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Summary Report

Analysing sector performance and company- specific performance for listed real estate

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EXECUTIVE SUMMARY

This research investigates how company-specific attributes including market capitalisation, institutional structure and investment focus impact upon key performance indicators. The study centres on six key listed European real estate markets namely France, Germany, Netherlands, Sweden, Switzerland and the United Kingdom. EPRA data provision afforded exploration of key performance indicators across the six markets for the period 2007-2017. Bloomberg data served to compliment the EPRA data provision affording integration of company level attributes with key market performance indicators. The results presented are based on 113 listed property companies all of whom were constituents of the EPRA indices over the defined time series.

In order to achieve the necessary consistency of interpretation and granularity depicting company-level performance attributes, a series of customised performance indices were constructed. This delineated analysis details a number of pertinent findings:

- In terms of explanatory power, company level attributes collectively account for more variation of risk-adjusted return than sector level attributes over the investigation period. More specifically, return on equity has been one of the most important attributes in explaining the performance of listed real estate. This may have implications for real estate companies aiming to raise capital internally for growth as higher return on equity in general signals reduced cost of capital.
- The analysis also demonstrates that the impact of company specific attributes on performance varies significantly from country to country. This in some respects can be attributed to the contrasting cyclical property market trends pertinent within the six markets across the 10 year time series 2007-2017. This in turn served to showcase the importance of company level attributes in optimising market upcycle opportunities and bolstering resilience in downcycles.
- In terms of structural composition, it is noteworthy that REITs outperformed non-REITs over the investigation period 2007-2017 on a risk-adjusted basis. The increased maturity, improved depth in the market allied with niche market entrants have all been factors in contributing to the out-performance of REITs.
- Finally, the research served to showcase the value adding benefits realised by sector specialist funds across the market cycle. Using Herfindahl Index (H.I) time series constructs the research results suggest that sectoral diversification is better attained by investing across sector-specialist companies rather than seeking diversification at the individual company level.

A more thorough understanding of sector-wide and company-specific attributes impacting listed real estate performance based on robust statistical analysis is valuable to investment professionals in terms of diversifying investment portfolios and mitigating industry/company-specific risks. Second, given that the scope of this research covers six major public real estate markets in Europe, the findings should be of practical use to multinationals specialising in international real estate trading in designing their business plans in general, and formulating cross-country investment strategies in particular. Last but not least, a more refined conceptualisation of corporate level performance drivers should complement existing professional practices in relation to business/company appraisal.

1.0 INTRODUCTION

The diversity and depth of the listed real estate market in Europe has evolved markedly over the course of the last decade. The increased market depth and diversity necessitates a more intricate understanding of the key drivers of performance at market, sectoral and company level. Specifically, this research addresses the following questions:

- (1) How have European listed real estate companies/markets performed in terms of risk-adjusted return?
- (2) What are the key attributes affecting the performance of European listed real estate at (i) Sector and (ii) Company levels?

The research focuses on six major European markets encompassing the period Q1 2007-Q3 2017 inclusive. A series of statistical tests were undertaken using EPRA and Bloomberg data to determine how sectoral focus and company specific attributes impact the performance of listed real estate companies. Ten real estate sectors were identified using conventional EPRA categorisation¹. The company-specific attributes investigated include (a) Market Capitalisation, (b) Loan-to-Value, (c) Dividend Yield, (d) Revenue Growth, (e) Return on Equity, (f) Corporate Structure, (g) Investment Focus and (h) Degree of Business Diversification. A comparison between the performance of REIT and non-REIT companies serves to further contextualise the analysis. A comprehensive methodological framework and supporting technical annex are provided in the main report detailing the data composition process and the series of models deployed in the investigation.

2.0 EMPIRICAL RESULTS AND DISCUSSION

At the aggregate level, over the entirety of the time series Switzerland is the best performing listed real estate market, followed by Germany, the Netherlands and the U.K. ($p < .01$) - a finding evident when examined on both a risk-adjusted and raw return basis. Pertinently, Healthcare is the best performing real estate sector over the investigation period, followed by Industrial ($p < .01$). The results for other sectors are less statistically significant with Industrial and combined Industrial/Office tending to outperform the market average (Exhibit 7 – Main Report). The Retail sector performs poorly in comparison, arguably a consequence of the transience within the sector – the shift to online retailing and wider exogenous shocks from economic uncertainty. When analysed factoring in the reclassification of the sectors, the collective ‘Speciality’ sector outperforms, with Retail continuing to exhibit underperformance with risk-adjusted returns below that of the base sector (Diversified).

Examination of the Company-specific characteristics over the entire sample period exhibits a number of noteworthy findings. Market Capitalisation (Cap) and Investment Focus (I) did not have any statistically significant relationships with the performance variables at any conventional statistical levels. By contrast, the Loan-to-Value parameter (L) appears to have had a dampening effect on both risk-adjusted and raw returns ($p < .01$). One explanation for this is that constituents with larger Market Caps have more concentrated exposures to ‘traditional’ real estate sub-sectors which performed less favourably than many of the niche sub-sectors over the time series Q1 2007-Q3 2017. Further to this, larger constituent companies also exhibit, on average, higher Loan-to-Value ratios so by inference the L variable is deemed to have a negative impact on performance across the time series. It is also notable that Dividend Yield (D)² also serves to marginally depress both risk-adjusted and raw returns. Dividend Yield considered in isolation can nonetheless be misleading as some companies pay out yields too aggressively and fail to reinvest profit to sustain operations through market turbulence.

Conversely, both Return on Equity (ROE) and Growth in Revenue (REV) enhance risk-adjusted return and raw return (albeit risk-adjusted return is not statistically significant for REV). Return on Equity also displays a positive effect ($p < .001$) suggesting that more efficiently invested funds (management) generates higher return. Higher ROE also suggests that a company is able to raise capital for growth

¹A five sector reclassification was also utilised to conform to statistical assumptions (see main report).

²In the body of the main report we examine the performance of both implied and realised dividend yield using models 5-8 as ‘robustness’ tests at the all country aggregate level (2007-2017). The results are consistent with those of Models 1-4 in terms of the magnitudes of the coefficients of the main variables’ coefficients and statistical significance.

more easily (i.e. it is more capable of generating cash internally) and hence it explains the positive impact on the Sharpe ratio. This is in line with theoretical propositions³ in that expected Return on Equity should increase with the amount of debt in a firm's capital structure. Nonetheless, it must be caveated that Return on Equity (asset turnover) is sensitive to inflation and can be bolstered by increasing asset turnover and/or leverage ratios, even if the company is destroying value.

It is also interesting to observe that r.f. has a positive and statistically significant impact on performance across the entirety of the study period (Models 1 – 4). Indeed, the results are not in line with our expectations in that a higher risk-free rate reflects a higher cost of financing, which should consequently subdue performance, both risk-adjusted and nominal. We surmise however, that the ongoing low interest rate environment and subdued bond market performance were contributory factors in this outcome. Further to this, the large quantity of capital chasing the relatively limited amount of real estate assets served to fuel asset price inflation and hence performance within the listed real estate sector affording an attractive margin relative to bonds over the course of the study period. Within these confines it is further pertinent that Return Volatility (V) appears to have a positive impact on raw returns (Models 5-8). This is consistent with financial theories that riskier investments command higher expected return.

2.1 Market cycle (sub-period) regimes on performance

Spline (sub-period) analysis was undertaken to garner further insights on the role of sectoral focus and company specific attributes across different points in the real estate cycle. Models 9 - 12 (Appendix C) examine the period of 2007-2011, whilst Models 13-16 (Appendix D) investigate the period of 2012-2017.

The results exhibit Switzerland to continue to outperform other European countries over both (sub) periods in terms of risk-adjusted return. Surprisingly, in terms of raw return, Switzerland is the worst performing country during the period of 2012-2017 (Appendix D) - parallel with the other noticeable coefficient figures – arguably due to contrasting volatility profiles across the six markets. Sweden and Germany outperform the UK on a risk-adjusted basis over the two sub-periods. However, on a raw return basis, the UK market performs better than the other five markets during the 2012-2017 (market recovery) period. In terms of sector insights, Healthcare remains the best performing RE sector ($p < .01$) across both sub-periods reflecting the considered resilience to market cyclicality.

An interesting picture emerges when comparing the company level variables across the time periods. The negative effects of Loan-to-Value and Dividend Yield on risk adjusted return become more pronounced during 2012-2017 (Model 13 and 14), depicted by the increase in the magnitude of the coefficients. On the other hand, the positive effect of Return on Equity on the risk-adjusted return becomes greater as revealed by the larger magnitude of its coefficient. We also observe that the effect of r.f. on performance during the first sub-period tends to be positive and statistically significant (Models 9-12) but either insignificantly positive or significantly negative during the second sub-period (Models 13 – 16).

2.2 Geographic Performance: United Kingdom versus Continental Europe

The analysis was further dissected to reflect market geography (sub-market regions) and allow for meaningful analysis. This was considered a necessary step given the high weighting of the UK market (in terms of number of observations) and the (statistical) impact upon sectoral performance. The Continental Europe (CE) market was selected at the aggregate level due to low sample size across the various sectors and countries which would not permit meaningful or indeed statistically insightful analysis in terms of robustness.

UK Listed Real Estate Market Performance Drivers

Exploration of the UK market results over the three distinct time periods (Appendices E, F, G) highlights some pertinent insights. Over the entire sample period (2007-2017), the key variables that

³ Modigliani-Miller(1958)

explain performance are Loan-to-Value, Return on Equity, Growth in Revenue and REIT status (Models 17 – 20), indicating these attributes increase returns. Interestingly, Dividend Yield, Growth in Revenue and Investment Focus indicators are not significant and do not enhance risk-adjusted return. Pertinently, when considering raw return, disparate findings emerge. Loan-to-Value is insignificant with all other company specific parameters having statistically significant effects (except Investment Focus and Market Cap). At the sectoral level, Residential, Retail, Industrial and Healthcare all show a significant impact upon risk-adjusted return (Model 17 – Appendix E). The Retail sector has a sizeable negative impact, with Healthcare and to a lesser degree Industrial showing positive influences on return.

For the 2007-2011 period, both Loan-to-Value and Dividend Yield are statistically insignificant. Given this period of extreme market volatility it is noteworthy that Return on Equity and Growth in Revenue were the only statistically significant company specific variables impacting on risk-adjusted return. The 2012-2017 sub-period analysis (Models 25 to 28) shows that Market Capitalisation has become an important predictor ($p < .01$) of performance during the market recovery period. More specifically, it suggests that it depresses risk-adjusted return and raw return ($p < .01$) – perhaps implying that larger market cap companies with concentrated exposures to more traditional real estate sub-sectors continue to lag during the market recovery phase and are underperforming. Indeed, this seemingly infers that small(er) companies (many of whom operate in the more niche real estate sectors) may have an edge over their larger counterparts in terms of capturing or exhibiting resilience to market cyclicity. Similarly, Loan-to-Value has a larger impact on risk-adjusted performance as indicated by the larger magnitude of its coefficient. On the contrary, Return on Equity observes a higher degree of importance in the second half of the sample period, with the coefficient increasing in magnitude on a risk-adjusted basis (Model 21 and Model 25). Moreover, within the 2012-2017 time frame, REITs in the UK display a much better performance for risk-adjusted return than their non-REIT counterparts (Model 25 and Model 26). To contextualise this, it should be noted that many of the non-REITS have large development portfolios and thus exhibit much greater volatility in their cash flows overtime.

In terms of sector performance, Healthcare, Residential and Industrial have been the leading real estate sectors in the UK over the study period. Interestingly, the Office sector has seen an upward and then downward trend over the two sub-periods as its coefficient turns from positive to negative (Model 21 and Model 25). Risk-free rates, on the other hand, tend to be positively and significantly correlated with both risk-adjusted return and raw return over the entire sample period and the two sub-periods.

Continental Europe Listed Real Estate Performance Drivers

In the Continental Europe context, over the whole investigation period (Appendix H; Models 29-32), it is observed that Market Capitalisation increases raw return ($p < .05$), however, no robust statistical relationship is found for the risk-adjusted return. On both a risk-adjusted and raw return basis, Return on Equity remains a value enhancing attribute. The Residential sector is the only real estate sub-sector in the sample that exhibits a statistically significant negative relationship with both performance indicators. This implies that the performance of the sector is below that of the base sector (Diversified) over the sample period. Moreover, Investment Focus (I) is negative inferring that non-rental companies perform better than rental companies in terms of return. When Return Volatility is considered in terms of raw return, the comparison between the two groups are less clear as revealed by an insignificant regression coefficient on I.

For the sub-period analysis (Appendix I), Market Capitalisation is found to have a positive effect on returns performance. However, its effect becomes less clear during the market recovery (Appendix J) and is statistically insignificant. In addition, Dividend Yield exhibits a dampening effect on risk-adjusted return during both sub-periods. Indeed, the effect becomes more pronounced during the second sub-period as indicated by a larger magnitude of regression coefficient (Models 37-38). With regards to the Return on Equity attribute, it is positively correlated with risk-adjusted return during both sub-periods (Models 33–34 and Model 37 – 38), and its effect has become increasingly more important over time as depicted by the amplification in the magnitude of the coefficient. An interesting finding pertains to the structure and status of the listed companies. Non-REIT and non-Rental companies outperformed their REIT and Rental counterparts during the first sub-period (Models 33-36). Interestingly, in the market recovery period, the findings show no statistically significant relationship between the two

variables and the two performance indicators during the second sub-period. It is further revealed that risk-free rates move in tandem with both risk-adjusted return and raw return over the first sub-period as suggested by the positive and statistically significant coefficients on r.f. (Models 33 – 36), nonetheless the corresponding results for the second period are not statistically robust at all conventional levels ($p > 0.1$)

2.3 Sector-level Analysis

Sector level analysis is conducted in order to ascertain how the country and company level parameters impact upon returns performance, as evidenced in Appendices K-O (Models 41-85) which display the regression results across the three defined time periods. Overall, the sector-level analysis exhibits mixed results across both sectors and sub-periods. This is undoubtedly attributable to the different economic fundamentals, business cycles and supply-demand dynamics of the sectors, which respond differently to the ever-changing market climates over the investigation period. The results for the company level variables on the sectors are summarised as follows⁴:

Market Capitalisation (Cap)

Over the entire sample period (Appendix K), Market Capitalisation appears to drive the risk-adjusted return of Industrial/Office, Speciality, non-REIT, non-Rental and Residential (in ascending order of magnitude of influence), whilst seemingly depresses that of REIT and Diversified (in an ascending order of magnitude of influence). When considering the time dimension, a different picture emerges. Over the first sub-period, in ascending order of magnitude of influence, *Cap* has a positive effect on a number of sectors such as non-REIT, Speciality, non-Rental and Residential (Models 59-67). On the other hand, it negatively impacts the performance of Rental, REIT and Retail (in ascending order of magnitude of influence) during the second sub-period (Models 68-76).

Loan-to-Value (L)

Loan-to-Value appears to have an average contractionary effect on the Sharpe ratio over the entire sample period (Models 41-49). The coefficient is negative across a number of real estate sectors including Rental, REIT, Diversified and Retail (in ascending order of magnitude of influence). At the sub-period level, the attribute has a negative effect on Diversified, non-Rental and Residential. It is noteworthy that the magnitude of its effect on the Residential sector is particularly acute as indicated by its high coefficient value (15.96), compared to (-1.13) for the Diversified sector over the same time period. For the 2012-2017 period (Models 68–76), the attribute seemingly drives the performance of Industrial/Office and Speciality despite some sectors such as Rental, Diversified and Residential being beset by it.

Dividend Yield (D)

Dividend Yield has a noticeable detrimental effect on performance across the majority of sectors investigated (Models 41-49), with the coefficient negative and statistically significant across the sectors of non-REIT, REIT, Diversified, Rental, Retail and Residential (in ascending order of magnitude of influence). On closer inspection, its effect is less ‘apparent’ during the market downturn period given that only Residential and Rental display a negative coefficient on Dividend Yield (Models 59 -67). For the market recovery phase (2012-2017), the Dividend Yield is negative and significant for seven out of the nine sectors, namely Diversified, non-REIT, REIT, Rental, Industrial/Office, Retail and Speciality (in ascending order of magnitude of influence) (Models 68-76).

Return on Equity (ROE)

The sign of coefficient on Return on Equity is positive and statistically significant at the conventional statistical levels for most sectors with Residential being the only exception (Models 41-49). The findings imply that the Return on Equity moves, more or less, in tandem with risk-adjusted return over the sample period. By comparing the magnitude of the coefficients across the sectors, the attribute exhibits an ascending order of impact on Industrial/Office, non-Rental, REIT, Speciality, Rental, Diversified, non-REIT and Retail. The sub-period analysis (Models 59–76) further confirms the

⁴ All findings based on the 10% level of statistical significance.

growing importance of the attribute for European real estate. Not only does it show that the sign of coefficient of the attribute is positive and statistically significant for eight out of the nine sectors for 2012-2017 (with Speciality being the exception), it also reveals its magnitude has become greater over the two sub-periods⁵: it is in the range of 0.018 (Retail) to 0.045 (Industrial/Office) for 2007-2011 and 0.037 (Retail) to 0.14 (Residential) for 2012-2017 and all sectors have seen an increase in influence of the attribute. In other words, the results suggest that a rise in Return on Equity (on average) increases the risk-adjusted return of the listed companies in the corresponding sectors to a larger extent after the first sub-period (market downturn).

Growth in Revenue (REV)

When the entire sample period is considered, Growth in Revenue is a driver of risk-adjusted return for the Residential sector, and REIT and Rental status (Models 41 –49). In particular, it affects the Residential sector most markedly with a coefficient value of 0.77, compared to 0.21 and 0.13 for REIT and Rental respectively. However, when the sub-periods are examined, a different outcome arises: None of the nine sectors displays a statistically significant relationship with the attribute for the first sub-period. In other words, Growth in Revenue appears to have no statistically noticeable effect on risk-adjusted return when the market is in a state of extreme volatility (post-GFC). In addition, only the sector of ‘Speciality’ displays a positive and statistically significant coefficient on the attribute for the second sub-period. The discrepancy between the results for different investigation periods seem to suggest REV being a long-term determinant of growth of a company for certain sectors.

REIT

As the results (Models 41 – 49) indicate, REIT status tends to enhance the performance of the majority of real estate sectors including Retail, Speciality, Rental and Residential (in ascending order of magnitude). This confirms the commonly held view that REITs are relatively more regulated and therefore less risky investment vehicles than non-REITs – which in turn explains their superior risk-adjusted return over a longer investment horizon. However, the conclusion should be treated with caution when the (sub)temporal context is considered. Based on the results of Models 59–67 for the period of 2007 to 2011, only Speciality and non-Rental sectors show a positive and statistically significant relationship with the REIT attribute. More notably, REIT companies underperform their non-REIT counterparts in the Retail sector as depicted by the negative coefficient value. On the other hand, the results for the 2012-2017 market recovery period (Models 68-76) are largely aligned with those of the full period. In particular, REITs in the sectors of Diversified, Rental, Retail, Residential and Speciality outperformed their non-REIT market peers over the five-year time horizon.

Investment Focus (I)

Investment Focus and its effect on a company’s risk-adjusted return, reveals significant variations across sector and time period. The full period analysis (Models 41-49) reveals that Investment Focus has no statistically significant relationship with most of the sectors under investigation with the exception of Residential, which is negatively impacted by the investment focus (Model 42). On the other hand, companies that focused on rental business in the Retail sector outstripped their market competitors with a non-rental focus during the first sub-period as implied by the positive coefficient (Mode 62). In addition, three sample real estate sectors, namely Diversified, Residential and Speciality have their risk adjusted return negatively correlated with the attribute for the second sub-period, whilst companies with a rental focus in Industrial/Office achieved a superior risk adjusted return during the same time period of market recovery.⁶

2.3 Impacts of Business Diversification on Performance

A supplementary objective of this study is the exploration as to whether the degree of business diversification of a listed real estate company is value-enhancing. To achieve this, the research constructed a Herfindahl Index (*H.I.*) for each sample company over each predetermined period of time,

⁵ The conclusion is drawn based on the results of sectors with ROE having a statistically significant coefficient at the 10% level.

⁶ A summary of the findings on the attributes across the three time (sub)period splines is displayed in Exhibit 8 within the main report.

using annual company-level portfolio data as furnished by EPRA⁷. Exhibits 10 and Exhibit 11 in the main report show the scatter plots of risk-adjusted return against H.I. and raw return against H.I. respectively. It is noteworthy that the performance variables are weakly correlated with the diversification measure with correlation coefficients equal to 15.23% (Exhibit 10) and 8.89% (Exhibit 11). The findings should be interpreted with caution since the correlation analyses do not account for other factors that also affect performance. Nonetheless, regression analysis details value enhancing attributes attributable to sector specialisation. using H.I time series constructs the analysis determines that sector specialists outperformed in the period Q1 2007–Q3 2017. The results (Exhibit 12 Main Report) unequivocally suggest that diversification tends to subdue the value of a firm as indicated by the positive and statistically significant coefficient (H.I.). In other words, companies that diversify by investing in more sectors appear prone to having lower total returns than their industry peers with a concentrated business focus. The results appear robust in that the diversification effect remained negative and significant across all model architectures.

2.4 Decomposition Analysis

Decomposition analysis was undertaken to test the explanatory power of the attributes in order to determine more precisely how much each attribute (or group of attributes) accounts for the variation of risk-adjusted return⁸. The analysis explores the explanatory power of the attributes over the three sub-periods and at the aggregate and sub-regional levels (UK and collective CE countries). The results are presented in Exhibits 13–15 within the main report. At the aggregate level, the findings (Model 1) unsurprisingly suggest that time variables explain the most variation of risk-adjusted return of the real estate companies (48.61% alone and 16.10% at the margin). In addition, it is revealed that the country variables explain the variation of risk-adjusted return more than the sector dummies (when method A is utilised, the opposite is observed when method B is employed). In terms of company specific attributes, unsurprisingly Return on Equity has the highest explanatory power, both individually (41.14%) and marginally (4.63%), with Market Capitalisation accounting for 6.33% and 0.02% respectively. Other regressors such as Growth in Revenue, REIT and Investment Focus play a much less significant role in terms of explanatory power.

Comparison between the two sub-periods (Model 9 and Model 13) further suggests that the time variables, consistent with our expectation, explain significantly more of the variation of risk-adjusted return during the first sub-period given the extreme market volatility caused by the aftermath of the GFC. Moreover, the results also highlight that the heterogeneity between sectors across the sample countries has grown over time, as indicated by the increase in explanatory power of the sector dummies over the two sub-periods: from 3.51% to 4.10% and 0.82% to 2.80% employing both methods (Exhibit 13).

By comparing the change in the size of explanatory power, we observe that Market Capitalisation has shown a reduced significance in terms of explanatory power over time. The results for Return on Equity are, however, slightly more ambiguous. Over the two sub-periods, the variable has displayed a rise in explanatory power at the margin (from 3.73% to 5.44%) but a remarkable reduction (49.44% to 20.7%) when it is encapsulated alone as the independent variable in the regression model. It is also interesting to note that Dividend Yield has become a much more important attribute in explaining risk-adjusted performance over time, judged by its change in partial R^2 contributed to the regression models. When all company specific attributes are considered collectively, their explanatory power (19.57% individually and 8.62% marginally) is larger than that of the sector level attributes combined (1.94% individually and 6.15% marginally) over the whole investigation period. In this sense, company specific

⁷ In this research HI is a revenue-based measure that reflects the extent to which a firm's revenue is concentrated within its industry/sector segments over a given time period. It is commonly defined as a ratio of the sum of the squares of each reported segment's revenue, $REV_{j,t}$, relative to the firm's overall revenue, $\sum_{j=1}^n REV_{j,t}$, over a period of time, t .

⁸ The decomposition approach employs a "partial R^2 " contribution to the models as advocated by Connor (1995). Method A: assessment of the coefficient of determination of a regression model with risk-adjusted return as the dependent. Method B: assessing the difference in the level of coefficient of determination between two regression models; 1 with all attributes as independent variables except the subject attribute(s); the other with all attributes as independent variables – the marginal increase in explanatory power through an additive approach which already includes all other regressors.

characteristics cannot be underestimated in their contribution to overall performance dynamics and in essence require due diligence on a par with that of sectoral focus.

With respect to the UK market, a very large proportion of variation of risk adjusted return can be explained by the time variables (59.18% alone and 13.04% at the margin) and Return on Equity (56.52% alone and 4.92% at the margin) for the period of 2007-2017, although both variables have seen a substantial reduction of explanatory power across the two sub-periods. Interestingly, the real estate sectors of the UK market seem to have become more divergent in terms of risk-adjusted return over time. The sector variables account for only 1.24% of the variation of risk adjusted return for the first sub-period, while the same figure increases to 5.53% for the second sub-period (Exhibit 14). In addition, their explanatory power increases at the margin from 0.67% to 4.39% over the same time horizon. Pertinently, the importance of corporate structure has grown quite considerably over the analysis period. The REIT variable captures only 0.01% of risk-adjusted return variation for the period of 2007-2011, nonetheless, its explanatory power increases significantly to 1.30% (Method A) and 1.20% (Method B) for the period of 2012-2017 – albeit relatively low in absolute terms. Along the same line of logic, Growth in Revenue has seen a reduced significance while Investment Focus has displayed a slight increase in importance in terms of explanatory power. The results for other company specific attributes such as Market Capitalisation, Loan-to-Value and Dividend Yield are less clear: whilst they have exhibited an increase in partial R^2 at the margin over the two sub-periods, the opposite holds when the regressors are used alone as the independent variable in the models.

For the Continental European markets, again, time variables account for a very large part of overall coefficient of determination of the regression models. Over the entire sample period, they explain 47.70% individually and 24.13% marginally of the variation of risk-adjusted return. However, the explanatory power of the variables diminishes over the two sub-periods undoubtedly due to the European markets becoming more stable – perhaps reflective of new financial regulations introduced. It also appears that the CE real estate market has become much more convergent in terms of risk-adjusted performance at the sector level depicted by the sizable decrease in the partial R^2 value of the sector variables from 11.32% to 3.94% and 2.57% to 0.83% respectively.

Compared to the UK real estate market, Market Capitalisation and Dividend Yield are more important attributes in explaining the performance of risk-adjusted return in the CE across all period and sub-periods examined. For example, Market Capitalisation in CE accounts for 9.48% (4.50% UK), 15.77% (3.24 % UK) and 24.24% (0.32% UK) of the total coefficient of determination over the sub-periods respectively.

In terms of explanatory power, another company specific attribute that is noteworthy for the CE market is Return on Equity. Its partial contribution to the R^2 is 17.77% and 2.97%, individually and marginally for the whole sample period. Despite its declining importance over time, it still comprises 9.25% when used alone in the equation and 2.03% at the margin of the total variation of the risk adjusted return models for the period of 2012-2017 (compared to 25.48% and 2.11% respectively for the period of 2007-2011).

3.0 CONCLUSIONS

Institutional investors considering European listed real estate companies need to more fully understand and comprehend the performance drivers attributable to corporate structures and company specific attributes. This study served to demonstrate that company specific attributes play an important role in the optimisation of performance in real estate upcycles and in ‘sheltering’ companies in down-cycles. the relationship between Dividend Yield and risk-adjusted performance implies that companies that retained and reinvested profits amidst turbulent market conditions have realised superior performance over the investigation period Q1 2007–Q3 2017. Further to this, corporate agility and financial structures seemingly played an important role in optimising opportunities/mitigating risk particularly around pinch points in the real cycle which in turn served as a key determinant of performance across the time series.

The emergence of new sub-sectors within the European listed real estate universe offers considered scope for investors to diversify portfolios as well as enhance performance. The cyclical resilience

demonstrated by the ‘niche’ sub-sectors is a key finding of the study and depicts how investors are expanding the conventional boundaries of ‘real estate’ to avail of opportunities afforded by ongoing societal evolution and associated needs/expectations. In terms of 5-year total return, Self-storage, Industrial and Residential have been the best performing sectors posting annualised total returns of 25.29%, 21.16% and 20.66% respectively since 2012. By contrast, Retail has been the worst performing sector with annualised total return rates of 6.49% over the same period. Pertinently, the Healthcare sector posted the best risk-adjusted performance over the period Q1 2007–Q3 2017. This serves to highlight the potential performance advantage and diversification benefits of building an investment portfolio that affords greater ‘shelter’ to economic and real estate cyclicity – particularly for investors with long term investment horizons.

The means by which investors seek exposure to ‘new’ sub-sectors and the optimal weighting allocation is the next logical step in the decision making process. The need for sector ‘specialist expertise’ and established competent networks is perhaps even more pronounced within the ‘niche’ sub-sectors. This study contributed to the ongoing debate pertaining to sector specialists versus diversified listed real estate companies. In terms of portfolio construction, the results suggest that sectoral diversification is better attained by investing across a number of sector-specialist companies (thus gaining from sector specialist knowledge) than from seeking diversification within an individual company level structure.

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EPRA

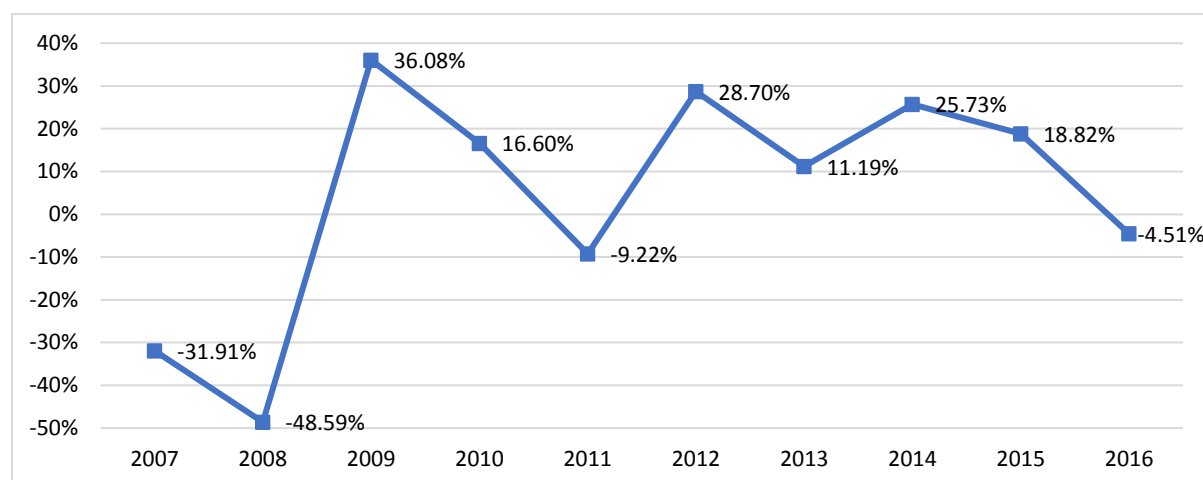
EUROPEAN PUBLIC
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Appendices

March
2019

Appendices

(i) Historical total returns of the Developed Europe's listed real estate



Source: EPRA (2017) and authors' compilation

(i) Correlation coefficients of total returns of the six sample countries (2007-2017)

	Developed Europe	France	Germany	Netherlands	Sweden	Switzerland
Developed Europe	100.00%					
France	93.78%	100.00%				
Germany	92.79%	82.86%	100.00%			
Netherlands	90.46%	89.88%	80.71%	100.00%		
Sweden	82.99%	72.78%	85.63%	79.28%	100.00%	
Switzerland	52.66%	46.32%	66.78%	43.68%	81.04%	100.00%
U.K.	96.62%	85.30%	88.03%	80.23%	75.52%	41.40%

Source: Authors' calculations based on FTSE EPRA/NAREIT Developed Europe Index Series

(ii) Number of constituents by sector for the six sample countries (2007-2017)

Country	Diversified	Resid	Retail	Office	Industrial	Industrial/Office	Health-care	Self-Storage	Lodging/Resorts	Speciality
France	7	0	3	4	0	0	0	0	0	0
Germany	6	12	2	4	0	0	0	0	0	0
Netherlands	2	0	6	1	1	0	0	0	0	0
Sweden	8	1	0	1	0	0	0	0	1	0
Switzerland	5	0	0	4	0	0	0	0	0	0
UK	28	4	9	5	4	2	4	2	1	1
Total	56	17	20	19	5	2	4	2	2	1

Source: EPRA (2007- 2017) and authors' calculations

(iii) Due to data limitations, the sectors were further compartmentalised into five principal sectors with Industrial, Office and Industrial/office classified as Industrial/office and Healthcare, Self-storage, Lodging/resorts and Speciality classified as Speciality. To explicitly remove the performance component of non-sample countries captured by FTSE EPRA/NAREIT Developed Europe Index, the research investigated the construction of more customised annual total return indices based on company-level data. This was extracted using the Bloomberg database specifically for the six sample countries. The indices were linearly weighted by year-end market capitalisation of all sample companies, to account for proportionality and attached with more significance. In our study, only stock exchange-listed companies in the sample countries that have been constituents of FTSE EPRA/NAREIT over the investigation period were included in the indices. The results reveal the historical performance of the five main sectors (2007-2016) to be broadly synchronised.

Capitalisation-weighted return of the five selected real estate sectors (2007-2016)



Source: Authors' compilation based on Bloomberg (2017)

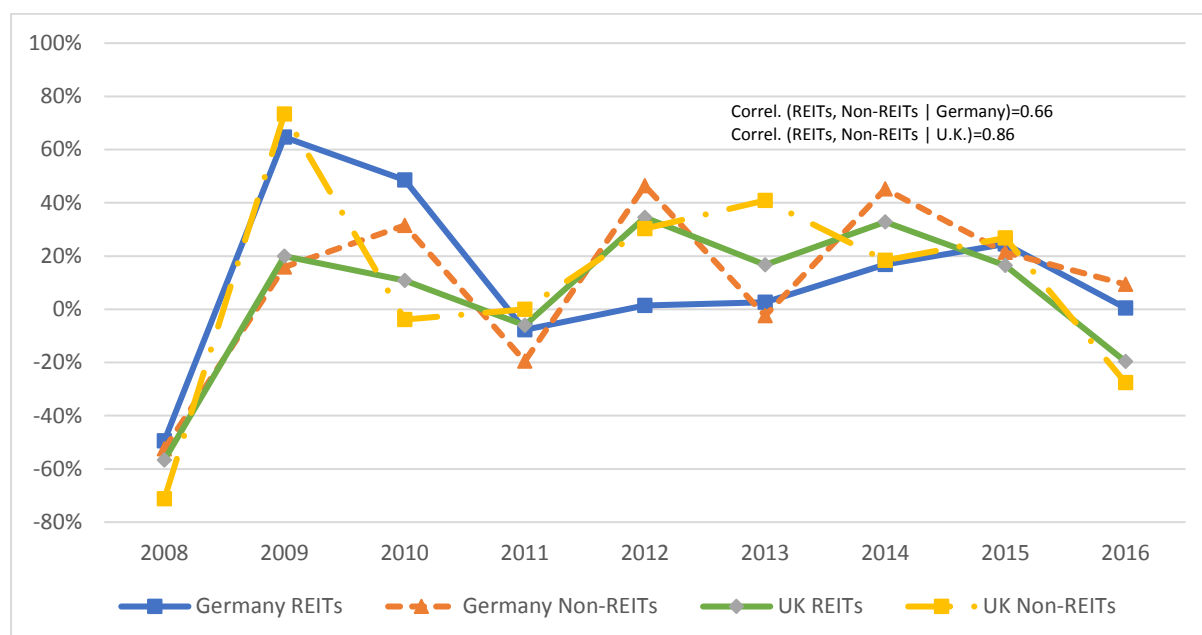
(iv) Descriptive statistics and performance-related features of REIT and non-REIT sectors in Developed Europe and the six sample markets based on data derived from EPRA Research Monthly Statistical Bulletin (October, 2017).

Country/Region	Sector	M. Cap (€M)	Div Yld (%)	Total. Rtn (%) - 10 Yrs	Total. Rtn (%) - 5 Yrs	Total. Rtn (%) - 1Yr	Total. Rtn (%) - QTD	10 Y Vltty (%)	36 M Vltty (%)
Developed Europe	REITs	122,388.37	4.11	NA	9.43	9.56	0.85	13.60	13.77
	Non-REITs	89,720.87	4.80	6.95	13.36	7.31	-0.60	11.81	12.29
France	REITs	20,615.01	4.74	6.97	9.49	6.78	1.23	19.21	15.34
Germany	REITs	2,298.51	4.41	4.45	9.97	7.17	0.19	26.41	12.16
	Non-REITs	46,145.85	2.82	NA	18.41	20.13	3.02	15.14	16.01
Netherlands	REITs	25,774.29	5.06	NA	7.83	3.94	3.45	15.11	15.35

Sweden	Non-REITs	18,18 1.12	2.57	NA	18.10	15.44	1.29	14.77	14.30
Switzerland	Non-REITs	11,47 7.82	4.01	7.09	11.09	0.67	3.57	12.68	14.27
U.K.	REITs	53,44 7.73	3.68	NA	8.44	12.11	0.26	16.35	17.30
	Non-REITs	6,936. 03	2.41	NA	10.42	15.12	1.13	15.24	16.17

Source: EPRA Research Monthly Statistical Bulletin (October 2017)

Historical total returns of REIT and Non-REITs in Germany and the U.K.



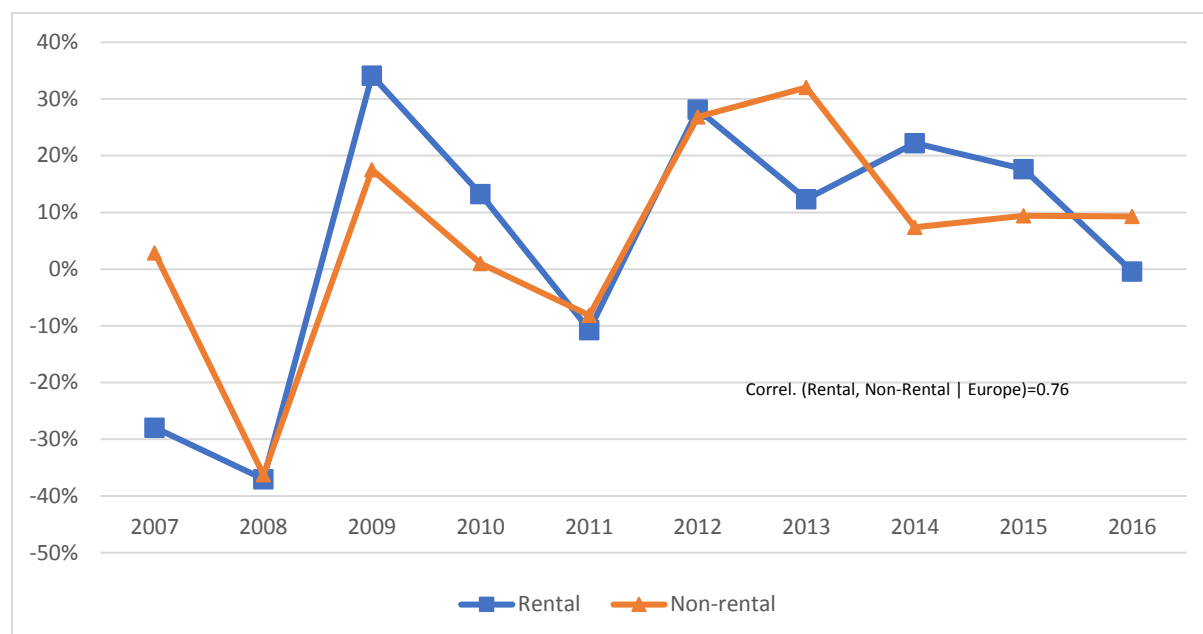
Source: Authors' compilation based on FTSE EPRA/NAREIT Developed REIT/Non-REIT Index Series (Germany and the U.K.)

(v) Descriptive statistics of rental and non-rental sectors in Europe and the U.K.

	Country/ Region	Sector	M. Cap (€M)	Div Yld(%)	Total. Rtn (%) - 10 Yrs	Total. Rtn (%) - 5 Yrs	Total. Rtn (%) - 1Yr	Total. Rtn (%) - QTD	10 Y Vlty (%)	36 M Vlty (%)
Rental/ Non-rental	Europe	Rental	193,9 22.38	3.56	NA	10.80	12.49	1.30	11.9 0	12.65
		Non-rental	20,00 5.62	3.77	4.33	30.49	8.17	-1.56	40.2 0	10.04
	U.K.	Rental	58,74 1.48	3.58	-1.15	8.46	11.83	0.24	21.7 3	12.65
		Non-rental	1,642. 27	1.91	-5.05	15.67	30.95	3.92	26.1 1	17.98

Source: EPRA Research Monthly Statistical Bulletin (October 2017)

Historical total returns of rental and non-rental sectors in Europe



Source: Authors' compilation based on FTSE EPRA/NAREIT Developed Europe Investment Focus indices

Appendices B-N (Regression models)

Exhibit 7 **Full model** (1-4) All countries at the aggregate level

	Dependent Variable	Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables	Model 1	Model 2	Model 3	Model 4
Time Variables (Base = Year 2007)	C	-2.381206 (0.0155)**	-2.167843 (0.0259)**	-0.522160 (0.0014)***	-0.442909 (0.0060)***
	Year 2008	-2.099385 (0.0000)***	-2.135370 (0.0000)***	-0.138848 (0.0000)***	-0.139688 (0.0000)***
	Year 2009	-1.168509 (0.0000)***	-1.198430 (0.0000)***	0.170392 (0.0000)***	0.174702 (0.0000)***
	Year 2010	1.049584 (0.0000)***	1.024520 (0.0000)***	0.344151 (0.0000)***	0.360154 (0.0000)***
	Year 2011	1.510232 (0.0000)***	1.493257 (0.0000)***	0.236240 (0.0000)***	0.242380 (0.0000)***
	Year 2012	0.821009 (0.0058)***	0.817262 (0.0061)***	0.280490 (0.0000)***	0.290836 (0.0000)***
	Year 2013	1.981757 (0.0000)***	1.981643 (0.0000)***	0.390448 (0.0000)***	0.399504 (0.0000)***
	Year 2014	2.778617 (0.0000)***	2.788153 (0.0000)***	0.415230 (0.0000)***	0.424331 (0.0000)***
	Year 2015	3.099214 (0.0000)***	3.127410 (0.0000)***	0.424132 (0.0000)***	0.435106 (0.0000)***
	Year 2016	1.782366 (0.0000)***	1.826275 (0.0000)***	0.256310 (0.0000)***	0.271762 (0.0000)***
	Year 2017	1.355372 (0.0002)***	1.387920 (0.0002)***	0.307281 (0.0000)***	0.318216 (0.0000)***
Country Variables	France	-0.140748 (0.3543)	-0.240091 (0.1096)	0.022477 (0.3723)	0.009748 (0.6963)
	Germany	0.881473 (0.0000)***	0.803443 (0.0000)***	0.095996 (0.0000)***	0.095186 (0.0000)***
	The Netherlands	0.253001 (0.0870)*	0.158126 (0.2801)	0.087810 (0.0003)***	0.074782 (0.0020)***
	Sweden	0.948997 (0.0000)***	0.884043 (0.0000)***	0.097515 (0.0002)***	0.102416 (0.0001)***
	Switzerland	1.396616 (0.0000)***	1.314598 (0.0000)***	0.115291 (0.0020)***	0.113916 (0.0017)***
Com	Market Capitalisation (Cap)	0.104514 (0.2938)	0.063260 (0.5186)	0.021800 (0.1860)	0.011719 (0.4694)

	Loan to Value (L)		-1.429240 (0.0000)***	-1.211183 (0.0001)***	-0.009848 (0.8533)	-0.015679 (0.7621)
	Dividend Yield (D)		-0.071747 (0.0000)***	-0.065916 (0.0000)***	-0.021295 (0.0000)***	-0.020164 (0.0000)***
	Return On Equity (ROE)		0.042413 (0.0000)***	0.043140 (0.0000)***	0.003544 (0.0000)***	0.003743 (0.0000)***
	Return Volatility (V)		N.A.	N.A.	0.494975 (0.0000)***	0.436210 (0.0000)***
	Growth in Revenue (REV)		0.064805 (0.2566)	0.076782 (0.1788)	0.022176 (0.0189)**	0.020703 (0.0284)**
	REIT (REIT)		0.298739 (0.0107)**	0.378545 (0.0007)***	0.044527 (0.0219)**	0.062089 (0.0006)***
	Investment Focus (I)		-0.023849 (0.8404)	0.000507 (0.9965)	-0.017452 (0.3729)	-0.020721 (0.2827)
Sector Variables (Base = Diversified)	Residential		-0.159578 (0.2775)	-0.120126 (0.4126)	-0.035161 (0.1488)	-0.022383 (0.3560)
	Retail		-0.315058 (0.0036)***	-0.299048 (0.0058)***	-0.051266 (0.0041)***	-0.048404 (0.0069)***
	Industrial/	Industrial	0.550200 (0.0014)***	0.169453 (0.0962)*	0.027061 (0.3406)	-0.001591 (0.9249)
		Office	0.034288 (0.7679)		-0.011459 (0.5512)	
		Industrial/Office	0.593242 (0.2835)		0.125789 (0.1688)	
	Speciality	Lodging/Resorts	-0.336248 (0.7236)	0.423914 (0.0074)***	-0.059489 (0.7049)	0.009361 (0.7208)
		Health care	0.984589 (0.0000)***		0.071229 (0.0537)*	
		Self storage	0.053821 (0.8254)		0.048905 (0.2257)	
		Speciality	0.188440 (0.5820)		-0.196913 (0.0009)***	
	Risk free (r.f.)		53.34203 (0.0000)***	53.64914 (0.0000)***	4.962113 (0.0008)***	5.098533 (0.0006)
	Included Obs.		1616	1616	1616	1616
	R²		0.643524	0.639435	0.466448	0.459885
	Adjusted R²		0.636318	0.633304	0.455318	0.450355
	Prob (F Stat)		0.0000	0.0000	0.000000	0.000000

Regression Results(B) All countries at the aggregate level, 2007–2017

	Dependent Variable	Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables	Model 5	Model 6	Model 7	Model 8
	C	-2.093597 (0.0325) **	-1.933588 (0.0461) **	-0.572438 (0.0006) ***	-0.501214 (0.0022) ***
Time Variables (Base = Year 2007)	Year 2008	-2.081242 (0.0000) ***	-2.116736 (0.0000) ***	-0.144239 (0.0000) ***	-0.144976 (0.0000) ***
	Year 2009	-1.197479 (0.0000) ***	-1.219312 (0.0000) ***	0.144165 (0.0001) ***	0.150002 (0.0001) ***
	Year 2010	1.039974 (0.0000) ***	1.019812 (0.0000) ***	0.332503 (0.0000) ***	0.349574 (0.0000) ***
	Year 2011	1.473913 (0.0000) ***	1.466365 (0.0000) ***	0.217102 (0.0000) ***	0.224652 (0.0000) ***
	Year 2012	0.810136 (0.0061) ***	0.816187 (0.0058) ***	0.263487 (0.0000) ***	0.275138 (0.0000) ***
	Year 2013	1.967696 (0.0000) ***	1.977075 (0.0000) ***	0.375386 (0.0000) ***	0.385653 (0.0000) ***
	Year 2014	2.766508 (0.0000) ***	2.787407 (0.0000) ***	0.401001 (0.0000) ***	0.411586 (0.0000) ***
	Year 2015	3.080008 (0.0000) ***	3.121139 (0.0000) ***	0.403446 (0.0000) ***	0.416129 (0.0000) ***
	Year 2016	1.760230 (0.0000) ***	1.817073 (0.0000) ***	0.231327 (0.0003) ***	0.248263 (0.0001) ***
	Year 2017	1.331187 (0.0003) ***	1.375745 (0.0002) ***	0.281681 (0.0000) ***	0.293660 (0.0000) ***
Country Variables	France	-0.152803 (0.3089)	-0.257654 (0.0822)	0.007889 (0.7562)	-0.004945 (0.8442)
	Germany	0.909587 (0.0000) ***	0.830887 (0.0000) ***	0.091022 (0.0001) ***	0.091101 (0.0000) ***
	The Netherlands	0.293102 (0.0493) **	0.186476 (0.2054)	0.088512 (0.0004) ***	0.073771 (0.0030) ***
	Sweden	0.986843 (0.0000) ***	0.919510 (0.0000) ***	0.097463 (0.0003) ***	0.102888 (0.0001) ***
	Switzerland	1.461552 (0.0000) ***	1.375221 (0.0000) ***	0.108111 (0.0043) ***	0.108054 (0.0033) ***
Company-specific Variables	Market Capitalisation (Cap)	0.071593 (0.4677)	0.033925 (0.7266)	0.030283 (0.0692) *	0.020782 (0.2043)
	Loan to Value (L)	-1.424155 (0.0000) ***	-1.207120 (0.0001) ***	-0.021459 (0.6902)	-0.028824 (0.5819)
	Dividend Yield (D) ¹	-0.084818 (0.0000) ***	-0.075943 (0.0000) ***	-0.020548 (0.0000) ***	-0.018884 (0.0000) ***
	Return On Equity (ROE)	0.041817 (0.0000) ***	0.042713 (0.0000) ***	0.003456 (0.0000) ***	0.003680 (0.0000) ***
	Return Volatility (V)	N.A.	N.A.	0.505174 (0.0000) ***	0.445431 (0.0000) ***

¹ Indicated dividend yield is used.

Sector Variables (Base = Diversified)	Growth in Revenue (REV)		0.057147 (0.3130)	0.069161 (0.2221)	0.022348 (0.0194) **	0.020881 (0.0290) **
	REIT (REIT)		0.320865 (0.0058) ***	0.401416 (0.0003) ***	0.041541 (0.0350) **	0.058948 (0.0021) ***
	Investment Focus (I)		0.023160 (0.8445)	0.041424 (0.7209)	-0.014975 (0.4526)	-0.019476 (0.3209)
	Residential		-0.066130 (0.6508)	-0.024714 (0.8654)	-0.027457 (0.2669)	-0.014232 (0.5631)
	Retail		-0.296860 (0.0056) ***	-0.280706 (0.0090) ***	-0.049001 (0.0068) ***	-0.045998 (0.0112) **
	Industrial/ Office	Industrial	0.567874 (0.0009) ***	0.166727 (0.0988) *	0.023727 (0.4094)	-0.002487 (0.8842)
		Office	0.027122 (0.8139)		-0.010774 (0.5801)	
		Industrial/Office	0.495788 (0.3658)		0.103907 (0.2613)	
	Speciality	Lodging/Resorts	-0.284325 (0.7629)	0.425229 (0.0066) ***	-0.055751 (0.7258)	0.017768 (0.5021)
		Health care	0.993264 (0.0000) ***		0.081537 (0.0290) **	
		Self storage	0.065126 (0.7876)		0.054925 (0.1786)	
		Speciality	0.144671 (0.6710)		-0.192599 (0.0014) ***	
	Risk free (r.f.)		53.43272 (0.0000) ***	54.01309 (0.0000) ***	3.433699 (0.0217) **	3.620415 (0.0159) **
	Included Obs.		1614	1614	1614	1614
	R ²		0.644187	0.639895	0.462117	0.455770
	Adjusted R ²		0.636985	0.633765	0.450883	0.446156
	Prob (F Stat)		0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "**" indicates significance at the 5% level; "***" indicates significance at the 1% level.

Regression Results (C) - All countries at the aggregate level, 2007-2011

	Dependent Variable	Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables	Model 9	Model 10	Model 11	Model 12
	C	-5.852474 (0.0002) ***	-5.067967 (0.0006) ***	-1.231368 (0.0002) ***	-0.933988 (0.0027) ***
Time Variables (Base = Year 2007)	Year 2008	-2.227076 (0.0000) ***	-2.242966 (0.0000) ***	-0.115892 (0.0075) ***	-0.122118 (0.0051) ***
	Year 2009	-1.279850 (0.0000) ***	-1.290979 (0.0000) ***	0.214454 (0.0001) ***	0.214042 (0.0001) ***
	Year 2010	1.360264 (0.0000) ***	1.340207 (0.0000) ***	0.446283 (0.0000) ***	0.453418 (0.0000) ***
	Year 2011	1.890147 (0.0000) ***	1.867853 (0.0000) ***	0.380803 (0.0000) ***	0.374876 (0.0000) ***
C o	France	-0.066927	-0.156070	0.005947	-0.016496

		(0.8067)	(0.5628)	(0.9172)	(0.7719)
	Germany	0.680550 (0.0037) ***	0.755932 (0.0010) ***	0.173169 (0.0004) ***	0.198528 (0.0000) ***
	The Netherlands	0.505760 (0.0103) **	0.419535 (0.0293) **	0.127238 (0.0020) ***	0.099811 (0.0134) **
	Sweden	0.888977 (0.0006) ***	1.047442 (0.0000) ***	0.216731 (0.0001) ***	0.266764 (0.0000) ***
	Switzerland	2.147686 (0.0000) ***	2.362475 (0.0000) ***	0.314001 (0.0004) ***	0.379239 (0.0000) ***
Company-specific Variables	Market Capitalisation (Cap)	0.358811 (0.0398) **	0.264763 (0.1136)	0.066911 (0.0676) *	0.032302 (0.3570)
	Loan to Value (L)	-0.868311 (0.0825) *	-0.972414 (0.0478) **	-0.071470 (0.4955)	-0.103622 (0.3197)
	Dividend Yield (D)	-0.037910 (0.0104) **	-0.036829 (0.0109) **	-0.021383 (0.0000) ***	-0.021306 (0.0000) ***
	Return On Equity (ROE)	0.032985 (0.0000) ***	0.033610 (0.0000) ***	0.001862 (0.0131) **	0.002083 (0.0000) ***
	Return Volatility (V)	N.A.	N.A.	0.569936 (0.0000) ***	0.514772 (0.0000) ***
	Growth in Revenue (REV)	0.076941 (0.2623)	0.072237 (0.2913)	0.019121 (0.1816)	0.017077 (0.2340)
	REIT (REIT)	-0.143507 (0.4947)	0.079905 (0.6605)	0.048880 (0.2650)	0.118537 (0.0023) ***
	Investment Focus (I)	0.103187 (0.6268)	0.050543 (0.8105)	-0.017168 (0.6985)	-0.031708 (0.4748)
Sector Variables (Base = Diversified)	Residential	-0.677459 (0.0071) ***	-0.600215 (0.0157) **	-0.186082 (0.0004) ***	-0.157429 (0.0025) ***
	Retail	0.094369 (0.5618)	0.101672 (0.5324)	-0.060746 (0.0736) *	-0.058656 (0.0859) *
	Industrial/	Industrial	0.130583 (0.4358)	-0.048031 (0.4509)	-0.042655 (0.2281)
		Office		-0.017167 (0.6581)	
		Industrial/Office		NA	
	Speciality	Lodging/Resorts	0.525893 (0.0498) **	NA	-0.034130 (0.5446)
		Health care		0.142878 (0.0650) *	
		Self storage		-0.187113 (0.1149)	
		Speciality		-0.193393 (0.0201) **	
	Risk free (r.f.)	73.90278 (0.0000)***	74.77414 (0.0000)***	10.92339 (0.0000)***	11.21618 (0.0000)***
	Included Obs.	662	662	662	662
	R ²	0.719029	0.716934	0.525006	0.516668
	Adjusted R ²	0.708443	0.707646	0.506335	0.500027
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "***" indicates significance at the 5% level; **** indicates significance at the 1% level.

Regression Results (D) - All countries at the aggregate level, 2012-2017

	Dependent Variable	Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables	Model 13	Model 14	Model 15	Model 16
	C	2.181113 (0.0862) *	1.840647 (0.1453)	0.415541 (0.0085) ***	0.423376 (0.0065) ***
Time Variables	Year 2013	1.146196 (0.0000) ***	1.158144 (0.0000) ***	0.140990 (0.0000) ***	0.141519 (0.0000) ***
	Year 2014	1.704861 (0.0000) ***	1.739150 (0.0000) ***	0.115658 (0.0000) ***	0.117444 (0.0000) ***
	Year 2015	1.818885 (0.0000) ***	1.887410 (0.0000) ***	0.065474 (0.0037) ***	0.067889 (0.0027) ***
	Year 2016	0.388257 (0.0717) *	0.480033 (0.0267) **	-0.152272 (0.0000) ***	-0.147454 (0.0000) ***
	Year 2017	0.057415 (0.7799)	0.141743 (0.4919)	-0.084819 (0.0010) ***	-0.079029 (0.0020) ***
Country Variables	France	0.040718 (0.8327)	-0.113857 (0.5518)	-0.003289 (0.8910)	-0.012512 (0.5975)
	Germany	0.718535 (0.0002) ***	0.549420 (0.0032) ***	-0.039442 (0.0914) *	-0.051774 (0.0227) **
	The Netherlands	-0.120149 (0.6351)	-0.293917 (0.2453)	-0.026803 (0.3908)	-0.035339 (0.2541)
	Sweden	0.783351 (0.0002) ***	0.592999 (0.0031) ***	-0.024692 (0.3394)	-0.040209 (0.1042)
	Switzerland	1.014453 (0.0006) ***	0.802100 (0.0059) ***	-0.096943 (0.0096) ***	-0.116540 (0.0014) ***
Company-specific Variables	Market Capitalisation (Cap)	-0.209640 (0.1157)	-0.209926 (0.1133)	-0.021704 (0.1861)	-0.024305 (0.1333)
	Loan to Value (L)	-1.635346 (0.0003) ***	-1.079115 (0.0136) **	-0.010811 (0.8479)	0.007830 (0.8842)
	Dividend Yield (D)	-0.145835 (0.0000) ***	-0.132240 (0.0000) ***	-0.018810 (0.0000) ***	-0.017967 (0.0000) ***
	Return On Equity (ROE)	0.060172 (0.0000) ***	0.059446 (0.0000) ***	0.004429 (0.0000) ***	0.004611 (0.0000) ***
	Return Volatility (V)	N.A.	N.A.	0.351447 (0.0008) ***	0.369949 (0.0003) ***
	Growth in Revenue (REV)	-0.014342 (0.8893)	0.010122 (0.9223)	0.029150 (0.0219) **	0.027705 (0.0291) **
	REIT (REIT)	0.594881 (0.0000) ***	0.628123 (0.0000) ***	0.018350 (0.3117)	0.018129 (0.3187)
	Investment Focus (I)	0.079064 (0.5911)	0.166806 (0.2498)	-0.000854 (0.9624)	0.006717 (0.7043)
Sector Variable	Residential	0.030177 (0.8670)	0.071365 (0.6945)	0.037292 (0.0939) *	0.038432 (0.0840) *
	Retail	-0.612497	-0.613056	-0.044350	-0.045708

		(0.0000) ***	(0.0000)***	(0.0147) **	(0.0118) **
Industrial/ Speciality	Industrial	0.620607 (0.0023) ***	0.120807 (0.3385)	0.052530 (0.0359)	0.011418 (0.4589)
	Office	-0.124645 (0.3984)		-0.012760 (0.4832)	
	Industrial/Office	0.428556 (0.4226)		0.088161 (0.1808)	
	Lodging/Resorts	-0.274794 (0.7645)	0.261367 (0.1886)	-0.003738 (0.9736)	0.049211 (0.0428) **
	Health care	1.102228 (0.0001) ***		0.032144 (0.3514)	
	Self storage	-0.270728 (0.3077)		0.089452 (0.0066) ***	
	Speciality	NA		NA	
	Risk free (r.f.)	15.78916 (0.2792)	16.58724 (0.2607)	-8.465522 (0.0000) ***	-8.545687 (0.0000) ***
	Included Obs.	954	954	954	954
	R ²	0.485839	0.472184	0.364414	0.358539
	Adjusted R ²	0.471418	0.459712	0.345882	0.342675
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; ** indicates significance at the 10% level; *** indicates significance at the 5% level; **** indicates significance at the 1% level.

Regression Results (E) U.K. at the aggregate level, 2007–2017

	Dependent Variable	Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables	Model 17	Model 18	Model 19	Model 20
	C	-2.771301 (0.0483) **	-2.496563 (0.0695) *	-0.629656 (0.0096) ***	-0.536204 (0.0245) **
Time Variables (Base = Year 2007)	Year 2008	-1.506339 (0.0000) ***	-1.573522 (0.0000) ***	0.047975 (0.3495)	0.045563 (0.3750)
	Year 2009	0.145282 (0.6940)	0.091224 (0.8053)	0.444522 (0.0000) ***	0.444673 (0.0000) ***
	Year 2010	1.344976 (0.0005) ***	1.311440 (0.0007) ***	0.330956 (0.0000) ***	0.345856 (0.0000) ***
	Year 2011	1.865442 (0.0000) ***	1.834067 (0.0000) ***	0.410671 (0.0000) ***	0.415901 (0.0000) ***
	Year 2012	2.260472 (0.0000) ***	2.238838 (0.0000) ***	0.556136 (0.0000) ***	0.567529 (0.0000) ***
	Year 2013	3.472005 (0.0000) ***	3.454431 (0.0000) ***	0.681360 (0.0000) ***	0.692838 (0.0000) ***
	Year 2014	4.228007 (0.0000) ***	4.221838 (0.0000) ***	0.595483 (0.0000) ***	0.606846 (0.0000) ***
	Year 2015	4.205241 (0.0000) ***	4.235377 (0.0000) ***	0.594849 (0.0000) ***	0.606351 (0.0000) ***
	Year 2016	3.171263 (0.0000) ***	3.219744 (0.0000) ***	0.455618 (0.0000) ***	0.471803 (0.0000) ***
	Year 2017	2.521659	2.557399	0.590309	0.602255

		(0.0000)***	(0.0000)***	(0.0000)***	(0.0000)***
Company-specific Variables	Market Capitalisation (Cap)	-0.102922 (0.4625)	-0.153981 (0.2583)	-0.009757 (0.6871)	-0.020880 (0.3766)
	Loan to Value (L)	-1.938554 (0.0000)***	-1.631273 (0.0000)***	-0.016387 (0.8182)	-0.033581 (0.6221)
	Dividend Yield (D)	-0.009793 (0.6216)	-0.001901 (0.9204)	-0.014090 (0.0000)***	-0.011517 (0.0005)***
	Return On Equity (ROE)	0.051405 (0.0000)***	0.051764 (0.0000)***	0.006230 (0.0000)***	0.006425 (0.0000)***
	Return Volatility (V)	N.A.	N.A.	0.520049 (0.0000)***	0.464055 (0.0000)***
	Growth in Revenue (REV)	0.113967 (0.1462)	0.137839 (0.0772)*	0.041025 (0.0026)***	0.038987 (0.0040)***
	REIT (REIT)	0.368133 (0.0108)**	0.412707 (0.0022)***	0.050423 (0.0453)**	0.068073 (0.0048)***
	Investment Focus (I)	0.268446 (0.1285)	0.268844 (0.1225)	0.041470 (0.1760)	0.028771 (0.3442)
Sector Variables (Base = Diversified)	Residential	0.377834 (0.0634)*	0.367510 (0.0703)*	0.010601 (0.7650)	0.023518 (0.5047)
	Retail	-0.387185 (0.0071)***	-0.373665 (0.0095)***	-0.059625 (0.0166)**	-0.055051 (0.0272)**
	Industrial/ Industrial/	Industrial	0.453848 (0.0098)***	0.231504 (0.0827)*	0.001519 (0.9601)
		Office	0.032542 (0.8522)	-0.045657 (0.1315)	-0.021855 (0.3457)
		Industrial/Office	0.454672 (0.4077)	0.085056 (0.3705)	
	Speciality	Lodging/Resorts	NA	0.373800 (0.0361)**	NA (0.6435)
		Health care	0.767248 (0.0015)***	0.027964 (0.5025)	
		Self storage	-0.018557 (0.9400)	0.015468 (0.7176)	
		Speciality	0.471330 (0.1918)	-0.185658 (0.0050)***	
	Risk free (r.f.)	90.31352 (0.0000)***	91.35498 (0.0000)***	8.657696 (0.0013)***	9.746479 (0.0003)***
	Included Obs.	804	804	804	804
	R ²	0.724978	0.721397	0.533363	0.518327
	Adjusted R ²	0.715776	0.713549	0.517127	0.504124
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "***" indicates significance at the 5% level; "****" indicates significance at the 1% level.

Regression Results (F) – U.K. at the aggregate level, 2007–2011

	Dependent Variable		Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables		Model 21	Model 22	Model 23	Model 24
	C		-3.986904 (0.0588) *	-3.308452 (0.0925) *	-1.068398 (0.0202) **	-0.683354 (0.1145)
Time Variables (Base = Year 2007)	Year 2008		-1.713010 (0.0000) ***	-1.716506 (0.0000) ***	0.032012 (0.6517)	0.027327 (0.7007)
	Year 2009		-0.240782 (0.5515)	-0.238463 (0.5536)	0.412836 (0.0000) ***	0.417198 (0.0000) ***
	Year 2010		0.864343 (0.0467) **	0.848641 (0.0495) **	0.325115 (0.0011) ***	0.332084 (0.0008) ***
	Year 2011		1.316799 (0.0083) ***	1.302451 (0.0086) ***	0.401879 (0.0002) ***	0.394964 (0.0003) ***
Company-specific Variables	Market Capitalisation (Cap)		0.108113 (0.6533)	0.029853 (0.8941)	0.044215 (0.3992)	-0.000975 (0.9842)
	Loan to Value (L)		-1.011842 (0.1854)	-1.105770 (0.1331)	-0.035619 (0.8302)	-0.076762 (0.6349)
	Dividend Yield (D)		0.014649 (0.5320)	0.015527 (0.4830)	-0.014595 (0.0045) ***	-0.013780 (0.0050) ***
	Return On Equity (ROE)		0.052871 (0.0000) ***	0.053374 (0.0000) ***	0.005603 (0.0000) ***	0.005913 (0.0000) ***
	Return Volatility (V)		N.A.	N.A.	0.521722 (0.0000) ***	0.471198 (0.0000) ***
	Growth in Revenue (REV)		0.200983 (0.0555) *	0.193626 (0.0611) *	0.053078 (0.0205) **	0.050586 (0.0265) **
	REIT (REIT)		-0.065982 (0.8078)	0.080348 (0.7116)	0.014985 (0.8003)	0.097410 (0.0503) *
	Investment Focus (I)		0.387370 (0.1839)	0.335388 (0.2333)	0.094833 (0.1385)	0.067531 (0.2832)
Sector Variables (Base = Diversified)	Residential		0.606383 (0.1122)	0.679984 (0.0663) *	-0.077317 (0.3597)	-0.026153 (0.7486)
	Retail		0.339502 (0.1437)	0.332343 (0.1505)	-0.036832 (0.4658)	-0.041079 (0.4180)
	Industrial/ Speciality	Industrial	0.321619 (0.3193)	0.356455 (0.0935) *	-0.045439 (0.5192)	-0.041613 (0.3760)
		Office	0.434421 (0.0857) *		-0.007739 (0.8881)	
		Industrial/Office	NA		NA	
	Speciality	Lodging/Resorts	NA	0.530682 (0.1057)	NA	-0.062210 (0.3920)
		Health care	0.784568 (0.0736) *		0.092797 (0.3310)	
		Self storage	0.321191 (0.5894)		-0.207106 (0.1116)	
		Speciality	0.329037 (0.4693)		-0.194486 (0.0617) *	
	Risk free (r.f.)		65.26742	66.05557	7.238554	7.834594

		(0.0004) ***	(0.0003) ***	(0.0699) *	(0.0506) *
	Included Obs.	338	338	338	338
	R ²	0.735282	0.734571	0.493791	0.483633
	Adjusted R ²	0.719466	0.721340	0.461854	0.456201
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "**" indicates significance at the 5% level; "***" indicates significance at the 1% level.

Regression Results (G) – U.K. at the aggregate level, 2012–2017

	Dependent Variable		Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables		Model 25	Model 26	Model 27	Model 28
	C		0.482309 (0.7982)	0.093006 (0.9606)	0.147103 (0.5519)	0.170003 (0.4837)
Time Variables	Year 2013		0.668856 (0.0060) ***	0.752904 (0.0025) ***	0.098322 (0.0020) ***	0.103988 (0.0011) ***
	Year 2014		1.322980 (0.0000) ***	1.491025 (0.0000) ***	0.025185 (0.4389)	0.035994 (0.2675)
	Year 2015		1.556121 (0.0000) ***	1.791261 (0.0000) ***	0.056064 (0.0856) *	0.071171 (0.0283) **
	Year 2016		1.252387 (0.0000) ***	1.425613 (0.0000) ***	-0.055607 (0.1642)	-0.041863 (0.2955)
	Year 2017		0.614234 (0.0281) **	0.723216 (0.0111) **	0.079855 (0.0313) **	0.091569 (0.0139) **
Company-specific Variables	Market Capitalisation (Cap)		-0.348047 (0.0799) *	-0.347302 (0.0085) ***	-0.049693 (0.0537) *	-0.055015 (0.0301) **
	Loan to Value (L)		-2.569841 (0.0000) ***	-1.991828 (0.0005) ***	-0.075570 (0.3091)	-0.051203 (0.4797)
	Dividend Yield (D)		-0.065412 (0.1521)	-0.019340 (0.6656)	-0.011806 (0.0521) *	-0.006651 (0.2574)
	Return On Equity (ROE)		0.079107 (0.0000) ***	0.071474 (0.0000) ***	0.007005 (0.0000) ***	0.006933 (0.0000) ***
	Return Volatility (V)		N.A.	N.A.	0.822266 (0.0000) ***	0.832824 (0.0000) ***
	Growth in Revenue (REV)		-0.075247 (0.5637)	-0.011657 (0.9300)	0.025609 (0.1304)	0.026122 (0.1233)
	REIT (REIT)		0.671136 (0.0003) ***	0.623997 (0.0008) ***	0.043266 (0.0733) *	0.034891 (0.1475)
	Investment Focus (I)		0.358806 (0.1531)	0.392180 (0.1269)	0.049293 (0.1335)	0.051346 (0.1203)
Sector Variables (Base = Diversified)	Residential		0.217376 (0.3638)	0.224697 (0.3593)	0.045799 (0.1401)	0.045200 (0.1485)
	Retail		-0.780354 (0.0000) ***	-0.788932 (0.0000) ***	-0.059398 (0.0149) **	-0.055240 (0.0238) **
	Industrial/ Office	Industrial	0.445208 (0.0292) **	0.108354 (0.5263)	0.030334 (0.2521)	-0.004333 (0.8430)
		Office	-0.466074 (0.0657) *		-0.081282 (0.0136) **	

		Industrial/Office	0.286179 (0.5817)	0.134480 (0.5462)	0.083061 (0.2176)	0.028726 (0.3126)
	Speciality	Lodging/Resorts	N.A.		N.A.	
		Health care	0.955409 (0.0009) ***		0.032977 (0.3796)	
		Self storage	-0.487934 (0.0715) *		0.040660 (0.2566)	
		Speciality	NA		NA	
	Risk free (r.f.)		173.2834 (0.0000) ***	172.6308 (0.0000) ***	14.73733 (0.0005) ***	14.32901 (0.0007) ***
	Included Obs.		466	466	466	466
	R ²		0.603686	0.581398	0.471130	0.458797
	Adjusted R ²		0.585874	0.565514	0.446116	0.437004
	Prob (F Stat)		0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "***" indicates significance at the 5% level; "****" indicates significance at the 1% level.

Regression Results (H) – Continental European countries at the aggregate level, 2007-2017

	Dependent Variable	Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables	Model 29	Model 30	Model 31	Model 32
	C	-0.106141 (0.9436)	-0.106141 (0.9436)	-0.480955 (0.0370) **	-0.480955 (0.0370) **
Time Variables (Base = Year 2007)	Year 2008	-2.258685 (0.0000) ***	-2.258685 (0.0000) ***	-0.242029 (0.0000) ***	-0.242029 (0.0000) ***
	Year 2009	-2.021615 (0.0000) ***	-2.021615 (0.0000) ***	0.015614 (0.7245)	0.015614 (0.7245)
	Year 2010	0.647019 (0.0234) **	0.647019 (0.0234) **	0.355421 (0.0000) ***	0.355421 (0.0000) ***
	Year 2011	1.215852 (0.0000) ***	1.215852 (0.0000) ***	0.135355 (0.0030) ***	0.135355 (0.0030) ***
	Year 2012	-0.594276 (0.0997) *	-0.594276 (0.0997) *	0.118459 (0.0327) **	0.118459 (0.0327) **
	Year 2013	0.453172 (0.1913)	0.453172 (0.1913)	0.184117 (0.0005) ***	0.184117 (0.0005) ***
	Year 2014	0.915448 (0.0220) **	0.915448 (0.0220) **	0.292591 (0.0000) ***	0.292591 (0.0000) ***
	Year 2015	1.369426 (0.0025) ***	1.369426 (0.0025) ***	0.318836 (0.0000) ***	0.318836 (0.0000) ***
	Year 2016	-0.082347 (0.8614)	-0.082347 (0.8614)	0.175832 (0.0157) **	0.175832 (0.0157) **
	Year 2017	-0.201573 (0.6614)	-0.201573 (0.6614)	0.142083 (0.0444) **	0.142083 (0.0444) **
Company-specific	Market Capitalisation (Cap)	0.159278 (0.2741)	0.159278 (0.2741)	0.047842 (0.0333) **	0.047842 (0.0333) **
	Loan to Value (L)	-0.486229 (0.3650)	-0.486229 (0.3650)	-0.016887 (0.8403)	-0.016887 (0.8403)

	Dividend Yield (D)		-0.112987 (0.0000) ***	-0.112987 (0.0000) ***	-0.023373 (0.0000) ***	-0.023373 (0.0000) ***
	Return On Equity (ROE)		0.042219 (0.0000) ***	0.042219 (0.0000) ***	0.001866 (0.0281) **	0.001866 (0.0281) **
	Return Volatility (V)		N.A.	N.A.	0.536935 (0.0000)***	0.536935 (0.0000)***
	Growth in Revenue (REV)		0.024468 (0.7529)	0.024468 (0.7529)	0.000439 (0.9707)	0.000439 (0.9707)
	REIT (REIT)		-0.189822 (0.1375)	-0.189822 (0.1375)	-0.004046 (0.8367)	-0.004046 (0.8367)
	Investment Focus (I)		-0.125364 (0.3731)	-0.125364 (0.3731)	-0.050260 (0.0198) **	-0.050260 (0.0198) **
Sector Variables (Base = Diversified)	Residential		-0.490975 (0.0037) ***	-0.490975 (0.0037) ***	-0.049961 (0.0559) *	-0.049961 (0.0559) *
	Retail		-0.134068 (0.3283)	-0.134068 (0.3283)	-0.020650 (0.3255)	-0.020650 (0.3255)
	Industrial/ Speciality	Industrial	N.A.	0.151697 (0.2558)	N.A.	0.005990 (0.7693)
		Office	0.151697 (0.2558)		0.005990 (0.7693)	
		Industrial/Office	N.A.		N.A.	
	Speciality	Lodging/Resorts	-0.641405 (0.4785)	-0.641405 (0.4785)	-0.040131 (0.7720)	-0.040131 (0.7720)
		Health care	N.A.		N.A.	
		Self storage	N.A.		N.A.	
		Speciality	N.A.		N.A.	
	Risk free (r.f.)		3.806280 (0.7246)	3.806280 (0.7246)	3.202213 (0.0555) *	3.202213 (0.0555) *

Note: p-values are in brackets; "*" indicates significance at the 10% level; "**" indicates significance at the 5% level; "***" indicates significance at the 1% level.

Regression Results (I) - Continental European countries at the aggregate level, 2007-2011

	Dependent Variable	Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables	Model 33	Model 34	Model 35	Model 36
	C	-6.666748 (0.0064) ***	-6.666748 (0.0064) ***	-1.735898 (0.0005) ***	-1.735898 (0.0005) ***
Time Variables(Base = Year 2007)	Year 2008	-2.196845 (0.0000) ***	-2.196845 (0.0000) ***	-0.204796 (0.0001) ***	-0.204796 (0.0001) ***
	Year 2009	-1.986248 (0.0000) ***	-1.986248 (0.0000) ***	0.062912 (0.2952)	0.062912 (0.2952)
	Year 2010	1.017151 (0.0009) ***	1.017151 (0.0009) ***	0.459847 (0.0000) ***	0.459847 (0.0000) ***

	Year 2011	1.665805 (0.0000) ***	1.665805 (0.0000) ***	0.294229 (0.0000) ***	0.294229 (0.0000) ***
Company-specific Variables	Market Capitalisation (Cap)	0.767221 (0.0023) ***	0.767221 (0.0023) ***	0.161678 (0.0017) ***	0.161678 (0.0017) ***
	Loan to Value (L)	-0.271712 (0.7044)	-0.271712 (0.7044)	-0.121667 (0.4063)	-0.121667 (0.4063)
	Dividend Yield (D)	-0.060333 (0.0008) ***	-0.060333 (0.0008) ***	-0.021479 (0.0000) ***	-0.021479 (0.0000) ***
	Return On Equity (ROE)	0.028110 (0.0003) ***	0.028110 (0.0003) ***	-0.001734 (0.2551)	-0.001734 (0.2551)
	Return Volatility (V)	N.A.	N.A.	0.658596 (0.0000)***	0.658596 (0.0000)***
	Growth in Revenue (REV)	-0.035729 (0.6692)	-0.035729 (0.6692)	-0.008583 (0.6098)	-0.008583 (0.6098)
	REIT (REIT)	-0.598224 (0.0008) ***	-0.598224 (0.0008) ***	-0.110750 (0.0022) ***	-0.110750 (0.0022) ***
	Investment Focus (I)	-0.421472 (0.0949) *	-0.421472 (0.0949) *	-0.168898 (0.0009) ***	-0.168898 (0.0009) ***
Sector Variables (Base = Diversified)	Residential	-1.453387 (0.0000) ***	-1.453387 (0.0000) ***	-0.249621 (0.0000) ***	-0.249621 (0.0000) ***
	Retail	0.245961 (0.1908)	0.245961 (0.1908)	-0.017200 (0.6473)	-0.017200 (0.6473)
	Industrial/ Office	Industrial	NA	NA	0.041934 (0.3068)
		Office	0.266314 (0.1953)	0.041934 (0.3068)	
		Industrial/Office	NA	NA	
	Speciality	Lodging/Resorts	NA	NA	NA
		Health care	NA	NA	
		Self storage	NA	NA	
		Speciality	NA	NA	
	Risk free (r.f.)	33.73728 (0.0219) **	33.73728 (0.0219) **	14.52139 (0.0000) ***	14.52139 (0.0000) ***
	Included Obs.	324	324	324	324
	R ²	0.747588	0.747588	0.636753	0.636753
	Adjusted R ²	0.735295	0.735295	0.617822	0.617822
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "***" indicates significance at the 5% level; "****" indicates significance at the 1% level.

Regression Results (J) - Continental European countries at the aggregate level, 2012-2017

	Dependent Variable		Risk-adjusted Return (R)		Raw Return (R')	
	Independent Variables		Model 37	Model 38	Model 39	Model 40
	C		3.589018 (0.0718) *	3.589018 (0.0718) *	0.162356 (0.4718)	0.162356 (0.4718)
Time Variables (Base = Year 2012)	Year 2013		1.024259 (0.0000) ***	1.024259 (0.0000) ***	0.059824 (0.0085) ***	0.059824 (0.0085) ***
	Year 2014		1.321386 (0.0000) ***	1.321386 (0.0000) ***	0.115117 (0.0000) ***	0.115117 (0.0000) ***
	Year 2015		1.780751 (0.0000) ***	1.780751 (0.0000) ***	0.129338 (0.0000) ***	0.129338 (0.0000) ***
	Year 2016		0.350259 (0.2338)	0.350259 (0.2338)	-0.012872 (0.7009)	-0.012872 (0.7009)
	Year 2017		0.287014 (0.3215)	0.287014 (0.3215)	-0.059494 (0.0679)	-0.059494 (0.0679)
Company-specific Variables	Market Capitalisation (Cap)		-0.250609 (0.1983)	-0.250609 (0.1983)	-0.005051 (0.8187)	-0.005051 (0.8187)
	Loan to Value (L)		-0.611492 (0.4357)	-0.611492 (0.4357)	0.070570 (0.4275)	0.070570 (0.4275)
	Dividend Yield (D)		-0.199235 (0.0000) ***	-0.199235 (0.0000) ***	-0.021517 (0.0000) ***	-0.021517 (0.0000) ***
	Return On Equity (ROE)		0.036054 (0.0001) ***	0.036054 (0.0001) ***	0.002806 (0.0053) ***	0.002806 (0.0053) ***
	Return Volatility (V)		N.A.	N.A.	-0.023383 (0.8681)	-0.023383 (0.8681)
	Growth in Revenue (REV)		0.086421 (0.5919)	0.086421 (0.5919)	0.017870 (0.3243)	0.017870 (0.3243)
	REIT (REIT)		0.025754 (0.8943)	0.025754 (0.8943)	0.033046 (0.1297)	0.033046 (0.1297)
	Investment Focus (I)		-0.053756 (0.7524)	-0.053756 (0.7524)	0.001687 (0.9299)	0.001687 (0.9299)
Sector Variables (Base = Diversified)	Residential		0.035553 (0.8692)	0.035553 (0.8692)	0.072885 (0.0044) ***	0.072885 (0.0044) ***
	Retail		-0.382877 (0.0547) *	-0.382877 (0.0547) *	-0.027427 (0.2205)	-0.027427 (0.2205)
	Industrial/	Industrial	NA	0.141448 (0.4104)	NA	-0.015487 (0.4227)
		Office	0.141448 (0.4104)		-0.015487 (0.4227)	
		Industrial/Office	NA		NA	
	Speciality	Lodging/Resorts	-0.515615 (0.5676)	-0.515615 (0.5676)	0.044602 (0.6601)	0.044602 (0.6601)
		Health care	NA		NA	
		Self storage	NA		NA	
		Speciality	NA		NA	
	Risk free (r.f.)		-4.754804	-4.754804	-2.750857	-2.750857

		(0.7608)	(0.7608)	(0.1312)	(0.1312)
	Included Obs.	488	488	488	488
	R ²	0.415873	0.415873	0.383302	0.383302
	Adjusted R ²	0.394745	0.394745	0.359633	0.359633
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "***" indicates significance at the 5% level; **** indicates significance at the 1% level.

Regression Results (K) – All countries at the subsector level, 2007-2017 (with risk-adjusted return as dependent variable)

	Dep. Var.	Risk adjusted Return (R)								
	Indep. Variables	Model 41	Model 42	Model 43	Model 44	Model 45	Model 46	Model 47	Model 48	Model 49
		Diversified	Resid.	Indust./Office	Retail	Speciality	REIT	Non-REIT	Rental	Non-Rental
	C	1.594182 (0.2227)	-19.14795 (0.0016) ***	-13.88755 (0.0004) ***	-3.464666 (0.2144)	-18.90108 (0.0157) **	-0.978748 (0.4630)	-19.32314 (0.0000) ***	-3.755214 (0.0006) ***	-21.46211 (0.0000) ***
Time Variables ² (Base-Year 2007-Year 2009)	Year 2010	3.053893 (0.0000) ***	2.599475 (0.0006) ***	2.802906 (0.0000) ***	2.503902 (0.0000) ***	1.949458 (0.0012) ***	2.530073 (0.0000) ***	2.932814 (0.0000) ***	2.874286 (0.0000) ***	2.028739 (0.0000) ***
	Year 2011									
	Year 2012									
	Year 2013									
	Year 2014	4.621700 (0.0000) ***	3.214456 (0.0031) ***	3.891408 (0.0000) ***	3.015804 (0.0000) ***	2.301636 (0.0072) ***	3.967089 (0.0000) ***	3.640434 (0.0000) ***	4.135683 (0.0000) ***	2.785385 (0.0000) ***
	Year 2015									
	Year 2016									
	Year 2017									
Country Variables	France	0.034881 (0.8622)	NA	-0.389569 (0.6783)	0.202605 (0.5799)	NA	-0.004633 (0.9799)	NA	-0.089380 (0.6173)	NA
	Germany	1.060763 (0.0000) ***	1.338391 (0.0148) **	0.787906 (0.0305) **	2.153987 (0.0000) ***	NA	0.867814 (0.0002) ***	0.464762 (0.0241) **	0.796586 (0.0000) ***	1.232336 (0.0005) ***
	The Netherlands	-0.096790 (0.6961)	NA	NA	0.756968 (0.0026) ***	NA	0.154692 (0.3699)	NA	0.219326 (0.1810)	NA
	Sweden	0.936166 (0.0000) ***	NA	-0.700362 (0.5943)	NA	NA	NA	0.045533 (0.8325)	0.859774 (0.0000) ***	-0.431663 (0.4301)
	Switzerland	2.226228 (0.0000) ***	NA	0.089018 (0.9430)	NA	NA	NA	0.717162 (0.0138) **	1.433296 (0.0000) ***	2.716270 (0.0000) ***
Company-specific Variables	Market Cap (Cap)	-0.285724 (0.0364) **	2.003414 (0.0024) ***	1.112015 (0.0044) ***	-0.030022 (0.9229)	1.749984 (0.0385) **	-0.224435 (0.0755) *	1.758580 (0.0000) ***	0.019382 (0.8654)	1.957934 (0.0003) ***
	Loan to Value (L)	-1.605393 (0.0004) ***	-2.641001 (0.2363)	0.649385 (0.6313)	-2.241030 (0.0307) **	-0.605144 (0.5484)	-1.360512 (0.0089) ***	0.109079 (0.8291)	-1.268210 (0.0008) ***	0.059812 (0.9542)
	Dividend Yield (D)	-0.080120 (0.0000) ***	-0.490633 (0.0002) ***	0.010574 (0.7667)	-0.269820 (0.0000) ***	-0.014965 (0.9024)	-0.074654 (0.0003) ***	-0.056297 (0.0021) ***	-0.084045 (0.0000) ***	-0.003896 (0.9488)
	Return On Equity (ROE)	0.047090 (0.0000) ***	0.002087 (0.8628)	0.063042 (0.0000) ***	0.033237 (0.0000) ***	0.052149 (0.0025) ***	0.052589 (0.0000) ***	0.036478 (0.0000) ***	0.047919 (0.0000) ***	0.059006 (0.0000) ***
	Return Volatility (V)	NA	NA	NA	NA	NA	NA	NA	NA	NA

² Due to constraints on sample size, only two time dummy variables are used for Model 41 to Model 49. The period of 2007 to 2009 is the base year.

Sector Variables (Base = Diversified)	Growth in Revenue (REV)	0.025017 (0.7985)	0.765303 (0.0127) **	0.236305 (0.3213)	-0.034055 (0.7020)	0.228309 (0.2406)	0.207509 (0.0420) **	-0.004421 (0.9548)	0.128872 (0.0922) *	-0.138315 (0.1779)
	REIT	0.190415 (0.2468)	2.453477 (0.0118) **	-0.900701 (0.4423)	1.332290 (0.0043) ***	1.338740 (0.0025) ***	NA	NA	0.231731 (0.0714) *	0.486806 (0.4399)
	Investment Focus (I)	0.077686 (0.6481)	-0.898162 (0.0609) *	0.425847 (0.3681)	0.672039 (0.1934)	0.985463 (0.3248)	-0.205103 (0.5726)	0.069365 (0.6206)	NA	NA
	Residential	NA	NA	NA	NA	NA	0.307680 (0.6369)	-0.850991 (0.0000) ***	-0.283623 (0.1560)	-0.257606 (0.3276)
	Retail	NA	NA	NA	NA	NA	-0.014750(0.9185)	-0.918243 (0.0000) ***	-0.224962 (0.0776) *	-0.201451 (0.6818)
	Industrial / Office	NA	NA	NA	NA	NA	0.350859 (0.0106) **	-0.183169 (0.3549)	0.282518 (0.0160) **	-1.802401 (0.0000) ***
	Speciality	NA	NA	NA	NA	NA	0.625926 (0.0048) ***	-0.568071 (0.0499) **	0.399053 (0.0287) **	-0.239980 (0.8091)
	Risk free (r.f.)	94.41704 (0.0000) ***	73.12003 (0.0147) **	76.78098 (0.0000) ***	75.51258 (0.0000) ***	50.18806 (0.0354) **	76.10999 (0.0000) ***	82.65509 (0.0000) ***	78.30422 (0.0000) ***	104.1146 (0.0000) ***
	Included Obs.	791	130	312	280	100	825	791	1402	214
	R ²	0.555819	0.739224	0.642328	0.555840	0.686885	0.612078	0.549333	0.575627	0.555078
	Adjusted R ²	0.547222	0.714915	0.625468	0.534375	0.651703	0.604397	0.540017	0.570104	0.518942
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "**" indicates significance at the 5% level; "***" indicates significance at the 1% level.

Regression Results (L) – All sample countries at the subsector level, 2007–2017 (with raw return as dependent variable).

	Dep. Var.	Raw Return (R)								
	Indep. Variables	Model 50	Model 51	Model 52	Model 53	Model 54	Model 55	Model 56	Model 57	Model 58
		Diversified	Resid.	Indust./Office	Retail	Speciality	REIT	Non-REIT	Rental	Non-Rental
	C	-0.027968 (0.8902)	-3.465417 (0.0024) ***	-1.156513 (0.0301) **	0.243262 (0.5421)	-0.136834 (0.9460)	-0.003510 (0.9850)	-2.550089 (0.0000) ***	-0.400476 (0.0204) **	-2.253968 (0.0290) **
Time Variables ³ (Base= Year2007- Year 2009)	Year 2010	0.308621 (0.0000) ***	0.538924 (0.0003) ***	0.376431 (0.0000) ***	0.248504 (0.0000) ***	0.389534 (0.0227) **	0.298924 (0.0000) ***	0.299926 (0.0000) ***	0.334412 (0.0000) ***	0.106030 (0.2048)
	Year 2011									
	Year 2012									
	Year 2013									
	Year 2014	0.363950 (0.0000) ***	0.662237 (0.0014) ***	0.479957 (0.0000) ***	0.258055 (0.0003) ***	0.389444 (0.0872) *	0.373203 (0.0000) ***	0.289463 (0.0000) ***	0.389667 (0.0000) ***	0.118343 (0.3019)
	Year 2015									
	Year 2016									
	Year 2017									
Country Variables	France	0.022419 (0.4722)	NA	-0.006969 (0.9571)	0.053007 (0.3116)	NA	0.010927 (0.6740)	NA	0.024621 (0.3850)	NA
	Germany	0.073830 (0.0262) **	0.011631 (0.9100)	0.025231 (0.6148)	0.279134 (0.0001) ***	NA	0.085074 (0.0081) ***	0.014683 (0.6919)	0.084562 (0.0009) ***	0.134928 (0.0569) *

³ Due to constraints on sample size, only two time dummy variables are used for Model 50 to Model 58. The period of 2007 to 2009 is the base year.

	The Netherlands	0.038185 (0.3192) ***	NA	NA	0.138260 (0.0001) ***	NA	0.074654 (0.0021) ***	NA	0.071508 (0.0058) ***	NA
	Sweden	0.109177 (0.0003) ***	NA	-0.141645 (0.4339)	NA	NA	NA	-0.031948 (0.4102)	0.114840 (0.0001) ***	-0.077128 (0.4699)
	Switzerland	0.157268 (0.0030) ***	NA	-0.025374 (0.8823)	NA	NA	NA	-0.056833 (0.2783)	0.104285 (0.0163) **	0.224771 (0.0331) **
Company-specific Variables	Market Cap (Cap)	-0.030989 (0.1430)	0.305618 (0.0136) **	0.059738 (0.2629)	-0.065412 (0.1411)	-0.017402 (0.9367)	-0.028921 (0.1021)	0.251968 (0.0000) ***	0.004548 (0.8010)	0.210947 (0.0494) **
	Loan to Value (L)	-0.111633 (0.1147)	0.350925 (0.4057)	0.578017 (0.0021) ***	-0.129233 (0.3824)	0.009230 (0.9707)	-0.045625 (0.5318)	0.193298 (0.0341) **	-0.067245 (0.2630)	0.357190 (0.0736) *
	Dividend Yield (D)	-0.019229 (0.0000) ***	-0.039524 (0.1007)	-0.024197 (0.0000) ***	-0.058800 (0.0000) ***	-0.064891 (0.0784)	-0.021589 (0.0000) ***	-0.016124 (0.0000) ***	-0.019677 (0.0000) ***	-0.024000 (0.0461) **
	Return On Equity (ROE)	0.001958 (0.0033) ***	-0.004200 (0.0711) *	0.003191 (0.0028) ***	0.003243 (0.0008) ***	0.006762 (0.1210)	0.003318 (0.0000) ***	0.000896 (0.3118)	0.002760 (0.0000) ***	0.005260 (0.0205) **
	Return Volatility (V)	0.618830 (0.0000) ***	0.558039 (0.0006) ***	0.924041 (0.0000) ***	0.672058 (0.0001) ***	0.175865 (0.1137)	0.731350 (0.0000) ***	0.512755 (0.0000) ***	0.472304 (0.0000) ***	0.796355 (0.0000) ***
	Growth in Revenue (REV)	0.021140 (0.1639)	0.062317 (0.2812)	0.038414 (0.2442)	-0.041719 (0.0012) ***	0.341342 (0.0000) ***	0.012257 (0.3920)	0.027665 (0.0492) **	0.035895 (0.0030) ***	-0.023534 (0.2331)
	REIT	0.047034 (0.0650) *	0.122765 (0.5012)	-0.132528 (0.4114)	0.230018 (0.0006) ***	0.319974 (0.0039)	NA	NA	0.050497 (0.0146) **	0.185683 (0.1337)
	Investment Focus (I)	-0.028872 (0.2717)	0.041708 (0.6463)	0.072018 (0.2702)	0.084009 (0.2562)	-0.117850 (0.6398)	-0.044436 (0.3834)	-0.010500 (0.6777)	NA	NA
Sector Variables (Base = Diversified)	Residential	NA	NA	NA	NA	NA	-0.002614 (0.9771)	-0.122982 (0.0002) ***	-0.024145 (0.4442)	-0.069043 (0.1760)
	Retail	NA	NA	NA	NA	NA	-0.025199 (0.2128)	-0.108635 (0.0043) ***	-0.031677 (0.1152)	-0.011525 (0.9038)
	Industrial / Office	NA	NA	NA	NA	NA	-0.004518 (0.8151)	-0.004590 (0.8976)	0.007993 (0.6669)	-0.170445 (0.0383) **
	Speciality	NA	NA	NA	NA	NA	0.071165 (0.0221) **	-0.218338 (0.0001) ***	0.007921 (0.7836)	0.024323 (0.8975)
	Risk free (r.f.)	5.862508 (0.0002) ***	5.495042 (0.3304)	6.072352 (0.0164) ***	4.175263 (0.0445) **	4.406243 (0.4610)	5.007466 (0.0006) ***	4.616918 (0.0080) ***	5.679965 (0.0000) ***	5.747956 (0.1074)
	Included Obs.	791	130	312	280	100	825	791	1402	214
	R ²	0.371000	0.583268	0.549274	0.476195	0.557131	0.465180	0.365533	0.396459	0.369789
	Adjusted R ²	0.357998	0.540527	0.526433	0.448832	0.501772	0.453913	0.351580	0.388162	0.315128
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "***" indicates significance at the 5% level; "****" indicates significance at the 1% level.

Regression Results (M) – All countries at the subsector level, 2007-2011 (with risk-adjusted return as dependent variable)

	Dep. Var.	Risk-adjusted Return (R)									
	Indep.	Model 59	Model 60	Model 61	Model 62	Model	Model 64	Model 65	Model 66	Model 67	

	Variables					63				
		Diversifi ed	Resid.	Indust./ Office	Retail	Special ity	REIT	Non-REIT	Rental	Non- Rental
	C	-0.795946 (0.6466) ***	-57.29052 (0.0000) ***	-13.21257 (0.0192) **	-8.473760 (0.0737) *	-51.42125 (0.0004)	-0.621837 (0.7389)	-28.39575 (0.0000) ***	-4.317979 (0.0070) ***	-55.83905 (0.0000) ***
Time Variables	Year 2008	-2.031281 (0.0000) ***	3.412741 (0.0158) **	-1.350247 (0.0251) **	-2.197489 (0.0000) ***	-1.913378 (0.0463) **	-2.165234 (0.0000) ***	-1.739785 (0.0000) ***	-2.257398 (0.0000) ***	-0.488017 (0.5469)
	Year 2009	-0.946962 (0.0048) ***	4.328622 (0.01330) **	-0.640285 (0.3404)	-2.038287 (0.0000) ***	-0.769745 (0.3522)	-1.291775 (0.0002) ***	-0.886072 (0.0128) **	-1.287095 (0.0000) ***	0.223336 (0.8367)
	Year 2010	1.474730 (0.0000) ***	4.990196 (0.0023) ***	1.811203 (0.0146) **	0.798484 (0.1061)	0.601157 (0.4907)	0.916792 (0.0120) **	1.807873 (0.0000) ***	1.354506 (0.0000) ***	1.376590 (0.1543)
	Year 2011	1.938207 (0.0000) ***	4.490867 (0.0150) **	2.983842 (0.0004) ***	1.146858 (0.0382) **	0.432097 (0.6563)	1.613294 (0.0000) ***	2.011794 (0.0000) ***	1.974797 (0.0000) ***	0.548947 (0.5841)
Country Variables	France	-0.121202 (0.6654)	NA	NA	NA	NA	-0.177658 (0.5559)	NA	-0.306913 (0.2918)	NA
	Germany	1.001458 (0.0052) ***	NA	1.713682 (0.0083) ***	NA	NA	0.758494 (0.0845) *	0.372654 (0.2094)	0.436054 (0.0790) *	3.551358 (0.0000) ***
	The Netherland s	0.525241 (0.0410) **	NA	NA	0.620520 (0.0650) *	NA	0.269359 (0.2079)	NA	0.319431 (0.0996) *	NA
	Sweden	1.346277 (0.0000) ***	NA	1.841123 (0.2134)	NA	NA	NA	0.046622 (0.8799)	0.957188 (0.0001) ***	NA
	Switzerlan d	4.168574 (0.0000) ***	NA	3.573546 (0.0093) ***	NA	NA	NA	1.094621 (0.0352) **	2.850148 (0.0000) ***	-1.283800 (0.1603)
Company-specific Variables	Market Cap (Cap)	-0.203683 (0.2785)	6.942558 (0.0000) ***	0.964981 (0.1274)	0.689594 (0.2173)	6.159212 (0.0010) ***	-0.158237 (0.4436)	2.984872 (0.0000) ***	0.171023 (0.3263)	6.437237 (0.0000) ***
	Loan to Value (L)	-1.144929 (0.0619) *	-15.96243 (0.0026) ***	-3.601501 (0.1009)	-1.230446 (0.2654)	-3.304363 (0.3197)	-0.554115 (0.4431)	-0.473884 (0.4818)	-0.752051 (0.1575)	-3.859736 (0.0500) **
	Dividend Yield (D)	-0.036854 (0.0189) **	-0.132386 (0.3749)	0.027801 (0.4333)	0.003859 (0.9612)	0.195545 (0.1918)	-0.020990 (0.4054)	-0.006111 (0.7329)	-0.036738 (0.0142) **	0.081394 (0.1528)
	Return On Equity (ROE)	0.039833 (0.0000) ***	0.011373 (0.4529)	0.044784 (0.0000) ***	0.018542 (0.0130) **	0.009293 (0.7181)	0.042210 (0.0000) ***	0.018405 (0.0033) ***	0.034597 (0.0000) ***	0.022482 (0.2926)
	Return Volatility (V)	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Growth in Revenue (REV)	-0.041673 (0.6626)	0.490413 (0.2952)	0.226731 (0.4636)	-0.020907 (0.8301)	-0.066170 (0.7742)	0.115830 (0.3822)	0.074198 (0.3219)	0.085970 (0.3136)	-0.036061 (0.7458)
	REIT	0.159392 (0.4965)	NA	0.796838 (0.4840)	-1.237211 (0.0054) ***	1.657929 (0.0117) **	NA	NA	0.017441 (0.9260)	3.257527 (0.0003) ***
	Investment Focus (I)	-0.393540 (0.1196)	1.233185 (0.1003)	0.244762 (0.7591)	1.453728 (0.0415) **	NA	-0.361804 (0.5359)	-0.169945 (0.4478)	NA	NA
Sector Variables	Residentia l	NA	NA	NA	NA	NA	NA	-0.993894 (0.0001) ***	-0.453886 (0.1007)	-0.330685 (0.5016)
	Retail	NA	NA	NA	NA	NA	0.489813 (0.0116) **	-0.512371 (0.0642) *	0.337796 (0.0573) *	-0.118249 (0.8398)

	Industrial / Office	NA	NA	NA	NA	NA	0.403761 (0.0543) *	-0.697906 (0.0148) *	0.226548 (0.1787)	NA
	Speciality	NA	NA	NA	NA	NA	0.625507 (0.1165)	0.011514 (0.9735)	0.445203 (0.1005)	NA
	Risk free (r.f.)	76.20279 (0.0000) ***	23.12843 (0.6580)	110.6748 (0.0005) ***	66.45717 (0.0081) ***	5.373284 (0.8882)	62.93170(0.0002) ***	69.91190 (0.0000) ***	76.01477 (0.0000) ***	33.51219 (0.2620)
	Included Obs.	315	42	124	137	44	350	312	587	75
	R ²	0.571379	0.895596	0.815667	0.734714	0.847865	0.742639	0.760120	0.734838	0.796747
	Adjusted R ²	0.552867	0.857314	0.790065	0.706676	0.795568	0.729461	0.745383	0.725468	0.745073
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "***" indicates significance at the 5% level; **** indicates significance at the 1% level.

Regression Results (N) - All sample countries at the subsector level, 2012-2017 (with risk-adjusted return as dependent variable)

	Dep. Var.	Risk-adjusted Return (R)								
	Indep. Variables	Model 68	Model 69	Model 70	Model 71	Model 72	Model 73	Model 74	Model 75	Model 76
		Diversifi ed	Resid.	Indust./ Office	Retail	Special ity	REIT	Non-REIT	Rental	Non- Rental
	C	1.248150 (0.4470)	-2.443997 (0.6427)	-4.967930 (0.3622)	6.996608 (0.0353) **	45.12802 (0.0000) ***	4.461702 (0.0040) ***	-1.133980 (0.7549)	3.559780 (0.0051) ***	-16.46832 (0.0936) *
Time Variables (Base = Year 2012)	Year 2013	1.273164 (0.0000) ***	0.443828 (0.3857)	0.771885 (0.0497) **	1.375023 (0.0000) ***	1.678498 (0.0033) ***	1.267898 (0.0000) ***	0.996744 (0.0000) ***	1.217956 (0.0000) ***	0.954938 (0.0389) **
	Year 2014	2.191837 (0.0000) ***	-0.114560 (0.8325)	1.389165 (0.0004) ***	1.048012 (0.0008) ***	1.684641 (0.0024) ***	1.874899 (0.0000) ***	1.410996 (0.0000) ***	1.796753 (0.0000) ***	1.385233 (0.0029) ***
	Year 2015	2.239723 (0.0000) ***	-0.283933 (0.6535)	2.342444 (0.0000) ***	1.225663 (0.0006) ***	2.413001 (0.0002) ***	2.115046 (0.0000) ***	1.430683 (0.0000) ***	2.051931 (0.0000) ***	0.988247 (0.0778) *
	Year 2016	0.484336 (0.1103)	-1.974478 (0.0173) **	1.174088 (0.0516) *	-0.536157 (0.1907)	1.805454 (0.0129) **	0.585879 (0.0414) **	0.025623 (0.9384)	0.382225 (0.0863) *	0.538706 (0.4392)
	Year 2017	0.424331 (0.1421)	-3.159551 (0.0002) ***	0.967827 (0.1093)	-0.940344 (0.0135) **	1.390223 (0.0633) *	0.078583 (0.7710)	-0.116585 (0.7138)	-0.135900 (0.5226)	0.658264 (0.3378)
Country Variables (Base = U.K.)	France	-0.213881 (0.4027)	NA	0.775590 (0.5165)	-0.136260 (0.6592)	NA	-0.195862 (0.3469)	NA	-0.290828 (0.1403)	NA
	Germany	0.560340 (0.0321) **	1.980694(0.0019) ***	0.086535 (0.8686)	1.524128 (0.0209) **	NA	0.113266(0.6647)	0.730924 (0.0205) **	0.286847(0.1471)	0.846257 (0.2574)
	The Netherlands	-1.765583 (0.0003) ***	NA	NA	0.291959 (0.3692)	NA	-0.281642 (0.2690)	NA	-0.341616 (0.1661)	NA
	Sweden	0.598775 (0.0130) **	NA	NA	NA	NA	NA	0.501901 (0.1087)	0.501690 (0.0188) **	-0.037536 (0.9612)
	Switzerla nd	1.287238 (0.0014) ***	NA	1.287274 (0.1487)	NA	NA	NA	0.560201 (0.2208)	0.048840 (0.8794)	3.320385 (0.0019) ***
Company-specific Variables	Market Cap (Cap)	-0.136197 (0.4224)	0.584067 (0.3311)	0.207000 (0.7276)	-0.633043 (0.0583) *	-4.696813 (0.0000)** *	-0.351718 (0.0148) **	0.173429 (0.6558)	-0.324231 (0.0161) **	1.518482 (0.1512)
	Loan to Value (L)	-1.700856 (0.0060) ***	-7.469732 (0.0005) ***	4.490861 (0.0372) **	-2.180096 (0.2601)	3.206782 (0.0007) ***	-1.080804 (0.1198)	-1.170603 (0.1187)	-1.270651 (0.0057) ***	1.284204 (0.4204)

	Dividend Yield (D)	-0.094328 (0.0010) ***	0.213142 (0.1592)	-0.316164 (0.0297) **	-0.344820 (0.0000) ***	-0.768030 (0.0001) ***	-0.123984 (0.0000) ***	-0.109732 (0.0558) *	-0.143749 (0.0000) ***	-0.098783 (0.5163)
	Return On Equity (ROE)	0.045384 (0.0000) ***	0.135446 (0.0000) ***	0.059599 (0.0014) ***	0.036950 (0.0232) **	0.001954 (0.9252)	0.067696 (0.0000) ***	0.054655 (0.0000) ***	0.052012 (0.0000) ***	0.089829 (0.0000) ***
	Return Volatility (V)	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Growth in Revenue (REV)	-0.054122 (0.7671)	0.020167 (0.9461)	0.583861 (0.1161)	-0.139300 (0.3437)	0.871227 (0.0191) **	0.118522 (0.3370)	-0.278002 (0.1319)	-0.030669 (0.7799)	-0.029309 (0.9180)
	REIT	0.384414 (0.0465) **	2.679254 (0.0032) ***	0.460962 (0.4092)	1.727842 (0.0027) ***	2.767886 (0.0000) ***	NA	NA	0.473775 (0.0011) ***	1.935757 (0.1690)
	Investment Focus (I)	-0.011910 (0.9510)	-1.599966 (0.0011) ***	1.088236 (0.0811) *	NA	-1.640582 (0.0427) **	-0.582455 (0.1490)	0.137288 (0.4292)	NA	NA
Sector Variables (Base = Diversified)	Residential	NA	NA	NA	NA	NA	0.942522 (0.0894)	-0.213724 (0.3799)	0.215753 (0.3612)	0.266025 (0.4478)
	Retail	NA	NA	NA	NA	NA	-0.561146 (0.0018) ***	-0.936998 (0.0010) ***	-0.546827 (0.0002) ***	NA
	Industrial/Office	NA	NA	NA	NA	NA	0.175362 (0.2528)	0.036874 (0.8767)	0.302117(0.0187) **	-1.756681 (0.0007) ***
	Speciality	NA	NA	NA	NA	NA	0.380375 (0.0976) *	-1.061845 (0.0333) **	0.284671 (0.1568)	-0.177994 (0.8644)
	Risk free (r.f.)	36.47298 (0.0700) *	30.23491 (0.5098)	66.71927 (0.1381)	-26.95551 (0.3156)	-177.4649 (0.0035) ***	5.618059 (0.7735)	14.76651 (0.5162)	5.228219 (0.7287)	86.14401 (0.0671) *
	Included Obs.	476	88	188	146	56	475	479	815	139
	R ²	0.525348	0.609260	0.444165	0.642540	0.799698	0.607983	0.341337	0.524852	0.463516
	Adjusted R ²	0.506652	0.534323	0.392157	0.601294	0.737699	0.591614	0.314072	0.512269	0.383044
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "*" indicates significance at the 10% level; "***" indicates significance at the 5% level; "****" indicates significance at the 1% level.

Regression Results (O) – All countries at the subsector level, 2007-2017 (with risk-adjusted return as dependent variable)

	Dep. Var.	Risk adjusted Return (R)								
	Indep. Variables	Model 77	Model 78	Model 79	Model 80	Model 81	Model 82	Model 83	Model 84	Model 85
		Diversified	Resid.	Indust./Office	Retail	Speciality	REIT	Non-REIT	Rental	Non-Rental
	C	-1.680533 (0.029)	-15.10952 (0.0088) ***	-13.72595 (0.0004) ***	-1.586618 (0.5631)	-18.91459 (0.0114) **	-0.905307 (0.4932)	-18.38737 (0.0000) ***	-3.430855 (0.0017) ***	-17.16780 (0.0008) ***
Time Variables ⁴ (Base=Year 2007-Year 2009)	Year 2010	3.079900	2.361682	2.796745	2.638759	1.953591	2.476323	2.982386	2.894169	1.997546
	Year 2011	(0.0000)***	(0.0011) ***	(0.0000) ***	(0.0000) ***	(0.0012) ***	(0.0000) ***	(0.0000) ***	(0.0000) ***	(0.0000) ***
	Year 2012									
	Year 2013									
	Year 2014	4.640851	3.210328	3.889690	3.163933	2.303206	3.870393	3.739166	4.165521	2.851502
	Year 2015	(0.0000) ***	(0.0019) ***	(0.0000) ***	(0.0000) ***	(0.0072) ***	(0.0000) ***	(0.0000) ***	(0.0000) ***	(0.0000) ***
	Year 2016									

⁴ Due to constraints on sample size, only two time dummy variables are used for Models 77 – 85. The period of 2007 to 2009 is the base year.

	Year 2017									
Country Variables	France	-0.001881 (0.9925)	NA	-0.366465 (0.6966)	0.548339 (0.1360)	NA	0.009793 (0.9573)	NA	-0.097497 (0.5830)	NA
	Germany	1.037374 (0.0000) ***	1.387851 (0.0070) ***	0.776976 (0.0321) **	2.523704 (0.0000) ***	NA	0.869497 (0.0001) ***	0.536475 (0.0092) ***	0.813841 (0.0000) ***	1.818359 (0.0001) ***
	The Netherlands	-0.013581 (0.9574)	NA	NA	0.944821 (0.0001) ***	NA	0.219972 (0.2089)	NA	0.238318 (0.1476)	NA
	Sweden	0.947344 (0.0000) ***	NA	-0.717048 (0.5857)	NA	NA	NA	0.134670 (0.5334)	0.911031	-0.231229 (0.6673)
	Switzerland	2.231751 (0.0000) ***	NA	0.082921 (0.9469)	NA	NA	NA	0.844422 (0.0039) ***	1.516812 (0.0000) ***	3.360795 (0.0000) ***
Company-specific Variables	Market Cap (Cap)	-0.275673 (0.0449) **	1.535411 (0.0154) **	1.095328 (0.0045) ***	-0.248600 (0.4172)	1.751642 (0.0310) **	-0.234681 (0.0616) *	1.639879 (0.0000) ***	-0.023384 (0.8376)	1.529915 (0.0031) ***
	Loan to Value (L)	-1.613708 (0.0004) ***	-1.680122 (0.4348)	0.717228 (0.5977)	-2.520242 (0.0130) **	-0.605761 (0.5467)	-1.229877 (0.0186) **	-0.017227 (0.9726)	-1.260306 (0.0008) ***	0.065667 (0.9490)
	Dividend Yield (D)	-0.095281 (0.0000) ***	-0.556971 (0.0000) ***	0.003723 (0.9129)	-0.366132 (0.0000) ***	-0.015975 (0.8934)	-0.095509 (0.0000) ***	-0.059716 (0.0078) ***	-0.093459 (0.0000) ***	-0.265502 (0.0692) *
	Return On Equity (ROE)	0.046361 (0.0000) ***	0.007205 (0.5317)	0.062603 (0.0000) ***	0.031652 (0.0000) ***	0.052095 (0.0025) ***	0.052161 (0.0000) ***	0.036524 (0.0000) ***	0.047631 (0.0000) ***	0.057162 (0.0000) ***
	Return Volatility (V)	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Growth in Revenue (REV)	0.021661 (0.8256)	0.800123 (0.0070) ***	0.232091 (0.3298)	0.031652 (0.0000) ***	0.229226 (0.2379)	0.196918 (0.0532) *	-0.009191 (0.9054)	0.119300 (0.1164)	-0.138059 (0.1748)
	REIT	0.188528 (0.2539)	2.564395 (0.0057) ***	-0.908337 (0.4385)	1.743615 (0.0002) ***	1.343351 (0.0028) ***	NA	NA	0.269910 (0.0354) **	1.745370 (0.0290) **
	Investment Focus (I)	0.126541 (0.4647)	-0.742487 (0.1065)	0.441832 (0.3509)	0.777113 (0.1231)	0.982713 (0.3249)	-0.023964 (0.9471)	0.086289 (0.5365)	NA	NA
Sector Variables (Base = Diversified)	Residential	NA	NA	NA	NA	NA	0.359973 (0.5800)	-0.733989 (0.0001) ***	-0.139749 (-0.139749)	-0.163466 (0.5285)
	Retail	NA	NA	NA	NA	NA	0.342684 (0.0124) **	-0.169422 (0.3881)	0.279336 (0.4827)	-1.705341 (0.0001) ***
	Industrial / Office	NA	NA	NA	NA	NA	-0.012207 (0.9323)	-0.889401 (0.0000) ***	-0.191011 (0.1311)	-0.189856 (0.6961)
	Speciality	NA	NA	NA	NA	NA	0.635040 (0.0041) ***	-0.542594 (0.0592) *	0.398701 (0.0275) **	0.000487 (0.9996)
	Risk free (r.f.)	94.15985 (0.0000) ***	64.46747 (0.0255) **	76.49663 (0.0000) ***	79.54461 (0.0000) ***	50.23981 (0.0328) **	72.99252 (0.0000) ***	85.39270 (0.0000) ***	79.74196 (0.0000) ***	97.02255 (0.0000) ***
	Included	791	130	312	280	100	825	791	1402	214

	Obs.									
	R ²	0.552475	0.726498	0.642236	0.578592	0.686895	0.614074	0.540480	0.574796	0.562481
	Adjusted R ²	0.543802	0.700785	0.625372	0.558226	0.651715	0.606432	0.530956	0.569254	0.526946
	Prob (F Stat)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Note: p-values are in brackets; "**" indicates significance at the 10% level; "***" indicates significance at the 5% level; "****" indicates significance at the 1% level.

Technical Annex – Summary composition of model specifications

Model specification, sample period, sample sectors and sample countries for Models 1 – 40 (Aggregate level models)

Model ⁵	Sample Country(ies)/ Region ⁶	Sample Sector ⁷	Sample Period ⁸	Dep. Var ⁹	Sector Class. Method	Model	Sample Countries	Sample Sector	Sample Period	Dep. Var	Sector Class. Method
1	All	All	2007-2017	R	10-sector	21	U.K.	All	2007-2011	R	10-sector
2	All	All	2007-2017	R	5-sector	22	U.K.	All	2007-2011	R	5-sector
3	All	All	2007-2017	R'	10-sector	23	U.K.	All	2007-2011	R'	10-sector
4	All	All	2007-2017	R'	5-sector	24	U.K.	All	2007-2011	R'	5-sector
5'	All	All	2007-2017	R	10-sector	25	U.K.	All	2012-2017	R	10-sector
6	All	All	2007-2017	R	5-sector	26	U.K.	All	2012-2017	R	5-sector
7	All	All	2007-2017	R'	10-sector	27	U.K.	All	2012-2017	R'	10-sector
8	All	All	2007-2017	R'	5-sector	28	U.K.	All	2012-2017	R'	5-sector
9	All	All	2007-2011	R	10-sector	29	Contin. Europe	All	2007-2017	R	10-sector
10	All	All	2007-2011	R	5-sector	30	Contin. Europe	All	2007-2017	R	5-sector
11	All	All	2007-2011	R'	10-sector	31	Contin. Europe	All	2007-2017	R'	10-sector
12	All	All	2007-2011	R'	5-sector	32	Contin. Europe	All	2007-2017	R'	5-sector
13	All	All	2012-2017	R	10-sector	33	Contin. Europe	All	2007-2011	R	10-sector
14	All	All	2012-2017	R	5-sector	34	Contin. Europe	All	2007-2011	R	5-sector
15	All	All	2012-2017	R'	10-sector	35	Contin. Europe	All	2007-2011	R'	10-sector
16	All	All	2012-2017	R'	5-sector	36	Contin. Europe	All	2007-2011	R'	5-sector
17	U.K.	All	2007-2017	R	10-sector	37	Contin. Europe	All	2012-2017	R	10-sector
18	U.K.	All	2007-2017	R	5-sector	38	Contin. Europe	All	2012-2017	R	5-sector
19	U.K.	All	2007-2017	R'	10-sector	39	Contin. Europe	All	2012-2017	R'	10-sector
20	U.K.	All	2007-2017	R'	5-sector	40	Contin. Europe	All	2012-2017	R'	5-sector

⁵ Models 1 – 4 and Models 9 – 76 take dividend yield as realised. The remaining models take the attribute as indicated.

⁶ "Contin. Europe" refers to the five sample continental European countries, namely France, Germany, the Netherlands, Sweden and Switzerland.

⁷ Since some countries/regions do not have data for certain sectors over some period, the corresponding sector dummy(ies) is therefore removed from those models.

⁸ "2007-2017" refers to Q1 2007 to Q4 2017; "2007-2011" refers to Q1 2007 to Q4 2011, and "2012-2017" refers to Q1 2012 to Q3 2017.

⁹ "R" refers to risk adjusted return whereas "R'" refers to raw return.

Model specification, sample period, sample sectors and sample countries for Models 41 – 85 (Sector level models)

Model	Sample Countries	Sample Sector	Sample Period	Dep. Var	Sector Class. Method	Model	Sample Countries	Sample Sector	Sample Period	Dep. Var	Sector Class. Method
41	All	Diversified	2007-2017	R	5-sector	64	All	REIT	2007-2011	R	5-sector
42	All	Residential	2007-2017	R	5-sector	65	All	Non-REIT	2007-2011	R	5-sector
43	All	Industrial/Office	2007-2017	R	5-sector	66	All	Rental	2007-2011	R	5-sector
44	All	Retail	2007-2017	R	5-sector	67	All	Non-rental	2007-2011	R	5-sector
45	All	Speciality	2007-2017	R	5-sector	68	All	Diversified	2012-2017	R	5-sector
46	All	REIT	2007-2017	R	5-sector	69	All	Residential	2012-2017	R	5-sector
47	All	Non-REIT	2007-2017	R	5-sector	70	All	Industrial/Office	2012-2017	R	5-sector
48	All	Rental	2007-2017	R	5-sector	71	All	Retail	2012-2017	R	5-sector
49	All	Non-rental	2007-2017	R	5-sector	72	All	Speciality	2012-2017	R	5-sector
50	All	Diversified	2007-2017	R'	5-sector	73	All	REIT	2012-2017	R	5-sector
51	All	Residential	2007-2017	R'	5-sector	74	All	Non-REIT	2012-2017	R	5-sector
52	All	Industrial/Office	2007-2017	R'	5-sector	75	All	Rental	2012-2017	R	5-sector
53	All	Retail	2007-2017	R'	5-sector	76	All	Non-rental	2012-2017	R	5-sector
54	All	Speciality	2007-2017	R'	5-sector	77	All	Diversified	2007-2017	R	5-sector
55	All	REIT	2007-2017	R'	5-sector	78	All	Residential	2007-2017	R	5-sector
56	All	Non-REIT	2007-2017	R'	5-sector	79	All	Industrial/Office	2007-2017	R	5-sector
67	All	Rental	2007-2017	R'	5-sector	80	All	Retail	2007-2017	R	5-sector
58	All	Non-rental	2007-2017	R'	5-sector	81	All	Speciality	2007-2017	R	5-sector
59	All	Diversified	2007-2011	R	5-sector	82	All	REIT	2007-2017	R	5-sector
60	All	Residential	2007-2011	R	5-sector	83	All	Non-REIT	2007-2017	R	5-sector
61	All	Industrial/Office	2007-2011	R	5-sector	84	All	Rental	2007-2017	R	5-sector
62	All	Retail	2007-2011	R	5-sector	85	All	Non-rental	2007-2017	R	5-sector
63	All	Speciality	2007-2011	R	5-sector						

Summary on model specification, sample period, sample sectors and sample countries for Models 86 – 89 (Diversification models)

Model ¹⁰	Sample Countries	Sample Sector	Sample Period	Diversification Variable used	Dep. Var	Model	Sample Countries	Sample Sector	Sample Period	Diversification Variable used	Dep. Var
86	All	All	2012 – 2016	H.I.	R	88	All	All	2012 – 2016	H.I.	R'
87	All	All	2012 – 2016	S.S.	R	89	All	All	2012 – 2016	S.S.	R'

¹⁰ Due to data limitations, return on equity and growth in revenue are not included in Models 86 – 89.