December 2023

Impact of REITs in Europe

The Role of REITs in the European Economy

By Hans Op't Veld, Research Fellow Amsterdam School of Real Estate ASRE

EPRA

TABLE OF CONTENTS

TABLE OF CONTENTS

PREFACE

Real estate investment trusts (REITs) have been a transformative force in the real estate industry and beyond. Since the U.S. REIT regime was enacted in 1960, the REIT market has evolved into a global phenomenon. The European REIT journey started a decade later when the Dutch fiscal investment institution was enacted. The proliferation of REITs accelerated on the back of the success of the U.S. REIT in the 1990's, which in turn was fueled by a combination of changes in legislation and a crisis in the underlying real estate market. The influx of capital in U.S. REITs in the 'modern REIT era' certainly resulted in interest from academics and policy makers to better understand the mechanics of the structure. Many European countries sought to replicate the success of the U.S. structure by using the REIT characteristics as a blueprint for a local structure. In the process, European policy makers did not only copy the U.S. REIT design; they also looked at their own policy objectives in creating their own version of REITs. While there is a variety of local policy elements that have been addressed, one of the common elements has been to offer retail investors the opportunity to participate in a diversified universe of real estate that was previously only attainable for institutional investors. In combining the U.S. key attributes of REITs with specific local requirements, the European REIT landscape now consists of a rich variety of - closely related - structures. The acronym REIT has in the meanwhile become synonymous with investment in listed real estate, as European countries increasingly gravitated to use the REIT name as the official designation of their structure[1] . This in effect served the purpose of signaling European REIT regimes to be equivalent to the U.S. design. While understandable, it perhaps downplays the influence that the deviations of the European structures have from their U.S. equivalent. The differences in REIT attributes between countries offers a natural laboratory to study the impact of REIT design features on the success in meeting both financial and policy objectives. This is of obvious importance to policy makers, both in designing local structures as well as improving on these in future iterations of their REIT structures. For firm managers it is also relevant to review what REIT adoption entails. Establishing or converting into a REIT has implications for capital structure, the ability to attract capital and on the type of investors. Conversely, for investors it is key to understand what drives REIT enactment, adoption and performance to determine how to structure and allocate investments.

UNIQUENESS OF EUROPEAN REITS AND THEIR POLICY OBJECTIVES

Because of the global use of the REIT acronym, the European REIT space is in many ways seen to be part of a global REIT ecosystem. This has greatly helped stakeholders to understand the industry and identify its players. It also has meant that expectations of European REITs are to a large extend based on the experiences and research in the U.S. market, which is the deepest market with the longest history. The focus on the U.S. market may not always provide takeaways that are applicable to the European geography, so it is important to use the extant data on European markets to study their behavior. The data has evolved with time, and after the wave of REIT structures in Europe ten to twenty years ago, the availability of time series data now allows for longer term studies.

At the same time, it is also relevant to particularly focus on the evolution of the European REIT markets and to use the differences in attributes to better understand the relationship between REIT legislation and the growth, performance and structure of the various European markets. Most studies on REITs, both in Europe and globally, have looked at the financial performance of REITs and have focused on the influence of key characteristics including geography, sector, leverage, shareholders and governance. Less attention has been spent in literature on the question on the policy objectives of European REIT enactment and whether these objectives have been met over time. In part, the dearth of literature on the subject is caused by uncertainty of what the policy objectives were. There are circumstantial indications that stem from the minutes of discussion of REIT law in parliament, but beyond this there is little hard evidence of the expectations policy makers have had beyond the makeup of the structure itself.

1 The German and Belgian REIT law e.g. uses the English acronym for the structure, instead of a national designation as is common for other financial structures.

Indeed, REIT laws from one country to another appeared to have had different motives, ranging from investor protection and international competition for capital to supporting capital allocation to certain parts of the real estate markets and improving financial market stability. How REITs have delivered on some of these motives cannot always be measured in terms of financial performance (only). Still, the impact of REIT enactment on the overall financial market and the function of REIT in supporting an economic and social agenda needs to be understood by policy makers in order to make informed decisions on the way in which REITs should be (re)designed and structured.

THREE LAYERS OF REIT INFLUENCE

The purpose of this report is to provide a comprehensive view on the effects of European REIT enactment on countries. The key objective is to be able to pinpoint which elements in European REIT design have proven to be successful and to which degree these factors can be employed. As indicated, the consequences of REIT enactment are broader than solely having a listed real estate investment vehicle. To offer a holistic view, three layers of European REIT market enactment and adoption are looked at. The three layers are structured to touch upon a wider circle of influence on European economies, starting with real estate industry itself and subsequently broadening it out to a view on REITs in society at large.

More specifically, the first layer studies the process of REIT adoption in major European countries and the influence on the (listed) real estate market. Both the timing and the motives of REIT enactment in European countries have been different. This has affected the way in which REIT markets have matured in various jurisdictions. Using data from the three largest economies in the European space it is possible to deduct how the differences have played out in terms of REIT adoption, performance and growth. Both the similarities and differences across regimes offer a wealth of information on what to expect from REIT enactment, depending on the specific design features of REITs.

The second layer investigates how REITs have altered the broader financial markets. REIT legislation can be seen as a signal of financial market maturity, as it indicates that the markets have reached a stage at which securitization of real estate assets is possible, adding to financial market depth. The transfer of assets to listed markets opens the door to a much wider constituency of shareholders and thus reduces the dependence on a small set of owners. This is of particular relevance in times of poor liquidity (often prompted by distress). When availability of capital dries up – which is a normal phase given the cyclicality of real estate as an asset class – having investment structures like REITs is of pivotal importance to help resolve market dislocations and to reinforce real estate market stability. This holds true for equity, but also for the debt markets. Even though most REIT research looks at the attributes of REIT stocks, it is interesting to also look at the evolution of REIT debt in view of the importance of real estate for financial market stability.

Whereas the first two layers of the report focus on the financial contributions of REITs to the economy, an equally important contribution REITs can provide is in the realm of societal contributions. In view of the role of real estate in society, it would be a mistake to overlook these contributions. Certainly, these elements are part of the policy objectives when creating REIT legislation and should therefore be considered when looking at the merits of REITs. Indeed, many REIT structures contain provisions on the types of real estate that REITs may hold. This indicates that specific policy goals (e.g. supporting housing markets) are being pursued through the REIT sector. An interesting development is that investors are also increasingly looking at the contributions of their investments to society and specifically look at real assets such as real estate to generate these contributions. Governments and investors alike are specifically trying to participate in the provision of solution to challenges regarding the decarbonization of the economy, providing healthcare solutions to an aging population and challenges in the urban environment across Europe. Private sector capital is needed to support these solutions, as the capital requirements to transform the economy are large. Due to the nature of REITs – being permanent structures with long investment horizons – policy makers are recognizing that the sector is a prime candidate for collaboration. While many of the policy goals are

formulated on the national level, most of the challenges and solutions are on the municipal level. The individual projects REITs are involved with are affecting the daily life of millions of people and help to shape the environment the European population lives in. These outcomes go well beyond the creation of jobs and the generation of economic value. They include things like the reduction of crime, the creation of livable neighborhoods and the provision of quality and affordable housing. This is particularly salient in view of some of the large scale urban transformation challenges, which require the skills of forming partnerships that many REITs possess. In the third layer of this report the contributions of REITs are investigated and reporting and monitoring structures are evaluated.

REPORT STRUCTURE

The structure of this report follows the aforementioned layers of analysis. The first chapter deals with the enactment and adoption of European REITs and what can be learned from their design features.

In the second chapter, the financial market impact of European REITs is studied, looking at the proliferation of the REIT structure, market growth and the relationship between the REIT market and the wider financial market.

Chapter three looks at the role of REITs in society. It addresses the social role of REITs and their contributions, that often are at the heart of policy goals that were the foundation of the enactment of these structures in Europe.

As a final note, the explanation of some of methodologies has been abbreviated to provide a more accessible report. The full methodology is available through the academic papers that form the basis of this report.

1. THE REAL ESTATE MARKET IMPACT OF EUROPEAN REIT LEGISLATION AND ADOPTION:

1.1 INTRODUCTION

Since the first Real Estate Investment Trust (REIT) structure was enacted in the United States, the REIT structure has been adopted by 38 countries around the world (EPRA, 2023). Even though the REIT only truly has become a success in the 1990's on the back of the so-called REIT-explosion (Downs, 1994) following changes to the fiscal structure, the REIT has become the blueprint for having a flourishing listed real estate securities market in many countries.

Even today, there are countries that are contemplating the introduction of or amendments to a fiscal structure resembling the U.S. REIT. Policy makers in these countries tend to look at the success of the regime in the United States, but should also take a look at the lessons learned from European REIT introductions. The European structures all resemble the U.S. REIT, but due to variations in their makeup they offer important information on attributes that make REITs successful, both from a market and from a policy perspective. From a market perspective, a REIT market is typically viewed as being successful when it has attracted substantial amounts of capital flowing into the market. The policy perspective is different on a country by country basis. Even though it is not always possible to ascertain all the policy goals of a REIT introduction, there is some evidence both in the structural makeup as well as in the stated objectives included in the various REIT Acts. A pervasive theme across countries in introducing REITs is the wish to provide retail investors with an opportunity to participate in real estate investments on par with the investments available to institutional investors. This provides for a 'level playing field', in which retail investors can diversify their exposure and enjoy returns similar to institutional investors. Furthermore, the investment restrictions that are part of the REIT structure curtail managerial freedom. By offering this opportunity small investors can benefit from lower risk levels and a greater opportunity set. Among the ancillary benefits that are cited by policymakers, countries may want to promote investment in underinvested parts of the market, support the influx of investment capital into a market or resolve underlying financial imbalances in the economy (e.g. dislocations in the banking sector and/or liquidity issues caused by financial distress)[2]. Literature has documented that both the motivation of governments to introduce REITs as well as the motivation of firm management to adopt the structure varies on a case-by-case basis. Damodaran et al. (1997) provide evidence that those firms that have adopted the REIT structure in the U.S. had stronger balance sheets than those who did not. Adoption of the REIT structure hence can be seen as a signal of financial strength. Whether this holds true for European REITs is of interest for both policy makers and investors.

This chapter looks at evidence from European listed real estate markets. In a number of European markets, REIT legislation was enacted in the past 20 years. The Dutch "Fiscale Beleggings Instelling" (f.b.i.) was the first tax transparent structure that was made available to real estate firms. The structure dates from 1970. However, it is not strictly a REIT structure as such, as the structure is applicable to all investment firms and not just real estate firms. In Belgium, the Sicafi or Bevak was introduced in 1995 and can be considered as the first 'true' real estate structure. The structure later is also dubbed the 'BE-REIT', to emphasize the comparability with other REIT structures. In 2003, the French REIT structure – the SIIC –was enacted. France was the first large European market to introduce a REIT-type vehicle. In 2007 the other two major European markets of the U.K. and Germany introduced their respective REIT regimes. The three major real estate securities markets in Europe now account for some 80% of the total European market size according to EPRA, which is why these markets offer the largest sets of data. On the back of

2 his issue is explored in further detail in the next chapter of the report.

REIT enactment in these markets, other countries have responded by introducing their REIT equivalents (e.g. Spain has introduced the Socimi in 2009). Thus, REITs have become a de-facto standard in the European listed real estate market. Even though many countries have chosen to use the acronym 'REIT', their makeup differs from one structure to another. While the differences are subtle, they hold relevant information as to which aspects in the REIT makeup are critical to the success of the structure in a given market. This is why it is interesting to look at the evolution of REIT markets across (European) countries in order to establish how the characteristics have driven the development of that market.

The remainder of this chapter is structured as follows. The next paragraph briefly discusses the background, looking at previous literature and provides an overview of the European REIT landscape and proceeds by developing research hypotheses. Subsequently, the characteristics of each market are looked at in more detail in which specifically the process of REIT enactment and subsequent adoption of REITs in the three major European real estate markets are analyzed. Both the evolution of financial performance as the key attributes are expected to change because of the introduction and subsequent adoption of REIT structures are expected. It is important to verify whether this happens empirically, so the consequences of REIT enactment and adoption are being considered in structuring a regime. Through the use event studies and statistical tests the consequences of REIT adoption on financial performance are analyzed. This chapter ends by drawing conclusions and discussing implications.

1.2 LITERATURE AND HYPOTHESIS DEVELOPMENT

There is more research available in this area due to the age, size and liquidity of the U.S. REIT market. The strands of literature of particular importance to this chapter are (i) literature on REIT adoption and conversion and (ii) the literature on the influence on REIT attributes.

There is a steadily growing body of literature on the consequences of REIT adoption. As mentioned before, the Damodaran (1997) paper was among the first to look at both motives and consequences of REIT adoption in the United States. The authors looked at REITs from the early days of REIT adoption (1966) through to 1989. An interesting finding from their study is the fact that firms appeared predisposed to become REITs depending on their financial strength. This notion fits with the rationale that REIT legislation curtails both financing and operations to a certain degree. Conservatively financed companies with larger amounts of free cash flow are better positioned to comply with regulations than those firms that are not. Indeed, the higher payout requirements of REITs force firms that adopt the structure to pay more in dividends, leaving less in retained earnings to make discretionary investment decisions. The aforementioned paper hitherto has not been replicated for other continents. However, there have recently been a number of papers looking at aspects of REIT conversion in other jurisdictions. One study looks at REIT conversion across 13 countries (Wagner et al., 2022) and finds that once REIT conversions happen, there is a herding effect that prompts companies to follow earlier adopters. This indicates that REIT adoption might be considered by firms to be best practice. Importantly, they find evidence that REIT adopters engage in higher levels of corporate activity prior to REIT adoption to prepare for the conversion process. Both papers inform the first hypothesis of this chapter:

H1.1 The propensity of firms to adopt the REIT structure higher for larger and financially sound firms.

REITs have been of interest to academics as a laboratory to study the (isolated) impact from curtailing firm activities on financial performance. In many cases, the thinking has been that by limiting the degrees of freedom of management teams the firm will exhibit more disciplined financial behavior. The early literature on this topic dates back to the 1980's. The notion was that the amount of (dividend) payout that is required under REIT law prevented managers from taking risky investment decisions without consulting shareholders (Jensen and Meckling, 1976, Easterbrook, 1984). This concept was taken further in the free cash flow theory of Jensen (1986), in which high payouts are associated with stronger alignment of managers with the shareholders. The argument suggests that these limitations of managerial freedom should also impact financial performance positively. Indeed, studies provide

evidence of declining REIT betas (Hartzell, Hoesli and Koo, 1993). While in the United States, the REIT structure in itself does not have leverage restrictions, some European structures including the Belgian, UK and Dutch REIT equivalents do have mandatory financing limits. These in turn are likely to influence the financial performance of REITs even more. By extension, other elements that curtail manager decisions, such as the decision to engage in property development should also impact performance. The above leads to the second hypothesis:

H1.2 After REIT adoption, REITs exhibit stronger inancial performance than real estate operating companies (REOCs).

Besides looking at the financial performance of REITs post adoption, it is also valuable to establish if the adoption process has had any of the desired outcomes on the (listed) real estate market. Particularly the attributes that REITs aim to manage come to mind in this evaluation. Now that there is are almost two decades of data available for the major European REIT markets it is possible to assess how REIT enactment and subsequent adoption have shaped markets. The hypothesis is that the REITs have fulfilled their promises:

H1.3 Markets that adopted a REIT structure have seen more growth and the key attributes of the firms in these markets have improved in line with the objectives of policymakers.

1.3 REIT ENACTMENT PROCESS AND KEY CRITERIA

As REIT adoption does alter the financial makeup of firms, it is of obvious importance to better understand the consequences of conversion. There is little literature on the results of changes in financial regulation itself. For policy makers, however, it is essential to understand the consequences of the enactment of REIT law. The reason why there is a limited amount of literature is primarily because it is difficult to separate the impact of the change in regulation from other factors present in the market. This means that there is always uncertainty whether changes can be attributed to the change in regulation or to market circumstances that coincide with regulation. Therefore, in studying REIT conversion it is important to both consider the enactment of a structure as an event as well as the actual adoption of the structure by firms. These two events may coincide, but they can also happen at different points in time. As is the case with other literature streams, the focal point of studies has been on the market in the United States. However, the U.S. REIT market – while resembling the structures enacted in other markets – is not entirely the same in terms of characteristics. It therefore is worthwhile to first explore key attributes and to subsequently compare these against one another. Table 1.1 provides an overview of the key characteristics of major REIT regimes in Europe[3], compared against the U.S. REIT for reference.

For this paper, four characteristics of REITs are key to examine in closer detail. The first characteristic, from the literature, is the (dividend) payout. REITs have to comply with a mandatory payout requirement of 85-95% of earnings. While the exact definition of earnings differs from one country to another it means that all recurring income has to be passed through to shareholders. The motivation behind having a payout requirement serves the purpose of ensuring that revenues are ultimately being taxed (not at the firm level, but rather at the shareholder level) as well as limiting the financial freedom of managers to use proceeds for discretionary spending.

The second key attribute of REITs is that they are meant to serve as investment structures focused on holding assets. Eligible REIT activities are typically limited and operating activities, of which property development is the most common activity among real estate firms, are either prohibited or subject to strict legislation. Activity restrictions are mainly aimed at maintaining a level (fiscal) playing field between REITs and property developers, but also serve to mitigate operational risk.

3 For an in-depth discussion of REIT characteristics across Europe see the EPRA Global REIT Survey
https://www.epra.com/application/files/8916/9357/7010/EPRA_Global_REIT_Survey_2023_ONLINE_v1_1.pdf

	US (Reference Structure)	Belgium	France	Germany	Spain	UK
Structure name	Real Estate Investment Trust	Société d'innvestissement en immobilier à capital fixe / Vastgoedbeleggingsvennootshap met vast kapitaal (1995) Société immobilière réglementée / Gereglementeerde vastgoedvennootschap	Sociétés d'investissements immobiliers cotées	German Real Estate Innvestment Trust	Sociedades Anònimas de Inversiòn en el Mercado Inmobiliario	Unitted Kingdom Real Estate Investment Trust
Abbreviation	REIT	Sicafi/Bevak (1995) Sir/GVV (2014)	SIIC	G-REIT	SOCIMI	UK-REIT
Year enacted	1960	1995	2003	2007	2009 (revisited 2012)	2007
Mandatory lising	No	Yes	Yes	Yes	Yes (within 2 years)	Yes
Asset test	At least 75% in real estate, government securities or cash; 75% & 95% income tests	Only investing in real estate, including participations >25% in REITs	Primary aim to rent out real estate; other activities <29% of book value assets	At least 75% of total assets in real estate; investment in housing <2007 prohibited	At least 80% qualifying assets, including land held for development and rental real estate and held for >3 years	At least 75% rental income; at least three assets with no property exceeding 40% of assets
Development activities	Below 20% when held in TRS (taxable REIT subsidiary)	Permitted, provided the asset is held for at least five years after completion	Below 20% of book value of assets	Below 20% of book value of assets via wholly owned subsidiary		Allowed for own portfolio; taxation if sold within three years
Leverage ceiling	None	LTV <65% of assets; interest expenses <80% of income; <50% mortgage limit	None	<66,25%	None (after 2012 revision)	Debt service coverage >1.25
Managment	Internally/ externally	Internally	Internally	Internally/ externally	Internally/ externally	Internally/ externally

	US (Reference Structure)	Belgium	France	Germany	Spain	UK
Payout requirements;						
- Recurring rental income	90%	80%	85%	90%	80% (100% of dividend icoome)	90% (100% of dividend income)
- Realised capital gains	None, but not distributing has tax consequences	None, provided procceeds are reinvested within foour years	70%	Minority share of sales <50% over moving 5-year window; capital gains reserve for 2 years applies over 50% of gains	If holding period requirement is met; 50% with remainder allowed to be reinvested within 3 years	None
Shareholder requirements:						
- Minimum number of shareholders	Minimum >100 shareholders	None	None	11; no shareholder may hold more tha 10%	None (stock exchange dependent)	11; no shareholder may holld more than 10%
- Concentration limits	Top 5 shareholders must hold less than 50%	Free float above 30%	No shareholder may hold >60%; 15% must be held by shareholders holding less than 2%	Besides the abobe, free float must be above 15% (25% at introduction)	Minimum free float of 25% to list on main market	Minimum of 35% needs to be owned by individual or entities holding less than 5%
Conversion costs	All (un)realized gains before eleccting REIT status must be distributed (corporate taxes apply) unless assets are held for 10 years after conversions.	15% taxation on ccapital gains	16.5% taxation on unrealized gains payable in four years	Conversion triggers a taxable event	None	2% of market value of assets applied but has been abolished. Company may elect payment in four annual installments

Another dimension of limiting activities is found in the German REIT legislation. Here, the investment in residential dwellings constructed before the enactment of the REIT structure is prohibited. This restriction is meant to protect the residential real estate market and is an interesting contrast with the U.K. REIT, which was in part introduced to stimulate investment in housing.

Thirdly, some of the REIT regimes have imposed leverage limits. Whereas activity limits serve to limit operational risk, the primary role of restricting leverage in REITs is to limit financial risk. Internationally, the limits to debt financing in REITs range from very strict (as is the case in Singapore) to quite liberal or even non-existent.

Finally, all REIT structures have implemented requirements regarding the distribution of share ownership. Because of the fact that in many cases the REITs are meant to offer a substitute for direct real estate holdings to private investors, REIT regimes require firms to have a large(r) number of shareholders. As is the case for other characteristics, the actual requirements per country are quite different, ranging from a requirement for all investors to hold less than 10% to having at least 1,010 shareholders, which is the case in Japan. The French SIIC has been the most liberal REIT regime, as majority share ownership of up to 60% is permitted. This is reflective of the French institutional environment, where many of the REIT portfolios have been formed by financial institutions.

1.4 RESEARCH DESIGN

The variations in the four characteristics mentioned above are interesting to explore in terms of the subsequent evolution of the REIT market in specific countries. First, it is important to establish what securitized real estate markets looked like before REIT enactment. To answer H1, the makeup of markets that have seen substantial REIT conversion is looked at before the enactment of the REIT structure. Through logistic regression, the propensity of firms to convert into REITs is explained by the factors that are suggested in the literature and which are specific to the REIT regime. The regressions are specified to establish to what extent the probability of a firm converting into a REIT is related to pre-existing characteristics:

$$P(Converter_i) = \alpha + \beta 1\, LNSize_{it-1} + \beta 2\, LTV_{it-1} + \beta 3\, Float_{it-1} + \beta 4\, Payout_{it-1} + \beta 5\, CapEx_{it-1} + \varepsilon_{it} \qquad (1.1)$$

In which $P(Converter_i)$ is a binary variable that measures whether a company will convert into a REIT at a given moment in time, in which case the value is 1, or whether it remains a REOC (the value is 0). It is important to point out that in this particular model, the actual time of conversion is not being considered; a firm may convert to a REIT immediately upon REIT enactment or choose to adopt the regime at a later time. The independent variables are the structural characteristics of the REIT at t-1, which is defined as the fiscal year-end before REIT enactment in the home country of the firm. $LNSize_{it-1}$ is the natural log of the market capitalization of the REIT at t-1. The second independent variable, LTV_{it-1}, measures the debt to enterprise value of each company. Payout it-1 is the percentage of recurring revenues that have been distributed in the form of dividends in the year before REIT enactment. $CapEx_{it-1}$ is an independent variable measuring capital expenditure by firms as a percentage of revenues at t-1. There is a limited number of markets for which it is possible to perform this analysis, either because there is insufficient data available, or because there have been limited conversions that allow for the analysis. However, in all three largest European listed real estate securities markets of France, Germany and the UK there have been REIT conversions. These three countries account for most of the REIT conversions in Europe.

The analysis of the propensity of firms to convert provides several clues as to whether companies were predisposed to become REITs, to begin with, as some literature (Damodaran, 1997) suggests. If so, it would be rational to expect that the financial performance of those firms that at a later stage became REITs would deviate from those firms that chose to remain REOCs. To identify whether this is the case, two cohorts are structured in which one consists of firms that have adopted the REIT structure and the other of firms that have not converted. This provides a more complete picture of the nature of the firms that went on to convert into REITs in comparison to the wider market. However, it remains unclear from this analysis whether the enactment of the REIT itself or the actual adoption of

the REIT structure through conversion is driving any changes in financial performance, should these occur. Since firms may convert into REITs at the very moment the structure gets enacted but might also decide to do so at a later date, it is interesting to study the financial performance around both moments in time.

A CAPM-inspired model is used to establish the factor loadings around REIT enactment:

$$E(r_{i,t} - r_{f,t}) = \alpha_i + \beta 1,iE(r_{market,t} - r_{f,t}) \quad (1.2)$$

In which ri,t is firm i's total shareholder return over period t, $r_{f,t}$ is the risk-free rate and rmarket,t is the return on the market index, defined as the FTSE EPRA Nareit index for the appropriate country. By looking at the test results it is possible to gauge whether the enactment indeed leads to significant structural changes in the financial characteristics of REIT converters.

After looking at the impact of REIT enactment, it is relevant to analyse what happens around the actual adoption of the newly created REIT structure. REIT conversions should affect the financial performance of firms that adopt the structure. Since this is not a single point in time but varies from one company to another, an event study approach is followed in which buy-and-hold abnormal returns are being used, following Lyon and Barber (1999):

$$BHAR_{it} = \prod^{t}_{t=1} {}^{\wedge}t\,(1+R_{it}) - \prod_{t=1} {}^{\wedge}t\,(1+R_{it}^{mc}) \quad (1.3)$$

In which $BHAR_{it}$ is the buy-and-hold return on firm I at time t and R^{mc}_{it} is the return on the reference index. As a reference index, the appropriate FTSE EPRA Nareit country index is used. The BHARs are subsequently aggregated to derive an (n equally weighted) composite for each country, providing information on the return behaviour before and after REIT conversion.

The final step in the analysis of REIT conversions is to assess whether the makeup of the market has changed materially as a consequence of the introduction of the REIT structure. More precisely, it is important to know whether the desired policy effects have been reached. As indicated earlier, the policy effects have not always been entirely clear from the outset. However, (improved) accessibility of the real estate market to (private) investors, reduced risk levels and a wider choice of investment products have been salient features for policymakers. By comparing before and after enactment figures it is possible to gauge whether these goals have been met.

Data sample composition and descriptive statistics

As the analysis is focused on the consequences of REIT enactment and adoption, the primary focus is on the markets that are sizeable and have seen REIT conversions. Furthermore, to be able to compare against a control group, there has to be a group of REOCs that have chosen not to convert. This leads to a core sample consisting of the three markets of France, Germany and the United Kingdom. Other markets like Belgium, Italy and the Netherlands have seen REIT conversions in the past, but because of the date of these conversions and the lack of comparable REOCs, these are left out of scope. To ensure covering the largest possible sample size, no size criterion is used in selecting the firms included. In the three core markets in the sample, there have been 75 REIT conversions through time4[4]. The control set of REOCs is equal in size, for a total of 205 firms in the sample. A description of the dataset is provided in Table 1.2. The data on other European markets is used as control data, allowing for comparisons of market growth and composition. The identification of REITs and their conversions was realized with the support of the European Public Real Estate Association (EPRA). Furthermore, data was extracted from stock exchanges, annual reports and prior literature. Firm data was extracted from Moody's and S&P and was cross-checked with company financial reports. Market data were collected through Bloomberg LP and Datastream every month. The sample only contains information on firms for which pricing data was available. In some cases, this led to exclusion.

4 This is the number of observations for which pricing data could be found. For six firms, there was no or unreliable data

Table 1.2: sample statistics

The table provides an overview of all the companies in the sample (including REOCs), broken down by the REIT sample consisting of companies that either converted to the REIT structure and the companies that were originally listed (through IPO) as REITs. Firms are not required to be in the sample for the full sample period, which is the period of five years around REIT enactment in each country (1998-2008 in the case of France, 2002-2012 in the case of Germany and the UK).

	Full sample	France	Germany	UK
Firms in sample	205	62	27	116
# of REITs in sample of which:	86	42	5	39
- Converted to REITs	75	41	2	32
- IPO after REIT enactment	11	1	3	7
# of REOCs	65	20	22	77

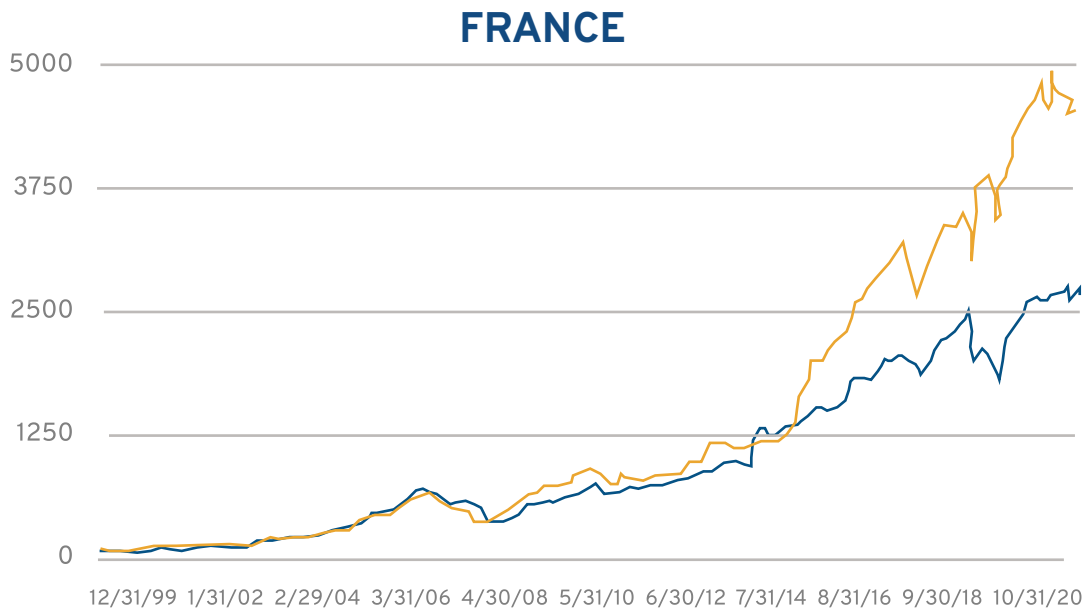
From the table, it is clear that the UK data forms the largest part of the sample. This is true for the number of firms as well as for the size of the market. Just over half the firms in the sample are British. The French market comes in second place, with 62 firms or 30.2% of the sample. Germany is a far smaller set of 27 firms in the sample. Here, conversions have taken place sparsely, with only two firms converting and the whole market consisting of four REITs by 2022. Nevertheless, the German market as a whole has grown quite substantially over time. The table also shows that in Germany there have been two IPOs of firms that went on to convert to REITs later on. In the UK, that has happened even more often; 32 companies converted to REITs while originally listing as REOCs. The control sample of REOCs consists of 77 firms in the UK, 20 in France and 22 in Germany.

1.5 FINDINGS

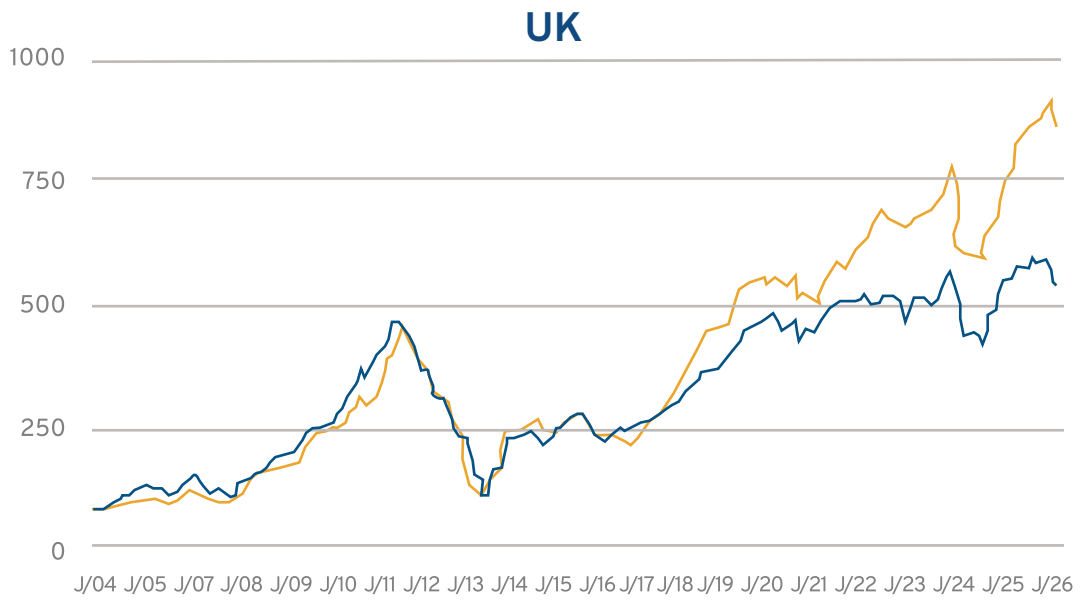
For the three key markets in the sample it is relevant to establish whether those companies that went on to become REITs were already different from those that remained REOCs to begin with. A simple way of establishing this is by looking at the financial performance of the two groups of companies. By compiling two portfolios consisting of REIT converters and REOCs, a first indication arises of any differences occurring.

Figure 1.1: Total return indices non-REIT converters and REIT converters, UK, France, and Germany

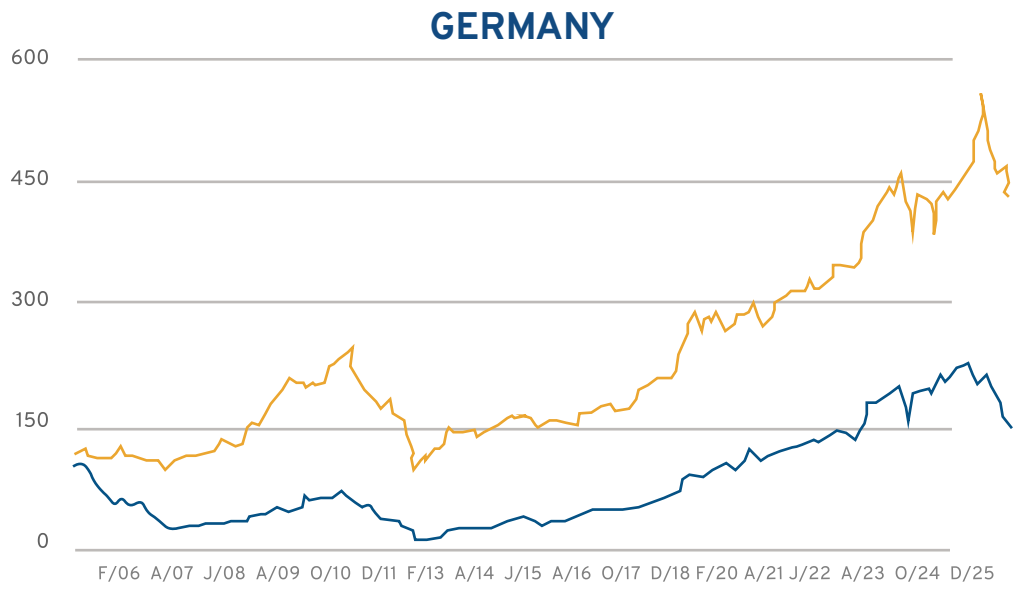
The table provides an overview of all the companies in the sample (including REOCs), broken down by the REIT sample consisting of companies that either converted to the REIT structure and the companies that were originally listed (through IPO) as REITs. Firms are not required to be in the sample for the full sample period, which is the period of five years around REIT enactment in each country (1998-2008 in the case of France, 2002-2012 in the case of Germany and the UK).



Panel A: Total Return of French REIT converters versus non-converters in local currency, 01/01/2000 = 100



Panel B: Total Return of UK REIT converters versus non-converters in local currency, 01/01/1999 = 100



Panel C: Total Return of German REIT converters versus non-converters in local currency, 01/01/2000 = 100

Figure 1.1 provides a graph that depicts the performance behaviour of the two groups through time. Panels a-c show the evolution of total return performance. In the French and U.K. markets, it appears that before REIT enactment, there was no (meaningful) difference between the REITs and REOCs. However, this is different from the German situation, in which the characteristics of the non-REITs differ from REITs. This may be explained by the fact that German REITs focus on commercial real estate, whereas non-REITs tend to focus on residential real estate and were unable to convert. Secondly, performance divergence appears to occur after some time subsequent to the enactment of a REIT structure. Third, REITs exhibit less volatile returns than their REOC counterparts after REIT enactment, suggesting that the REIT structure does deliver on reducing risk-adjusted returns. Indeed, the Sharpe ratio of REIT returns is higher than that of the REOC series. This in itself is justification for the implementation of a REIT structure. However, this does not answer the question of whether it was the enactment of the REIT itself or the conversion of companies into the REIT structure prompted the divergence. To test the differences more formally in makeup between the REIT converters and the REOCs, the regression analysis as specified by (1.1) is being carried out. The results of the logistics regressions are provided in Table 1.3.

Table 1.3: Logistics regression of conversion probability

This table shows whether differences in firm characteristics can explain the propensity of a firm to convert into a REIT. Key characteristics tested include the size of the firm (LNSize), financial leverage (LTV), the dividend payout level (Payout) and the level of investment the firm does (CAPEx). Country sample sizes are dependent on the availability of all data points required.

Variables	Full	UK	France
α	-2.782	-16.9588*	-7.6305
	(-0.922)	(-1.999)	(-0.899)
$LNSize_{t-1}$	0-208	0.8474	0.6078
	(1.376)	(1.955)	(1.402)
LTV_{t-1}	-1.557	-2.0564	-0.8400
	(-1.557)	(-0.838)	(-0.272)
$Payout_{t-1}$	-0.007	-0.0110	-0.0072
	(-0.488)	(-0-706)	(0.005)
$CapExt_{t-1}$	-9.518	-20.2644*	-18.7669
	(-1.504)	(-2.233)	(-0.837)
$Float_{t-1}$	0.003	0.0305*	-0.0250
	(0.357)	(1.989)	(-1.002)
N	**71**	**40**	**24**
McFadden Pseudo R^2	0.0559	2.2106	0.1979

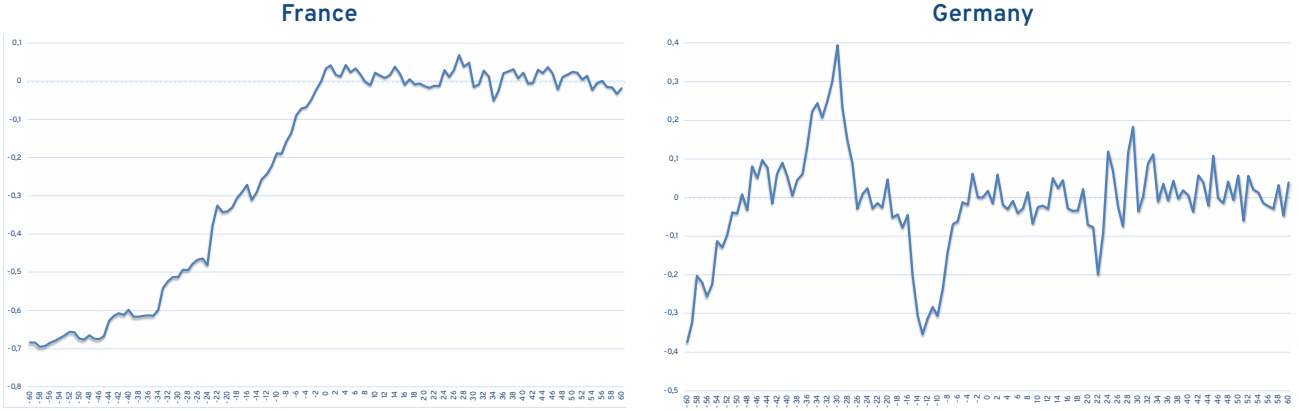
This table presents the results of the logistics regression for the variable used i the regressions for the full sample, as well as the country samples for the UK and France. Z-values are reported in parentheses. "." and "*" indicate significance at the 10%, 5%, and 1% levels, respectively, in two-tailed tests.

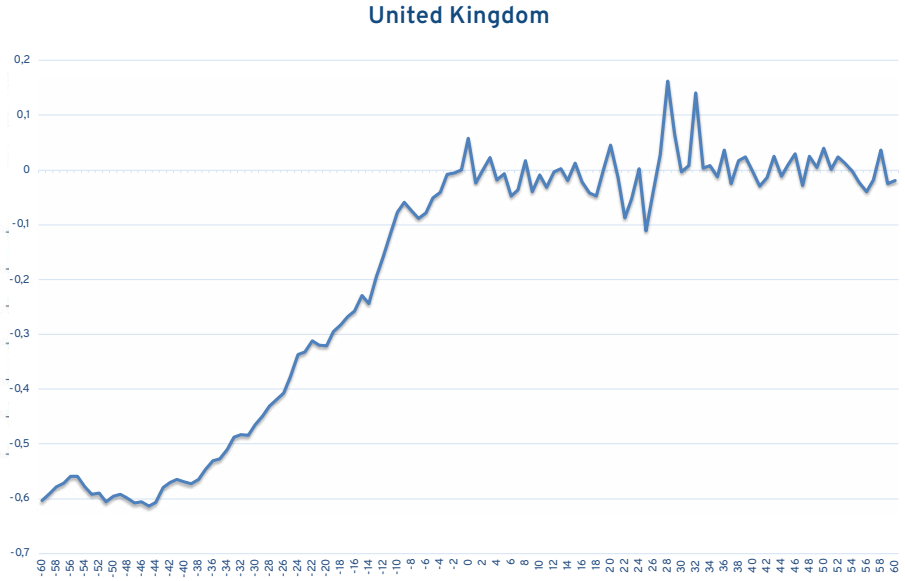
The table provides more insight into the makeup of the sample. First, there is a substantial number of observations lost due to the fact that historic firm data is not always available. This particularly pertains to companies that were smaller, as their reporting standards were not as good as those of companies that were larger at the time. The propensity of firms to convert into REITs appears to be part-driven by the level of change required to meet the REIT criteria. As expected, the significance of the results is dependent on the size of the sample. For this reason, the results of the regression for Germany (only) are left out, as there are insufficient observations to arrive at any conclusions. From the analysis, the signs of the coefficients are broadly as expected, except for the Payout and Float in the case of France. Whereas it is logical to expect higher pre-existing payouts to be associated with a higher propensity to convert into a REIT, this is not the case in France. Furthermore, since REITs tend to require higher levels of free float, ex-ante REIT conversions should be related to higher levels of free float. The reason why this is not found in France is likely the makeup of the French SIIC structure. Contrary to typical REIT structures, the French regime has an unusually low free float requirement (i.e. only 40% of shares need to be part of free float). Indeed, many French REITs have dominant shareholders (typically banks and insurance companies). This is associated with a lower alpha coefficient. Furthermore, larger firms are more likely to convert to the REIT structure, which might be explained by 'herding' or because of the availability of resources to achieve conversion. A higher level of leverage is associated with a lower probability of becoming a REIT, which suggests that imposing a REIT structure does lead to more disciplined financing. Firms that have high levels of (development) capital expenditure are less likely to convert to a REIT, probably because this impedes their ability to develop and/or engage in non-investment business. The results are stronger for the UK than for France. This is partly due to the larger sample size, but might also be due to the REIT structure itself. The British structure has not seen many changes over time, whereas the SIIC structure has been updated substantially several times. Furthermore, the characteristics of the structure itself are quite different, suggesting that REIT design actually results in different outcomes. The findings are furthermore robust to multicollinearity, as VIFs are well below 2 in all cases. McFadden Pseudo-R squares are between .06 and .21. Judging from findings, there is some evidence that firms who are larger and have a better financial position (particularly with respect to debt and capital expenditure) as per H1.1 are more likely to convert into REIT. However, this comes with the health warning that the statistical significance of this is modest at best, which is unsurprising in view of the sample size.

As a next step in the analysis, the focus is shifted to the consequences of REIT adoption on financial performance. The earlier analysis shows that there are some seeds of REIT conversion in the makeup of firms prior to REIT enactment. However, the evidence is not very strong as such, which makes it interesting to look at what happens when firms decide to convert to a REIT. As firms convert at different times, an event study approach is used. First, nominal abnormal returns around REIT conversion are calculated for the period [-60,60], using monthly returns. Figure 1.2a-c provides the results of this analysis.

Figure 1.2a-c: Monthly Total Shareholder Return REIT converters around conversion, France (a), Germany (b), and the UK (c)

This figure displays the evolution of aggregate equally weighted total returns before and immediately after the adoption of the REIT regime by firms. Performance is monitored from 60 months before REIT conversion and then for 60 months after. Aggregated returns are provided in decimals (vertical axis), where the month 0 provides a zero return.

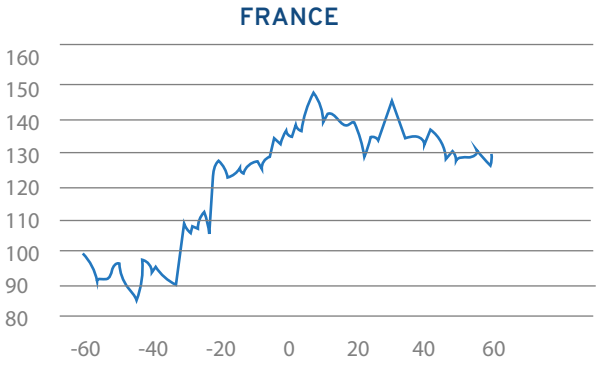


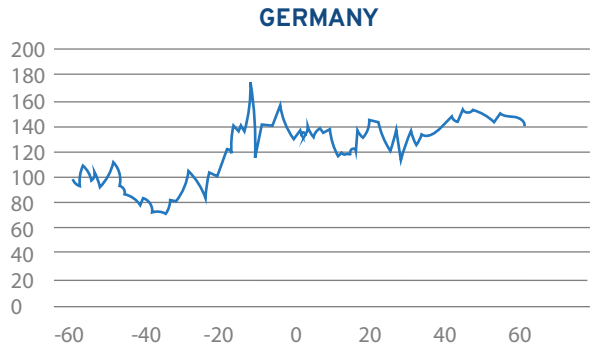


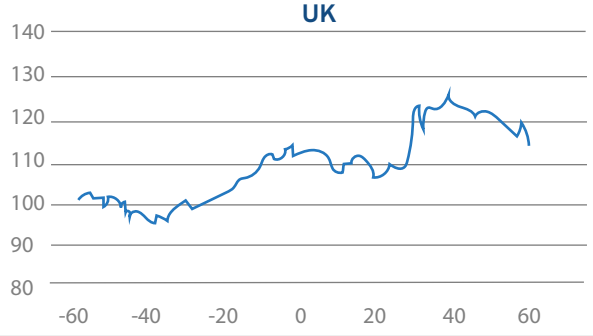
What is striking about the data is that it indicates that converters start exhibiting abnormal returns well before the conversion date. From around four years ahead of companies converting, there appears to be substantial outperformance of the general (real estate index). This holds true for all three countries in the sample. It is expected that before conversion the financial performance should already be affected, as firms do not convert into REITs overnight. First, the firm has to make sure it meets all requirements. Second, a structure change requires shareholder approval well in advance of conversion. In addition, it remains unclear from the graphs whether the effect is due to a conversion (announcement), or because of the enactment of the REIT structure in the country. It is therefore necessary to take a look at the buy-and-hold abnormal returns, as per equation (1.4) to separate out these effects. The results thereof are shown in Figures a-c. In principle, these cover the same timeframe and set of companies, but correct for market movements throughout the event period.

Figure 1.3a-c: Monthly composite buy-and-hold abnormal returns of REIT converters, UK (a), France (b), and Germany (c)

This figure displays the evolution of sample REIT converter returns versus the FTSE EPRA Nareit country index in local currencies as a measure of outperformance prior to and after firm REIT conversion. The abnormal returns are recorded from 60 months prior to REIT conversion until 60 months after. Results are plotted as an equally weighted total return index, where t-60 = 100







Figures 1.3a-c show that there clearly is a market effect in the data, which is neutralized by looking at abnormal returns. However, the outperformance does not disappear altogether. Rather, it now concentrates on a shorter period of time prior to firms converting to REITs, amounting to approximately three years. This fits well with the explanation that firms need time to prepare for conversion; an average of three years between the initial decision by management and actual conversion appears to be in line with a normal preparatory period. Post REIT conversion, the outperformance stabilizes. Judging by this information, REIT conversions lead to an improvement in valuation that is persistent. This validates H1.2 to the extent that REIT conversions result in persistent added value.

As per equation (1.2), OLS regressions provide more colour as to the changes in behaviour over time, using REIT enactment and REIT conversion dates as the event date. Specifically, changes in the abnormal returns (alpha) and the risk loadings (beta) are of interest, as they provide an indication of to what extent the characteristics of REIT converters have changed. The regression analysis is carried out both for the REIT sample as well as for the REOC sample to compare. Table 1.4 reports on the findings.

Table 1.4: European structural comparison for alpha and beta[5]

This figure displays the evolution of sample REIT converter returns versus the FTSE EPRA Nareit country index in local currencies as a measure of outperformance prior to and after firm REIT conversion. The abnormal returns are recorded from 60 months prior to REIT conversion until 60 months after. Results are plotted as an equally weighted total return index, where t-60 = 100

Panel A: Structural tests arouns REIT enactment

Sample	Prior to enactment		Post enactment	
	α_1	β_1	α_1	β_1
France				
REIT converters	0.0197	0.1985	0.0100	0.3720
Non-converters	0.0142	0-5724	0.0079	0.8885
Germany				
REIT converters	0.0054	0.1524	0.0068	0.5636
Non-converter	0.0142	0.0239	0.0119	0.7894
UK				
REIT converters	0.0073	0.5983	0.0046	0.6697
Non-converter	0.0119	0.5532	0.0081	0.8344

Panel A: Structural tests arouns REIT adoption (only converters)

Sample	Prior to conversion		Post conversion	
	α_1	β_1	α_1	β_1
France	0.0126	0.4096	0.0022	0.5055
Germany	0.0098	0.3199	0.0069	0.5379
UK	0.0063	0.6001	0.0017	0.7547

5 See source paper for additional (Chow) tests.

The table shows that there is a difference in performance leading up to and after REIT enactment (Panel A) and conversion (Panel B). The most surprising finding is that in all markets, betas after REIT enactment increase. This is counterintuitive, as from literature the enactment of a REIT structure should lead to reduced systematic risk. The same finding holds true around REIT conversion. In the data there are a couple of clues as to why this finding occurs. First, the increase in betas is not found solely in the REIT converter sample, but also in the non-converter sample. More specifically, non-converters have seen stronger increases in betas than converters, so on a relative basis, REITs have seen less increase in risk. The clearest example of this is the UK market, in which REIT converters have on average seen the beta go up by .07, whereas the non-converters have seen an increase of .28. Put simply: in view of changing market conditions REITs have been much more resilient in picking up additional risk than non-REITs. In other markets, we see a similar – but less pronounced – pattern. Second, the European REIT regimes in the UK and Germany have been enacted just before the global financial crisis, in which specifically real estate firms have been hit by volatility. The increase in betas both is observed in the dataset with the date of enactment as the key date as well as where the conversion date is the measurement date. This is unsurprising in view of the fact that of the converters a large portion converted around the date of enactment of the structure. Turning to alphas, there is an equally unexpected drop around REIT enactment. With the exception of the German sample, alphas fall across the board. This is likely the result of the gradual movement in the market indices towards becoming REIT-heavy. The same issues that explain the movement in firm betas might be at work in this case as well. In France, the converters exhibit higher alphas than REOCs. This is not the case in Germany or in the UK. In all cases, alphas carry a positive sign.

Finally, and perhaps the most important question we are trying to answer is whether the enactment and subsequent adoption of the REIT structure has had the desired effect on the market. The best way to reflect on this is by simply looking at the makeup of the market prior to and after the enactment. Now that the European REIT structures have been around for two decades, we are able to make such a comparison. An interesting case is the German market. The REIT structure has not yet been widely adopted and also it has not been very successful in attracting additional capital, both measured by the growth in the size of the pre-existing converters well as in IPOs. From a policy perspective, it is interesting to see, while REITs are prohibited from owning legacy housing assets, it is exactly this part of the market that has resulted in Germany becoming one of the largest property share markets in Europe. Vonovia is now one of the largest real estate companies in Europe. This signals that there is an opportunity for policy makers in terms of widening the scope of the REIT market. As it stands, REITs in Europe have hitherto been disciplined by long term investors. Their robustness should mean that including sectors in regulation actually enables policy makers to add to the stability and robustness of the real estate market. This is particularly of importance for assets that are seen to be of regulatory importance. This is further substantiated by the fact that German REOCs have elevated LTVs, which translates into more financial risk. Particularly in view of the sector exposure this appears to be undesirable. The French market, in turn, has its own idiosyncrasies. Here the liberal policies regarding shareholder composition are in contrast with most regimes. Even though the average free float level has moved up, it still is much below the sample average. Furthermore, the level of control that some of the majority shareholders have been at odds with the concept of protecting smaller shareholders. Agency issues such as described in literature are a concern here. This might be an explanation for the lack of newly formed REITs after the SIIC structure was enacted. At the same time though, the market has seen strong growth when measured as the average market capitalization. This could point to the fact that the regulatory environment has been more conducive to consolidation than to provide additional vehicles. Indeed, the SIIC regime provides opportunities for companies to transfer holdings into a pre-existing REIT. In the UK this has been different. There have been multiple REIT IPOs since the REIT structure was introduced and the number of firms that have not chosen to adopt the REIT regime is very small. Still, firms have grown on average and thus, the regime has been quite successful when compared to non-REITs, who have seen very little growth when compared to the REIT market. All of the above validates H1.3.

1.6 CONCLUSIONS AND IMPLICATIONS

This chapter studies the causes and results of REIT conversions to both the firms active in the listed real estate market as well as for the securitized real estate market as a whole. The variations in the REIT structures from one country to another provide a laboratory to study which elements in REIT regimes are important to the success of REITs. Data from REIT converters as well as from REOCs provides information on the degree to which policy objectives have been reached. These objectives vary from one country to another and have not always been made explicit by lawmakers. From an investment point of view, the primary goal of having a REIT structure is improved financial performance. REITs have delivered on this, judging from the nominal risks and returns. However, on a more detailed level, there is more colour to this. One of the important notions is that financial markets appear to consider the fact that those companies that become REITs should trade at a different valuation from non-REITs. Consequently, REIT candidates see their valuation change in a positive sense in recognition of this. Furthermore, the attributes of the firms that convert to REITs generally move in the direction that appears to be in line with what is desired from a policy perspective: REITs are larger than REOCs, enjoy lower levels of debt and have higher payouts than non-REITs. However, there are also some issues that are of importance to policymakers. One of the motives for introducing REIT legislation has been to promote diversified investments by private individuals in real estate. However, in practice, the free float of many REITs has not gone up. This holds particularly true for a country like France, which has very liberal shareholder requirements. A second issue is whether REITs can steer investments into or away from particular sectors of the real estate market. Judging by the data and particularly by the contrast between Germany and the UK in view of the residential market, it appears that REITs have a limited role in this. However, the research indicates that, by regulating the REIT structure, key elements that are conducive to the real estate market can be managed within the context of the regime. This particularly pertains to the management of financial and operational risks, with the aim of having a stable and professionally managed market. REITs display lower levels of leverage and more modest operational exposure, leading to market stability. This is where the opportunity lies both in evaluating existing structures as well as in the design of new REIT regimes. Policymakers can benefit from these lessons learned. This chapter is also limited in the sense that it takes three REIT markets in Europe as examples. REITs also exist in other jurisdictions and also affect broader financial markets.

2. THE FINANCIAL MARKET IMPACT OF REITS IN EUROPE

2.1 INTRODUCTION

Real Estate Investment Trusts (REITs) have reorganized how capital is made available to the real estate market. The Literature shows (e.g. Hoesli and Oikarinen, 2012; Pagliari et al. 2005) that in the long run real estate securities perform in line with the underlying real estate markets when controlling for factors including leverage and portfolio composition. REITs thus offer an investment alternative to direct investments or private real estate structures to achieve exposure to real estate returns. Studies of the REIT market in the past decades have focused on the performance characteristics and interrelations with other investment classes such as common equities (Clayton and MacKinnon, 2001) and bonds (e.g. Eichholtz et al., 1998). Furthermore, the literature has mainly focused on the U.S. REIT market, as it is the largest market that has also been around the longest (since 1960). The European REIT markets have received less attention in academic literature, but do offer an interesting laboratory for research into both the motives of as well as the consequences of introducing REITs.

Among the motives of policymakers to enact a REIT regime was the wish to allow retail investors to enjoy the same investment opportunities that previously were only available to institutional investors. At least three factors contribute to the creation of this 'level playing field'. First, REITs provide retail investors with a similar tax position as institutional investors by virtue of their tax transparency. Second, structural REIT requirements such as a leverage ceiling protect small investors from entering into risky investments. Third, the liquidity and share prices of listed REITs are such that they allow retail investors to participate in small amounts and diversify their holdings. This has been further supported by an exchange-traded fund (ETF) market that offers investors diversified exposure to the market at low costs. While these elements have certainly been an important driver for REIT markets to evolve, there are ancillary benefits to the REIT structure that do not only affect retail investors but also have played an important role in the wider financial market. This paper focuses on these consequences, that go well beyond the creation of a level playing field and may help explain the growth of the European REIT market in the last two decades.

This chapter specifically looks at how REITs have proliferated in the European markets and what have been the effects of an acceleration in the adoption of the REIT structure across Europe as already discussed in Chapter 1. The creation of REITs has not only affected the ownership of real estate equity, but it also has influenced the real estate debt market. This specific topic has not received a lot of attention in the literature, but as real estate plays an important role in debt markets it certainly deserves attention. With the arrival of the REIT structure, these firms have also become active in the (public) debt markets, which extends the investment thesis beyond the equity markets. This study extends the body of literature by looking at how the REIT market has impacted the efficiency of both the real estate proper as well as the broader financial market.

First, the growth of European markets is looked at in a wider setting. Whereas the focus of the first chapter was on understanding the mechanics of REIT structuring and adoption and the impact on the real estate market, this chapter looks at implications for the wider financial market. Particularly the growth in the aftermath of stress in the financial system is of interest to gauge whether REITs have played and are currently playing a role in the resolution of challenges in the underlying market. Both the U.S. REIT market as well as some of the larger REIT markets in Europe have seen strong growth in the aftermath of financial crises. The role of REITs in the resolution of market dislocations therefore is of interest to policy makers that look to improve the stability of the real estate market. Second, this paper takes a look at how REITs are using debt in their capital structure and how this influences financial markets.

This chapter proceeds as follows. After a review of the literature research hypotheses are developed. Subsequently, European market evolution in terms of both equity and debt markets is examined more closely. This allows for an analysis of how REITs have contributed to the real estate market and – more broadly – to financial markets in European geographies. This is relevant for policymakers as well as for real estate managers considering adopting the REIT structure. The chapter concludes with a summary of findings and implications for future research.

2.2. LITERATURE AND HYPOTHESIS DEVELOPMENT

The success of the REIT structure in the U.S. in the 1990s was supported by a confluence of circumstances, among which changes to the REIT legislation, issues in the banking sector (the savings and loans crisis) and the developing notion that real estate should have a place in mixed-asset portfolios as documented by Hudson-Wilson et al. (2003/2005). The 'REIT boom' offered a one-stop solution for these issues. In Europe, REITs have been adopted geographically over a four-decade time period since the Dutch structure was enacted. Table 2.1 provides an overview of the introduction date of the various REIT structures around Europe included in the sample.

Table 2.1: Overview of REIT structures in Europe included in the sample and their enactment years

Country	Structure name	Introduction
Belgium	Sicafi	1995
France	SIIC	2003
Germany	G-REIT	2007
Ireland	I-REIT	2013
Italy	SIIQ	2006
Netherlands	FII	1969
Spain	SOCIMI	2014
United Kingdom	UK-REIT	2007

As is the case for the structure itself, European REIT IPOs are not equally dispersed through time. Like in the U.S. (Buttimer et al., 2004), there have been waves of IPOs that have been prompted by various events. The literature tends to focus on IPOs in the context of abnormal financial returns that occur around these events. For the purpose of this paper, it is primarily interesting to identify what are the catalysts of REIT IPO waves as these have driven the growth of the European REIT markets.

According to the literature, there are several competing theories as to both why IPO waves occur and how these are priced. Due to Lowry (2003), the competing hypotheses can be summed up as capital demand, information asymmetry and investor sentiment. Capital demand theory suggests that IPOs occur because market conditions are such that it is attractive for (private) companies to find new capital. If market circumstances prompt a wave of IPOs, this would also suggest that pre-existing firms would also be likely to be looking for additional capital (Choe et al., 1993). Information asymmetry looks at another aspect driving IPO returns, which is a discrepancy between the information that investors have about a firm versus the information that the firm's managers have. In the situation that there is a large difference in information, managers with superior information would be able to benefit by taking a company public. The level of information asymmetry is time-varying: in some circumstances, firm management

has superior information whereas in others that may not be the case. This appears less relevant for REITs, as these are relatively transparent on the assets that they hold and therefore may not have large discrepancies in information between management and shareholders, unlike operating companies. The third explanation for IPO waves is the investor sentiment hypothesis, which suggests that at times investors become irrationally optimistic about the prospects of a firm and/or market, and are thus willing to 'overpay' for a stock. In this case, it would be rational that IPOs are not only grouped very closely but also that they would be specific to a single market. Furthermore, it would then be likely that IPOs would occur after strong returns that signal strong investor sentiment.

The nature of the occurrence of REIT IPOs therefore provides information on which theory is more likely to explain the market development and may explain the structure of growth. This helps to inform policymakers when considering how REITs can support the robustness of the financial system. A key example is the global financial crisis, in which REITs in several countries were an important vehicle for transferring assets from the public sector to the private sector. The availability of a functioning REIT market facilitates this process. The hypothesis is therefore:

H2.1: European REITs have seen their strongest growth in the aftermath of financial crises and have supported recovery from these crises.

Apart from being a unique investment vehicle in the equity space, REITs issue more than just equity capital. Debt issuance by REITs is also substantial. The most common type of debt financing in real estate is through secured financing, typically in the form of bank loans and mortgages. The reliance on banks to provide debt capital has therefore historically been substantial. At the same time, due to the requirements attached to their REIT status (leverage limits, activity constraints and mandatory dividend payout), REITs have appealing risk characteristics relevant to lenders baked into their structure. This may make it more sensible for REITs to issue debt in the public debt market as the aforementioned characteristics curtail risk not only for their equity but equally for the debt side of the capital stack. As indicated, the benefit of the issuance of public debt is that it lowers the reliance on banks to provide debt capital. This is particularly important as commercial banks in the past have been affected by contagion from the real estate sector. Literature (e.g., Blasko and Sinkey, 2006) suggests that banks that are predominantly real estate lenders tend to be more exposed than others to interest rate movements. This is particularly salient given the strong interest rate rise in many economies after the COVID-19 pandemic and the ensuing challenges to the banking sector in coping with the changing environment. A particular concern is that banks themselves as well as regulators may well underestimate the systemic risk that real estate lending introduces into the banking sector (Silva et al., 2018). REITs moving away from bank lending therefore is from a systemic point of view healthy. Put in other words: both REIT investors and the general financial system benefit from the ability of REITs to access the public debt market. Furthermore, REITs have above-average-sized portfolios and are infinite life vehicles, adding to these benefits. This leads to the second hypothesis:

H2.2: REITs are facilitating the growth of public real estate debt markets in Europe, thus lowering systemic risk.

The growth of the public real estate debt market has advantages beyond providing investors with an investment instrument. While it allows REIT managers to diversify debt sources which removes constraints (Faulkender, Petersen, 2003), evidence suggests that it also disciplines managers to maintain a healthy balance sheet to maintain financial flexibility (Riddiough and Steiner, 2021). The disciplinary function of public debt issuance by REITs therefore reinforces the aforementioned built-in structural characteristics that REITs have. This may be an explanation that some literature (e.g., Howe and Shilling, 1988) finds that bond issuance signals quality as reflected in positive stock price reaction to announcements. The extant literature leads to the following hypothesis:

H2.3: REITs issue public debt with higher quality than other real estate bond issuers.

2.3 RESEARCH DESIGN

To research H2.1, the pattern of the European REIT market growth is examined. As a start, the REIT IPO activity in Europe is charted. There is no existing study that solely looks at the volume of REIT IPOs through time, as REIT conversions, listed property companies and REIT IPOs are often bundled into one figure. The pattern of REIT IPOs provides a first indication of the nature of market growth resulting from the introduction of REIT structures. Next, the IPO frequency is confronted with the introduction date of the REIT structure as well as with previous market returns, to identify whether one of these elements drives market growth. A simple OLS regression is run to formalize the relationship between IPOs and market growth and returns:

$$N_t = \alpha + \beta(Rm_{t-1}) + \varepsilon \qquad (2.1)$$

In which N_t is the number of REIT IPOs in year t and Rm_{t-1} is the total return on the FTSE EPRA Nareit Developed Europe Total Return index in the year prior to the year in which the IPOs took place.

Subsequent to this analysis, the size of the market is corrected for the investment returns in order to gauge how the market has grown from capital inflows:

$$NI_t = MC_t - (MC_{t-1} * Rm_t) \qquad (2.2)$$

Whereas NI_t is the net inflow in € billions, MC is the market capitalization of the FTSE EPRA Nareit Developed Europe Total Return index and Rm_t is the total return on the same index.

The sources of inflows have been both secondary equity issuance as well as the influx from capital by newly formed structures. As the expectation is that the adoption of REITs accelerates market growth, it is relevant to study IPO activity in the European REIT market. Together with the view on autonomous growth, this provides a picture of the role of REIT enactment and introductions in the market. Turning to the role of REITs in the debt markets as formulated in H2.2, the growth in European REIT bond issuance is being looked at. The analysis starts by mapping how REITs have been accessing the bond market over time to establish whether REITs have influenced the pace of growth in the public debt market. This also provides information on the degree to which REITs are supporting the maturity of the public debt market.

The ability to access the debt market provides REITs with a source of (unsecured) financing, but it may also lead to REITs overextending. The literature suggests that the issuance of bonds would discipline investors. Following this reasoning (H2.3), it is in the line of expectation to find that REITs issue bonds that – on average – are in rating classes that are of higher quality than bonds issued by non-REIT real estate parties. Investigating the current makeup of the market and the distribution of REIT debt over maturities and ratings helps to research this.

Data sample composition

The data sample considers the European real estate securities markets that adopted (a form of) the REIT structure[6]. It includes data from 1995 (at which time the Belgian structure was enacted) to 2022. In these markets, a sample of 74 REIT IPOs was compiled. The European REIT market in total is larger, as many pre-existing listed property companies converted to the REIT structure . The identification of REITs was realized with the support of the European Public Real Estate Association (EPRA). Furthermore, data was extracted from stock exchanges, annual reports and prior literature. Firm data was extracted from Fitch, Moody's and S&P and was cross-checked with company financial reports. Market data were collected through Bloomberg LP and Datastream on a monthly basis and using the FTSE EPRA Nareit indices. For bond market data, a Bayes University dataset is used. This dataset includes information on bond issuance by REITs and other real estate parties in the UK and continental Europe.

6 For the discussion of European REIT conversions, see chapter 1.

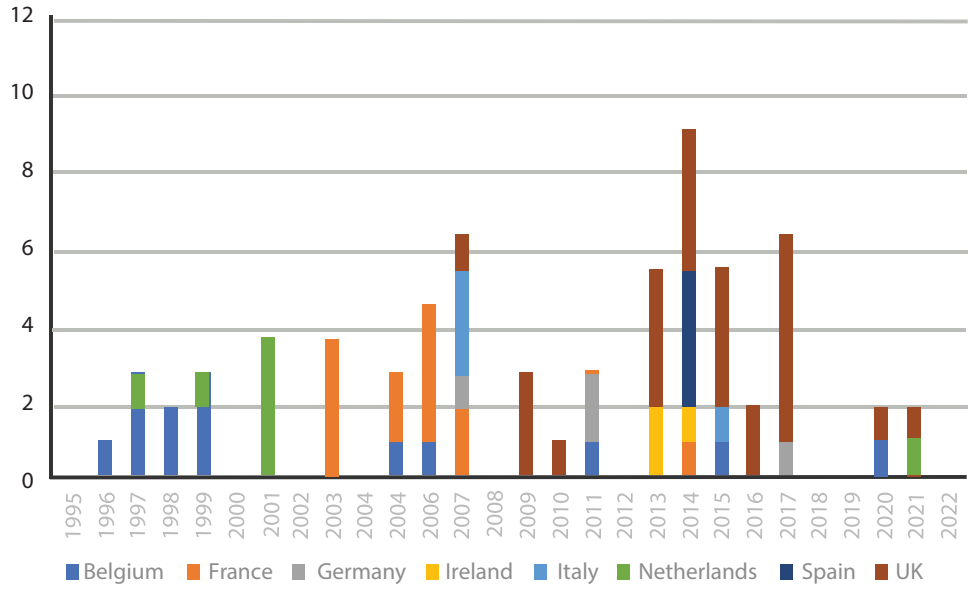
2.4 FINDINGS

Figure 2.1 provides an overview of European REIT IPOs through time, broken down by country. It is important to emphasize that only IPOs of firms that are listed as REITs at the time of IPO are included in the sample. Firms that either converted into REITs at a later date or did not have the REIT (equivalent) status are ignored in the sample. The figure indicates that IPOs primarily tend to cluster by country. For obvious reasons, the initial part of the sample solely consists of Dutch and Belgian IPOs. In Belgium, many REITs have been launched on the back of the introduction of the structure. Dutch companies have also seen IPOs at the time the Belgian REIT structure was introduced, even though the Dutch structure had been in place for quite some time. The countries that introduced REITs at a later date have seen similar behaviour. Even though there was a pre-existing French-listed real estate market, there have been substantial additions to the universe due to the introduction of the SIIC structure. This is evidence of the REIT structure itself permitting a more efficient ownership distribution. In Spain, the introduction of the SOCIMI in 2014 immediately led to an IPO-wave[7] that hitherto has proven to be very concentrated in time. The same holds true for the Irish market. In these two geographies, the introduction of REIT structures was a catalyst for resolving pre-existing issues in the market as a result of the global financial crisis. Immediately after the introduction of the structure, there was a strong take-up as REITs could generate the capital needed to replace government financing that was injected into the real estate market. Both in Spain as well as in Ireland government-backed 'bad banks' were created (Sareb in Spain, NAMA in Ireland) to bail out commercial banks and developers that were overextended in real estate. These two markets were among the most affected countries in the global financial crisis. In both cases, the bad banks were left with large positions in real estate which had to be sold back into the market and REITs offered a solution to this issue. The transferal of assets from the government-owned banks into the market supported the resolution of the real estate crisis and thus freed up capital that governments had to put into bail-out programs. The situation has strong similarities with the savings and loan crisis in the U.S., where REITs took on a similar role.

The UK market did not have a bad bank as such, but commercial banks had similar issues with real estate debt. Here, the process of digesting the real estate positions took more time. However, the UK market also saw growth after the financial crisis, even though the way in which REITs have made their way to the market took place over a larger time period. After an initial IPO peak just after the REIT enactment, the volume of IPOs rose again after the global financial crisis. This suggests that particularly the capital demand hypothesis offers a strong explanation for the changing IPO frequency through time. The growth of REIT structures in Europe therefore appears to be predicated both on having the structure in place and a need for market restructuring through the structure.

Figure 2.1: Evolution of REIT IPOs in Europe

This figure provides an overview of real estate investment trusts that were listed between 1995 and 2022 in European markets, broken down by year and by country of listing. Source: EPRA research, author analysis.

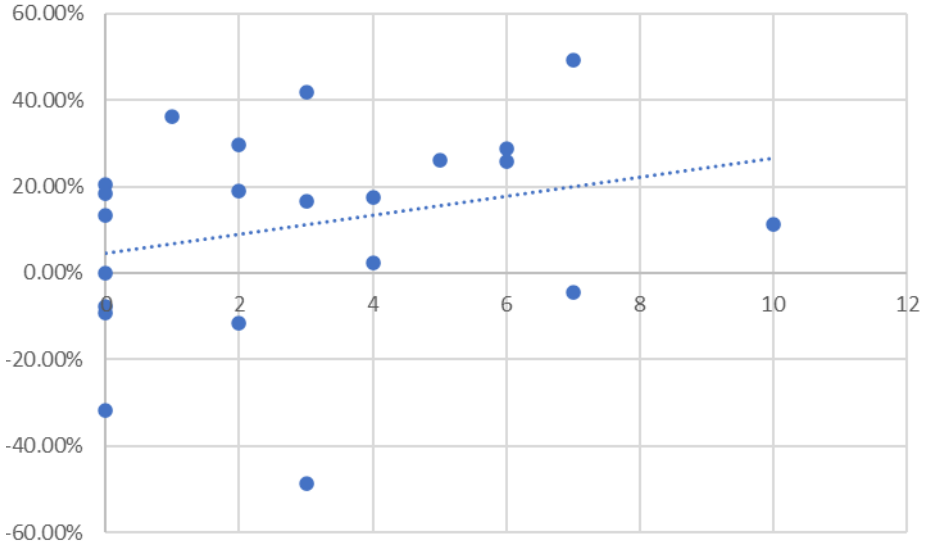


7 The number of Spanish IPOs ignores the small-cap and direct listing portions of the market, that have seen strong growth (40+ REITs) as well but have very limited free float.

As a next step in the analysis it is interesting to confront the IPO frequency with REIT market returns, to establish whether investor sentiment also has a role in market growth. If the investor sentiment hypothesis holds true, there should be a strong correlation between these two factors, whereas, in the case of capital demand theory and information asymmetry, this would not be as strong. Figure 2.2 displays the number of European REIT IPOs and the total market return of the European market as measured by the FTSE EPRA Nareit Developed Europe index for the period between 2000 and 2022. The Figure suggests that there is a positive relationship between the return in the previous year and the number of IPOs. However, the correlation does not appear to be very strong.

Figure 2.2: Number of European REIT IPOs versus prior year FTSE EPRA Nareit Europe return, 2000-2022

This figure provides the number of REIT IPOs in European markets versus the market return in the year prior to the occurrence of the REIT IPO. A trendline is fitted to indicate the slope of the observations.

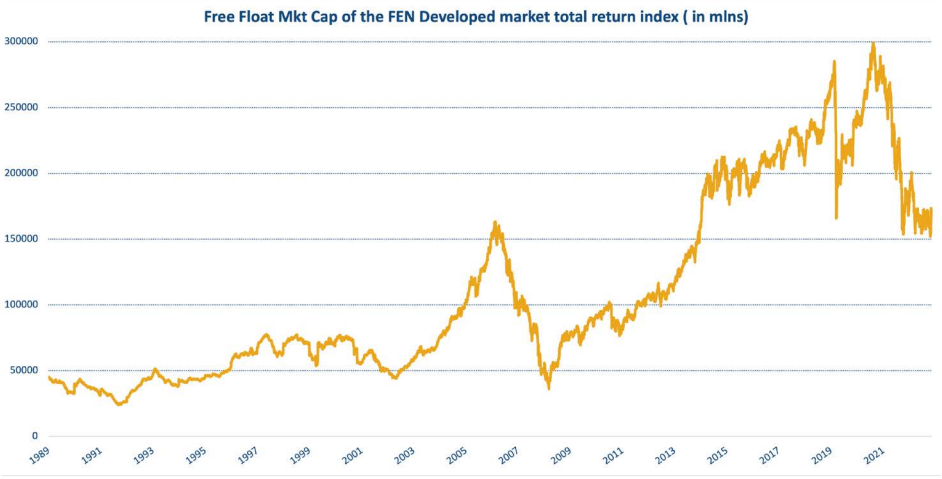


To test the relationship more formally, a simple OLS regression as per equation (2.1) is used in which the number of European REIT IPOs is regressed against the annual return of the corresponding country in the year prior to IPO occurrence. The resulting statistics confirm that while there is a positive relationship as expressed in a positive coefficient, it is insignificant. Furthermore, the R-squared is only 0.07. This indicates that there is no evidence of investor sentiment playing a (dominant) role, but that capital demand is much more relevant. Certainly, capital demand has been high in the aftermath of the global financial crisis, which explains why 29.7% of the REIT IPOs have taken place In the three years between 2013 and 2015 and why this has been most pronounced in those countries that have had the most challenging market conditions (Ireland and Spain).

Turning to the development of market size, it is quite clear that the real estate securities market is susceptible to the cyclical nature of real estate. The European market has seen strong growth over time, which is characterized by periods of growth alternated by cyclical declines. This is reflected in the evolution of the FTSE EPRA Nareit Developed Europe index market capitalization as displayed in Figure 2.3.

Figure 2.3: Evolution of the size of the European Listed Real Estate Securities Market

This figure displays the evolution of the free float market capitalization of the FTSE EPRA/ Nareit Europe Developed market total return index in millions for the entire coverage period since inception in euro. Source: FTSE EPRA Nareit indices.

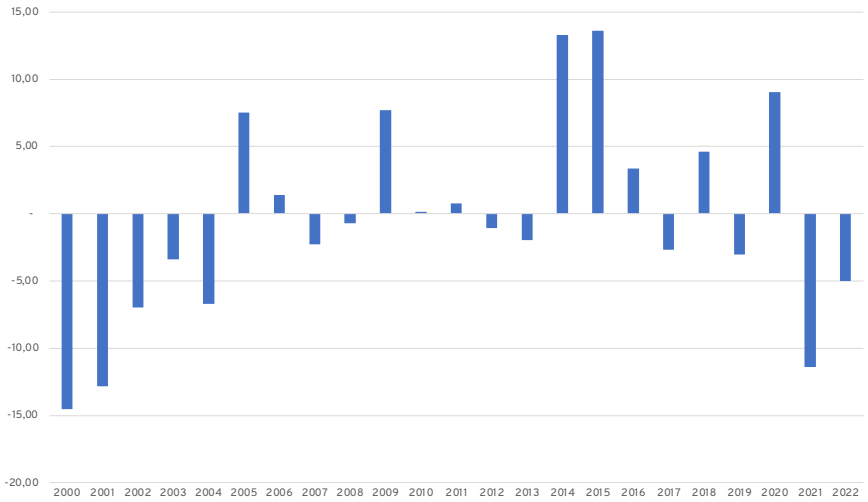


From Figure 2,3 it is visible that prior to the enactment of the REIT structure in the largest European markets of France, Germany and the U.K. in the early 2000s, there was a period of negative market growth. This pattern disappeared after the 2003 introduction of the SIIC in France, at which time market growth became more stable. A remarkable finding is that at the time of the global financial crisis (between 2008-2011) there have not been large outflows in the market, suggesting that the market has maintained its structural viability. In the period after the financial crisis, the growth of the market took on a clearly positive development path, until the COVID-19 pandemic hit. This has had a negative influence on growth.

For the purpose of this analysis, it is relevant to separate the influence of market returns from capital inflows to be able to look at the pattern of growth. As an estimate of the inflow of new capital in the European market, the size of the market is corrected for the total market return in a given year as a proxy for the net inflow of capital in the market as per equation (2.2). It is not an exact estimate both because of the annual approach that is taken and because it ignores the influence of free float and index changes. However, it does provide an indication of the pattern of capital movements in the European market. Figure 2.4 displays the movements in the period between 2000 and 2022.

Figure 2.4: Net growth of the European Real Estate Securities market by year

This Figure presents an approximation of the net inflows into the European real estate securities market index in billions of euros (vertical axis) by correcting the fluctuation in market capitalization for the observed returns.

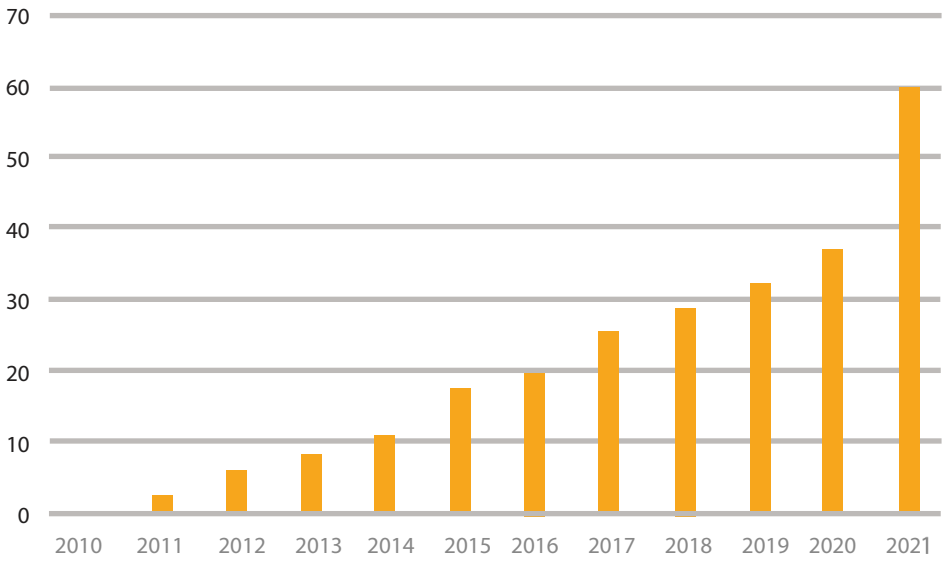


As indicated and in view of the data, the growth of the European REIT market has been driven by a combination of two factors. The structure itself has made real estate investment more attractive and has led to IPOs around the introduction date of the structure. A second driver has been the resolution of distress in the real estate market, as evidenced by the inflow of capital into the REIT market in the aftermath of the global financial crisis. This corroborates the capital demand theory (Lowry, 2003). The hypothesis (H2.1) that the strongest growth has been a result of financial crises is validated, as indeed the IPO volumes were highest after the global financial crisis, helped by the introduction of REIT structures in Ireland and Spain. The ability of REITs to play a role in the resolution of financial distress in the real estate and banking sector is an important consideration for policymakers. REITs have proven to be able to provide a transfer mechanism for (real estate) assets from the public to the private sector, thus freeing up capital locked up in government-owned bad banks as well as commercial banks.

The resolution of problems due to commercial banks becoming overexposed to real estate is beneficial, but ideally, policymakers promote the prevention of such issues occurring. REITs can play a role in this as well, as demonstrated by the growing number of REITs that are not relying (solely) on bank debt but have gained access to the public debt market as well. Even though there is little literature on the use of the bond market by REITs, the importance of REITs in the public bond market has been growing in the last decade. According to the ICE BofA Euro Corporates (Bond) index, some 6% of the volume of the public corporate bond market consists of real estate. This should be considered with the fact that this percentage was close to zero at the beginning of the century and also taking into account the growth of the European corporate bond market itself by around ten times within that timeframe. The exponential growth of the European real estate bond market has been driven by REITs. Figure 2.5 provides the evolution of the volume of the European REIT bond market between 2010 and 2021, according to BNP Paribas. The 2021 market volume was 15 times the volume of 2010, exceeding the growth of the bond universe as a whole.

Figure 2.5: European REIT bond market issuance in EUR billion, 2010-2021

The figure provides the volume of bond issuance by REITs in Europe through time on an annual basis. Volumes are in € billions. Source: BNP Paribas.

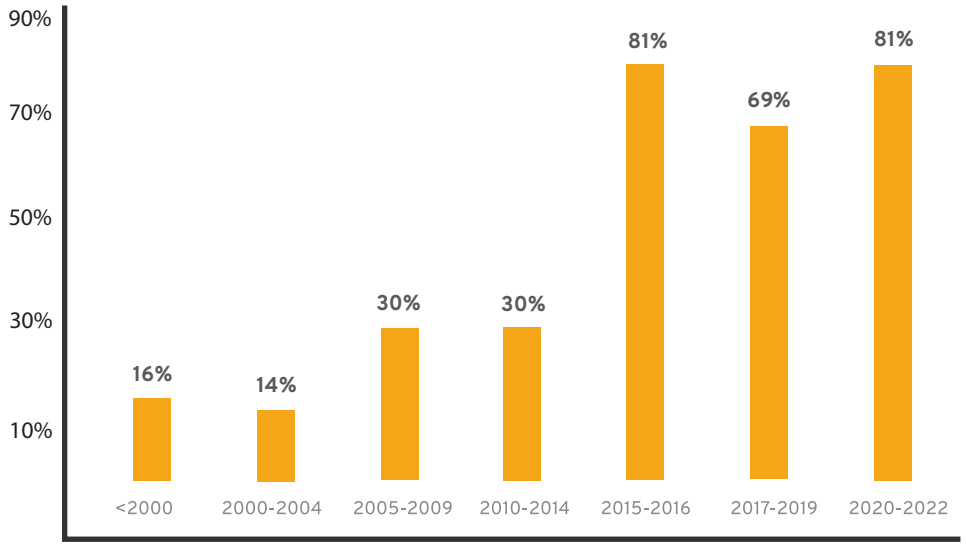


The ability of REITs to access the unsecured debt market has important consequences for the REITs themselves, as well as for their investors and the wider financial market. REITs are only able to issue bonds when the firm is rated by credit rating agencies. On top of the transparency already available to investors, the credit rating agencies provide another layer of scrutiny. This – according to the literature – has a disciplining function as it further enhances the structural requirements. Evidence hereof can be found when looking at the makeup of the market. If the REIT structure indeed is conducive to issuing bonds, the REIT sector should be over-represented in the European real estate bond market. Moreover, it would be logical to expect REITs to issue bonds of higher quality than real estate

operating companies and funds as a result of the constraints that REITs have. Based on data that is collected from Bayes Business School, this indeed appears to be the case. REIT bonds are overrepresented in the European real estate bond market, as 49.5% of the issued fixed-rate European real estate bonds currently outstanding are issued by REITs. Irrespective of the exact measure used to determine what the entire European real estate universe entails, this is clearly an outsized influence. The REIT component also has grown through time, which is logical considering the fact that the European REIT market has matured over time. Whereas in the early years, the REIT component amounted to some 30%, this currently hovers around 80%. Over time it is therefore likely that as older bonds mature the percentage of REITs in the European real estate bond market will rise. Figure 2.6 presents the evolution of the REIT component in the real estate bond market over time.

Figure 2.6: Proportion of REITs in total European fixed rate real estate bond issuance, 2000 – 2022

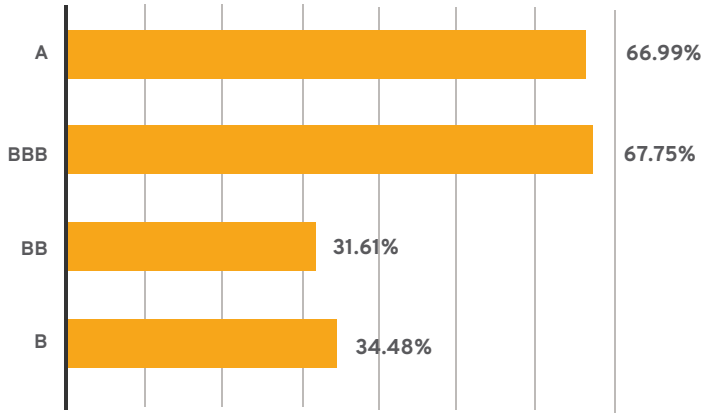
The figure provides the proportion of bonds issued by REITs in Europe as a percentage of the total bond volume issued by real estate bond issuers. Source: Bayes Business School real estate bond data.



Beyond the importance of REITs in the bond market, there is also the risk component to consider. REITs were meant to provide investors – particularly retail investors – with a moderate risk level. When looking at the bond market, this may also translate into REIT bonds being of more moderate risk than average. Literature (e.g. Deng et al., 2015) suggests that this is explained by and related to REIT debt covenants. This should translate into a relatively large proportion of the higher-rated European real estate bond market being issued by REITs. Indeed, REITs do makeup 67.5% of the European institutional grade real estate bonds outstanding, whereas, among lower-rated bonds (B and BB), the REIT component is only 34% and 31% respectively. This highlights the relative quality of REIT bonds. Literature finds that in the U.S. REIT market, higher-rated REIT bonds are associated with longer debt maturities, which adds to the stability of the market (Brown and Riddiough, 2003). The dataset used for the analysis in this analysis does not allow for making such a comparison, but it is an important notion in the context of the capital structure of European REITs that should be investigated further. The breakdown of the European REIT bond market by rating class is presented in Figure 2.7.

Figure 2.7: Breakdown of the European REIT bond market by rating, Q3 2022

The figure presents the breakdown of REIT bonds in Europe over rating classes. For each rating class, the percentage of REIT in the total real estate bond market is provided. Source: Bayes Business School real estate bond data.



Having access to public bond markets is an efficient way of gaining access to debt capital, but it does require a certain size to justify the costs of obtaining credit ratings and to go through the process of listing bonds, as requirements apply. This in part can explain the fact that REITs are overrepresented in corporate real estate bond issuance. REITs are sizeable, and have a long investment horizon and diversified portfolios. It is therefore likely that REITs will continue to be a prime source of issuance.

2.5 CONCLUSIONS AND RECOMMENDATIONS

The role of REITs in the European financial markets has been substantial and growing with time. While research tends to focus on investment returns and the characteristics of REITs on financial performance, the financial market implications of REIT enactment are significant. One of the key attributes of REITs has been the ability to support the resolution of market dislocations, as evidenced by the growth pattern of the European REIT market around the global financial crisis. This is in line with the role that U.S. REITs have played in the past. Particularly the banking sector and hence the stability of the financial system as a whole benefit from having a functioning REIT market in place. As financial markets do experience financial distress from time to time, the presence of a REIT structure contributes to both the prevention and resolution of market dislocations in the real estate market. This is both due to the attractiveness of the structure proper, but also due to the ownership of real estate being with parties that have financial resilience. When other forms of real estate investment typically are heavily affected by crises, both in terms of the ability to raise capital as well as in terms of liquidity, REITs continue to offer these attributes when most needed.

The role of REITs in financial markets is not limited to the equity market but also encompasses the bond market. Real estate as a component of the corporate debt market in Europe has been growing, and within real estate, it is the REITs that contribute a large proportion of issuance. In view of the data, it can be expected that this role is becoming even more significant going forward. Besides it being an efficient way of financing, the use of public debt reduces the reliance on commercial banks which has systemic advantages. On top of this, the literature indicates that the use of the bond market is beneficial to the discipline of REIT managers. REITs do issue higher-rated bonds than the average real estate issuers, which appears to support this view.

The availability of information on REIT debt issuance, their credit rating and the makeup of the REIT debt market remains under-researched. It would be interesting to further investigate how debt financing influences the REIT market. The performance of REIT bonds and the evolution of credit ratings in the market is an area of research that would further improve the understanding of this growing market. The ability to finance real estate will become even more important as, due to social and environmental challenges, substantial investment in the built environment around Europe is to be expected. REITs can and should play an important role in this transition.

3. THE CONTRIBUTION OF REITS TO EUROPEAN SOCIETY

3.1 INTRODUCTION

Real estate investment trusts (REITs) invest in a variety of different economic sectors, that all form part of the fabric of society. As such, real estate is at the heart of a number of key challenges to society, ranging from the affordability of the housing market to the decarbonization of the economy. The special role that real estate plays in society is both a challenge and an opportunity for the sector. Sustainability aspects in real estate in literature are primarily looked at within the context of corporate social responsibility (CSR) or Environmental, Social and Governance (ESG) aspects. The motivation of firms to report on sustainability aspects is the topic of debate in academic literature. Fombrun and Shanley (1990) conclude that stakeholder engagement regarding social contribution is a supporting factor to reputation. This notion is of interest to the real estate industry as it might put companies in a better position with local governments and/or communities to generate business opportunities. Involving social issues in long-term strategy and communication is important both to the license to operate (Kramer and Porter, 2006; Donoher, 2017) and financial performance. Kramer and Porter (2006) argue that reporting on CSR helps firms differentiate themselves from others in order to benefit in terms of growth prospects and the ability to generate business. However, other factors also appear relevant, such as the ability of real estate firms to establish legitimacy (Falkenbach et al., 2010; Lutzkendorf and Lorenz (2007). Many studies focus on the link between social and financial performance. Among the papers there are many that look at the way in which financial returns are influenced by (1) sustainability ratings such as the EPRA sBPRs and GRESB (Brounen et al. 2021), (2) certifications (Dermisi, 2009; Eichholtz et al., 2012; Fuerst and McAllister, 2011), and (3) reporting on sustainability (Chiang et al. 2019). The results of these analyses do point to the fact that sustainable or 'green' real estate is indeed associated with better financial performance than real estate in general. Moreover, firms that are already performing well in a financial sense are also more likely to report on non-financial aspects of the business. An explanation for this is given by the 'slack resources theory' (Waddock and Graves, 1997) which asserts that companies that have high financial performance have the ability to invest more in corporate social activities, and will therefore show better performance in this field as well. Similarly, Chiang et al. (2019) hypothesize that companies that have better growth prospects are more likely to invest in CSR reporting.

Additionally, reporting is also becoming mandatory, particularly as it relates to climate. This perhaps has developed most in the European geography, where the European Union has introduced detailed disclosure requirements that investors have to comply with under the Sustainable Finance Disclosure Regulation (EU 2019/2088). In the near future, corporates will face similar requirements when the Corporate Sustainable Reporting Directive (EU 2022/2464) is implemented. Furthermore, under the European Sustainable Finance Taxonomy, definitions have been given as to what activities are considered to contribute to society. In other geographies including the UK, Australia and Canada, similar taxonomies are being developed. The growing attention from regulators to (environmental) sustainability aspects means that the compliance burden of firms is increasing rapidly.

This chapter explores the opportunity side of sustainability by not looking at the way in which sustainability affects the financial returns of REIT portfolios, but rather how REITs through their investments are contributing to society. Investors are increasingly looking for investments that contribute to society, thus providing them with both financial as well as tangible societal returns. This type of investment is typically called impact investment and in the past was considered to be in the realm of philanthropy. However, according to the Global Impact Investing Network, the size of the global impact investment market is now estimated to have reached a size of US$ 715 billion (GIIN, 2020) and is growing rapidly. As mainstream investors are including impact investments

into their portfolios and reporting on these is becoming relevant, it is interesting to explore how REITs can and do play a role in this emerging space of sustainable investment.

The remainder of this chapter is structured as follows. After a brief literature review in paragraph 2, the potential contributions of REITs to society are explored in paragraph 3 and examples are given of these within the European REIT market. Paragraph 4 proceeds by investigating the way in which measurement and reporting take place and considers a number of challenges in reporting appropriately. The chapter concludes with a summary and suggestions for further research.

3.2 LITERATURE REVIEW

In the past, the contributions of REITs to society were primarily evaluated through the lens of the economic activity that is being generated by REITs. This includes benefits from providing jobs (EPRA and PWC, 2017), the generation of tax revenues for the government (EPRA & PWC, 2020) and providing income security for people through the financial returns REITs make. Besides these sizeable and relevant contributions, the emphasis of the stakeholders in REITs is increasingly on the sustainability aspects of their activities.

The focus on sustainability is quickly becoming a crucial part of the decision-making process of the stakeholders of REITs. Investors are taking sustainability factors into account when making asset allocation and investment selection decisions. The importance hereof has grown in the last decade (Dixon et al., 2008; Jackson and Orr, 2021). On the corporate level, sustainability aspects part-determine which party has access to transactions. This notion is important for any firm, but particularly for those firms that are engaged in projects with long-term effects on society, such as REITs. Investors have started to embark on strategies that specifically look for investments that combine market-rate financial returns with explicitly stated positive contributions to society. Because of the nature of REITs and their role in society, REITs tick many of the boxes in terms of being impact investments. However, the criteria for being an impact investment are rather unclear, and the phrase is in some geographies even contentious. This is due to the debate about whether striving for social contributions is at odds with the objective of achieving financial returns. According to the Global Impact Investor Network (the GIIN), impact investing is defined as “an investment made with the intention to generate positive, measurable social and environmental impact alongside a financial return.”. The embedded assertion that it is possible to have an intended positive social impact in combination with financial returns has been debated in literature. An early paper by Emerson and Caba (2000) challenges the conventional wisdom that societal contributions and financial returns are a trade-off. The aspects may go hand in hand in trying to generate value and lead to ‘blended value’ (Emerson, 2003). This view is contested by others who adhere to the Friedman doctrine (1970). In Friedman’s view, it is not the corporation that should engage in pursuing social contributions. Through maximizing shareholder value, the shareholders are best positioned to use the proceeds and allocate these, rather than firms making these contributions themselves in this view.

Besides the notion that impact investing is expected to make social returns alongside financial returns, impact investing is different from socially responsible investments in the sense that the latter category is primarily focused on the reduction of negative effects brought about by investments, whereas impact investing is primarily focused on the positive consequences of the investment and attempts to enlarge these (Clarkin and Cangioni, 2015). The focus on the positive contribution to society is particularly salient for REITs, as many key social functions are created and maintained by REITs. It is therefore relevant for REITs to determine in which way they can contribute and how they communicate these contributions. One of the frequently cited challenges in reporting on societal contributions is that there has not been a commonly accepted framework that is being used. This creates challenges for reporting, but also for measurement. However, investors and governments have in the past years gravitated to use the UN Sustainable Development Goals (the SDGs) as the framework to communicate about contributions to society. This has become the most widely used structure within which sustainable investments are now being evaluated.

In 2015 the United Nations introduced the framework of the SDGs. The 17 SDGs were introduced as the successors of the

Millennium Goals. One of the key challenges according to literature (e.g. Hacking, 2019; Fukuda-Par and McNeill, 2015) is the need for the private sector to invest in solutions to the challenges of the SDGs, as this is the largest part of the economy (Frey and Sabbatino, 2018). It would therefore be impossible to leave the contribution to the goals to the public market only (Bugg-Levine and Goldstein, 2009). Even though the SDGs themselves and the underlying targets and indicators have not been explicitly created for investment purposes, these do expect the involvement of corporations to achieve the goals. Thus, the SDG framework can be used in support of reporting on the positive contributions that investments deliver (Schramade, 2017). Indeed, it is estimated that for the 2021 reporting year, 73% of listed European real estate companies did at least mention one or more of the SDGs in corporate reporting (Op 't Veld, 2023). This evidences that the SDGs have become an important framework for communicating social contributions. At the same time though, there is no commonality in reporting by REITs, which would be conducive to making a collective case for the importance of the sector to their stakeholders.

Because of the above, it is both relevant and important to explore what the societal contributions are, how these can be related to the SDGs and to chart the significance in practice, as evidenced by the activities REITs engage in. This paper follows the SDG framework to assess and measure these.

3.3 SOCIETAL CONTRIBUTIONS OF REITS WITHIN THE SDG FRAMEWORK

Within the framework of the SDGs, there are several aspects that are of particular relevance to real estate investment. It is important to establish what elements are meaningful in terms of the investments of REITs proper and what elements are more operational/conductive in nature. Quite often, these elements get intertwined in reporting structures, which is confusing for stakeholders. Even though the operations and conduct elements are relevant to any firm, they are less specific to the external consequences of the product/service rendered by a firm. This is why the focus of this paper is on the latter element. For firms, it is essential to be able to communicate contributions in view of the consequences they have on stakeholder decisions. Especially since there will be substantial reliance on the private sector to resolve and/or mitigate the challenges charted by the SDGs, proper communication will support stakeholders to determine how to work with, and invest in, the REIT market in maximizing contributions.

The contributions of REITs to society through their activities – apart from their economic significance as alluded to before – are manifold. When looking at the structure of the SDGs, the key demonstrable elements are captured in five of the SDGs. This pertains on the one hand to the social element of the SDGs, and on the other to the environmental element. The latter, which primarily is the ability of REITs to play a role in decarbonization by conserving energy and by contributing to the generation of renewable energy is an important contribution that, in view of climate change, is receiving a lot of attention. Figure 3.1 presents the SDGs and Table 3.1 lists the main contributions and indicates for which types of real estate these are relevant.

Figure 3.1: Overview of the Sustainable Development Goals

Source: United Nations

From the Table, it is clear that the contributions can be expected to be (1) large and (2) applicable for a broad group of REITs (if not all). It is therefore worthwhile to explore these in more detail, to discuss the opportunities for REITs to demonstrate their contributions and also associated challenges in the discussion of these with stakeholders. Within Table 1 there are three types of contributions: (1) direct contributions through the type of product offered; (2) direct contributions through energy conservation and renewable energy generation and (3) indirect contributions through improvement of the urban environment.

Table 3.1: Sustainable Development Goals Relevant for and Translated to Real Estate

This table presents an assessment of the way in which real estate, through its activities, contributes to various SDGs on the target level, as well as on the sub-target level. Category names, as well as subcategories and metrics, are provided to translate the goal into measurable units. Finally, the definitions of the (sub)goals are given.

Product / Service	SDG	SDG-2	Category	Subcategory	Metric	Definition
Healtcare services	3	3b	Healthcare equipment and services	Investible entities that provide affordable access to quality essential health-care services (e.g. public hospitals, afford-able private clinics)	Gross rental income from hospitals and clinics (sugges-tion: long term acute-care would qualify)	Affordable healthcare facilities are those facilities that admit significant amount of publicly financed or co-pay options
	3	3.8	R/D of vaccines and medicines	Investible entities that provide R&D services and facilities	Gross revenues from the provision of lab space	Lab space is purpose built real estate for R&D purposes
Build and upgrade educational facilities	4	4.a	Real Estate & Infra-structure related to education	Schools, universities & refurbishment of such education facilities	Gross rental income from education related facilities	Leasing and ownership of schools/universities
	7	7.3	Double the global rate of improve-ment in energy efficiency	Built environment	Gross revenues from renewable energy generated	Generators of electricity and/or heat generated from wind, solar, biomass, geothermal, hydro, waste and/or tidal sources
Access to safe and affordable housing and basic services	11	11.1	Affordable housing	Social housing	Gross rental income from social housing	Social housing is shelter for low income households
				Student housing	Gross rental income from student housing	Student housing is shelter specifically/ exclusively aimed to provide housing to students

Product / Service	SDG	SDG-2	Category	Subcategory	Metric	Definition
				Senior housing	Gross rental income from senior housing	Senior housing to shelter elderly people with a care element
				Sustainable property	Gross rental income from sustainable real estate	Assets with a carbon footprint below the Paris aligned pathway according to CRREM
				Safe housing	Gross revenues from upgrading existing housing	Assets upgraded/ adapted to address health & safety considerations/ regulatory requirements
Life on Land	15		Finance and incentivize sustainable forest management	Sustainable Forestry	Gross revenues from sustainable forestry	Investible entities which operate sustainable forestry (certified to FSC, SFI or PEFC)

Some of the SDG sub-targets are directly served by REIT sectors, as they are engaged in the specific activity indicated by the sub-target. The intentionality and additionality in these cases are more or less baked into the sector focus. This includes SDGs 3 (healthcare), 4 (education), 11 (sustainable cities) and 15 (sustainable forestry). These sectors together form around 7.4% of the European REIT market as measured by their market capitalization[8]. It is likely that this percentage will grow, as many of the recently created REITs do have a specific focus on these sectors, but also because the demographic situation in Europe calls for additional investments in the activities supported by REITs focused on these sectors. There is a considerable and growing shortage of healthcare real estate due to the increasing pressure on healthcare systems brought about by an ageing population. Table 3.2 provides examples of REITs specifically focused on these activities within the universe of the listed European sector as defined by the FTSE EPRA Nareit Developed Europe index. Within this index, 11 companies with a combined real estate asset value of some € 19.2 bn. are represented. The REITs are listed in Belgium and in the UK. However, their assets are located throughout Europe. In total, over 175,000 European people are being served by these REITs, not counting the use of the primary healthcare facilities some of the companies provide.

8 Source: FTSE EPRA Nareit index, June 2023.

Table 3.2: REIT contributions to SDG 3, 4 and 11 through direct sector focus

This table provides an overview of REITs with a specific focus on real estate sectors that are identified within the context of the sub-targets of the Sustainable Development Goals (SDGs). The basis for the sample is the constituent list of the FTSE EPRA Nareit Developed Europe index as of July 1st, 2023. Besides the name of the REIT, the country of listing, its sector and the revenue contribution of that sector are provided. Furthermore, the number (#) of assets and the number (#) of residents served as per the 2022 company annual report is provided.

Source: Company Reporting, FTSE EPRA Nareit

REIT Name	Country	Relevant Sector	%	# of assets	# ofresidents
Aedifica	Belgium	Healthcare - senior housing	100%	622	35,60
Cofinimmo	Belgium	Healthcare - senior housing	72%	405	29,200
Xior Student Housing NV	Belgium	Housing - student housing	100%	42	18,208
Assura Healthcare	United Kingdom	Healthcare - primary care	100%	608	N/A
Civitas Social Housing	United Kingdom	Housing - social housing	100%	619	4,295
ESP Empiric Student Property	United Kingdom	Housing - student housing	100%	85	8,533
Impact Healthcare REIT plc	United Kingdom	Healthcare - care homes	100%	141	7,854
Primary Health Properties (PHP)	United Kingdom	Healthcare - primary care	100%	513	N/A
Target Healthcare REIT Limited	United Kingdom	Healthcare - senior housing	100%	97	N/A
Triple Point Social Housing REIT PLC	United Kingdom	Housing - social housing	100%	494	3,246
Unite Group plc	United Kingdom	Housing - student housing	100%	162	70,000
Total:				**3,788**	**176,936**

The second category mentioned pertaining to energy conservation and renewable energy generation in support of SDG 7 is achievable for all REITs. Both by preserving energy as well as by generating renewable energy REITs can reduce the carbon footprint of the urban environment. The number of REITs that have committed to a 'net-zero' strategy has been growing ever since Hammerson (UK) was the first REIT to publicly commit to becoming 'net positive' in 2017. The ability to decarbonize real estate with its ~40% contribution to carbon emissions is perhaps one of the most challenging tasks in the energy transition, given the investments that are required to turn the existing building stock into net zero emitters. Looking at the opportunity side of this from an impact point of view, REITs have the ability to use their portfolios to generate renewable energy and to also improve

their assets to contribute. Indeed, many REITs have embarked on such strategies, e.g. by looking at alternatives for the use of concrete in buildings, but also by generating renewable energy. Using the example of logistic REITs [9]included in the European developed market FTSE EPRA Nareit index as of July 2023, the amount of installed photovoltaic renewable energy capacity in 2022 amounted to some 323 Mwh peak. This substantially reduces the carbon footprint of the buildings and supports the effort to reach the net-zero goal. Table 3.3 provides a synopsis of the installed capacity as reported by these REITs[10].

Table 3.3: REIT contributions of European logistic REITs to SDG7: renewable energy

This table demonstrates the contributions of logistic REITs to Sustainable Development Goal (SDG) 7. The basis for the sample is the constituent list of the FTSE EPRA Nareit Developed Europe index as of July 1st, 2023. Besides the name of the REIT, the country of listing and the installed capacity in mega-watt hour peak capacity (MWh) as per financial year-end 2022 for each company are displayedd.

Source: 2022 company annual reports

REIT	Country	Installed capacity in MWh
WDP	Belgium	113
SEGRO PLC	United Kingdom	44
VGP	Belgium	57
CTP	Netherlands	38
ABRDN European Logistics Income	United Kingdom	N/A*
Montea	Belgium	49
Tritax Eurobox PLC	United Kingdom	7
Tritax Big Box PLC	United Kingdom	15
Total:		**323**

** One project in the Netherlands was cited.*

However, perhaps the largest social contribution that REITs are making beyond a direct link to sector activities is the indirect contribution to SDG 11: "Make cities and human settlements inclusive, safe, resilient and sustainable.". There are many ways in which such an ambition can be interpreted. However, the sub-targets do provide a more precise definition of what is included in this SDG. Sub-targets of SDG 11 are listed in Table 3.4. In part, these sub-targets directly refer to certain specific real estate activities (e.g. affordable housing). Another – even bigger – part, refers to the contributions that are indirectly influencing the viability of the urban environment. This includes – among other things - ensuring accessibility to public transport and the management of public space.

Table 3.3: REIT contributions of European logistic REITs to SDG7: renewable energy

Target 11.1: Safe and affordable housing: "By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums".

Target 11.2: Affordable and sustainable transport systems: "By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special

9 Logistics REITs are looked at specifically for this purpose as they have the largest roof surfaces.

10 It is important to note that the sample used only considers REITs, not other real estate entities that are list but do not have the REIT status.

attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons".

Target 11.3: Inclusive and sustainable urbanization: "By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries".

Target 11.4: Protect the world's cultural and natural heritage: "Strengthen efforts to protect and safeguard the world's cultural and natural heritage."

Target 11.5: Reduce the adverse effects of natural disasters: "By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations".

Target 11.7: Provide access to safe and inclusive green and public spaces: "By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and Persons With Disabilities"

Target 11.a: Strong national and regional development planning: "Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning".

Target 11.b: Implement policies for inclusion, resource efficiency and disaster risk reduction: "By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster risk reduction 2015–2030, holistic disaster risk management at all levels

Target 11.c: Support least developed countries in sustainable and resilient building: "Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings using local materials".

In short, the sub-targets of SDG 11 point to two key attributes that most REITs possess; i.e. (1) their ability to shape the urban space through their projects and (2) the relevance of cooperation of owners of real estate with public entities in creating the urban environment that is conducive to this SDG. This is particularly relevant to those REITs that engage in large-scale urban gentrification, regeneration and development. In many cases, these projects are complex, as they involve both municipalities and private market parties, require substantial long-term (capital) investments and have specific goals in terms of societal outcomes. Even though REITs are routinely involved in these projects, the SDG reporting of REITs seldom uses this element to demonstrate their contribution. Furthermore, literature suggests that many listed real estate companies prefer to focus on smaller contributions of an operational nature (Op 't Veld, 2023) than on the larger societal contribution, which perhaps is more difficult to measure. It is therefore useful to discuss these types of contributions and the challenges around measurement to explore whether there are opportunities to improve on the understanding of the indirect benefits to society as brought about under SDG11.

Examples of SDG 11 contributions

The ability of REITs to demonstrate their contributions in terms of measurable outcomes is underexploited by REITs. It can be argued that this is seen to be self-explanatory, but to many stakeholders, it may not be. Highlighting that there are intended and additional benefits, driven by the objectives of REITs helps both investors as well as public and private market counterparties understand the purpose of the REIT and may thus help in financing and growth as indicated by literature. To demonstrate the impact of European REITs in the urban environment, seven examples

are selected. The projects mentioned are not meant to form an exhaustive list, but rather as a collection of examples that underline a variety of different outcomes, geographies and REITs. Table 3.5 provides an overview of these seven projects.

Table 3.5: Examples of large-scale urban redevelopment projects by REITs

This table provides selected statistics on four large-scale regeneration schemes conducted with a component executed by European REITs. The selection is based on the scale and the duration of the scheme. For each of the schemes, the location, project name, participating REIT and the project duration have been provided. Additionally, the estimated total investment volume and the number of visitors as an estimate of people affected are provided.

Ex.	Country	City	REIT	Project	Project timeframe	Investment volume in millions	Visitors per annum in millions
1	France	Paris	URW	Forum des Halles	2010-2016	EUR 803	50
2	France	Lyon	URW, Icade	Part Dieu	2018-2021	EUR 3290	31
3	Netherlands	Uthrecht	Klépierre	Hoog Catharijne	2011-2020	EUR 3,200	30
4	UK	London	URW	Stratford	2010-2022	GBP 12,500	50
5	UK	London	Landsec	Nova VIctoria	2009-2020	GBP 2,200	115
6	UK	Birmingham	Hammerson	Bullring	2000-2010	GBP 600	35
7	UK	London	British Land	Canada Water	2022-2034	GBP 5,600	N/A
						EUR 28,427	311

As is shown in the Table, REITs are engaging in large-scale urban projects. Each of the examples pertains to a combination of public and private investment and includes public transport hubs as a key part of the scheme. This means that in aggregate on an annual basis, over 300 million people in Europe have benefited from just these 7 schemes[11], which translates into about a third of the total European population. Additionally, all examples are cases of pre-existing urban environments that suffered problems with a declining social environment. This was in general characterized by increasing poverty, unsafe environments and social cohesion issues (e.g. Emery, 2006; Watt, 2012; Buijze, 2013; Jarrigeon, 2014). The investment in these places has undoubtedly prevented a continuation of this situation, which would have had many negative social implications, and replaced this with a positive and self-perpetuating improvement. It is important to mention though, that the benefits are not entirely uncontested. There is often discussion on the wider consequences of an improved environment. In the case of urban gentrification, there are questions around affordability and displacement, i.e. the effect that neighbourhoods may become less affordable due to the improved circumstances and drive away the population. This can be prevented by explicitly building in affordable housing and education opportunities to ensure that the upgraded environment is available to all. Furthermore, the benefits of the improvement as a result of urban schemes cannot be entirely attributed to the REITs involved, as there is an obvious mix of functions and investment sources that generate outcomes. However, since the scheme is dependent on the collaborative investment of various entities, their participation is necessary to get the intended results. It is therefore good to have an idea of the magnitude of the impacts brought by the confluence of resources in the entire scheme.

11 The exact number of individuals benefiting from these schemes is hard to measure, as there will be double counting in the numbers.

What sets the involvement of the REITs apart from other parties that could have played a similar role is that through the continued ownership of the assets the REITs are not only a provider of capital, but also a long-term beneficiary from the investment in the creation or transformation of an area. Doing this successfully requires a skill set that is not readily available to municipalities, but is one of the key attributes of REITs. Due to the fact that they own large schemes and know how to operate these over longer periods of time, they can contribute to the success of urban projects. This is certainly true for those large-scale projects in which partnerships between municipalities and REITs have been created to drive shared value. In all cases provided, the REIT has been part of a bigger consortium that has driven the project. Furthermore, the duration of the schemes extends in some cases to over a decade, which requires a long-term commitment of the REIT to the project. This requires permanent and considerable capital in order to see a project through, which is something that many real estate parties cannot cope with. In the aforementioned schemes, there has been continued community involvement by the REITs invested in the area to further reinforce the positive societal effects. These may have taken place in contributions in financial terms, but also through in-kind contributions.

3.4 MEASURABILITY AND CHALLENGES

REITs find it difficult to report on the alignment of their activities with the SDGs, the magnitude of the alignment and the outputs and outcomes that are being realized. Even though sustainability reports and integrated annual reports are published by most REITs, there is limited information on this aspect. Even though most REITs cite a focus on certain contributions, they tend not to be backed up by concrete targets and metrics that are both verifiable and can be monitored through time. In part, this is due to the fact that the type of data involved is of a different nature than 'standard' reporting data (e.g. financial accounts). The data may therefore not be collected through the same systems as this other data, which can lead to inconsistent data. At the same time, it remains relevant to provide meaningful datasets to substantiate claims of social and environmental contributions and to demonstrate progress as a result of intentional actions. Stakeholders are typically looking for revenue alignment data, output data and outcomes data to provide this type of information.

Applying this to the European listed real estate sector, the activities that fall under the SDG sub-targets can be aggregated into a (revenue or asset) alignment figure that encompasses the revenues generated by investments in the activities contributing to the SDGs. For the combined European REIT sectors of student housing, social housing, healthcare real estate and educational real estate, the aggregated volume of aligned assets would e.g. amount to € 19.2 billion[12].

While this is by no means a small number, it ignores the knock-on effect on the urban environment as the investments of the real estate firms usually are complemented by public market investments of significant value. This is where it is interesting to not only look at alignment but also at outputs and outcomes. As indicated, REITs themselves are still struggling with the generation of this type of information, even though this would help tremendously in understanding the reach of the firms in terms of societal contributions. Outputs may include information on the number, geography and social position of people served, the valuation uplift in neighbourhoods and other ancillary evidence to provide colour as to the contributions. Concrete examples of this type of information would be the number of people served by access to healthcare real estate or the number of people receiving housing as a result of social/affordable housing schemes. From Table 3.2, an example is the number of residents benefiting from various types of housing.

Yet another step is to translate into outcomes. This typically requires one or more calculations, which take the outputs and transform the outputs into numbers on societal benefits. In the context of healthcare, one could think of the number of lives saved by having access to hospitals. Another example would be to look at the change of neighbourhoods as a result of investments, as demonstrated by changes in poverty numbers, reduction of temporary

12 This number is based on the sample as provided in Table 3.2.

housing and/or the difference in safety. Particularly generating outcomes information is still challenging and data around this is still in its infancy. However, the examples provided in Table 3.5 offer the opportunity to provide this contextual information and will demonstrate to stakeholders that 'what gets measured gets managed'.

While the opportunity to provide a better understanding of the role of REITs in society is clear, there are also a few challenges that firms are facing when looking through the lens of impact investment. As the methodologies to report are still young, standard setting is something that has yet to occur. Even though there are emerging standards, REITs have to determine how to best provide this type of information. A key element in reporting on contributions is that the scrutiny of reporting is likely to increase substantially over the years to come. On the one hand, this makes firms nervous to report as there is a (perceived) risk of having to adapt or change reporting to the emerging standards. On the other hand, there is the concern of greenwashing (or in the case of SDGs 'rainbow washing') accusations that would be detrimental to reputation. Within this context, it is important for firms to focus on those elements that are key and measurable, in line with the concept of impact investing. Second, some of the data on contributions might be difficult to generate and subject to definitions. One of the key challenges is the concept of affordability that plays a role in many real estate sectors such as the provision of (student) housing, access to healthcare and education. Here it is important for the industry to develop standards in order to be better positioned in demonstrating the contributions. Lastly, the translation from revenue alignment to outputs and outcomes can be quite difficult as it is dependent on the way in which the benefits are being presented.

3.5 PROSPECTS AND CONCLUSION

In the past, the contribution of REITs to the economy has largely been measured in the creation of financial returns and employment. However, REITs do play a significant economic role beyond these metrics, and in view of societal trends, they will be called upon to extend this role. The way in which the attention to positive contributions to society is currently growing both with investors as well as with policymakers and regulators implies that those firms that do offer significant contributions will have the benefit of growing interest. REITs do have attributes that – due to their role – are among these firms. The societal importance of real estate in general, combined with the ability of REITs to be involved both in the provision of long-term capital and to engage in activities that generate a positive contribution is a powerful argument in support of functioning REIT markets. By just selecting four case studies the far-reaching impact of REITs can already be demonstrated, as these four already are impacting the lives of hundreds of millions of people.

However, it is important for REITs to measure, monitor and demonstrate these attributes as these move beyond direct financial results. Reporting on key contributions through their real estate underlines the intentionality of the investments made and strengthens the license to operate, and therefore, legitimacy. Hitherto, REITs tend to blend in various operational and conduct metrics which pertain to financial materiality into reporting on contributions to the SDGs, which makes it hard for investors to truly understand the value added. Against the backdrop of the growing importance of information and the interest of regulators in this topic, it is important for REIT managers to engage with policymakers and regulators to ensure that the development of reporting frameworks aligns with the role REITs are playing and can play in delivering contributions to society. By ensuring that the required information provides an appropriate reflection of the capacity of the industry to support the agenda as set forth by the SDGs, a relevant and concerted effort to achieve the goals can be made.

4. WRAP UP

Now REITs have become an established part of the European real estate and financial market, it is possible to evaluate their contributions to the market. The contributions have been extensive and have gone far beyond offering investors an attractive investment vehicle. The previous chapters indicate that not only investors but also policymakers can benefit from the structure. The opportunity offered by REITs is such, that policymakers in the design of the structure should consider the contributions that a structure – if devised well – can offer to society.

The REIT markets in Europe provide a wealth of information on how REIT structures can be optimized and provide a strong and resilient regime to weather the storms – both financially and in terms of social challenges – that time has to offer. Perhaps one of the most distinguishing characteristics is that REITs appear to be a conduit that can play a big role in the resolution of these challenges. As Europe is navigating global challenges like climate change, real estate markets are poised to transition. In view of past experiences, the REIT markets in Europe are uniquely positioned to thrive in these circumstances.

REFERENCES

CHAPTER 1

Allen, M. T., Madura, J. and Springer, T. M. (2000) REIT Characteristics and the Sensitivity of REIT Returns. Journal of Real Estate Finance and Economics, 21 (2): 141-152.

Allen D. E. and Rachim V. S. (1996) Dividend policy and stock price volatility: Australian Evidence, Journal of Applied Economics 6, pp. 175-188.

Barth, J.R., Caprio Jr., G., and Levine, R. (2001) Financial Regulation and Performance: Cross-Country Evidence. Working Papers Central Bank of Chile 118, Central Bank of Chile.

Baskin, J. (1989) Dividend Policy and the Volatility of Common Stocks. Journal of Portfolio Management, 15 (3): 19-25.

Bleaney (1990) Some Comparisons of the Relative Power of Simple Tests for Structural Change in Regression Models. Journal of Forecasting, 9: 437-444.

Brady and Conlin, (2004), The Performance of REIT-owned Properties and the Impact of REIT Market Power, Journal of Real Estate Finance and Economics 28(1)

Brounen, D. and P.M.A. Eichholtz (2005), Development Involvement and Property Share Performance; International Evidence. Journal of Real Estate Finance and Economics, 29(1), 79-97.

Brounen, D. P.M.A. Eichholtz, and D.C. Ling (2009) Liquidity of Property Shares; A Second Look Across Countries, Real Estate Economics 37(3)

Bundestag (2007) Gesetz zur Schaffung deutscher Immobilien-Aktiengesellschaften mit börsennotierten Anteilen, Bundesgesetzblatt Jahrgang 2007 Teil I Nr. 23.

Bushee, B. J., Matsumoto, D. A., and Miller, G. S. (2004) Managerial and Investor Responses to Disclosure Regulation: The Case of Reg FD and Conference Calls. The Accounting Review, 79 (3): 617-643.

Chan, K. C., Hendershott, P. H. and Sanders, A. B. (1990) Risk and Return on Real Estate: Evidence from Equity REITs. AREUEA Journal, 18 (4): 431-452.

Chan, S.H. Leung, W.K., and Wang, K., (1998), Institutional Investments in REITs: Evidence and Implications, The Journal of Real Estate Research 16 (3)

Chan, S. H., Leung, W.K. and Wang, K. (2005) Changes in REIT Structure and Stock Performance: Evidence from the Monday Stock Anomaly. Real Estate Economics, 33 (1): 89-120.

Chow, G. C. (1960). Tests of equality between sets of coefficients in two linear Regressions. Econometrica, 28: 591–605.

Chui, A. C. W., Titman, S. and Wei, J. K. C. (2003) The Cross Section of Expected REIT Returns. Real Estate Economics, 31 (3): 451-479.

Chung, R., S. Fung, J.D. Shilling (2016) REIT Stock Market Volatility and Expected Returns. Real Estate Economics 44(4): 968-995.

Clayton, J. and MacKinnon, G. (2001) The Time-Varying Nature of the Link between REIT, Real Estate and Financial Asset Returns. Journal of Real Estate Portfolio Management, 7 (1): 43-54.

Clayton. J. and MacKinnon, G. (2003) The Relative Importance of Stock, Bond and Real Estate Factors costs, and capital structure. Journal of Financial Economics 3(4): 305–60.

Cotter, J. and R. Roll (2015) A Comparative Anatomy of Residential REITs and Private Real Estate Markets: Returns, Risks and Distributional Characteristics. Real Estate Economics 43(1): 209-240.

Damodoran, A., J. Kose and C.H. Liu (1997) The Determinants of Organizational Form Changes, Journal of Financial Economics 45(1), 1997: 169-192

Dennis, P.J. and D. Strickland (2002) Who Blinks in Volatile Markets, Individuals or Institutions? The Journal of Finance, 57(5): 1923-49.

Derwall, J., D. Brounen, J. Huij, W. Marquering (2009) Hot Hands in REITs? Financial Analyst Journal September/ October 2009.

Downs, A., (1994), The REIT Explosion: What Does It Mean?, Market Perspective for Salomon Brothers

Einhorn, Emmerich, Panovka, (2001), Focus on REITs: IFRS Ruling Permits REIT Spin-offs, Real Estate Issues 26(2)

Garcia, R. and Ghysels, E. (1998) Structural change and asset pricing in emerging markets. Journal of International Money and Finance, 17: 455-473.

Glascock and Gosh (2000), the Introduction to the Special Issue: The Maturation of a Developing Industry: REITs in the late 1990s, The Journal of Real Estate Finance and Economics 20(2)

Gordon , M. (1959) "Dividends, Earnings, and Stock Prices." Review of Economics and Statistics: 99-105.

Grullon, G., Michaely, R., and Swary, I. (1997) Capital Adequacy, Bank Mergers, and the Medium of Payment. Journal of Business Finance and Accounting, 24 (1): 97-124.

Gyourko, Sinai, The REIT Vehicle: Its Value Today and in the Future, The Journal of Real Estate Research 18(2)

HM Treasury (2005) UK Real Estate Investment Trusts, a discussion paper.

HMRC (2006) Regulatory Impact Assessment for Real Estate Investment Trusts (U.K.-REITs) [URL: http://www.hmrc.gov.uk/ria/ria-reits.pdf]

Hoesli, M. and Camilo, S. M. (2007) Securitized Real Estate and its Link with Financial Assets and Real Estate: An International Analysis. Journal of Real Estate Literature

Hoesli, M., Milcheva, S. & Moss, A. Is Financial Regulation Good or Bad for Real Estate Companies? – An Event Study. J Real Estate Finan Econ 61, 369–407 (2020). https://doi.org/10.1007/s11146-017-9634-z

Howe, J. S. and Jain, R. (2004) The REIT Modernization Act of 1999. Journal of Real Estate Finance and Economics, 28 (4): 369-388

Jensen, M.C. (1986) Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, the American Economic Review 76(2): 323-29.

Jensen, M.C., and W. Meckling (1976) Theory of the firm: Managerial behaviour, agency

Khoo, T., Hartzell, D. and Hoesli, M. (1993) An Investigation of the Change in Real Estate Investment Trust Betas. Journal of the American Real Estate and Urban Economics Association, 21 (2): 107-130.

Koninkrijk der Nederlanden (1969) Wet op de vennootschapsbelasting 1960, Nader voorlopig verslag, Nr. 19 & Nr. 25, Kamerstukken II, Zitting 1968-1969, 6000.

Krauss, A. and Litzenberger, R. H. (1976) Skewness Preference and the Valuation of Risk Assets. Journal of Finance, 31 (4): 1085-1100.

Kurzrock, B.M. and M. Roth (2006) The performance of property developments of institutional investors: An empirical analysis and European comparison. Journal of Property Finance and Investment 24(1): 27-48.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. W (1998) Law and Finance. Journal of Political Economy, 106 (6): 1113-1155.

Lin, 2007, The Development of REIT Markets and Real Estate Appraisal in Taiwan, Journal of Real Estate Literature 15(2).

Ling, D. C., Naranjo, A. (1998) The Fundamental Determinants of Commercial Real Estate Returns. Real Estate Finance, 14 (4): 13-24.

Ling, D. C., Naranjo, A. and Ryngaert, M. D. (2000) The Predictability of Equity REIT Returns: Time Variation and Economic Significance. Journal of Real Estate Finance and Economics, 20 (2): 117-136.

Ljungqvist, A. and Wilhelm, W. J. Jr. (2003) IPO Pricing in the Dot-com Bubble. The Journal of Finance, 63 (2): 723-752.

Modigliani, F. and M. Miller (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. American Economic Review. 48 (3): 261–297.

Ott, S.H., T.J. Riddiough, and H.C. Yi, (2005) Finance, Investment and Investment Performance: Evidence from the REIT Sector. Real Estate Economics 33(1): 203-235.

Parker, D. and C. Kirkpatrick (2012) Measuring Regulatory Performance: A Literature Review of Quantitative Evidence. OECD Expert Paper No.3, August 2012.

Pastor, L. and Stambaugh, R. F. (2003) Liquidity Risk and Expected Stock Returns. Journal of Political Economy, 111 (3): 642-685.

Pelster, M., F. Irresberger, G.N.F. Weiss (2017) Bank Stock Performance and Bank Regulation Around the Globe. Forthcoming in European Journal of Finance.

Prakash, A. J., Parhizgari, A. M., and Perritt, G. W. (1989) The Effects of Listing on the Parameters of Characteristic Lines Models. Journal of Business Finance and Accounting, 16 (3): 335-344.

PriceWaterhouseCoopers (2007) Worldwide REIT Regimes: Country Summaries. Web site. [URL: http://www.pwc.com.vn/lu/eng/ins-sol/publ/pwc_reit_regimes.pdf.] Last accessed May 17th 2008.

Rubin, A. and D.R. Smith (2009) Institutional ownership, volatility and dividends. Journal of Banking and Finance, 33(4): 627-39.

Stoll, H. R. and Whaley, R. E. (1990) Stock Market Structure and Volatility. The Review of Financial Studies, 3 (1): 37-71.

CHAPTER 2

Ascherl, C., Schaefers, W. (2018). REITs and REOCs and their initial stock market performance, a European perspective. Journal of European Real Estate Research, vol. 11-1, 4-27.

Blaško, Matej, Sinkey, J.F. (2006). Bank asset structure, real-estate lending, and risk-taking. The Quarterly Review of Economics and Finance, Volume 46, Issue 1.

BNP Paribas (2022). Expanding European real estate sector finds new sources of funding.

Brown, D.T., Riddiough, T.J. (2003). Financing Choice and Liability Structure of Real Estate Investment Trusts. Real Estate Economics, vol. 31, issue 2, 313-346.

Buttimer, R.J., Hyland, D.C., Sanders, A.B. (2005). REITs, IPO waves, and long-run performance. Real Estate Economics, vol. 33-1, 51-87.

Deng, Y., Devos, E., Rahman, S., Tsang, D. (2015). The Role of Debt Covenants in the Investment Grade Bond Market – The REIT Experiment.

Faulkender, M., Petersen, M.A. (2006). Does the source of capital affect capital structure? NBER Working Paper 9930, Rev. Financ. Stud. vol. 19, 45–79.

Hoesli, M., Oikarinen, E. (2012). Are REITs real estate? Evidence from international sector-leveldata. Journal of International Money and Finance, vol. 31-7, 1823-1850.

Howe, J.S., Shilling, J.D. (1988). Capital Structure Theory and REIT Security Offerings. The Journal of Finance, vol. 43-4, 983-993.

Jensen, M.C. Meckling, W.H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, Journal of Financial Economics, 3, 305-360.

Lowry, M. (2003). Why does IPO volume fluctuate so much? Journal of Financial Economics, vol. 67-1, 3-40.

Lu, C., So, R.W. (2005). Return Relationships between Listed Banks and Real Estate Firms: Evidence from Seven Asian Economies. The Journal of Real Estate Finance and Economics, vol. 31, 189-206.

Nash, R. C., Netter, J. M., Poulsen, A.B. (2003). Determinants of contractual relations between shareholders and bondholders: Investment opportunities and restrictive covenants, Journal of Corporate Finance, 9(2), 201-23.

Olazabal, J. Arora, A. (2012). Real Estate Resiliency: the 'REIT Model' Proves its Mettle, PIMCO Viewpoint, August.

Pagliari, J., Monopoli, R.T., Scherer, K.A. (2005). Public Versus Private Real Estate Equities: A More Refined, Long-Term Comparison. Real Estate Economics, vol. 33-1, 147-187.

Peni, E., Smith, S.D., Vähämaa, S. (2013). Bank Corporate Governance and Real Estate Lending During the Financial Crisis. Journal of Real Estate Research, vol. 35-3, 313-343.

Riddiough, T., Steiner, E. (2017). Financial Flexibility and Manager-Shareholder Conflict: Evidence from REITs. Real Estate Economics, vol. 48-1, 200-239.

Shen, J., Chau, K.W. (2022). The Effect of Access to the Public Debt Market on Corporate Financing Decisions: The Case of REITs. Sustainability, vol. 14.

Silva, T.C., da Silva Alexandre, M., Tabak, B.M. (2018). Bank lending and systemic risk: A financial-real sector network approach with feedback. Journal of Financial Stability, vol. 38, 98-118.

CHAPTER 3

Belkaoui, A., & Karpik, P. G. (1989). Determinants of the corporate decision to disclose social information. Accounting, Auditing and Accountability Journal, 2, 36–51.

Brounen, D., Marcato, G., Op 't Veld, H. (2021). Pricing ESG Equity Ratings and Underlying Data in Listed Real Estate Securities. Sustainability, vol. 13-4.

Brundiers, K., & Wiek, A. (2017). Beyond Interdisciplinarity: Using Transdisciplinary Research to Address Wicked Problems in Sustainability Science. Journal of Cleaner Production, 169, 31-44.

Brown, N., & Deegan, C. (1998). The public disclosure of environmental performance information—A dual test of media agenda setting theory and legitimacy theory. Accounting and Business Review, 29, 21–41.

Chiang, K.C.H., Wachtel, G.J., Zhou, X (2019). Corporate social responsibility and growth opportunity: The case of real estate investment trusts. Journal of Business Ethics.

Clarkin, J.E., Cangioni, C.L. (2015). Impact Investing: A Primer and Review of the Literature. Entrepreneurship Research Journal.

Deng, X., Kang, J., & Low, B. S. (2013). Corporate social responsibility and stakeholder value maximization: Evidence from mergers. Journal of Financial Economics, 110, 87–109.

Dermisi, S. V. (2009). Effect of LEED ratings and levels on office property assessed and market values. Journal of Sustainable Real Estate, vol. 1, 23–47.

Eichholtz, P., Kok., N. and Yonder (2012). Portfolio greenness and the financial performance of REITs. Journal of International Money and Finance, vol. 31, 1911-1929.

Emery, J. (2006). Bullring: A case study of retail-led urban renewal and its contribution to city centre regeneration, Journal of Retail and Leisure Property, vol 5-2, 121-133.

Frombrun, C.J. and Shanley, M. (1990). What's in a Name? Reputation Building and Corporate Strategy. The Academy of Management Journal, vol. 33(2), pp. 233-58.

Frey, M., & Sabbatino, A. (2018). The role of the private sector in global sustainable development: The UN 2030 Agenda. Corporate responsibility and digital communities. Palgrave studies governance, leadership and responsibility.

Fukuda-Parr, S., & McNeill, D. (2015). Post-2015: A new era of accountability? Journal of Global Ethics, vol. 11-1, 10–17.

Hacking, T. (2019). The SDGs and the sustainability assessment of private-sector projects: Theoretical conceptualisation and comparison with current practice using the case study of the Asian Development Bank. Impact Assessment and Project Appraisal, vol. 37-1, 2-16.

Hoepner, A. G., Oikonomou, I., & Sautner, Z. (2020). The Sustainable Investing Market: Review and Consensus Definitions. Journal of Business Ethics, 169(1), 53-73.

Lehner, O. M. (2020). The Emergence and Evolution of Impact Investing. In The Oxford Handbook of Corporate Social Responsibility (pp. 127-149). Oxford University Press.

Lorenz, D., & Lund, D. (2021). The Relationship between Corporate Social Responsibility and Corporate Real Estate: A Systematic Literature Review. Journal of Corporate Real Estate, 23(1), 52-73.

McAllister, P., & Anderson, M. (2012). Socially Responsible Real Estate Development: Shifting Corporate Strategy or Growing Public Relations Movement? Journal of Corporate Real Estate, 14(2), 124-137.

Op 't Veld, H. (2023). A first look into SDG reporting by European companies. Forthcoming.

Porter, M. E., & Kramer, M. R. (2006). Strategy and society: The link between competitive advantage and corporate social responsibility. Harvard Business Review, 84, 78–93.

Porter, M. E., & Kramer, M. R. (2011). Creating Shared Value. Harvard Business Review, 89(1/2), 62-77.

Rashed, A.H., Shah., A. (2020). The role of the private sector in the implementation of sustainable development goals. Environment, Development and Sustainability.

Rottke, N. B., & Wijesinghe, P. (2019). Impact Investing in Real Estate: An Exploratory Study. Journal of Real Estate Literature, 27(2), 291-313.

Scholtens, B., & Kang, F. (2018). Do Socially Responsible Investment Funds Deliver on Their Promises? The Case of European REITs. Journal of Real Estate Finance and Economics, 57(4), 660-690.

Schramade, W. (2017). Investing in the UN Sustainable Development Goals: Opportunities for Companies and Investors. Journal of Applied Corporate Finance, vol. 29-2, 87-99.

Vats, A., van der Vegt, P., & Bloemhof-Ruwaard, J. (2018). Impact Investing: A Systematic Review of Literature. Sustainability, 10(10), 3579.

Waddock, S.A. and Graves, S.B. (1997). The Corporate Social Performance-Financial Performance Link. Strategic Management Journal, 18(4), pp. 303-19.

Wijesinghe, P., Rottke, N. B., & Akehurst, G. (2021). Integrating Sustainability into Real Estate Investment Decisions: A Review and Research Agenda. Journal of Sustainable Real Estate, 13(1), 73-10.