

Department of Real Estate, Planning and Geoinformatics

European Real Estate Investment Trusts

Articles on Their Characteristics and Properties

Jaakko Niskanen



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Public real estate equity vehicles provide an investor with a standardized trading process, transparency, and high liquidity. The European listed real estate market is divided between real estate operating companies (REOCs), which make up two-thirds of the market, and real estate investment trusts (REITs), which cover the remaining one-third. The emergence of European REITs has been accelerating during the past years. An increasing number of European countries have recently adopted legislation regarding REITs, pass-through entities that, under certain conditions, avoid paying corporate taxes and distribute most of their earnings as dividends to shareholders.

The research aim of this dissertation is to increase knowledge about European real estate investment trusts and their characteristics: the correlation of different asset classes, capital structure, and liquidity, to name but a few. The findings of the study indicate that, in many ways, REITs exhibit different properties from their counterparts REOCs. For example, European REITs have a significantly different capital structure as European REOCs (less debt). REITs also have more liquidity as trading assets. Moreover, differences in the ownership bases can also be found.

Thus, judged from several perspectives, it can be noted that the legislative efforts in numerous European countries pertaining to the creation of a new form of real estate investment (REITs), seem to have been working.

Keywords Real Estate Economics, Real Estate Finance, Real Estate Investment Trusts, Real Estate Investing, European Listed Real Estate**ISBN (printed)** 978-952-60-4912-0**ISBN (pdf)** 978-952-60-4913-7**ISSN-L** 1799-4934**ISSN (printed)** 1799-4934**ISSN (pdf)** 1799-4942**Location of publisher** Espoo**Location of printing** Helsinki**Year** 2012**Pages** 114**urn** <http://urn.fi/URN:ISBN:978-952-60-4913-7>

Tekijä

Jaakko Niskanen

Väitöskirjan nimiEurooppalaiset REIT-kiinteistösijoitusyhtiöt
Artikkeleita ominaisuuksista ja tunnusmerkeistä**Julkaisija** Insinööritieteiden korkeakoulu**Yksikkö** Maankäyttötieteiden laitos**Sarja** Aalto University publication series DOCTORAL DISSERTATIONS 169/2012**Tutkimusala** Kiinteistötalous ja -arviointi**Käsikirjoituksen pvm** 08.06.2012**Väitöspäivä** 03.12.2012**Julkaisuluvan myöntämispäivä** 24.09.2012 **Kieli** Englanti **Monografia** **Yhdistelmäväitöskirja (yhteenveto-osa + erillisartikkelit)****Tiivistelmä**

Listattu kiinteistösijoitusmarkkina tarjoaa sijoittajalle standardoidun kaupankäyntiprosessin, läpinäkyvyyden sekä korkean likviditeetin. Pitkälti Yhdysvaltain mallia seuraten, nyt 2000-luvun aikana, lukuisat Euroopan maat ovat ottaneet osaksi kansallista lainsäädäntöään REIT-kiinteistösijoitusyhtiöitä koskevat lait. Näissä laeissa tyypillisesti määritellään ehdot, joiden puitteissa kiinteistösijoitusyhtiön on mahdollista hakeutua yhteisöveron osalta verovapaaksi toimijaksi. Euroopan listattu kiinteistömarkkina jakautuu kahteen yhtiötyyppiin: Verovelvolliset kiinteistösijoitusyhtiöt (REOC) joita on kaksi kolmasosaa markkinasta, sekä tietyin ehdoin verovapaat kiinteistösijoitusyhtiöt (REIT), joita on täten yksi kolmasosa.

Tämä tutkimus tarkastelee Eurooppalaisten REIT-yhtiöiden ominaisuuksia, niin sijoituskohteina kuin rakenteellisestikin. REIT-yhtiöiden ominaisuuksia on monilta osin verrattu REOC-yhtiöiden vastaaviin ominaisuuksiin, ja on havaittu, että eurooppalaiset REIT-yhtiöt eroavat REOC-yhtiöistä merkittävästi niin likviditeetiltään kuin pääomarakenteeltaan.

Globaalista talouskriisistä huolimatta Suomessa on perustettu ensimmäinen REIT-kiinteistösijoitusyhtiö. Talouskriisin aikanaan laannuttua ja luotonannon normalisoiduttua on oletettavaa, että uusia REIT-yhtiöitä tullaan perustamaan Eurooppaan lukumääräisesti viime vuosiakin enemmän.

Avainsanat Real Estate Economics, Real Estate Finance, Real Estate Investment Trusts, Real Estate Investing, European Listed Real Estate**ISBN (painettu)** 978-952-60-4912-0**ISBN (pdf)** 978-952-60-4913-7**ISSN-L** 1799-4934**ISSN (painettu)** 1799-4934**ISSN (pdf)** 1799-4942**Julkaisupaikka** Espoo**Painopaikka** Helsinki**Vuosi** 2012**Sivumäärä** 114**urn** <http://urn.fi/URN:ISBN:978-952-60-4913-7>

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Espoo, November 9th, 2012

Jaakko Niskanen

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LIST OF APPENDED PAPERS

This dissertation for the Doctor of Science in Technology summarizes the following publications.

Paper 1

Niskanen, J. and Falkenbach, H., REITs and Correlations with Other Asset Classes: A European Perspective. *Journal of Real Estate Portfolio Management*, Sep-Dec 2010, 16:3, 227–239.

Paper 2

Niskanen, J. and Falkenbach H., Liquidity of European real estate equities: REITs and REOCs. *International Journal of Strategic Property Management*, June 2012 issue.

Paper 3

Niskanen, J., Rouhento, J. and Falkenbach, H., European real estate equities: Ownership structure and value of the firm *Journal of European real estate research*, 2011, 3:2, 131–143.

Paper 4

Niskanen, J. and Falkenbach, H., European listed real estate: The capital structure perspective. *Forthcoming*. Accepted to be published in *Nordic Journal of Surveying and Real Estate Research*, 29.10.2012.

Contributions of the author to papers 1 to 4 are as follows:

Paper 1

Jaakko Niskanen is responsible for initiating, executing and writing the paper. Heidi Falkenbach provided comments on the article.

Paper 2

Jaakko Niskanen is responsible for initiating, executing and writing the paper. Heidi Falkenbach provided comments on the article.

Paper 3

Jaakko Niskanen is responsible for initiating, executing and writing the paper. Jussi Rouhento provided help in the data-mining process and provided comments on the paper. Heidi Falkenbach provided comments on the article.

Paper 4

Jaakko Niskanen is responsible for initiating, executing and writing the paper. Heidi Falkenbach provided comments on the article.

TABLE OF CONTENTS

1	INTRODUCTION	15
1.1	BACKGROUND AND MOTIVATION OF THE STUDY	15
1.2	RESEARCH PROBLEM AND RESEARCH QUESTIONS	18
1.3	METHODOLOGY	19
1.4	STRUCTURE OF THE DISSERTATION	21
2	SUMMARIES OF THE RESEARCH PAPERS	23
2.1	REITs AND CORRELATIONS WITH OTHER ASSET CLASSES: A EUROPEAN PERSPECTIVE	23
2.2	LIQUIDITY OF EUROPEAN REAL ESTATE EQUITIES: REITs AND REOCs	25
2.3	EUROPEAN REAL ESTATE EQUITIES: OWNERSHIP STRUCTURE AND VALUE OF THE FIRM	27
2.4	EUROPEAN LISTED REAL ESTATE: THE CAPITAL STRUCTURE PERSPECTIVE	28
3	CONCLUSIONS AND DISCUSSION	31
3.1	CONTRIBUTION OF THE RESEARCH	32
3.2	EVALUATION OF THE RESEARCH	33
3.3	FUTURE RESEARCH	35
4	REFERENCES	37

1 Introduction

1.1 Background and Motivation of the Study

The role of real estate investments as a diversifier of a mixed asset portfolio has been discussed in great detail in the academic literature. Seiler et al. (1999) provide a summary of the previous studies, noting that property has a low correlation with other asset classes and thus should be awarded a place in a mixed-asset portfolio. The early literature has been focused on the U.S. and U.K. markets – more recent literature confirms that diversification benefits are also available in other European markets (see, e.g., Stevenson 2000, Fraser et al. 2002, Hoesli et al., 2004) and in the Finnish market (Falkenbach 2009).

Due to a number of inherent characteristics specific to real estate, the inclusion of real estate in a portfolio poses challenges for the investor. For example, the unit size of the investment is large and the properties are heterogeneous. Thus, constructing a well-diversified real estate portfolio may prove difficult. Moreover, along with asset- and market-specific knowledge, real estate investments require ongoing property management.

Some of these challenges may be avoided by investing in real estate via indirect means. The variety of instruments can be illustrated by a four-quadrant model consisting of two dimensions: equity/debt and private/public (see, e.g., Hudson-Wilson et al., 2003). The private real estate equity investments include direct real estate and investment in private commingled vehicles, such as non-listed real estate funds. The public real estate equity investments include investments in real estate operating companies (REOCs), i.e., real estate companies that are subject to corporate tax just as any other corporations, and real estate investment trusts (REITs), real estate companies that under certain circumstances are exempt from corporate taxation.

The public equity vehicles provide the investor with a standardised market place, transparency and high liquidity. The unit size of investment, compared to that of the private market, is also remarkably lower. Moreover, no specific real estate skills are expected from the investor. However, there is evidence in the previous literature that the risk and return characteristics of these instruments are similar to those of stocks (see, e.g., Eichholtz, 1996, 1997; Ling & Naranjo 1999; Fraser et al. 2002; Schulte et al. 2011). On some occasions, the partial independence of public real estate equities from direct real estate and stocks has even been interpreted as potentially indicating that the public real estate equity should be regarded as an asset class in itself, rather than as a substitute for direct investments, thus deserving a place in a mixed-asset portfolio (e.g., Mueller & Mueller, 2009). Yet on the other hand, there is also empirical evidence that the direct and public real estate returns are co-integrated, proposing that in the long term, direct and public real estate investments could be regarded as substitutes in a mixed-asset portfolio (Pagliari et al. 2005, Oikarinen et al. 2011).

The value of global real estate assets amounts to more than 19,000 billion dollars. Real estate assets in Europe make up about 40 percent of this figure, reaching over 7.8 trillion dollars. Globally, the value of total listed real estate assets amounts to nearly \$1,160 billion, of which Europe's share remains at 21 percent, or \$249 billion, a relatively low figure. Furthermore, the European listed real estate market is divided between real estate operating companies (REOCs), which accounts for two-thirds of the market, and real estate investment trusts (REITs), which account for the remaining one-third (Table 1). To put the figures in a broader perspective, the value of the whole global, listed stock market reaches close to 44 trillion dollars. Thus, the value of all real estate assets, private and public combined, equals almost 44 percent in value as compared to the listed stock market assets in the world (EPRA 2010). It follows that real estate should be included in an investment portfolio of any well-diversified investor.

Table 1: Real estate and stock values (EPRA 2009, EPRA 2010).

Real estate, stock values (\$bn)	
Total real estate assets, world	\$ 19,269
Total real estate assets, Europe	\$ 7,815
Total listed real estate assets, world	\$ 1,159
Total listed real estate assets, Europe	\$ 249
REOCs Europe (239 companies)	\$ 167
REITs, Europe (127 companies)	\$ 82
Total stock market value, world	\$ 43,539
Total stock market value, Europe	\$ 11,136

Now a clear distinction between European REITs and non-REIT real estate companies has to be made. To qualify as a REIT, a real estate company must satisfy certain requirements set forth in national legislation. Non-REIT real estate companies are those that are either domiciled in countries without REIT legislation or that have chosen to opt for non-REIT status for other reasons.

Compared to U.S. REIT legislation dating back to the 1960s, Europe is severely lagging behind. To date, there is no unified REIT legislation in Europe; the laws are passed on a country level, not by any international council or body working in Europe. The number of REITs in Europe is just less than one-half of the number found in the Americas (Table 2). However, according to Eichholz and Kok (2007), the European REIT structures generally exhibit the following characteristics: distribution requirements, operational restrictions, leverage restrictions, shareholder requirements, and listing requirements. Abiding by the set requirements, REITs are often given tax neutrality, i.e., exemption from corporate taxation. Of interest from both academic and practical points of view is the magnitude to which these set preconditions for REITs change these companies' profitability from the investor point of view and structurally (e.g., capital structure).

Table 2: Global REIT market by geographic location. Out of the total global REIT figure of 537, the Americas have altogether 230 REITs, followed by Europe (127) and Asia (109). Australia (66) and Africa (5) are also represented (EPRA, 2009).

	Number of REITS	Value of REITS (€bn)	Value of global REIT market, %
Africa	5	2.1	0.73 %
Americas	230	146.7	51.15 %
Asia	109	39.8	13.88 %
Australia	66	34.9	12.17 %
Europe	127	63.28	22.07 %
Total	537	286.78	100 %

The number of European countries with special REIT legislation currently numbers 14. The value of European REITs out of all REITs globally amounts to 22 percent (EPRA 2009). Even though the history of European REITs dates back to the 1990s, the legislation has really started to gain ground only in the mid-2000s. The largest European REIT countries today are France, the U.K., and the Netherlands, in that order (Table 3). France has 46 REITs with a combined market value of €32.2bn; the U.K. has 21 REITS (with €18.7bn), and the Netherlands has 8 REITS (with €5.9bn). The remaining ten REIT countries manage total REIT assets of €6.5bn (EPRA 2009). The local REIT legislation in Finland dates from 2009, and even

though at least one real estate company currently avoids corporate taxation with REIT status, no REIT companies have yet reached the listing phase (naturally, in order to retain tax neutral status, a listing has to take place in the near future).

Table 3. The European REIT market is heavily dominated by the largest REIT countries – France, UK and the Netherlands (EPRA 2009).

	REITs since	Number of REITS	Value of REITs (€bn)	Value of European REIT market, %	Value of global REIT market, %
Belgium	1995	14	4	6.32 %	1.39 %
Bulgaria	2004	19	0.2	0.32 %	0.07 %
Finland	2009				
France	2003	46	32.2	50.88 %	11.23 %
Germany	2007	2	0.4	0.63 %	0.14 %
Greece	1999	2	0.5	0.79 %	0.17 %
Israel	2006	1	0.08	0.13 %	0.03 %
Italy	2007	1	0.4	0.63 %	0.14 %
Lithuania	2008				
Luxembourg	2007				
Netherlands	2003	8	5.9	9.32 %	2.06 %
Spain	2009				
Turkey	1995	13	0.9	1.42 %	0.31 %
United Kingdom	2007	21	18.7	29.55 %	6.52 %
Total		127	63.28	100.00 %	22.07 %

Thus, for an increasing number of European nations embracing REIT regulation, it is of purely academic interest to study European REIT characteristics (as an investment vehicle) and how those characteristics potentially differ from those of REOCs.

1.2 Research Problem and Research Questions

The aim of this study is to contribute to the knowledge about European-listed real estate companies, and, in more detail, about real estate investment trusts (REITs). The research question, *"The characteristics of European REITs – What are they and what do they have to offer?"* has two perspectives to it – the investor perspective and the structural perspective.

Firstly, European REITs are researched from the investor point of view – the correlation to other assets, REIT liquidity, etc., are studied. Secondly, structural characteristics, such as capital structure and ownership structure, are studied.

RQ The characteristics of European REITs – What are they and what do they have to offer?

RQ 1.1. European REITs from the investor point of view

RQ 1.2. European REITs, structural characteristics

In the articles included in this study to answer the research questions, REITs are often contrasted with REOCs. This will provide valuable help in analyzing the different REIT characteristics, both from the investor's point of view and the structural point of view. The first sub-question will provide analysis from the investor perspective: related to the findings to previous studies, how do REITs fare? As follows, the second research question will provide insight into the REIT structure in terms of leverage employed, ownership structure – dimensions onto which national legislation in Europe has tried to have an effect via stringent legislation efforts.

1.3 Methodology

The selection of research approach and methods depends on the nature of the research problem(s) at hand and the objectives of the study. The aim of this dissertation is to increase knowledge about the European REIT market and REIT companies by understanding how REITs are characterized in relation to non-REIT companies and other assets. The study is interpretative in nature. The existing literature on research methodology distinguishes between different research logics – traditionally, deduction, induction and abduction. In deductive logic, the direction is from a general law to a specific occasion. With induction, the researcher begins from a specific occurrence and moves towards a general law (Rowlands 2005). Finally, abduction is a combination of both logics, a methodology applied in this dissertation. As stated by many methodologists (Ruane, 2004, Yin, 1994, Gummesson, 2003), all findings, be they based on quantitative or qualitative data, must be interpreted by the researchers. Thus, in each of the articles included in this dissertation, the quantitative data used is carefully interpreted and analyzed.

The four papers making up this dissertation research the same field and seek to answer questions of a similar nature. The perspective and the angle of approaching the issue differ by experiment and paper. Thus, these four papers create a strong case-based theory as presented by Eisenhardt (1989) and Eisenhardt and Graebner (2007). According to the authors, the theory is, *ceteris paribus*, more accurate and generalizable when based on multiple experiments. Literature reviews, specifically matching the perspective of each of the papers, are provided on an article-by-article basis. Adequate literature reviews for each studied area assist in building a higher validity for the research as a whole.

Moreover, some methodologists distinguish between logical positivism and the interpretive approach (Amaratunga and Baldry, 2002). In more detail, an orientation characterised by the use of quantitative and experimental methods and then applied for creating hypotheses and identifying causal relationships, is positivism. The second orientation, aiming at understanding and explaining a phenomenon, is known as the interpretive approach. According to Kelliher (2005), the interpretive paradigm is underlined by the presumption that reality is not objective but rather a social construction. This dissertation applies characteristics from both orientations, potentially being, however, marginally more inclined towards logical positivism due to the heavy use of data and quantitative methods.

The first perspective of the research problem, *European REITs from the investor point of view*, aims at increasing knowledge on the characteristics of European REITs as perceived from the investor point of view. How do REIT returns correlate to other assets, how liquid are they, and so forth. This question was approached by following the mainstream of the academic literature on the topic – correlation testing and regression analysis to name but a few. The data used in the study is gathered using modern data collection methods, such as the Thomson-Reuters Data Stream. After the data is collected, it is processed by the author to optimally meet the needs of the specific study. The second perspective, *European REITs, structural characteristics*, aims at providing valuable information on the structural side of REITs: how much leverage do they use, does the ownership structure make a difference (in valuation and other chosen parameters), etc. Similar data collection and processing methods are used for both perspectives of the research problem.

Table 4. Research questions, research methods and data.

Research question	Discussed paper(s)	Research Method	Sample / Data
1.1 European REITs from the investor point of view	1,2	Literature reviews. Difference between means testing for REITs and REOCs; correlation tests, regression analysis. Intertemporal graphing.	European REIT data along with six equity, three bond and one commodity index, data used ranges between 2006 and 2010.
1.2. European REITs, structural characteristics	3,4	Literature reviews, difference between means testing. Intertemporal graphing.	Constituent equities of FTSE REIT and non-REIT indices, various periods of time between 2005 and 2009.

1.4 Structure of the Dissertation

This dissertation is comprised of four published research papers and a summary. The research papers discuss and analyze the topic of European real estate investment trusts and contribute to the research questions and objectives of this dissertation. Each of the four articles is a scientifically reviewed and published paper. The author of this dissertation has been responsible for initiating, executing and writing the articles.

Papers 1 and 2 contribute to the first perspective of the research problem, *European REITs from the investor point of view*. The first paper follows the mainstream of REIT studies, mostly performed on the U.S. market, by analysing the European REIT correlation to a selection of other assets, including stocks, bonds and commodities, on an intertemporal basis. Though REITs have been studied rigorously in the U.S., this is the first extensive academic paper on the correlation of European REITs to other assets. As liquidity constitutes one of the most important characteristics of any investment, the second paper aims at studying the liquidity of European REITs. Furthermore, REIT liquidity is studied and analyzed by comparing the findings to those of European REOCs; some interesting findings are made, both from the perspective of academic society and the practitioners. Papers 3 and 4 approach the research problem from the structural point of view. Paper 3 studies the ownership structure and value of European REITs as measured as the M/B ratio. Interesting observations on block ownership and valuation (and other measures) are detected. Paper 4 studies one of the

most intriguing aspects of financial studies – capital structure decisions, specifically those concerning European REITs and REOCs. This paper shows that the tax neutrality available for REITs, along with the effects on the deductibility of interest rate costs of debt, clearly make a difference in the chosen debt patterns. The four papers and the conclusions all contribute to the research problem and finally fulfil the objectives of this dissertation. As there are always limits in which a dissertation can study the chosen phenomena, it has been one of the hardest choices to cut down on ideas and research angles. A current matter, such as *European REITs*, could have been approached from numerous perspectives, yet those chosen to be included in this dissertation were judged the most prominent by the researcher.

The summary of this dissertation consists of three chapters. The first chapter is an introduction to the research area and design of the research. The first chapter presents the research problem, along with the research aim and objectives, the research methodology and, finally, the structure of the dissertation. Chapter 2 presents the individual papers comprising the dissertation as well as the main conclusions drawn in the individual papers. Chapter 3 presents the contribution of this dissertation. The chapter provides an evaluation of the research and its validity, as well as a view on the most prominent areas of future research as perceived by academia and the author of this dissertation.

2 Summaries of the Research Papers

2.1 REITs and Correlations with Other Asset Classes: A European Perspective

This paper examined the sensitivity of European REIT returns to returns in other asset classes, including equities, bonds and commodities. In addition to rigorous correlation tests performed on the studied variables, temporal variations in correlations and the relationships between asset volatilities and correlations were also examined. The approach of the first article is that of the first perspective of the research question, *European REITs from the investor point of view*.

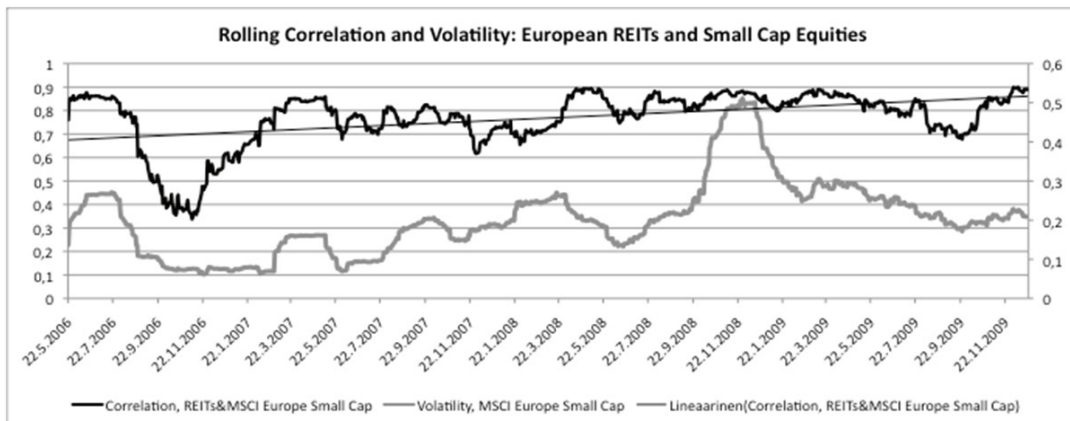
The results of the study showed that, consistent with previous studies in the field (e.g., Glascock 2000, Clayton and McKinnon 2001, Stevenson 2002, Chong et al. 2009), a significant positive correlation between REITs and equities, especially small cap and value stocks, was observable (Table 5). Moreover, correlations with equities exhibited an upward-sloping trend over the period analyzed. In contrast, the REIT correlation to fixed income securities was found to be increasingly negative across the asset class. However, also in the case of real estate equities, it is to be noted that the length of the study period and planned investment horizon may have an effect on the asset co-movements (correlations) and volatilities (asset prices are not necessarily always independently and identically distributed, following a random walk). Moreover, given that the many investors investing in direct or indirect real estate have long investment horizons, it is worth noting that for these investors, it's primarily the properties of asset correlations and volatilities in the long term that count.

Table 5. Correlation matrix for European REITs and studied assets5.

Correlation Matrix for Studied Assets											
	REITs	Europe	Value	Growth	Small Cap	S&P500	AC Pacific	EMU	UK	US	GSCI
REITs	1,00	0,75	0,76	0,73	0,80	0,46	0,39	-0,39	-0,34	-0,28	0,26
MSCI Europe Index		1,00	0,98	0,97	0,90	0,59	0,46	-0,46	-0,40	-0,34	0,39
MSCI Europe Value			1,00	0,94	0,90	0,58	0,46	-0,46	-0,41	-0,35	0,39
MSCI Europe Growth				1,00	0,90	0,58	0,44	-0,46	-0,41	-0,34	0,40
MSCI Europe Small Cap					1,00	0,51	0,54	-0,45	-0,42	-0,32	0,37
S&P500 Composite						1,00	0,16	-0,27	-0,23	-0,35	0,34
MSCI AC Pacific							1,00	-0,22	-0,20	-0,11	0,16
EMU BENCHMARK 10 YR. GOVT.								1,00	0,82	0,55	-0,25
UK BENCHMARK 10 YEAR GOVT.									1,00	0,50	-0,23
US BENCHMARK 10 YEAR GOVT.										1,00	-0,31
S&P GSCI											1,00

Temporal variations in asset volatilities and their effect on correlations were studied, and some interesting findings were reached. For REITs and equity benchmarks, a positive relationship was detected for volatility and correlation, i.e., correlation increases with equity market volatility (Figure 1). For fixed income benchmarks, a negative relationship was found: correlation decreases with increasing volatility. On a practical level, the results imply that during times of extreme volatility in the equity market, REITs’ diversification qualities diminish. In contrast, when volatility increases in the fixed income market, REITs can be seen as providing augmented diversification benefits.

Figure 1. Rolling Correlation for European REITs and European Small Cap Equities. As shown in the figure, a positive relationship is to be found – as the market volatility rises, so does the correlation.



2.2 Liquidity of European Real Estate Equities: REITs and REOCs

This article is about the liquidity of European-listed real estate equities. As already known at this point, listed real estate companies can be divided into two categories: real estate operating companies (REOCs) and real estate investment trusts (REITs). The differences pertain to permissible activities and taxation, which could have implications for the trading characteristics of the instruments. Along with daily return characteristics (holding period return, volatility, and so forth), the extremely important variable of liquidity is studied. This second article of the dissertation, just like the first one, approaches the research problem of *European REIT characteristics* from the investor perspective. One of the key assets of a listed real estate investment, compared to a direct real estate investment, is the liquidity provided by the vehicle. Thus, it is of utmost interest to study the liquidity characteristics of European-listed real estate stocks, and to be more specific, how do these characteristics differ between REITs and REOCs?

With regard to the liquidity of the vehicles, some interesting findings were made. Firstly, the turnover ratio, measuring the *ratio of shares of a stock traded during one day*, was significantly higher (30%) for REITs than REOCs (Figures 2 and 3). This difference could potentially be explained by limitations regarding REIT ownership structures, thus providing superior liquidity for the stock. Secondly, an interesting notion regarding liquidity: real estate stock liquidity seems to be following a somewhat similar path as the underlying REOC/REIT stock market development. Liquidity tops are reached when the stock market is peaking and vice versa. However, an exception to this notion is contributed by REOCs whose asset turnover ratios, in relation to REOC market development, started to move in a contrary way since mid-2008. Finally, when real estate liquidity and general stock market volatility were studied, it was noted that prior to 2009 the variables seemed to correlate rather strongly. Post-2009, the exact opposite was observed. Excluding the differing turnover ratios, REOC and REIT liquidity patterns per se were perceived somewhat similar in nature.

The findings imply the following: even though REITs seem faintly more lucrative than REOCs in terms of asset returns and volatility (combined), findings pertaining to liquidity were of greatly surpassing significance. Especially the superior stock turnover ratio exhibited by REITs was an interesting phenomenon to be found. The superior figure displayed by REITs could supposedly be a product of legislative ownership restrictions laid on REITs in order to ensure improved liquidity.

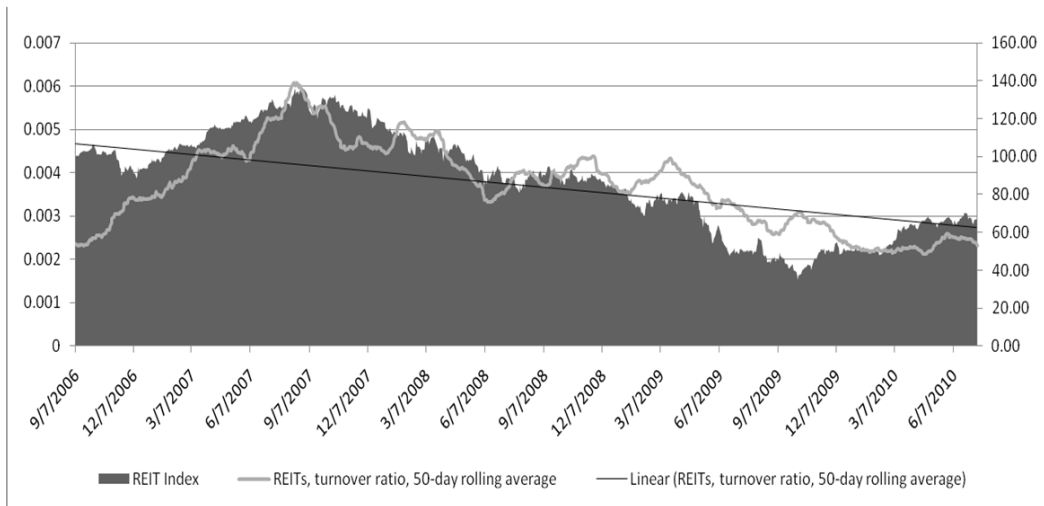


Figure 2. Asset Turnover Ratio, European REITs.

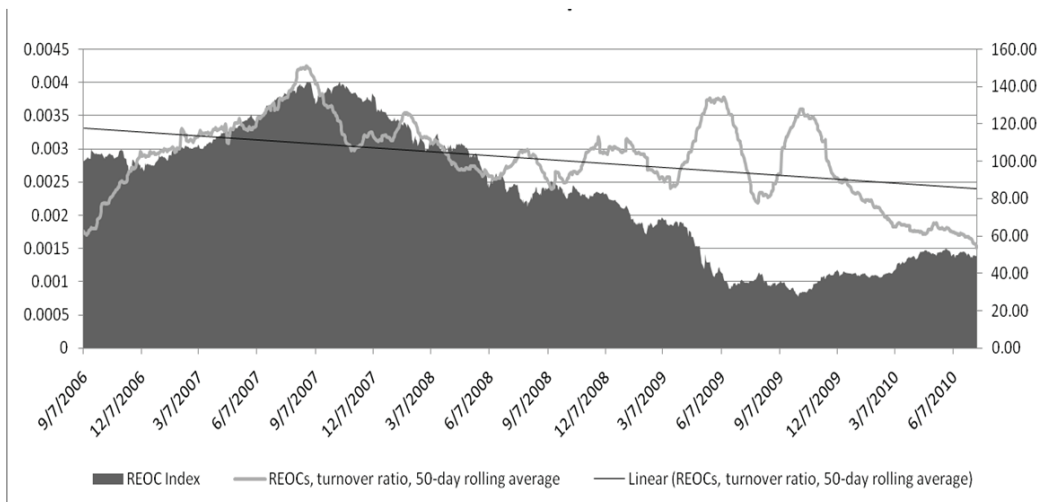


Figure 3. Asset Turnover Ratio, European REOCs.

Ceteris paribus, other factors remaining constant, superior REIT liquidity implies that REITs constitute the preferred investment vehicle of these two. It would be interesting to follow the development of the European-listed real estate market and the distinctive features of the studied assets. Will the segregation between the studied assets remain the same over time? Or will the relationship potentially change as a product of a maturing European REIT market?

2.3 European Real Estate Equities: Ownership Structure and Value of the Firm

The relationship between ownership structure and firm value has been of interest for a long time. Among the fundamental ideas in REIT legislation is to provide investors with a liquid means of indirectly investing in real estate by regulating the ownership structure of the vehicle. This paper studied the potential effects that differences in the ownership structure of European REITs may have on observed firm value, as proxied by the M/B ratio and other financial measures. Furthermore, the effects of block holdings and strategic ownership were also measured and analyzed. This third article of the dissertation approaches the research area of European REITs from the structural point of view. It is also worth noting that the ownership structure of a REIT (studied in this paper) and the liquidity of such an entity (studied in another paper) may well be connected.

Firstly, consistent with previous studies (Barclay et al., 1993; Friday et al., 1999), the study showed that increasing block ownership resulted in lower M/B ratios as well as decreased dividend yield, ROE, and ROA (Table 6). Thus, the results suggested that, in terms of M/B ratio, the markets value REITs with low block holdings slightly higher than those with more block holders.

Table 6. Differences in Means Analysis: REITs by the number of blockholders.

Difference in Means Analysis, Financial Statistics and Performance Measures				
REITs, by # of blockholders				
	M/B-ratio	Div. Yield	ROE	ROA
High (12)				
Mean	0.83**	0.04	0.00	0.01
Std.Dev	0.11	0.02	0.17	0.10
Average (11)				
Mean	1.03	0.05	0.11	0.07
Std.Dev	0.47	0.02	0.09	0.04
Low (12)				
Mean	1.35	0.05	0.11	0.07
Std.Dev.	0.85	0.02	0.05	0.03
Difference between High and Low				
t-Stat	-0.52	-0.01	-0.11	-0.05
	2.07**	1.27	2.12**	1.83**
Difference between High and Average				
t-Stat	-0.20	-0.01	-0.11	-0.06
	1.38	1.00	1.99**	1.96**
Difference between Average and Low				
t-Stat	-0.32	0.00	0.01	0.01
	1.11	0.22	0.16	0.43
* Significant at the 10% level				
** Significant at the 5% level				
***Significant at the 1% level				
**** Significant at the 0.5% level				

Possibly due to the increased stock liquidity (provided by the more dispersed shareholder structure), the results of this study suggest that the more dispersed the shareholder structure, the higher the firm value. This finding could serve as yet another indication to lawmakers that the REIT ownership regulations may actually be working on a practical level. An interesting field of study in the future would be to include REOCs in the scheme. Would similar findings be attainable? Or would REITs and REOCs also exhibit different characteristics in this sense?

In sum, the results of this study indicate that block ownership negatively affects REIT valuation, which suggests that the presence of block holders is not necessarily in the best interest of shareholders willing to maximize corporate value. As the European REIT market is constantly growing and expanding in the number of REITs as well as in overall REIT market capitalization, researchers will be able to carry out more extensive and statistically significant research.

2.4 European Listed Real Estate: The Capital Structure Perspective

This article studied the capital structure of European non-taxed real estate entities (REITs) and compared the capital structure decisions of these tax transparent companies to those of their taxed counterparts (REOCs). Of primary interest was to research the potential differences in the companies' use of leverage in terms of *debt-to-assets ratio*. Furthermore, potential temporal variations in the leverage patterns were studied. In addition, the relative amount of short-term debt (maturity under one year) of all debt financing was studied. Finally, the relationship of both REIT and REOC leverage and annual M/B ratios were researched. Like the previous article, this fourth article of the dissertation approaches the research area – European REITs – from the structural point of view. In this paper, the investor perspective is also strongly present.

The primary findings of the paper revealed that the tax-neutral REITs use significantly less leverage than their taxed counterparts' REOCs, a rather strong indication of the corporate tax status playing a role in firms' capital structure decisions (Figure 4). An additional potential reason for the higher leverage with REOCs could be an attempt to mitigate the potential agency costs with additional debt. The observed pattern in REIT/ REOC leverage was consistent throughout the sample studied. With regard to the amount of short-term debt used by REITs and REOCs, no statistically significant difference was found. In the future, as the potential data available from the

European REIT market has expanded, country- and company-specific factors affecting the capital structure choices should be researched and analyzed. Moreover, does the focus of the companies' investing activities make a difference? Are condominiums, for example, more easily leverage-able than less liquid investing targets, such as warehouses and office space? How have the leverage patterns de facto changed during the global financial crisis when credit availability has evidently been tightened? Should the financial turmoil continue for some time with credit becoming even harder to obtain, it might not be totally absurd to expect that the more heavily leveraged real estate companies (REOCs) will face some serious trouble in refinancing their operations as the debt maturities inevitably run out.

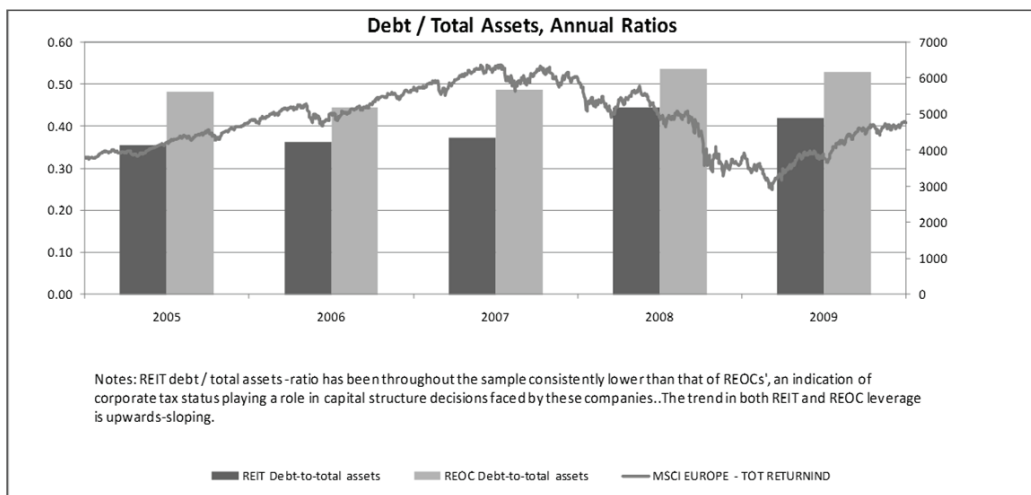


Figure 4. European REIT and REOC debt-to-total-assets-ratios.

3 Conclusions and Discussion

Already present in the U.S. since the 1960s, tax-free REITs are a fairly new phenomenon in Europe. The aim of this doctoral thesis has been to contribute to the knowledge of European REITs – to study their characteristics and how they potentially differ from REOCs (non-REITs). REOCs cover two-thirds of the European-listed real estate market, and REITs cover the remaining one-third.

In summary of the study, it can be noted that European REITs truly seem to compose a different form of listed real estate vehicle from REOCs, yet one that correlates rather highly with chosen equity benchmarks. Among the most interesting findings stand the observations of high liquidity provided by the REITs and the lower levels of leverage used by REITs (as compared to REOCs). The higher-than-REOC liquidity provided by the heavily regulated and supervised REITs could be an example of regulatory efforts paying off. The several different ownership regulations (e.g., those pertaining to the maximum amount of shares owned by a single entity) seem to be making the stock more tradable. Given that liquidity is one of the key measures in any listed equity environment, this finding is of significant relevance.

Secondly, the study reveals that the European REITs employ notably less debt than REOCs, just like the observation pertaining to liquidity (presumably due to legislative efforts). The fact that as a tax-neutral entity, REITs do not get the relative advantage of debt-to-equity in the form of being able to deduct the interest rate costs of debt in their profit and loss account contribute to the REITs' opting for higher levels of equity than REOCs, which get to deduct the interest rate costs of borrowed capital. Since Modigliani and Miller (1958, 1963), capital structure decisions pertain to the most interesting topics of research, also in the area of real estate studies. It will be of utmost interest to follow how these phenomena might change along with the maturing European REIT market.

Combining the conclusions of the articles comprising this thesis, it can be noted that the legislative efforts for REITs seem to be working. One of the potential downsides to encouraging more and more real estate to get listed (in the form of REITs) is the fact that real estate equities, including REITs, correlate rather highly with benchmarking equity markets. The author believes that after the global financial turmoil that has lasted since late 2007, a new wave of European REIT listings will emerge. Given the tax-free status, higher liquidity of the vehicle, and the size of the market, it is almost inevitable to happen in the near future. Therefore, in the future as well, large-scale studies of European REITs have to be constantly carried out to ensure sufficient knowledge and expertise of the vehicle and its characteristics. Some very specific areas of future research pertain to European REIT IPOs and REIT discounts/premiums to NAV. These essential areas have not been studied enough thus far. Moreover, one potential shortcoming inherent in the articles included in this dissertation is the relative shortness of the sample periods – the results could be different for a larger data sample. However, the European REIT market yet being in an early stage, and constantly maturing, studies with a more extensive data coverage are surely to follow in the future.

The findings presented in this thesis are not only of scientific relevance to the author, but for the whole academic community.

3.1 Contribution of the Research

The academic value of this research is in the knowledge it has provided on European REITs and their characteristics, both as investment and trading vehicles and also from the structural point of view. The research has utilized unprecedented data sets from the European real estate market. Whereas U.S. REITs are a closely studied group of listed real estate companies, European REITs have not been subject to similar studies in the previous academic literature. Now that the European REIT market is swiftly expanding, both in terms of countries adapting REIT legislation and in the number of REIT companies, it is more important than ever to establish a solid academic base on which to build the evident later studies to follow up on the maturing European REIT market. Moreover, the thesis has shown that in terms of liquidity and capital structure for example (Niskanen and Falkenbach 2012, Niskanen and Falkenbach, *forthcoming*), the European REITs are very different from REOCs and thus should possibly be regarded as a category of listed real estate per se.

In 2007 Eichholtz and Kok performed an extensive study on European REIT legislation – however informative the study, the empirical part (testing) was yet largely to be completed. This thesis has not only performed extensive empirical testing, but also markedly contributes in laying ground on the further studies to be followed in the area, not only in Europe but also in the Americas and other continents. Moreover, the findings provided in the thesis will not only serve academic causes, but will also add to knowledge applicable on a more practical level. Directors of pension funds, real estate fund managers, real estate financiers –all will be able to draw on the conclusions of this dissertation. Finally, this dissertation will also provide the European lawmakers with informative insight into the area that is yet to be shaped to its final form.

3.2 Evaluation of the Research

Two different dimensions to assess the validity of a study exist. Validity as a concept can be divided into two perspectives: internal validity and external validity (Ruane, 2004). As stated by Ruane, "in the language of science, the evidence is derived via empirical indicators or measures. In focusing on the issue of measurement validity, the researcher is most concerned with critically evaluating the empirical indicators or measures used in our research efforts. When we claim research validity, we claim that we have been successful at measuring what we say we've measured." Ruane continues by adding, "science will assess or evaluate causal assertions in light of the standard of internal validity. In posing the question of internal validity (aka causal validity) we are asking if the overall research plan or research design is really capable of detecting causal relationships when they exist. Achieving internal validity means that we can demonstrate that changes in one entity are due to changes in another." According to Ruane, the key to achieving internal validity is a good, solid research plan or strategy. The research plan of this dissertation tried to follow Ruane's example by laying solid ground for valid and reliable experiments – from the author's point of view, successfully so.

Another measure within the validity domain is coined 'external validity' (Ruane, 2004). "Even if we are satisfied with our study's measures and with our study's overall design, we still must ask if the findings obtained in any one study can be safely generalized to other settings or groups?" The ability to generalize from small groups to large groups of similar elements is defined as sample generalizability. So in practice, for example, when studying samples of 37 European REITS or REOCs, could the observations detected from these study groups be generalized to cover larger sample sizes

of similar objects? Or if the researcher were to study not only the most prominent real estate companies, but include 100 REITs and 100 REOCs instead, would the results be dramatically different? To some extent they would be different due to random variance, but how much? The author is assured that the sample sizes used in the studies of this dissertation are very representative, providing for good external validity of research. Some constraints have been posed by the relative immaturity of the European REIT market. However, this will be changed in the future along with the passing years, maturing market, and the emergence of more REIT companies on the market.

According to Robson (1993, p. 402–407), research using qualitative data can be evaluated by analysing its credibility – credibility referring to the researcher's ability to demonstrate that the research was carried out accurately. One of the ways in which credibility can be enhanced is *peer debriefing*, a method also employed in this specific dissertation and the included articles. The concept of peer debriefing during the research process refers to exposing the analysis and conclusions to a colleague or other peer(s). Regarding this dissertation, peer debriefings with the members of the research group and other colleagues were held throughout the research process. Moreover, all four research papers included in this dissertation have been peer-reviewed and individually evaluated as a part of the publishing process of academic journals. According to Robson (2002, p. 371), triangulation refers to using multiple means of research to tackle the same research question. Patton (1999) distinguishes between four different forms of triangulation: triangulation of methods, where different methods for collecting data are used; triangulation of investigator, where several researchers investigate the same phenomenon; perspective triangulation (multiple perspectives or theories are used to interpret the data); and triangulation of data sources, referring to the ability to use evidence from different sources to draw conclusions. In this dissertation, triangulation by investigator is applied in all research questions. The empirical studies performed by the author (and their results) are compared and linked to the previous, existing studies by other academic researchers. The other aspects of triangulation have also been applied where possible in this dissertation.

3.3 Future Research

This thesis has given birth to a host of potential directions for future research. Firstly, it will be of primary interest to follow how the maturing of the European REIT market will potentially have an effect on the reported REIT characteristics (moreover, versus those of REOCs). In addition to studying REITs and REOCs, an extensive body of research should be established on studying the European REITs and the unlisted real estate market. How does the REIT market develop (and stocks behave) in relation to the underlying private real estate market? With a more extensive data set, do the REIT returns de facto forecast the returns on the private market? The inter-asset dynamics, such as lead-lag-effect for public and private market (as also for REITs and REOCs or even other assets) would undoubtedly be worth more in-depth study and rigorous analysis with an even broader data set. How can the new information be best applied in practice? In addition to studying European REITs as one group of companies, as was done in this research, it could be worthwhile to conduct country-specific studies, e.g., beginning with just the largest countries, should the scarcity of data become an obstacle in a wider context. Also, the future studies could include analysis based on the company size and its effects on the asset qualities. Finally, now that the European REIT market has matured and more comprehensive data on it will be attainable, one of the interesting topics to study in more detail would be the potentially different clienteles of owners that the European REITs and REOCs appeal to.

Secondly, the scope of the European REIT studies can be deepened to also cover several additional challenging, yet rewarding, new areas of REIT characteristics. These areas include studies on European REIT IPOs. How have the listings proceeded? What kind of price impacts have there been during the first days of listing on the stock market? Have the observations differed by the size of the company (market value, balance sheet), by the time (year) of the listing, or by geolocation of the stock market in which the listing was processed? Studying the European IPO qualities would inevitably help lay ground for analytical decision-making on the subject by prospective real estate companies who might be seeking to start operating as REITs. Increased awareness of REIT IPOs could then even augment the rate at which European real estate investors/companies are embracing the REIT institution. Yet another area of extreme interest for academics and practitioners alike would be the study of the net asset valuation vs. the REIT stock prices in the case of European REITs. The general ratio of the market value to net asset value (NAV) of the underlying real estate portfolio undoubtedly has an effect on the willingness of private real estate companies to become listed on the stock market. Just as in the case of the prospective

studies on REIT IPOs presented in the previous paragraph, potential variation in discounts/premiums to European REIT stocks should be studied not only by time and place but also by the size of the company and the underlying real estate portfolio of the REIT company. Given that these aforementioned areas of potential future research are of significant academic relevance, the results of the studies would, undoubtedly, receive wide attention among practitioners, too.

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Public real estate equity vehicles provide an investor with a standardized trading process, transparency, and high liquidity. The European listed real estate market is divided between real estate operating companies (REOCs), which make up two-thirds of the market, and real estate investment trusts (REITs), which cover the remaining one-third. The emergence of European REITs has been accelerating during the past years. An increasing number of European countries have recently adopted legislation regarding REITs, pass-through entities that, under certain conditions, avoid paying corporate taxes and distribute most of their earnings as dividends to shareholders. The research aim of this dissertation is to increase knowledge about European real estate investment trusts and their characteristics: the correlation of different asset classes, capital structure, and liquidity, to name but a few. The findings of the study indicate that, in many ways, REITs exhibit different properties from their counterparts REOCs.



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