019). They are:

Price model: $\quad P_{it-n} = \alpha + \beta X_{it} + \varepsilon_t$ $\qquad$ (1)

European Public Real Estate Association

Square de Meeus, 23
1000 Brussels, Belgium

T +32 (0) 2739 1010
F +32 (0) 2739 1020

W www.epra.com
E info@epra.com

Differenced price: $\Delta P_{it} = \alpha + \beta \Delta X_{it} + \varepsilon_t$ (2)

Return model: $P_{it-n} / P_{tn-1} = \alpha + \beta \Delta X_{it} + \varepsilon_t$ (3)

Where

P_{it} = the price of a firm i share price at time t;

X_{it} = A accounting performance measure of a firm i at time t;

ε_t = A random disturbance term at time t;

α = intercept term;

β = coefficient measuring the contribution of the performance metrics in explaining the stock price or stock return.

3.2. DATA

Accounting performance is measured by three key indicators: earnings per share (EPS), return on equity (ROE), and dividend per share (DPS). To evaluate their individual contributions to firm valuation, each dependent variable—share price, change of share price and share return—is regressed on EPS, ROE, and DPS separately. This approach enables a clear identification of the explanatory power of each metric.

The study period covers the Great Financial Crisis (2008-2009) and COVID 19 lockdown (March 2020-March 2021) and the interest rate rise (2022). Therefore, two sub-periods are defined to test if the impact is sensitive to market conditions. The first one is 2008 and 2009 for the financial crisis period. COVID 19 lockdown in many European countries was March 2020 to March 2021. In July 2022, the European Central Bank (ECB) started to raise interest rates to combat rising inflation. The impact of these events on firm performance may not be immediate. So, the second subperiod is defined as 2021-2023. To investigate whether these relationships differ under market uncertainty, a difference-in-differences (DID) methodology is employed. Two distinct subperiods are defined as treatment groups: the Global Financial Crisis (2008–2009) and the COVID-19 pandemic, including the interest rate rise (2021–2023). This design allows for the comparison of performance metric effects across stable and volatile market conditions, providing insights into how investor responses to accounting information may shift during periods of economic disruption.

Earnings per share (EPS) is defined as net income divided by the number of outstanding ordinary shares at the end of the fiscal year. It reflects a company's profitability on a per-share basis and is widely used by investors to assess earnings performance.

Return on equity (ROE) is calculated as net income divided by shareholders' equity. It measures a company's efficiency in generating profits from shareholders' investments and serves as an indicator of financial performance and managerial effectiveness.

Dividend per share is defined as the annual dividend payout per share at financial year-end. It is commonly used to evaluate the income-generating potential of a company, particularly by income-focused investors.

Earnings per share (EPS) and return on equity (ROE) are closely related, as both reflect aspects of a company's profitability. EPS measures profit on a per-share basis, while ROE assesses how efficiently a company generates earnings from shareholders' equity. Despite their conceptual overlap, the two metrics capture distinct dimensions of performance and can diverge due to structural factors.

**European Public
Real Estate
Association**

Square de Meeus, 23
1000 Brussels, Belgium

T +32 (0) 2739 1010
F +32 (0) 2739 1020

W www.epra.com
E info@epra.com

EPS and DPS can also be affected by changes in the number of outstanding shares, such as through share buybacks or new issuances, which may inflate or dilute the metric independently of underlying profitability. ROE, on the other hand, can be artificially elevated by high leverage; increasing debt reduces the equity base, potentially boosting ROE even when operational efficiency remains unchanged.

These differences suggest that EPS, ROE and DPS, while correlated, retain sufficient independent variation to justify their separate inclusion in regression models. This allows for a more nuanced analysis of their respective contributions to share price and return dynamics.

The sample consists of 102 European listed real estate companies and REITs included in FTSE EPRA Nareit Developed Europe Index by September 2024 covering the period from 2005 to 2024. FTSE EPRA Nareit Developed Europe Index tracks the performance of listed real estate companies in developed Europe[1]. Based on these stringent criteria, the sample of 102 listed real estate companies included in the index is considered representative of the European developed real estate market. The sample includes companies that remained in the index until September 2024.

These real estate companies were operating in different property sectors such as industrial/logistics, office, retail, residential, healthcare and diversified. The performance may vary by sectors; therefore, we also control for sector effects. Data was collected at an annual frequency from S&P Capital IQ, with all financial values denominated in euros. In cases where variables contained missing values, supplementary data was sourced from alternative platforms such as LSEG Workspace and Bloomberg to ensure completeness.

The number of firms included in the sample varies over time, starting with 50 in 2005 and increasing to 102 by 2024. Due to the requirements of the differenced-price model, which necessitates an additional year of data for each firm, one observation per company is excluded. This adjustment results in a total of 1,525 annual observations across the full study period.
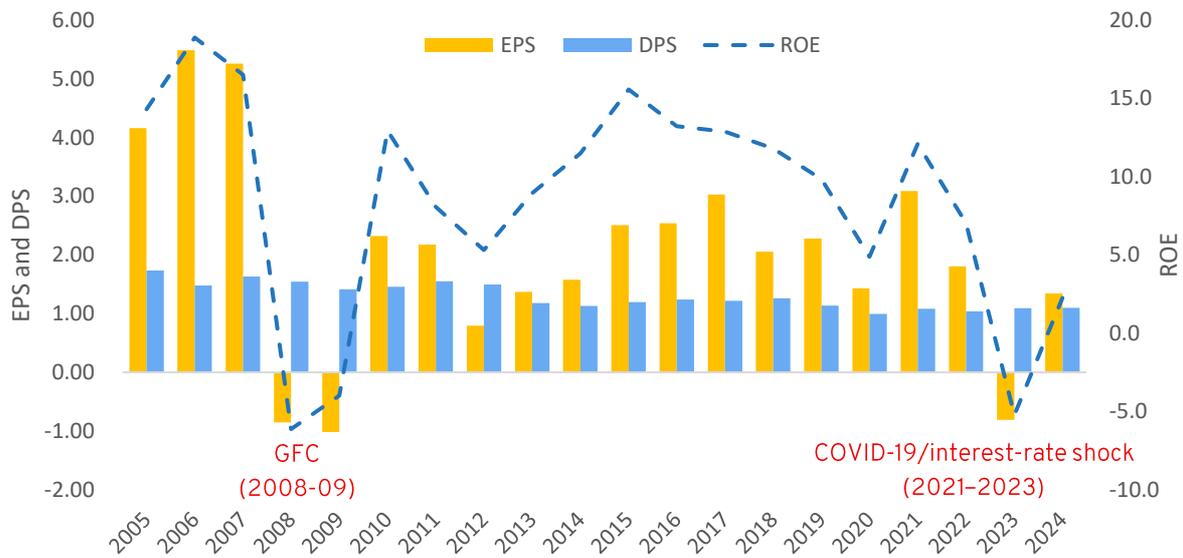
Share price data are based on monthly observations and are lagged by three months to account for the typical reporting lag, under the assumption that annual financial results are published within three to four months following the end of the relevant accounting period. To mitigate the influence of outliers, all variables are winsorized at the 1st and 99th percentiles. Additional information on the listed property companies, including their country of origin, is provided in Table A1 in Appendix.

Figure 1 shows that ROE shows strong performance from 2005 to 2007, a sharp decline during the 2008–2009 financial crisis, recovery through the 2010s, and another dip in 2023. EPS follows a similar pattern to ROE, with negative values during the crisis years (2008-2009) and a peak in 2021, followed by a drop in 2023. DPS remains relatively stable over the years, with a slight downward trend post-2015, indicating cautious dividend policies during volatile periods. The descriptive statistics are reported in Appendix as Table A2.

---

[1] FTSE EPRA Nareit Global Real Estate Index Series- Ground Rules (December 2025). Companies must satisfy several requirements to be included in the FTSE EPRA Nareit Developed Europe Index. They are that the company must be listed on a recognized stock exchange in a country classified as a Developed Market within Europe. At least 75% of the company's total annual EBITDA (Earnings Before Interest, Tax, Depreciation, and Amortisation) must originate from eligible real estate activities. Financial Reporting: The company must publish a publicly available, audited annual report in English. A minimum investable market capitalization is required to ensure that the company is sufficiently large to represent the market. Securities must meet minimum liquidity thresholds to guarantee investability and tradability.

European Public Real Estate Association

Square de Meeus, 23
1000 Brussels, Belgium

T +32 (0) 2739 1010
F +32 (0) 2739 1020

W www.epra.com
E info@epra.com

Figure 1 mean EPS, ROE, DPS over the period of 2005-2024.

4. Test Results

To understand the relationships between the study variable, a correlation test was run first, and the results are reported in Table 1.

Table 1. The correlations of the study variables

	EPS	ROE	DPS	Share Price	Change of price	Share return
EPS	1.00	0.40	0.50	0.57	0.21	0.10
ROE	0.40	1.00	-0.02	0.04	0.21	0.41
DPS	0.50	-0.02	1.00	0.65	0.01	-0.04
Share Price	0.57	0.04	0.65	1.00	0.13	0.03
Differenced price	0.21	0.21	0.01	0.13	1.00	0.43
Share return	0.10	0.41	-0.04	0.03	0.43	1.00

The correlation coefficient of Earnings Per Share (EPS) with Return on Equity (ROE) is 0.40, while its correlation with Dividends Per Share (DPS) is 0.50. This indicates that firms with higher EPS tend to also have higher ROE and DPS. The correlation between EPS and share price is 0.57, suggesting that EPS has significant information content in share price. The correlation between ROE and share return stands at 0.41, implying that ROE contributes to investors' returns.

There is a strong positive correlation between DPS and share price, with a value of 0.65, indicating that dividends have the greatest influence on share price. However, the correlations between DPS and both the differenced share price and share return are low.

Overall, the share price is most impacted by DPS and EPS, which supports valuation models such as the Dividend Discount Model (DDM) and earnings-based approaches. Meanwhile, ROE appears to be more relevant to stock returns, suggesting it may indicate long-term performance rather than immediate market valuation. Additionally, the moderate correlation between DPS and EPS may reflect dividend policies that are linked to profitability.

To identify causal or predictive relationships by estimating how changes in one variable affect another, regression tests were run and the results are presented Table 2-4.

Table 2 presents the results of the Price Model, where the dependent variable is the share price lagged by three months to account for the typical reporting delay of annual financial results. Two sub-periods are included as treatment group. The sector effects are also controlled which include Industrial/logistics, office, retail, residential (including student housing and social housing) and diversified and healthcare sector which servers as reference in the tests. Column 1 presents the EPS specification. Both EPS and its interaction terms with the COVID-19 and interest rate rise period (2021–2022) are statistically significant predictors of lagged share price (Price at t−3), with positive coefficients. In contrast, EPS during the Global Financial Crisis (2008–2009) is not significant; suggesting that net earnings had a limited influence on stock prices during that period of heightened uncertainty. Notably, the coefficient and t value for EPS (2021–2023) are the highest (4.75; 13.84), indicating that earnings reported during COVID-19, especially the interest rate rise period, carried greater informational value for stock pricing than historical EPS figures. These findings are consistent with prior studies on listed real estate companies/REITs (e.g. Graham and Knight, 2000), indicating the earning information is useful and relevant as a key determinant for the stock price. Earnings are value relevant as they reflect cash flow, especially for real estate companies, earnings reflect rental income, property management revenues, and other operational profits, which ultimately determine distributable cash flows to shareholders.

Column 2 reports the ROE specification. The coefficients of ROE are positive and statistically significant only during the period of 2021-2023. Column 3 presents the dividend per share (DPS) specification. The coefficients of DPS and its interactions with both subperiods are positive and statistically significant. DPS's coefficient is 10.55 and its t value is 31.04, higher than the coefficients of two subgroups, indicating an extremely strong and significant impact. The findings are consistent with the relevance of dividend theory, which states that dividend payout influences the market value of stock (Gordon, 1963; Kallberg, et al. 2003). Real estate stocks attract investors seeking stable income streams rather than speculative capital gains. Higher and consistent dividends increase demand for the stock, which drives up market value.

Regarding Model Fit, the Adjusted R^2 in DPS specification in Column 3 is 0.46, the highest among the three models, followed by EPS model with Adjusted R^2 of 0.35 and ROE of 0.04, indicating that DPS has the highest explanatory power among all models and has the highest information content in share prices as evidenced in correlation test results in Table 1. This is consistent with the Dividend Discount Model and existing literature (Fama & French, 1988; Cochrane, 2011; Kallberg et al., 2003; Chiang,2015).

Next, we examine the sector's impact across three different specifications. Across all models, the Industrial sector has no statistically significant impact (t-stats < 2). The coefficients are small and inconsistent in sign. The Office sector shows marginal significance in Columns 2 and 3 at 10%. It has a positive impact, suggesting that Office-related firms may perform slightly better in terms of ROE and DPS. Retail has a strong positive impact in Columns 1 and 2 (EPS and ROE), but not significant in Column 3 (DPS). This suggests that Retail firms may have higher earnings and returns, but not necessarily higher dividends. The residential sector shows no significant impact in any model. The coefficients are small and statistically insignificant. Diversified firms show a strong positive impact in EPS and ROE models, but not on DPS. This suggests that diversified firms may be more profitable and efficient, but not necessarily more generous in dividends.

In sum, the findings suggest that DPS is the most relevant to share price, followed by EPS and ROE. The significant impact of DPS on share price can be supported with dividend discount model, that is stock

**European Public
Real Estate
Association**

Square de Meeus, 23
1000 Brussels, Belgium

T +32 (0) 2739 1010
F +32 (0) 2739 1020

W www.epra.com
E info@epra.com

price is the present value of expected future dividends.   An increase in DPS signals management's confidence in future earnings and cash flow stability. Investors interpret this as positive news, often bidding up the share price (Priya and Mohanasundari, 2016).

The variance in the sector exists. We also compute the variance inflation factors (VIFs) of the variables to ease the multicollinearity concern further. VIFs of these variables are all below 2, suggesting that there is little concern of multicollinearity.

Table 2: Regression Test Results of Price Model

	Column 1		Column 2		Column 3	
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Const.	12.12	4.39***	17.31	5.09***	9.46	3.77***
EPS	4.30	25.34***				
EPS (2008-09)	-0.30	-0.5				
EPS (2021-23)	4.75	13.84***				
ROE			0.08	0.86		
ROE (2008-09)			0.25	1.42		
ROE (2021-23)			0.47	3.09***		
DPS					10.55	31.04***
DPS (2008-09)					6.55	8.27***
DPS (2021-23)					17.63	22.34***
Industrial	-2.94	-0.95	-1.35	-0.35	1.11	0.39
Office	4.56	1.48	6.97	1.86*	4.71	1.7*
Retail	9.41	2.71***	10.47	2.47**	2.21	0.70
Residential	-1.42	-0.43	-1.54	-0.38	0.95	0.31
Diversified	10.26	3.36***	15.95	4.29***	1.23	0.44
Adjusted R^2	0.35		0.04		0.47	
F-stat	111.41		9.08		179.39	

Note. Price Model: $P_{it-n} = \alpha + \beta X_{it} + \varepsilon_t$ n is three-month lag.
*** Significant at level 1%, 5% and 10% levels.

Table 3 displays the results of the differenced price model, where the dependent variable is the difference △ in share prices, lagged by three months. All models include the interaction terms of two subperiods: 2008-2009 and 2021-2023. Column 1 focuses on the EPS specification. The coefficients of △EPS and its two subperiods (2008–09 and 2021–23) are positive and statistically significant. The coefficients and t-value of △EPS (2008-09) and △EPS (2021-23) are higher, as shown in Column 1, reinforcing the importance of the change of earnings performance even during periods of market stress. Column 2 presents the △ROE specification. All three △ROE-related variables—△ROE, △ROE (2008–09) and △ROE (2021-23) are positive and statistically significant. Again, the coefficients and t-value during the financial crisis period (2008-09) and the latest COVID-19 and interest rate rise period (2021-23) are higher, as shown in Column 2. ROE measures the efficiency of a firm and reflects the firm's ability to convert equity capital into net income. A higher ROE signals efficient use of resources, which investors interpret as strong operational performance. Empirical studies suggest that suggest that changes in efficiency are reflected in changes in stock prices (Beccalli, et al. 2006; Emrouznejad and Yang, 2018. The findings are consistent with these empirical studies. In valuation terms, firms with consistently high ROE are perceived as capable of sustaining growth without excessive external financing, which supports higher stock prices.

Column 3 reports the test results of △ DPS. The coefficient signs are mixed; it is negative and significant marginally at 10% during the 2008-2009 period, but the coefficient during 2021-2023 becomes positive and statistically significant. Generally, we observe a muted market reaction to a change in dividend payout during the normal period. As Figure 1 above shows that the dividend per share is smoothing most of the time. However, it decreased during 2008-2009 and increased during 2021-2023. The significance during these two periods indicates that the share price will rise when a dividend increases and falls when a dividend decreases, consistent with the studies such as (Lintner, 1956; Hayunga and Stephens, 2009). The sector variables are not statistically significant in any model and have mixed signs.

Table 3. Regression results of the differenced price model

	Column 1		Column 2		Column 3	
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Const.	0.31	0.31	-0.11	-0.1	-0.51	-0.49
ΔEPS	0.31	3.91***				
ΔEPS(2008-09)	1.17	10.25***				
ΔEPS(2021-23)	1.28	9.93***				
ΔROE			0.06	2.15**		
ΔROE(2008-09)			0.23	5.33***		
ΔROE(2021-23)			0.19	4.82***		
ΔDPS					0.45	1.05
ΔDPS(2008-09)					-1.76	-1.66*
ΔDPS (2021-23)					14.61	11.41***
Industrial	0.71	0.64	1.08	0.92	0.95	0.83
Office	-1.23	-1.11	-1.03	-0.89	-0.86	-0.76
Retail	-0.47	-0.37	-0.14	-0.11	-0.46	-0.36
Residential	0.06	0.05	0.33	0.26	0.67	0.54
Diversified	0.50	0.45	0.79	0.68	0.82	0.72
Adjusted R^2	0.13		0.04		0.08	
F-stat.	28.25		7.80		17.58	

Note: Differenced price: $\Delta P_{it-n} = \alpha + \beta \Delta X_{it} + \varepsilon_t$ n is three-month lag.
*** Significant at level 1%, 5% and 10% levels.

Comparing Adjusted R^2 across the three models, Adjusted R^2 in the ΔEPS-focus model is 0.13 higher than the other two models (0.04 for ΔROE model and 0.08 for ΔDPS model), indicating the changes in EPS have the strongest and most consistent explanatory power in the change of share prices, followed by △ROE. The influence of ΔDPS on stock return is time varying, with a dramatic positive effect post-2021, possibly reflecting investor preference for dividends in uncertain times. In summary, the regression results suggest that sector affiliation does not significantly influence changes in firm share performance, at least not in the short-term financial metrics analysed. Instead, firm-level financial changes, especially in EPS and DPS during 2021–2023, are the primary drivers of share price movements.

Table 4 presents the regression results for the stock return model, where the dependent variable is the three-month lagged stock return. Column 1 presents the △EPS specification. The results show that changes in △EPS and its interaction terms all have significant and positive effects on the stock returns,

implying that investors respond positively to earnings growth, particularly during periods of economic uncertainty (2008-09) represented by its higher values of the coefficient (0.02) and t-stat (6.35). The test results suggests that EPS is one of key drivers of market sentiment, offering strong informational value during periods of volatility.

Table 4: Regression Test Results of Total Return Model

| | Column 1 | | Column 2 | | Column 3 | |
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
(Constant)	0.03	0.86	0.02	0.79	0.02	0.61
ΔEPS	0.01	4.58***				
ΔEPS(2008-09)	0.02	6.35***				
ΔEPS(2021-23)	0.02	4.81***				
ΔROE			0.01	8.75***		
ΔROE(2008-09)			0.01	10.41***		
ΔROE(2021-23)			0.01	10.96***		
ΔDPS					0.02	1.49
ΔDPS(2008-09)					0.03	0.86
ΔDPS (2021-23)					0.02	4.72***
Industrial	0.07	2.24**	0.09	2.81***	0.08	2.34**
Office	0.02	0.52	0.03	0.94	0.02	0.63
Retail	-0.03	-0.82	-0.03	-0.74	-0.03	-0.71
Residential	0.04	0.98	0.05	1.43	0.05	1.21
Diversified	0.03	0.78	0.03	1.12	0.03	0.93
Adjusted R2	0.06		0.17		0.02	
F-stat.	12.35		40.316		4.83	

Note: Stock Return model: $P_{it-n}/P_{tn-1} = \alpha + \beta \Delta X_{it} + \varepsilon_t$
*** Significant at level 1%, 5% and 10% levels.

Column 2 reports the ΔROE specification. All three ΔROE-related variables—ΔROE, ΔROE (2008–2009) and ΔROE (2021–2023)—are statistically significant and positively correlated with stock returns. Among them, ΔROE (2021–2023) exhibits the strongest effect, represented by its t value (10.96), followed by ΔROE (2008–2009) and ΔROE, as indicated by their respective t values (10.41 and 8.75). Column 3 presents the ΔDPS specification. All three DPS-related variables are positive but statistically significant only in ΔDPS (2021-2023). These findings are consistent with the existing literature (e.g. Cheng and Roulac, 2007; Beracha et al. 2019)

Comparing sector variables across the three models, firms in the Industrial/logistic sector consistently show positive and significant effects on stock returns. This suggests that investors may perceive firms specializing logistic properties as more resilient or profitable, especially during periods of financial change. Office sector firms show no meaningful impact on stock returns. The coefficients are small and t-stats are well below the significance threshold. Retail firms show a slight negative association with stock returns, but the effect is not statistically significant. The residential sector shows a weak positive association, but not strong enough to be conclusive. Diversified firms show no significant impact on stock returns. Regarding Model Fit, the Adjusted R^2 in the ΔROE-focus model in Column 2 is 0.17 higher than the others: ΔEPS (0.06) and ΔDPS (0.02). Overall, stock returns are primarily driven by changes in firm-level financial performance, especially ΔROE and EPS, during market uncertainty periods.

European Public
Real Estate
Association

Square de Meeus, 23
1000 Brussels, Belgium

T +32 (0) 2739 1010
F +32 (0) 2739 1020

W www.epra.com
E info@epra.com

5.Conclusion

In Europe, under IFRS 13, assets are value investment properties using a fair value, mark-to-market approach, As a result, the price to Net Asset Value (NAV) has become the dominant metric for assessing performance of Listed Real Estate (LRE) companies.

While NAV remains a key valuation benchmark, its heavy reliance on appraisal-based estimates has attracted increasing criticism, particularly following periods of market stress such as the Global Financial Crisis. NAV is subject to estimation uncertainty, managerial discretion, and reporting lags, and therefore may not fully capture the operational performance of LRE companies, which increasingly function as income-generating platforms for investors.

Alternative accounting-based metrics such as earnings, return on equity, and dividend could offer additional insights into the business performance of real estate companies. Despite their potential relevance, there is limited research examining whether these accounting metrics provide meaningful information content that is reflected in the stock performance of European LREs. This study addresses that gap by critically evaluating the role of accounting-based performance metrics—Earnings Per Share (EPS), Return on Equity (ROE), and Dividend Per Share (DPS)—in valuing European Listed Real Estate (LRE) companies.

Using a panel of 102 European-listed real estate companies from 2005 to 2024, the analysis spans two major periods of market uncertainty: the Global Financial Crisis (2008–2009) and the COVID-19 pandemic and interest rate hike (2021–2023). This timeframe allows for an assessment of whether the relationships between accounting metrics and stock performance change over time and under different market conditions.

The findings reveal that EPS is the most consistent and robust predictor of both share price levels and share price changes, particularly during periods of market uncertainty. ROE demonstrates strong explanatory power for stock returns, indicating that investors reward improvements in profitability and capital efficiency, especially during crisis periods. DPS has the highest explanatory power for share price levels, consistent with dividend-based valuation models, though its impact on stock returns is more time-varying and sensitive to market conditions.

Sectoral analysis further reveals that industrial /logistic sector companies consistently outperform others in terms of stock returns, while sector effects are generally limited for other property types (office, retail, residential, diversified).

Overall, the results indicate that accounting-based metrics provide valuable insights into firm performance and investor behaviour that are not fully captured by NAV alone, These metrics complement NAV by capturing operational realities, enhancing transparency and improving comparability across firms and sectors—benefits that are particularly pronounced during volatile market periods.

The confirmation of accounting-based performance indicators as effective evaluative tools has important implications for both industry practitioners and professional bodies such as EPRA. For practitioners, the results underscore the importance of integrating EPS, ROE, and dividend yield measures into strategic decision-making processes, including capital allocation, portfolio optimization, and investor communication. These measures provide transparent and comparable benchmarks that facilitate performance monitoring and enhance credibility in capital markets, particularly in an environment where investors demand clarity and accountability.

**European Public
Real Estate
Association**

Square de Meeus, 23
1000 Brussels, Belgium

T +32 (0) 2739 1010
F +32 (0) 2739 1020

W www.epra.com
E info@epra.com

For EPRA, the findings reinforce the value of its ongoing efforts to improve performance reporting standards within the sector. While EPRA specific measures such as EPRA Earnings and Net Asset Value address limitations of traditional accounting metrics, the evidence suggests that conventional accounting indicators remain indispensable for cross-sector comparability and investor confidence. Greater alignment between EPRA-specific measures and widely used accounting-based metrics may ensure comprehensive and consistent disclosure practices, therefore it would not only strengthen the analytical toolkit available to stakeholders but also promote greater transparency and market efficiency within the European listed real estate sector.

References

Alford, A., Jones, J., Leftwich, R. and Zmijewski, M., 1993. The relative informativeness of accounting disclosures in different countries. *Journal of Accounting Research*, 31, pp.183-223. https://doi.org/10.2307/2491170

Aubert, F. and Grudnitski, G. (2011), The impact and importance of mandatory adoption of international financial reporting standards in Europe, *Journal of International Financial Management and Accounting*, Vol. 22 No. 1, pp. 1-26.

Ball, R. and Brown, P.R., 2014. Ball and Brown (1968): A retrospective. *The Accounting Review*, 89(1), pp.1-26.

Bauer, R., Eichholtz, P. and Kok, N., (2010). Corporate governance and performance: The REIT effect. *Real* Estate Economics, 38(1), pp.1-29. https://doi.org/10.1111/j.1540-6229.2009.00252.x

Beccalli, E., Casu, B. and Girardone, C., (2006). Efficiency and stock performance in European banking. *Journal of Business Finance & Accounting*, 33(1-2), pp.245-262.

Beaver, W.H., (1968). The information content of annual earnings announcements. *Journal of Accounting Research*, Pp.67-92.

Beaver, W., Eger, C., Ryan, S. and Wolfson, M., (1989). Financial reporting, supplemental disclosures, and bank share prices. *Journal of Accounting Research*, 27(2), pp.157-178.

Beracha, E., Feng, Z. and Hardin III, W.G., (2019). REIT operational efficiency: Performance, risk, and return. *The Journal of Real Estate Finance and Economics*, 58(3), pp.408-437. https://doi.org/10.1007/s11146-018-9655-2

Bond, S., Xue, C. The Cross Section of Expected Real Estate Returns: Insights from Investment-Based Asset Pricing. *Journal of Real Estate Finance and Economics*, 54, 403–428 (2017). https://doi.org/10.1007/s11146-016-9573-0

Cheng, P. and Roulac, S.E., (2007). REIT characteristics and predictability. *International Real Estate Review*, 10(2), pp.23-41.

Chiang, K. C. H. (2015). What drives REIT prices? The time-varying informational content of dividend yields. *Journal of Real Estate Research*, 37, 173–190.

Cochrane, J.H., (2011). Presidential address: Discount rates. *The Journal of Finance*, 66(4),1047-1108.

Dechow, P.M., (1994). Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics*, 18(1), pp.3-42. https://doi.org/10.1016/0165-4101(94)90016-7

Devalle, A. (2012). Value relevance of accounting data and financial crisis in Europe: an empirical analysis. *International Journal of Accounting and Financial Reporting*, 2, pp.1-17.DOI: 10.5296/ijafr.v2i2.2527

Emrouznejad, A. and Yang, G.L., (2018). A survey and analysis of the first 40 years of scholarly literature in DEA: 1978–2016. *Socio-Economic Planning Sciences*, 61, pp.4-8.

Ernst and Young (2013), "Applying IFRS in real estate"

Fama, E.F. and French, K.R. (1988). Dividend yields and expected stock returns. *Journal of Financial Economics*, *22*(1), pp.3-25.

Feng, Z., Lin, Z. and Wu, W. (2022). CEO Influence on Funds from Operations (FFO) Adjustment for Real Estate Investment Trusts (REITs). *Journal of Real Estate Finance and Economics*, 65, 524–547. https://doi.org/10.1007/s11146-020-09795-0

Feng, Z., Hardin III, W.G. and Wang, C., 2022. Rewarding a long-term investment strategy: REITs. *Journal of Real Estate Research*, 44(1), pp.56-79. https://doi.org/10.1080/08965803.2021.2001896

Gordon, M. (1962). *The investment, financing and valuation of the corporation*. Homewood, Ill.: Irwin.

Graham, C., and Knight, J. (2000). Cash Flows vs. Earnings in the Valuation of Equity REITs. *Journal of Real Estate Portfolio Management*, 6(1), 17–25. https://doi.org/10.1080/10835547.2000.12089590.

Hartzell, J.C., Kallberg, J.G. and Liu, C.H., (2005). The role of the underlying real asset market in REIT IPOs. *Real Estate Economics*, 33(1), pp.27-50. https://doi.org/10.1111/j.1080-8620.2005.00111.x

Hirshleifer, D., Hsu, P.H. and Li, D., (2013). Innovative efficiency and stock returns. *Journal of Financial Economics*, 107(3), pp.632-654.

Hayunga, D.K. and Stephens, C.P., (2009). Dividend behaviour of US equity REITs. *Journal of Property Research*, 26(2), pp.105-123.

Iatridis, G. (2010). International Financial Reporting Standards and the quality of financial statement information, *International Review of Financial Analysis*, Volume 19, Issue 3, Pages 193-204, https://doi.org/10.1016/j.irfa.2010.02.004.

Jarva, H. and Lantto, A.M., (2012). Information content of IFRS versus domestic accounting standards: evidence from Finland. *The Finnish Journal of Business Economics*, (2), pp.141-177. http://dx.doi.org/10.2139/ssrn.1588087

Kallberg, J.G., Liu, C.H. and Srinivasan, A., (2003). Dividend pricing models and REITs. *Real Estate Economics*, *31*(3), 435-450.

Kang, E., Kim, R. and Oh, S., (2019). Dividend yields, stock returns and reputation. *ACRN Journal of Finance and Risk Perspectives*, 8, p.96-105.

Klamer, P., Bakker, C. and Gruis, V. (2018). Complexity in valuation practice: an inquiry into valuers' perceptions of task complexity in the Dutch real estate market. *Journal of Property Research*, *35 (3),*

Kousenidis, D.V., Ladas, A.C. and Negakis, C.I., (2010). Value relevance of accounting information in the pre-and post-IFRS accounting periods. https://www.um.edu.mt/library/oar//handle/123456789/31990

Lintner, J., (1956). Distribution of incomes of corporations among dividends, retained earnings, and taxes. *The American Economic Review*, 46(2), pp.97-113.

Mäki, J., (2020). The role of investment property appraisal in European real estate companies. *Journal of European Real Estate Research*, 13(1), pp.105-122.

McDonough, R., Panaretou, A. and Shakespeare, C. (2020), Fair value accounting: current practice and perspectives for future research, *Journal of Business Finance and Accounting, 47 (¾), 303-332.*

Mostafa, W. (2014). The relative information content of cash flows and earnings affected by their extremity: UK evidence, *Managerial Finance*, 40 (7), 646-661. https://doi.org/10.1108/MF-06-2013-0128.

Morais, A.I. and Curto, J.D., (2008). Accounting quality and the adoption of IASB standards: Portuguese evidence. *Revista Contabilidade & Finanças*, 19, pp.103-111. https://doi.org/10.1590/S1519-70772008000300009

Nadyayani, D.A.D. and Suarjaya, A.A.G.,(2021). The effect of profitability on stock return. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, 5(1), pp.695-703.

Niskanen, J., Rouhento, J. and Falkenbach, H., (2011). European real estate equities: ownership structure and value of the firm. *Journal of European Real Estate Research*, 4(2), pp.131-144. https://doi.org/10.1108/17539261111157307

Niskanen, J. and Keloharju, M., (2000). Earnings cosmetics in a tax-driven accounting environment: evidence from Finnish public firms. *European Accounting Review,* 9(3), pp.443-452.

Nordlund, B., Lorentzon, J. and Lind, H. (2022), Practice briefing: a note on auditing fair value of investment properties, *Journal of Property Investment and Finance*, 40 (1), 108-115.

Priya, P.V. and Mohanasundari, M., (2016), Dividend policy and its impact on firm value: A review of theories and empirical evidence. *Journal of Management Sciences and Technology*, 3(3), pp.59-69.

PwC (2013), Compare and contrast, worldwide real estate investment trust (REIT).

Sangchan, P., Bhuiyan, M.B.U. and Habib, A. (2022). Value-relevance of reported changes in fair values and measurement-related fair value disclosures: evidence from the Australian real estate industry. *Asian Review of Accounting*, 30 (1), 121-151.

Sundgren, S., Mäki, J. and Somoza-López, A., (2018). Analyst coverage, market liquidity and disclosure quality: a study of fair-value disclosures by European real estate companies under IAS 40 and IFRS 13. *The International Journal of Accounting*, 53(1), 54-75.

Vincent, L. (1999). The information content of funds from operations (FFO) for real estate investment trusts (REITs). *Journal of Accounting and Economics,* 26, 69–104.

Watts, R.L., (1977). Corporate financial statements, a product of the market and political processes. *Australian Journal of Management*, 2(1), pp.53-75.https://doi.org/10.1177/031289627700200104

Appendix

Table A1. List of the companies included in the study

Company	Country	Sector
ABRDN European Logistics Income	UK	Industrial
ABRDN Property Income Trust	UK	Industrial
Aedifica	Belgium	Health care
AEW UK REIT	UK	Diversified
Allreal Hld N	Switzerland	Diversified
Argan	France	Industrial
Aroundtown SA	Germany	Diversified
Ascencio	Belgium	Diversified
Assura	UK	Health care
Atrium Ljungberg AB Series	Sweden	Diversified
Balanced Commercial Property Trust	UK	Diversified
Big Yellow Group	UK	Self Storage
British Land Co	UK	Diversified
Ca Immobilien	Austria	Office
Care Property Invest	Belgium	Health care
Care REIT	UK	Health care
Carmila SA	France	Retail
Castellum	Sweden	Industrial/Office
Catena AB	Sweden	Industrial/Office
Cibus Nordic Real Estate AB	Sweden	Retail
Citycon	Finland	Retail
CLS Holdings	UK	Office
Cofinimmo	Belgium	Diversified
Corem Property Group	Netherland	Diversified
Covivio	France	Diversified
Custodian Property Income REIT	UK	Diversified
Derwent London	UK	Office
Deutsche EuroShop	Germany	Retail
Deutsche Wohnen SE	Germany	Residential
Dios Fastigheter AB	Sweden	Diversified
Empiric Student Property	UK	Student Housing
Entra ASA	Norway	Office
EuroCommercial Ppty	Netherlands	Retail
FABEGE	Sweden	Office
Fastighets AB Balder	Sweden	Office
FastPartner	Sweden	Diversified
Gecina	France	Office
Grainger	UK	Residential
Grand City Properties	Germany	Residential
Great Portland Estates	UK	Diversified
Hamborner REIT AG	Germany	Diversified
Hammerson	UK	Diversified
Helical	UK	Office

HOME INV.BELG-SIFI	Belgium	Residential
Hufvudstaden	Sweden	Office
Icade	France	Diversified
Igd - Immobiliare Grande Distribuzione	Italy	Retail
Inmobiliaria Colonial S.A.	Spain	Office
Intershop	Switzerland	Diversified
Irish Residential Properties REIT	Ireland	Residential
Klepierre	France	Residential
Kojamo	Finland	Residential
Land Securities Group	UK	Diversified
Lar Espana Real Estate SOCIMI SA	Spain	Residential
LEG Immobilien AG	Germany	Life Science
Logistea AB	Sweden	Industrial
LondonMetric Property	UK	Industrial
Mercialys	France	Retail
Merlin Properties Socimi SA	Spain	Diversified
Mobimo	Switzerland	Diversified
Montea C.V.A.	Belgium	Industrial
NewRiver REIT	UK	Retail
NP3 Fastigheter AB	Sweden	Diversified
NSI NV	Netherland	Office
Nyfosa AB	Sweden	Diversified
Pandox AB	Sweden	Hotel
Peach Property Group AG	Switzerland	Residential
Picton Property Income	UK	Diversified
Platzer Fastigheter Holding publ AB	Sweden	Office
Primary Health Prop.	UK	Health care
PRS REIT (The)	UK	Residential
PSP Swiss Property	Switzerland	Diversified
Regional REIT	UK	Office
Retail Estates	Belgium	Retail
Safestore Holdings	UK	Industrial
Sagax AB	Sweden	Industrial
Samhallsbyggnadsbolaget i Norden AB	Sweden	Social housing
Schroder Real Estate Investment Trust	UK	Diversified
Segro	UK	Industrial
Shaftesbury Capital	UK	Diversified
Shurgard Self Storage	Belgium	Self Storage
Sirius Real Estate	UK	Diversified
Supermarket Income REIT	UK	Retail
Swiss Prime Site	Switzerland	Diversified
TAG Immobilien AG	Germany	Residential
Target Healthcare REIT	UK	Health care
Triple Point Social Housing REIT	UK	Social housing
Tritax Big Box REIT	UK	Industrial
Tritax EuroBox GBP	UK	Industrial
Unibail Rodamco Westfield	France	Retail

Unite Group	UK	Residential
Urban Logistics REIT	UK	Industrial
Vastned Retail	Netherland	Retail
VGP N.V.	Belgium	Industrial
Vonovia SE	Germany	Residential
Wallenstam AB	Sweden	Residential
Warehouse REIT	UK	Industrial
Warehouses De Pauw	Belgium	Industrial
Wereldhave	Netherland	Retail
Wihlborgs Fastigheter	Sweden	Diversified
Workspace Group	UK	Office
Xior Student Housing NV	Belgium	Student Housing

Table A2. Descriptive statistics summary of study variables by year

| | EPS | | ROE | | DPS | | Share Price | | Change of price | | Share return | | No |
Year	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	
2005	4.16	7.03	14.31	11.63	1.74	3.26	32.99	45.34					50
2006	5.49	8.28	18.91	9.80	1.48	2.93	45.46	58.31	8.12	12.03	0.33	0.25	55
2007	5.26	8.00	16.53	15.74	1.63	3.41	31.56	40.62	-12.92	35.51	-0.17	0.31	62
2008	-0.86	4.33	-6.13	19.13	1.55	2.84	21.00	29.99	-9.47	13.98	-0.35	0.22	65
2009	-1.02	4.59	-4.00	16.46	1.41	2.61	22.34	33.24	1.34	8.92	0.20	0.58	65
2010	2.32	5.44	12.95	11.17	1.46	2.66	23.39	33.29	1.67	14.69	0.24	0.35	68
2011	2.18	4.21	8.07	5.67	1.55	2.84	20.92	30.96	-2.81	8.75	-0.09	0.20	67
2012	0.79	3.54	5.31	9.79	1.50	2.81	21.75	32.28	1.13	5.35	0.11	0.21	68
2013	1.37	4.54	8.96	10.44	1.18	1.96	20.92	28.81	-0.21	5.22	0.12	0.21	74
2014	1.58	3.63	11.51	9.67	1.13	1.99	22.04	30.61	2.44	4.23	0.20	0.23	80
2015	2.51	4.35	15.59	8.42	1.20	2.26	24.54	33.51	2.99	5.04	0.22	0.21	84
2016	2.54	4.21	13.23	8.14	1.24	2.19	25.87	36.48	1.62	8.07	0.01	0.25	85
2017	3.03	5.38	12.89	8.41	1.22	2.13	25.32	36.55	0.83	6.60	0.15	0.88	92
2018	2.06	3.48	11.81	8.83	1.26	2.27	23.77	35.12	-1.23	5.85	0.00	0.23	101
2019	2.28	4.41	9.85	10.36	1.14	1.75	29.45	41.98	5.68	9.96	0.26	0.32	101
2020	1.43	4.39	4.88	11.45	1.00	1.65	26.92	40.07	-2.52	11.80	-0.08	0.28	101
2021	3.09	5.70	12.12	12.33	1.08	1.75	30.61	44.41	3.85	10.03	0.25	0.38	102
2022	1.81	3.88	7.04	11.23	1.04	1.74	22.02	33.95	-8.58	17.63	-0.22	0.29	102
2023	-0.81	4.16	-5.24	10.61	1.09	1.82	23.22	36.58	1.19	5.99	-0.02	0.25	102
2024	1.35	3.43	2.26	8.64	1.10	1.88	22.09	36.06	-1.36	6.20	-0.06	0.18	101