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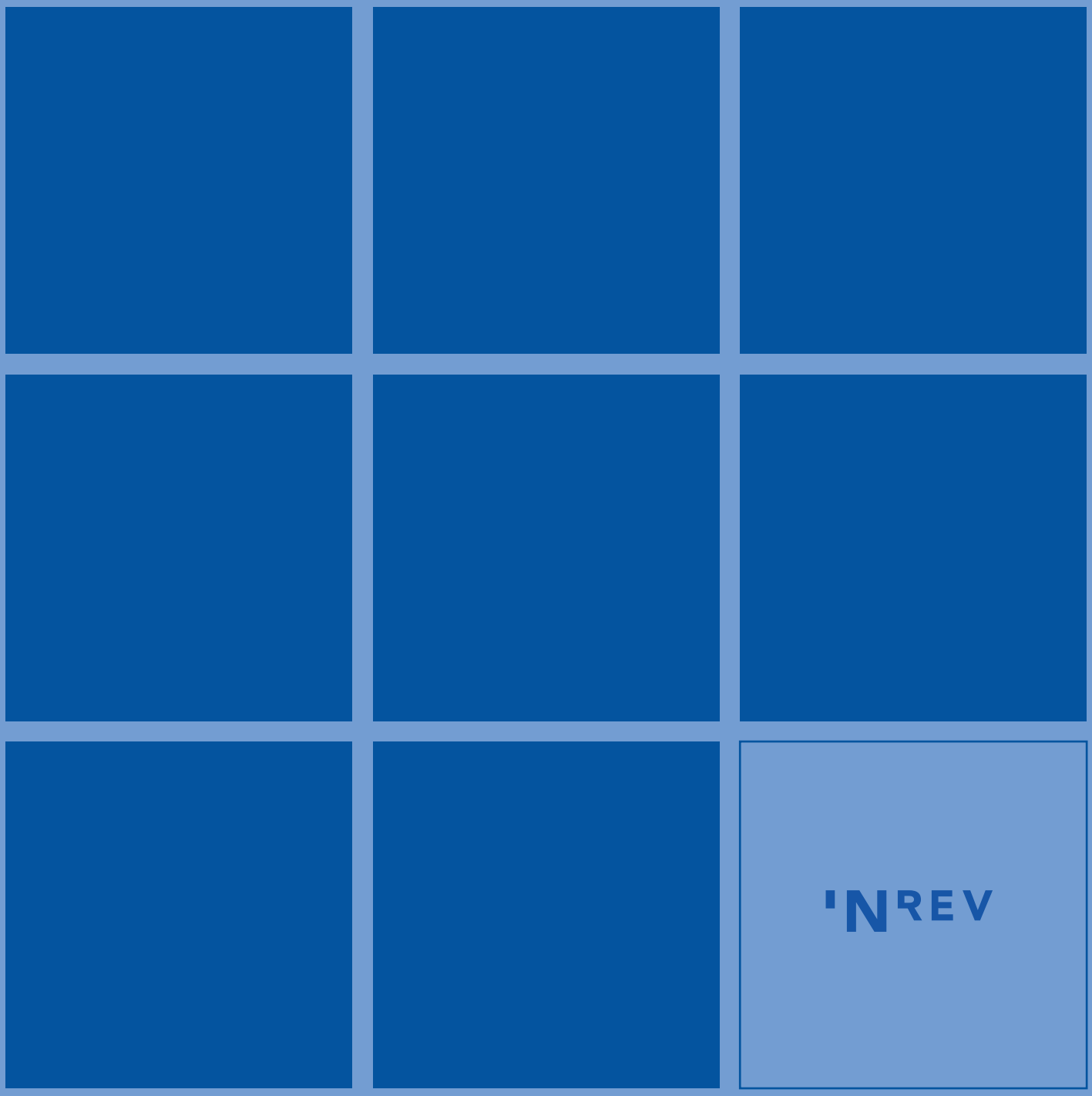
TRANSPARENCY AND PERFORMANCE OF THE EUROPEAN NON-LISTED REAL ESTATE FUND MARKET

ACADEMIC PAPER



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ABSTRACT

Over the past decade, the European institutional non-listed real estate fund market has matured into an investment category that consists of 472 funds, representing €227 billion of gross asset value. But maturity cannot be measured by numbers alone. In this paper, we examine the recent evolution of the non-listed fund market with respect to transparency and performance. In line with the private equity literature, we analyse the returns and fees that investors face when investing in non-listed real estate funds. Our results show that non-listed real estate funds have delivered moderate but stable total returns over the past thirteen years. Compared to Europe's public real estate market, the non-listed core fund index yielded an average return of 5.2% which is more than 2.0% lower than the public real estate index return, but at a risk (standard deviation) of 9.7%, which is less than a third. The total fee load of non-listed real estate funds (2.2%) is low compared to private equity (7.0%). This fee could be earned back by selecting the funds that rank highest on their sustainability performance, as our analysis shows a 2.8% return spread between the top and bottom Global Real Estate Sustainability Benchmark (GRESB) deciles. A large fraction of this return pattern, however, relates to the associated variation in fund leverage. Hence, transparency regarding non-listed fund characteristics is key and although the market is not there yet, it is gaining momentum and relevance.

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TRANSPARENCY AND PERFORMANCE OF THE EUROPEAN NON-LISTED REAL ESTATE FUND MARKET

1. INTRODUCTION

Institutional investors around the globe have invested, on average, 8.8% in real estate and are expected increase their allocation in the coming years.[1] Publicly listed Real Estate Investment Trust (REIT) markets are often used as a convenient and liquid means to build up real estate exposure. REITs have become available in almost all major investment markets, and their stock market listing offers investors clear advantages when it comes to trading and portfolio management. The flipsides of this coin, the public listing, are also well documented. Listed real estate tends to correlate with general equities, especially in the short run, which also increases the volatility of this investment category. But besides the classic tradeoff between publicly listed real estate convenience and non-listed real estate stability, investors have a third investment alternative: the non-listed real estate funds. Brounen et al. (2007) described the surge and structure of this market from a European perspective. A lot has happened and changed since then. Figure 1 (p5) shows that the number of funds has grown substantially, but total GAV remained rather stable over the past six years. The non-listed real estate fund market today, consists of 472 funds with a total gross asset value of around €227 billion. But in the past six years, the market changed more than these numbers can tell.

In this paper, we examine and discuss the evolution of non-listed real estate funds in Europe. Beyond the current breakdown of market statistics, we offer an overview of the outcomes on performance and initiatives regarding fees and sustainability. In an era of financial crises and debate about sustainability, the non-listed fund market has made significant progress regarding improving transparency, cost structures and the enhancement and protection of investor value through sustainability best practices. In all matters, transparency is key, as in the absence of a public listing, non-listed funds face more challenges in disseminating corporate information and cost and performance data. Hence, in this paper, we offer the outcomes of a careful analysis of three important transparency themes: the relative performance of the non-listed market, the management fee load, and the sustainability performance effects.

Even though the non-listed real estate fund market has been developing strongly over the past six years, not a lot of scientific research has been written. Tomperi (2010) was probably the first to analyse private real estate returns using a database tilted towards US and opportunity funds. He found, for instance, that size is positively correlated to realised performance. This size effect was also found by Andonov et al (2013), but then analysing real estate portfolios of pension funds instead of private real estate funds. Part of the explanation of this size effect was the fact that smaller pension funds had higher costs. They also found that investments in REITs outperformed investments in non-listed real estate, while funds of funds showed the lowest performance. Fisher and Hartzell (2013) analysed

1 2013 Institutional Real Estate Allocations Monitor, Cornell University's Baker Program in Real Estate and Hodes Weill & Associates, LP

the performance difference between public REITs and non-listed real estate funds using a similar database as Tomperi. They found that non-listed real estate funds underperformed alternative real estate indices, like the listed market. Again, the data was centered around US value added and opportunity funds and moreover most launches were the years before the global financial crisis. Results, therefore, are somewhat skewed to negative returns.

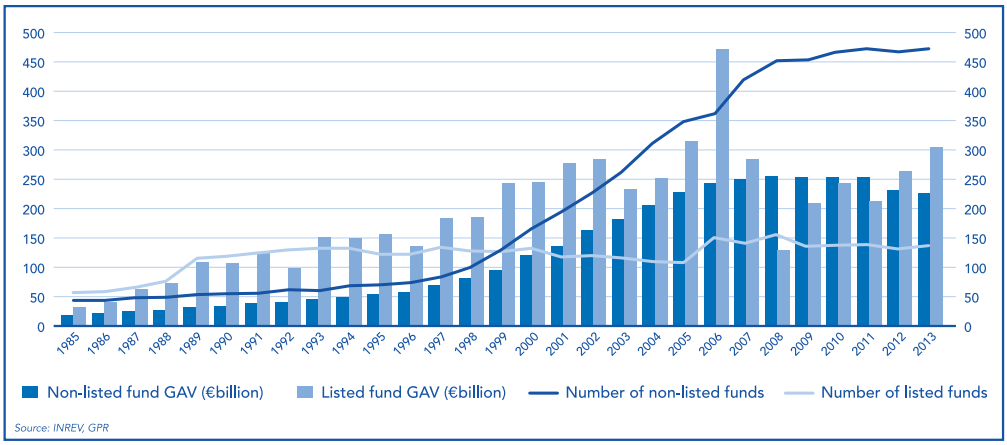
A careful analysis of the INREV Index shows that European non-listed real estate funds have delivered a modest but stable total return over the past thirteen years. Compared to their stock listed counterparts, non-listed funds yielded more than 2.0% lower (5.2% a year, on average) but at only a third of the risk (standard deviation) of public real estate stocks. Regarding the total fee load, we find that the non-listed market is quite competitive. The average total fee load of 2.2% a year is less than a third of the charges that investors face when investing in the private equity market. Finally, we find that sustainability has gradually developed into an important distinctive factor within the non-listed markets. The results of a combined GRESB/INREV dataset show that total returns of high ranked GRESB funds yield higher return, a difference of around 2.8% a year between the highest and lowest GRESB deciles within the non-listed fund market. However, after correcting for underlying variations in the fund's debt structures, most of this return pattern fades out, indicating that leverage currently still outweighs the impact of sustainability performance in Europe's non-listed real estate market.

This paper is structured as follow: We first offer a more elaborate overview of the current size and structures of the European listed REIT and non-listed real estate funds markets. We then continue with three sections with analyses of current transparency themes. We first present and compare our results regarding the total return analysis relative to the public real estate market. Then we discuss the breakdown of total fee loads, and finally we report the outcomes of the first sustainability effect analysis for non-listed funds. We conclude the paper with a summary of the most important findings and implications.

2. A BREAKDOWN OF THE EUROPEAN NON-LISTED REAL ESTATE FUND MARKET

In order to adequately assess the evolution of the size of the non-listed fund market we start this section with a comparison. In Figure 1, we benchmark the numbers and size of the European non-listed fund market to the publicly listed counterpart. These statistics tell a clear story. While both markets started out with comparable figures in 1985 with around 50 funds in each market and a gross asset value of €20-30 billion each, almost thirty years later the differences are apparent.

Figure 1: Market development of European listed and non-listed markets



The number of non-listed funds skyrocketed after the mid-nineties and reached a number of 472 in 2013. The corresponding increase in market value was more gradual, indicating the non-listed market growth is a result of fund number and less of fund size. For the listed market we find a rather different story in Figure 1. First, we clearly see that the increase in market value outpaced the trend in the number of listed firms. In other words, the growth of the listed real estate market in Europe is largely due to the fact that individual firms expanded their portfolio and market size. Although the number of listed firms tripled in almost thirty years, the current number of listed constituents is only a third of the number of the non-listed peers. Over the past seven years, in which the credit crisis and subsequent economic depression roamed across Europe, we find a striking difference in how both markets coped with the financial economic turbulence. While the listed real estate market lost two thirds of its market value in the period 2006-2008, the non-listed market value did not suffer at all during that period. Most of the impact on the total value has become visible during the last 3 years, implying a clear time lag, due to the fact that GAVs are appraisal based. The absence of stock market quotation has clearly helped the non-listed market to delay and escape part of the effects of the negative sentiments over the past seven years. Moreover, part of this difference may also be due to the time varying availability of the debt market, which is likely to be more visible in the listed real estate numbers.

In Table 1, we break down the current non-listed fund market in the three fund styles: core, value added, and opportunity. Although INREV has published a revised Fund Style

Classification report in 2011[2], styles have been set by the managers, as usually was done historically. Where the old classification was based on leverage, return and the proposed strategy, the new classification is a translation of the proposed strategy into a number of risk parameters. This new classification applies to new funds only and is based on the following 4 risk parameters: (i) target percentage of non-income producing investments, (ii) target percentage of (re)development exposure, (iii) target percentage of return derived from income and (iv) maximum loan-to-value. The vast majority of the non-listed fund market consists of the lower risk and return core funds, which have an average fund GAV of around €600 million. Typically these funds target income producing assets, hardly any (re)development, low leverage and aim to have most of their return derived from income. The more risky value added and opportunity funds come in smaller sizes, at average fund GAV of €300 and €450 million respectively. We also report the fund domiciles, and find that although the tax favorable Grand Duchy Luxembourg is the popular home of over 100 non-listed real estate funds, Germany clearly leads the pack when accounting for size. But also the U.K. and the Netherlands are home to a large fraction of the European funds. When analysing the real estate portfolio of these funds, we find that a little less than half of all funds has specialised its portfolio in one single property type. Of these specialised funds, 36% is investing in retail sector for a total of €32.3 billion of gross asset value. Other commercial real estate, like office and industrial, appear to be popular as well, while only 11.6% of non-listed funds are specialised in residential real estate. Most funds, however, are multi sector funds.

Table 1: Non-listed fund universe by style, domicile and sector

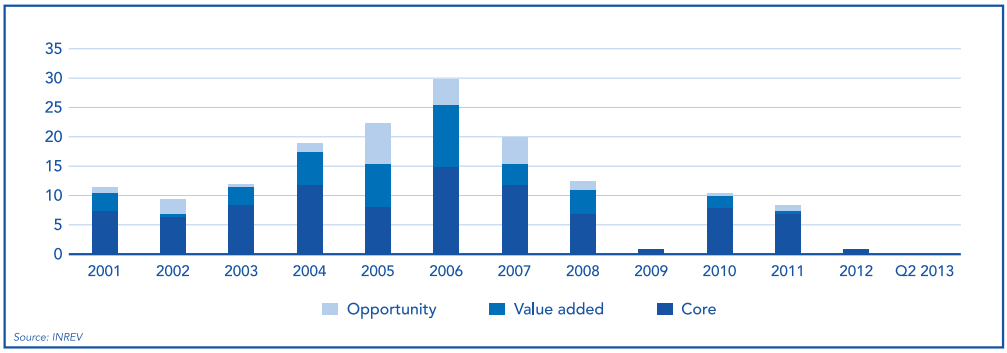
Fund style	Number of funds	Property GAV (€billion)	% of universe
Core	265	156.9	56.1%
Value add	144	42.9	30.5%
Opportunistic	61	27.5	13.1%
Total	472	227.0	100.0%
Fund domicile	**Number of funds**	**Property GAV (€billion)**	**% of universe**
Germany	74	44.7	15.7%
U.K.	82	38.2	17.4%
Luxembourg	101	36.3	21.4%
Netherlands	54	34.6	11.4%
Switzerland	4	10.5	0.8%
Italy	23	9.8	4.9%
Jersey	5	5.4	1.1%
France	7	4.7	1.5%
Other	122	42.8	25.8%
Sector strategy	**Number of funds**	**Property GAV (€billion)**	**% of universe**
Retail	68	32.3	36.0%
Office	47	19.8	24.9%
Industrial	31	14.3	16.4%
Residential	22	13.8	11.6%
Other	21	17.2	11.1%

Source: INREV

2 See www.inrev.org for full information on new style classification

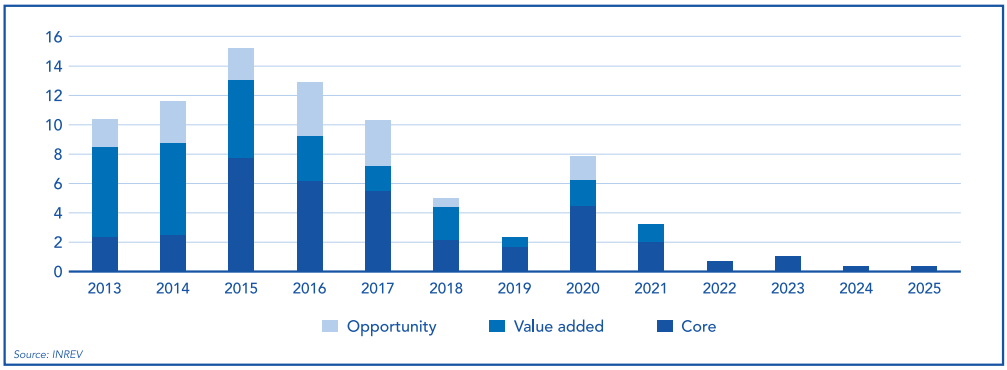
When we take a fund style perspective on the market growth in the most recent years, we document the numbers shown in Figure 2. Here we clearly see that until 2007, the market growth accelerated year after year, and an increasing portion of this growth stemmed from opportunity funds. But since the financial crisis, this stream of new funds dried up quickly. Only a few of non-listed funds were launched after 2008, and most of them offered a lower risk profile. An interesting trend, not reported in our figures, is the recent surge of European non-listed real estate debt funds. Since 2010, over 30 of these funds emerged, offering investors a total pool of €26 billion worth of real estate debt. The vast majority (69%) of this debt market consists of senior debt, and the remainder is split across junior, subordinated, mezzanine and whole loans.[3] For investors it is still a question whether this type of fund is part of the fixed income or the real estate allocations.

Figure 2: Non-listed fund launches by current GAV (€billion)



Besides these recent trends, we also have data on what the next few years have in store for the non-listed fund market. The pipeline of planned fund terminations is plotted in Figure 3, and shows a peak in 2015, when over €15 billion of asset value is planned to terminate. Especially, the value added funds are about to meet deadlines over the next five years. Obviously the performance of the funds and the state of the underlying real estate markets will determine the course of this fund termination and whether or not these funds will extend for a number of years.

Figure 3: Upcoming fund terminations by current GAV (€billion)



3 Source: INREV Real Estate Debt Fund Universe 2013

3. TRANSPARENCY, A 2014 PERSPECTIVE

Having a clear view on market statistics and structures, we now shift our focus to some of the key trends that will shape the performance of non-listed funds in the years to come. In the absence of a stock listing, information transparency has always been a challenge. Like in any private equity market, investors need to invest more time and effort in their due diligence in order to assess the potential and risks of the inherent investment opportunities. Over the past seven years, INREV has made various efforts to enhance the transparency of this market. Three key themes are discussed and analysed below: investment performance, management fees, and sustainability. Investors need to understand how their investments are faring, how much their investments are costing, and how their funds are positioned towards both the short and long term needs. More recently, INREV has invested time and efforts to shed more light on these three issues. By introducing the Standard Data Delivery Sheets (SDDS), INREV tries to start a new tradition of how to collect and disseminate objective and consistent information regarding Europe's non-listed real estate funds. This initiative can significantly enhance the transparency in this market. In the following sections, we analyse some of the data that will be contained in this SDDS and report results regarding performance, fees and sustainability.

3.1. Transparency and performance

The primary concern of most investors is performance. How have investment values evolved over the years, and how hard has the financial crisis hit the investment portfolio? Investing in European real estate markets is not without risk, but due to the long history of European investment most of these risks are well documented. Novel is the way how real estate exposure is built up, both in institutional and retail portfolios. Investing indirectly allows investors to gain exposure to real estate returns through minority stakes without the asset management concerns. Whether to invest indirectly in the public or private market is a relevant question that can be partly answered by the results of Table 2.[4] Here, we plot the weighted average annual total returns of listed (public) firms versus non-listed (private) real estate investment funds since 2001.[5] Over the past thirteen years, both investment markets delivered competitive returns. The average INREV annual return equals 4.9% for all funds and 5.2% for core funds. The comparison to core funds is more meaningful, as listed real estate companies and especially REITs are generally more likely to pursue core strategies. The INREV dataset may have some sample selection and survivorship bias, as providing fund returns is only on a voluntary basis and as a result some older funds may have decided not to provide their data because the fund was already at the end of its life.

4 A thorough review of this rich literature can be found in Hoesli and Oikarinen (2013) and Pagliari et al. (2005)

5 Here we use the GPR 250 Europe Universe, which includes the 250 most liquid stock listed real estate investment companies, free of selection and survivorship biases. We have back tested our analysis with the EPRA Europe Index, and found virtually identical results, which is in line with the fact that correlation between both indices is 0.95 over the sample period.

Table 2: Average total return, risk as represented by the standard deviation, and Sharpe ratio of the non-listed versus the listed real estate market.

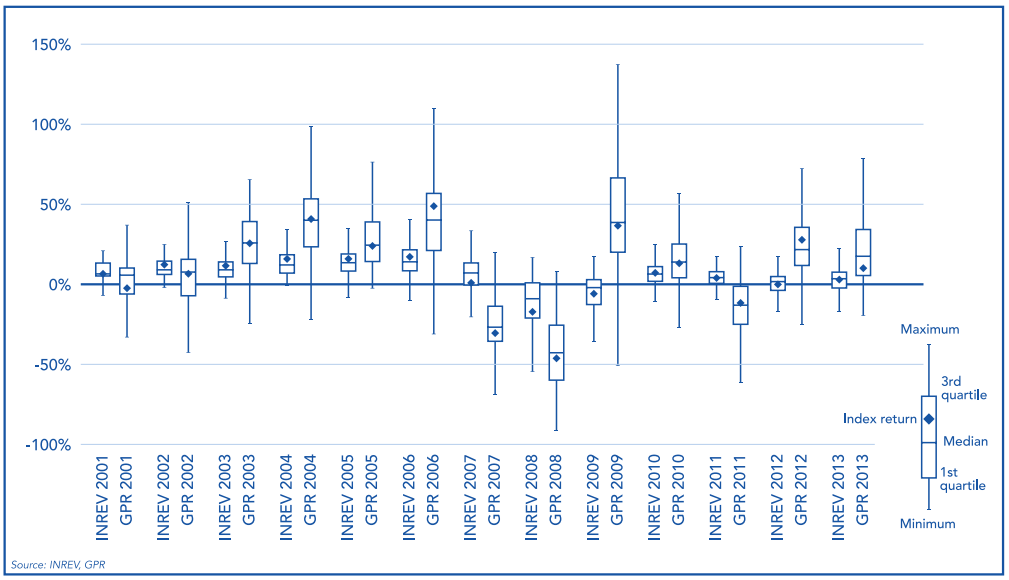
	INREV All fund index	INREV Core index	GPR 250
Average	4.90%	5.20%	7.40%
Standard deviation	10.80%	9.70%	26.60%
Sharpe ratio	0.29	0.35	0.21

The non-listed market outperformed the listed market in five years (2001, 2002, 2007, 2008 and 2011), of which four occurred during crisis years. This is a clear indication of listed being more sensitive to economic downturns. During the thirteen years, the five underperforming years for listed were, on the other hand, compensated by high-yielding years like 2004, 2006 and 2009. The average listed total return is 7.4% per year and therefore outperformed non-listed real estate funds. This higher average public return, however, comes at a price, as these higher returns are associated with a risk (standard deviation) that is triple that of the non-listed market. The stock listing introduces stock market sentiments into the price series of public real estate returns, which results in a standard deviation which is comparable of Europe's common stock market. The Sharpe ratio incorporates the difference in return as well as in risk to allow for a fair comparison, after correcting for the available level of risk-free rate of return.[6] The net effect is a Sharpe ratio which is rather comparable across both investment vehicles, although slightly in favor of the non-listed market.

Finally, Figure 4 shows the variation in returns among listed firms and non-listed funds per annum in a bow and whisker diagram. Clearly, the variation among listed firms is much higher than that among non-listed funds for all years. In addition, the annual variation observed is extremely high, in some years there is even 200% difference between the best and worst stock performance. Hence, stock selection within the listed market seems even more important.

6 For the risk-free rate the 5-year government bond yield was used

Figure 4: Total return distributions of non-listed versus listed real estate presented in a box and whisker plot, where minimum and maximum is restricted to 1.5 the interquartile range. Outliers are not plotted, as these will disrupt the chart.



3.2. Transparency and fees

At the moment, non-listed real estate fees and costs are high on the agenda of the real estate industry. This topic is very important to institutional investors as pressure from regulators for more transparency and lower costs is increasing. In addition to this, the current investment environment is characterised by low returns, as bond yields are historically low and as a result each basis point reduction in fee can have a relative high impact on net return. Only limited literature on fees is available, and most of it deals with the general private equity market. Phalippou (2009), for instance, shows that private equity funds effectively charge a 7% fee per annum. On the real estate side, multiple industry bodies are working on increasing transparency. The European Public Real Estate Association (EPRA) recently published their costs ratio report proposing a more transparent way of reporting costs and fees for listed firms. The Pension Real Estate Association (PREA) commissioned Pagliari of the University of Chicago to prepare a research report examining the various fee structures (2013). The best information available on European non-listed real estate fees is the Total Expense Ratio (TER) published in the annual management and fees study by INREV. This information, however, is based on a relatively low number of funds. A solution to this problem is presented in a paper by Van Der Spek (2013), where private placement memorandums are used to calculate the Total Fee Load (TFL). This fee metric is the aggregation of all fees paid to the fund manager and excludes fund expenses, as this information is not well enough documented. The TFL is calculated by taking the difference between the IRR before and after fees using a cash flow model. This reduction in IRR equals the TFL and is the loss of return due to fees paid to the manager. The data used in this analysis is obtained from a hitherto unexplored investor's database, containing hundreds of non-listed real estate placing documents, including the terms and conditions of each fund. For this analysis, only the European data is used, including in total 174 funds well spread across styles, property type, vintage and size.

In Table 3, we provide an overview of the average fee load by style in Europe, using only the European results of the aforementioned paper. The average TFL is 2.24% and the biggest portion (73%) is the management fee load (MFL). In line with expectations, core funds have the lowest performance fee load (PFL), while opportunity pay the highest performance fees. It is however remarkable to see that the management fee for value added funds is higher than that of opportunity funds. The lower expected performance fee apparently needs to be compensated by a higher management fee. As a result, fees can be similar or even higher than opportunity funds in periods with low returns, for instance periods including the global financial crisis. Opportunity funds, on the other hand, seem to have stronger alignment, as 43% of their TFL is dependent on performance. The average TER published by INREV (2012) is rather similar , although the construction is different. The TER is including fund expenses and excluding performance fees and therefore comparing to the MFL would be more meaningful. Furthermore, one should consider that it is a backward looking ratio which includes the crisis and fund setup years, and as a consequence, the expense ratios for value added and opportunity funds might be on the high side.

Table 3: Total fee load (TFL), management fee load (MFL) and performance fee load (PFL) for European funds compared to average INREV TER by style.

	Number of funds	TFL	MFL	PFL	INREV TER
Core	65	1.50%	1.31%	0.18%	1.35%
Value added	73	2.50%	1.90%	0.61%	2.58%
Opportunity	36	3.06%	1.74%	1.32%	4.55%
All	174	2.24%	1.65%	0.60%	2.30%

We split the results in a number of segments to create a better understanding of the main drivers of fees. These segments are presented in Table 4. Here we show that industrial funds are on average the least expensive funds, while residential funds for instance are much more expensive. A potential explanation can be found in the management intensiveness of the underlying property. Generally, industrial properties do not require much management capacity once build and occupied, which is not the case for residential properties. Moreover, many residential funds also pursue a development strategy and are more expensive for that reason. The difference between single and multi country funds is 44 basis points. Multi country funds are clearly more expensive than single country funds, due to additional legal costs and complexity. Open end funds are generally defensive core type vehicles, while more return driven strategies are usually structured as closed end vehicles. The fees difference between these vehicle types is therefore obviously in favour of open end structures.

Table 4: Number of funds and average total fee load (TFL), per segment in % for European non-listed real estate funds.

Segment	Number of funds	Average TFL	Segment	Average TFL	Standard deviation
Property type			**Vintage year**		
Residential	18	2.41	≤ 2005	28	1.46
Mixed	72	2.32	2006	13	2.29
Other	5	2.52	2007	18	2.77
Office	41	2.34	2008	36	2.88
Retail	26	1.99	2009	27	2.29
Industrial	12	1.62	2010	23	1.95
			2011	16	1.96
Country diversification			≥2012	13	2.13
Multi country	68	2.51			
Single country	106	2.07	**Size in equity**		
			≤ 250 million	66	2.37
Structure			>250 and ≤ 500	73	2.27
Closed end	138	2.51	>500 and ≤ 1,000	24	1.81
Open end	36	1.24	>1,000 million	11	2.29
Leverage			**Catch-up clause**		
≤ 40%	51	1.47	Catch-up	35	3.21
> 40% & ≤ 65%	100	2.41	No catch-up	139	2.00
> 65%	23	3.26			

Although size effect is rather common in the financial market, it does however not seem to make a huge difference when it comes to fees. The problem is however that there are four highly leveraged, pre-crisis value added and opportunity funds among the 11 largest funds, which have a significant influence on the average fee load for that segment. Without these funds, large funds would be less expensive and this size effect in fees could therefore be part of the explanation of the size effect in performance found by Tomperi (2009). The impact of the boom and bust of the global financial crisis is also visible in this data. Especially in the last two year of the boom period, 2007 and 2008, fee levels were substantially higher than in other years. Fees have adjusted to more normal levels afterwards. Another very important fee driver is leverage. It is rather clear that highly leveraged funds are more expensive. The reason for this is that some funds have fees based on commitments or GAV and when leverage is increased it has a direct impact on the height of the fee on equity. Leverage also increases the volatility resulting in a higher average performance fee for the manager. From a fee point of view, it would make sense for investors to limit the amount of leverage. The most expensive driver of fees is the catch-up clause. A fund applying this clause is on average 1.2% more expensive, which is rather high given the fact that the average fee load is 2.2%.

3.3. Transparency through sustainability

One of the most prominent transparency topics of this time and age is 'sustainability'. As a response to the threats of climate change, international treaties have put more pressure on how we deal with scarce resources. Given that the real estate industry accounts for over

30% of global energy usage, real estate markets around the world have been supplied with various regulations and incentives to make sustainable choices part of their strategy. Ever since the introduction of energy certification, transparency regarding corporate sustainability policies blossomed. The Global Real Estate Sustainability Benchmark (GRESB) is a next and important step in mainstreaming sustainability within the global real estate industry. GRESB's mission is to enhance and protect shareholder value by evaluating and improving sustainability best practices in the global real estate sector. By means of an elaborate annual assessment, GRESB collects firm-specific data to benchmark the sustainability performance of real estate companies and funds. This is done by weighting responses on seven different sustainability aspects: management; policy and disclosure; risks and opportunities; monitoring and EMS; performance indicators; building certification and benchmarking; and stakeholder engagement.[7] The 2013 GRESB benchmark results were based on sustainability data gathered from 543 companies and funds, providing information on 49,000 real estate assets across the globe. In this paper, we link the 2013 GRESB scores of funds to their return performance. In order to do this, we matched the INREV and GRESB databases, which resulted in a set of 101 European non-listed real estate funds. In Table 5, we present some key summary statistics for this INREV-GRESB sample. On average, the INREV funds have a GAV of around €800 million, which is larger than typical for non-listed funds. Clearly, we are looking into a sample of front-runners, which have the scale to participate in GRESB. Within our subsample of INREB-GRESB funds, 66% of funds classified as core, 47% has a closed end structure, and 57% invests their assets within one single country. The average debt level (gearing) of the funds in this sample equals 33%, which is lower than the total INREV universe average. The GRESB score for these non-listed firms equaled 44.65, and ranged between 7.80 and 79.80, which offers a wide cross sectional variation. From INREV we use the fund-specific total, income and capital returns for each firm, both for 2012 and the past three years. The GRESB scores are available from 2012 onwards and the cross-sectional correlation between the 2012 and 2013 scores are high (0.76), indicating that even though sustainability performance tends to be increasing over time, these scores vary consistently across firms.

Table 5: GRESB score summary statistics.

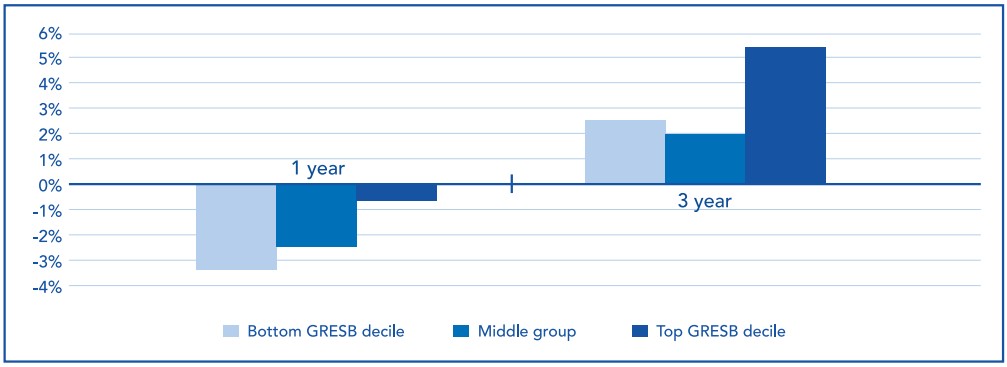
	Mean	Median	Min	Max	Stdev
Total return	-0.02	0.00	-0.58	0.17	0.12
GRESB score	44.65	42.90	7.80	79.80	15.58
Core	0.66	1.00	0.00	1.00	0.48
Closed end	0.47	0.00	0.00	1.00	0.50
Single country	0.57	1.00	0.00	1.00	0.50
Single sector	0.65	1.00	0.00	1.00	0.48
GAV (€million)	800,44	593,81	80,35	6,06	817,14
Gearing	0.33	0.37	0.00	0.96	0.25
Income return	0.03	0.04	0.00	0.12	0.03
Capital growth	-0.06	-0.03	-0.58	0.14	0.11

In Figure 5, we sort the 2012 and 2010-2012 annual total returns of the firms in our sample based on their GRESB scores. For the top GRESB decile we consistently find the highest INREV returns. For the 2012 returns, the return difference between the top and bottom

7 For a more detailed of the GRESB score, please visit www.gresb.com

GRESB decile groups equals 2.75%. This difference equals 2.88%, when we consider the total returns over the past three years. Obviously, this return pattern may well be a reflection of other fund characteristics than sustainability performance alone. Hence, we also analyse the relation between GRESB scores and the fund characteristics size, leverage, risk (core versus value added and opportunity), portfolio focus (single country/sector versus multi country/sector), and fund structure (closed end versus open end). The only statistically significant correlation that turns up here is the one with fund leverage (-0.29). Apparently, low levered funds are also the funds that score high with GRESB and in this respect we might even consider low leverage as means of maintaining financial sustainability.

Figure 5: GRESB score return sorts.



To ultimately test the effects of the transparency in non-listed fund's sustainability performance on their returns, we perform a set of multivariate regressions. The regression is done according to following formula:

$$R_{i,t} = c + \beta_{1,t} \cdot GRESB_{i,t} + \beta_{2,t} \cdot Core_{i,t} + \beta_{3,t} \cdot Closed_{i,t} + \beta_{4,t} \cdot SingleCountry_{i,t} + \beta_{5,t} \cdot SingleSector_{i,t} + \beta_{6,t} \cdot Size_{i,t} + \beta_{7,t} \cdot DebtRate_{i,t} + \varepsilon_{i,t} \quad (1)$$

The dependent variable is the return of fund *i* and for the period *t*. We run our regressions, for funds' total income and capital returns, separately. *GRESB* is the GRESB score for the specific fund, *Core* is a dummy with a value 1 for core funds, *Closed* is a dummy with a value 1 for closed end funds, *SingleCountry* is a dummy with a value 1 for country-specific funds, *SingleSector* is a dummy with a value 1 for sector-specific funds, *Size* equals the logarithm of the fund's net asset value and *DebtRate* is the fund's leverage ratio. Before we present the results of these regression estimations, we also report the correlations between the variables in our model. In Table 6, we report strong and positive correlations between capital growth and total returns, and between closed end structure and the amount of debt. We also find some strong and negative correlations, for instance between the closed end structure and core profiles, and between corporate debt levels on the one hand and total returns, GRESB scores, and core profiles, on the other. Clearly some of these variables are related, hence we run our regressions in various model specifications, to assess the multicollinearity that is present in our dataset.

Table 6: GRESB correlation matrix

	GRESB score	Core	Closed end	Single country	Single sector	GAV	Gearing	Income return	Capital growth
Total return	0.11	0.22	-0.15	0.08	-0.04	0.12	-0.39	0.37	0.98
GRESB score	1.00	0.15	0.08	0.06	0.18	0.10	-0.29	0.08	0.09
Core	0.15	1.00	-0.52	0.12	-0.10	0.31	-0.38	0.14	0.20
Closed end	0.08	-0.52	1.00	-0.17	0.20	-0.22	0.43	-0.28	-0.10
Single country	0.06	0.12	-0.17	1.00	0.10	-0.13	-0.59	0.27	0.03
Single sector	0.18	-0.10	0.20	0.10	1.00	0.05	0.09	0.12	-0.07
GAV	0.10	0.31	-0.22	-0.13	-0.06	1.00	-0.06	-0.04	0.14
Gearing	-0.29	-0.38	0.43	-0.59	0.09	-0.06	1.00	-0.39	-0.32
Income return	0.08	0.14	-0.28	0.27	0.12	-0.04	-0.39	1.00	0.17
Capital growth	0.09	0.20	-0.10	0.03	-0.07	0.14	-0.32	0.17	1.00

The results in Table 7 start with an analysis of the three-year total returns. We first run a regression in which we link fund returns to a set of common control variables (core, closed end, single country, single sector, size, and debt rate). This baseline model succeeds in explaining 16% of the cross-sectional three-year return variation, a number which is comparable to other studies using this data (see for instance Fuerst et al. (2014)). This analysis is based on a set of 90 funds, as the three-year returns are not available to all the matched funds.[8] The only variables shown that can stand the test of statistical significance are 'closed end' and 'debt rate'. The base line results show that closed end fund delivered higher returns than their open end peers, and that this return was higher if leverage was low. Adding the GRESB score to this baseline model, we find no significant effect or any improvement of the model performance (R^2). Apparently, the aforementioned correlation between leverage and GRESB score is causing multicollinearity in our regressions, weakening the GRESB effect. To test this interpretation of results, we also run a third model specification in which we omit debt rates. Here, we indeed report a positive and statistically significant effect for GRESB scores. We also find significant results for 'core funds'. At the same time, the third column of Table 7 shows that dropping 'debt rates' strongly weakens the model, as the R^2 drops to 10%. In other words, in recent years leverage was key, and a dominant factor for fund return. The other factors are not unimportant, but have been less decisive in the final outcome. The remainder of Table 7 is build up in various versions of the same analyses, but with varying dependent variables. In columns four and five, we find comparable results for our analysis of one year instead of three years total returns. Again, leverage is key and GRESB score is insignificant. In the final two columns, we repeat the analysis for income and capital returns, and find that especially income returns are well explained by this model. Both 'closed end' and 'debt rate' are significantly here, but this time closed end reduces income returns. An explanation for this could be that most value added and opportunity funds are structured as closed end funds, while open end funds are mostly core which are much more focused on delivering income return. For capital returns, we find that country focus and leverage are important. Leverage reduces capital returns, and country specialists have yielded lower capital returns, apparently it paid to be diversified. A result which contrasts with public real estate analyses by Capozza and Seguin

8 We also ran the same set of baseline regressions for the three-year and one-year total returns for the full set of INREV funds, instead of the reported sample of INREV funds that have a GRESB-score. These unreported full-INREV regressions show coefficient that are very similar to the ones reported. Moreover, the sample size differences between both groups are small (and extra 32 observation for the three-year returns, and and extra 20 for the one-year returns).

(1999) and Eichholtz et al. (2000), which both find that portfolio specialisation results in stronger REIT returns.

Table 7: Non-listed fund performance regressions. Model (1) analyses the total return in relation to the control variables, model (2) includes the GRESB variable and model (3) excluded leverage.

	Total return (3 year)			Total return (1 year)		Income return	Capital return
	(1)	(2)	(3)	(1)	(2)	(1)	(2)
Constant	0.036	0.012	-0.066	0.057	0.084	0.049	0.035
	(-1.137)	(0.303)	(-2.288)	(1.197)	(1.421)	(3.902)	(0.508)
GRESB score		0.001	0.001		-0.001	0.000	-0.001
		(0.489)	(2.023)		(-0.688)	(0.221)	(-0.714)
Core fund	0.025	0.024	0.039	0.018	0.021	-0.003	0.023
	(1.285)	(1.223)	(1.998)	(0.617)	(0.711)	(-0.518)	(0.796)
Closed end	0.043	0.040	0.027	0.019	0.024	-0.011	0.036
	(2.394)	(2.184)	(1.528)	(0.687)	(0.824)	(-1.942)	(1.298)
Single country	-0.005	-0.003	0.025	-0.051	-0.055	0.000	-0.055
	(-0.312)	(-0.221)	(1.582)	(-1.723)	(-1.798)	(0.085)	(-1.885)
Single sector	-0.010	-0.015	-0.022	0.005	0.009	0.011	-0.002
	(-0.598)	(-0.598)	(-1.281)	(0.211)	(0.416)	(2.080)	(-0.976)
Size (GAV)	0.009	0.008	0.008	0.010	0.008	0.009	0.008
	(1.012)	(0.798)	(0.597)	(0.599)	(0.598)	(1.042)	(0.917)
Debt rate	-0.137	-0.122		-0.247	-0.266	-0.035	-0.231
	(-3.296)	(-2.821)		(-4.036)	(-3.149)	(-2.413)	(-3.587)
n	90	90	90	102	102	102	102
R2 adjusted	0.16	0.16	0.1	0.14	0.13	0.16	0.11

The t-statistics are presented between brackets.

4. CONCLUSIONS AND IMPLICATIONS

Over the past decade, the European non-listed real estate fund market matured into an investment category that consists of 472 funds with a total value of €227 billion. But maturity cannot be measured by numbers alone.

In this paper, we examine the recent evolution of this non-listed fund market with respect to transparency. In line with the private equity literature, we analyse the returns and fees that investors face when putting their money into non-listed real estate funds. Our results show that non-listed real estate funds have delivered stable but moderate total return over the past thirteen years. Compared to Europe's public real estate market, the non-listed fund index yielded a return of 5.2% which is 2.0% less than public, but at a risk (standard deviation) of 9.7% - less than a third.

Also, the total fee load of non-listed real estate funds (2.2%) turns out to be quite low compared to the private equity benchmark (7.0%). This fee could partly be earned back by selecting the funds that rank highest on their sustainability performance, as our analysis shows a 2.8% return premium for the top versus bottom Global Real Estate Sustainability Benchmark (GRESB) deciles. A large fraction of this return pattern, however, relates to the associating variations in fund leverage.

In other words, the available track record of European non-listed real estate fund market shows returns that differ from listed real estate returns, but that after correcting these returns for the risks involved a comparable score emerges. Fees are higher than that of listed real estate, but a large fraction of these fees can be earned back by selecting carefully within the market. For this selection, transparency regarding non-listed fund characteristics is key, and initiatives like GRESB help to disclose relevant fund qualities that can help investors in their choice.

In the years to come, this increasing transparency of the non-listed real estate fund market will open up the door to a lot of relevant further research. Especially, a more thorough understanding of the time variation in market returns and detailed analysis of leverage effects on the risk of fund is very welcome.

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INREV is the European Association for Investors in Non-Listed Real Estate Vehicles. Our aim is to improve the accessibility of non-listed real estate funds for institutional investors by promoting greater transparency, accessibility, professionalism and standards of best practice.

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