

# Composition and returns of Dutch institutional real estate portfolios



## Summary

- This IVBN paper examines the composition and returns of the real estate portfolios of Dutch institutional real estate investors.
- An analysis was made of the portfolios of 32 pension funds and 6 insurers, with real estate investments of minimally €250m each. At the end of 2011, the real estate investments of these investors together were worth €83.3 bn.
- Over the period 2000–2012, investors achieved an unweighted average return on their real estate portfolio of 7.5% and a weighted average return of 9.2%.
- There are large differences between investors; returns ranged between 5.1% and 12.3%.
- At the end of 2011, portfolios on average consisted of 28% direct real estate investments, 44% participations in non-listed real estate funds, and 28% listed real estate shares.
- This concerned 37% real estate in the Netherlands, 23% real estate in other European countries, 26% real estate in North America and 14% real estate in Asia.
- By sector, the real estate portfolios consisted of 26% residential real estate, 27% retail, 15% offices, 5% industrial and logistics, and 27% mixed real estate funds and other real estate (e.g., parking facilities, hotels and day care centres).
- Returns on indirect real estate investments were significantly higher than returns on direct real estate investments, but the risks were also much higher; European and Asian real estate investments led to higher returns – but were also riskier – than investments in Dutch real estate; investments in retail led to higher returns and also entailed lower risks than investments in other sectors.
- Larger institutional investors achieved higher returns than smaller investors, but that difference is directly related to the higher risks taken by larger investors.
- Four different kinds of real estate portfolios can be distinguished, each with its own composition and return/risk profile:
  - Strongly diversified investors; they spread their real estate investments across all investment methods, regions and sectors. These are mainly the larger pension funds. Using this strategy, they achieved the highest average return in the period 2000–2011 (11.5%);
  - Real estate specialists with a ‘home bias’; they mainly invest in Dutch real estate and prefer the residential sector. Using this strategy, they achieved a weighted average total return of 7.1%;
  - Diversified fund investors; they divide their real estate investments 50/50 between participations in private funds and real estate shares. Using this strategy, they achieved a weighted average total return of 8.0%; and
  - Private fund investors; they mainly participate in non-listed real estate funds. Using this strategy, they achieved a weighted average total return of 6.5%.

## 1. Introduction

Since the 1960s, Dutch pension funds and insurers have included real estate in their investment portfolios. On 31 December 2011, the total real estate investments of these institutional investors together amounted to € 92.8 billion, or 7.5% of total invested capital. The risks run and the returns achieved with this public capital are regular topics of public debate. At the same time, little is known from public sources about the composition and returns of these real estate portfolios.

With this paper, IVBN aims to provide new insights into the composition, risks and returns of institutional real estate portfolios. The underlying research differs from other studies by being based not on index data, but on data from the investment portfolios themselves. Of course, this may give rise to the criticism that this paper compares apples and oranges. However, we are convinced that the rich data set on which this paper is based is a correct reflection of the investors' portfolios and the choices they make every day.

This paper is a shortened version of Marco Mosselman's MSRE thesis. He carried out research for IVBN into the real estate portfolios of institutional investors. The full version of the thesis (in Dutch) can be downloaded from the IVBN website ([www.ivbn.nl](http://www.ivbn.nl)).

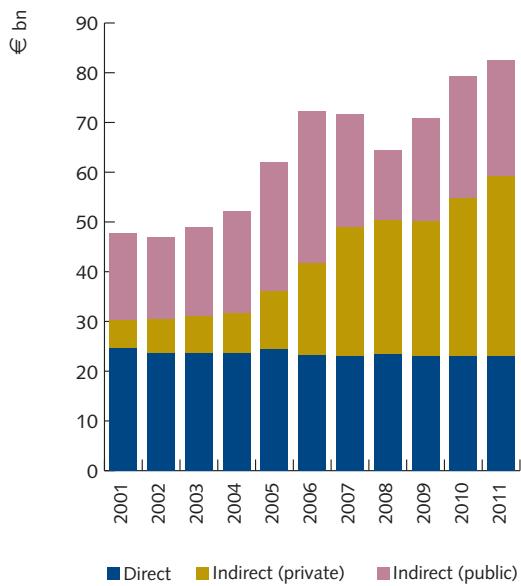
This paper is structured as follows: Section 2 discusses the real estate portfolios of institutional investors; in section 3, we propose a typology of real estate investment strategies; and in section 4, we sum up the main conclusions.

## 2. Composition, returns and risks of institutional real estate portfolios

### Size and composition of institutional investors' real estate portfolios

This paper examines real estate investments of 32 pension funds and 6 insurers which, at the end of 2011, had invested at least €250m in real estate. In the period 2000–2011, the total value of the real estate portfolios of these 38 institutional investors grew from €49.6 bn to €83.3 bn. As at 31 December 2011, the average real estate allocation was €5.8 bn. This average amount is distorted because a small number of very large institutional real estate portfolios were involved in the research. The largest portfolio is more than 100 times the size of the smallest one. As a result, the joint share of the four largest investors (the C4 ratio) is 63.1%.

*Figure 1: Development of the real estate investments of the 38 institutional real estate investors taking part in the research.*



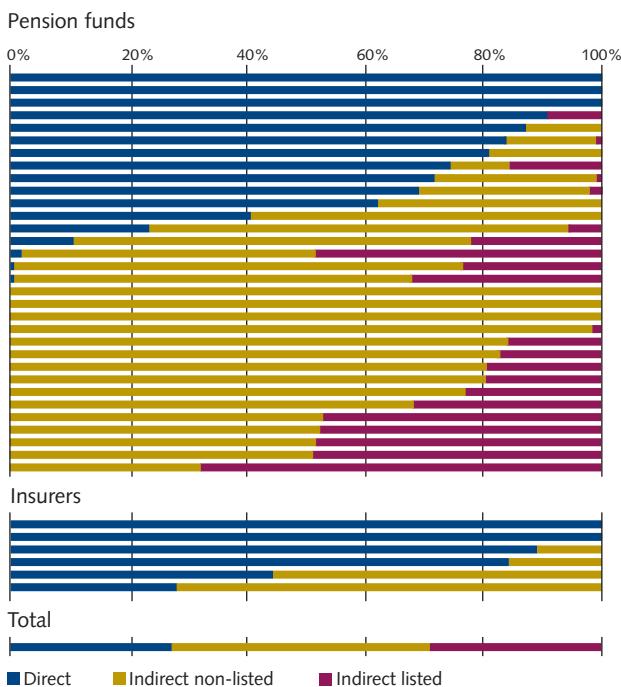
*Source: Funken (Vastgoedmarkt October 2012), annual reports and survey.*



## Investment methods

Figure 1 shows the division between direct investments in 'bricks', indirect public (listed) real estate shares, and participations in (non-listed) real estate funds. At the end of 2011, *direct* real estate investments accounted for on average 27.8% of the portfolios, *non-listed indirect* real estate 43.9%, and listed real estate 28.3%. There are huge differences between institutional investors in this respect. Figure 2 shows the cumulative division of portfolios in terms of percentage per investor. In this, investors were ranked according to the weight of direct real estate in their real estate portfolio.

*Figure 2: Division of real estate investments by investment method on 31 December 2011.*



The direct investments vary between 0% and 100% of the total real estate portfolio; the non-listed investments vary between 0% and 100%, and the listed real estate investments vary between 0% and 67.3%. This implies that some institutional investors' real estate portfolio consists 100% of direct assets, while others only invest in indirect real estate assets, which in some cases exclusively consist of non-listed real estate. Within the group studied, there are no real estate portfolios consisting exclusively of listed real estate shares.

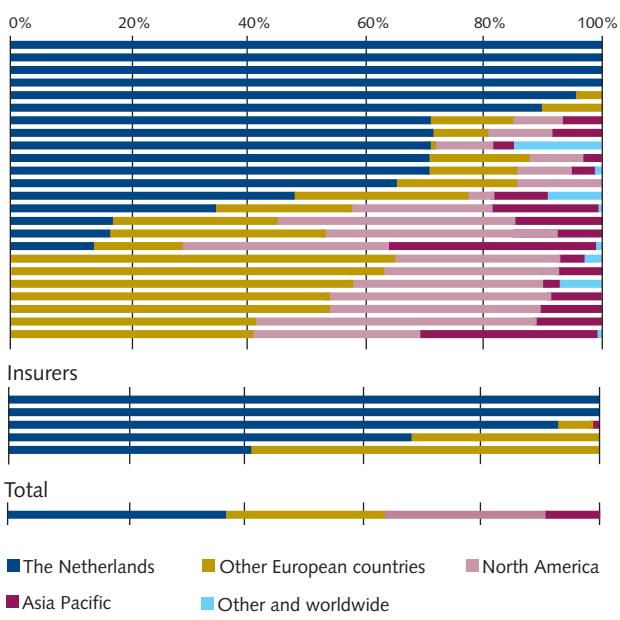
As shown in Figure 1 above, allocation to direct and listed real estate in the period 2000–2012 remained stable in nominal terms, but decreased in real (i.e., corrected for inflation) and relative terms. Growth was mainly seen in non-listed indirect real estate investments.

## Regions

The real estate portfolios of large institutional investors can also be split up by region and sector. However, this information could not be retrieved for all investors in the target group. Figure 3 presents the cumulative division by region (in percentages) of the real estate portfolios of those investors for whom the information could be retrieved.

*Figure 3: Division of real estate investments by region on 31 December 2011.  
(Six pension funds were unable to separate Dutch real estate from European real estate).*

### Pension funds



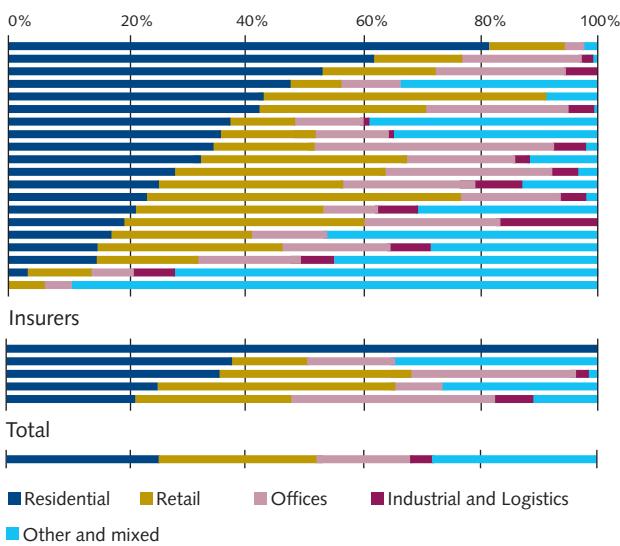
The regional division of real estate investments could be determined for 27 investors, with real estate assets under management jointly worth €73.6 bn. Of these 27 investors' real estate portfolios, 37% concerned Dutch real estate, 23% other European real estate, 26% North American real estate and 14% Asian real estate. The share of Dutch real estate ranges between 0% and 100%. However, a few investors whose share is 0% have indicated that they cannot separate their Dutch real estate from their European real estate investments, which is why their Dutch real estate is categorised as 'Other European real estate'. It is unlikely that there are investors in our target group who do not invest in Dutch real estate at all.

## Sectors

The sectoral division of the real estate investments is known for 25 investors, with joint real estate assets worth €72.4 bn. Figure 4 shows the cumulative division of the portfolios of these 25 investors (in percentages), divided by sector.

*Figure 4: Division of the real estate investments by sector on 31 December 2011.*

### Pension funds

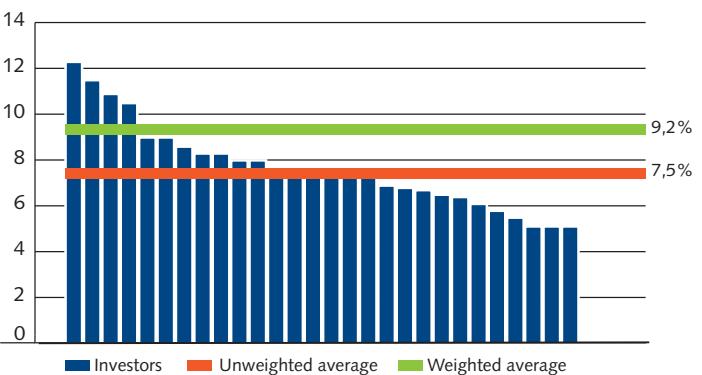


On average, we see 26% of investments in residential, 27% in retail, 15% in offices, 5% in industrial and logistics, and 27% in mixed funds or other real estate (e.g., parking facilities, hotels and day care centres). Here, too, there are significant differences between individual investors. The share of residential ranges between 0.3% and 100%, retail between 0% and 53%, offices between 0% and 34%, logistics between 0% and 17%, and other/mixed between 0% and 89%.

## Return and risk

For 28 institutional investors, at least ten total annual returns were able to be retrieved. These are shown in Figure 5. The first quartile of the average annual returns of these 28 investors ranged from 5.1% to 6.4%. The third quartile ranged from 8.6% to 12.3%. This means that half of the investors achieved an average total annual return on their real estate investments of between 6.5% and 8.5%.

*Average long-term annual returns 2000–2012, per investor (in %, n=28)\*.*



*Source: Funken (2012) and survey among institutional investors.*

\*These results concern only those investors for whom at least 10 years' historical data on returns were available

In addition, the average return was calculated for the total group of investors. Because real estate returns could not be retrieved for each investor for each year, the average return (weighted and unweighted) was first calculated per year. These annual figures were subsequently averaged, which led to the following results:

The unweighted average total return of the 38 investors over the period 2000–2012 is 7.5%. This figure weighs each real estate strategy equally and therefore does not take into account the size of the real estate portfolio.

The weighted average total return of the 38 investors over the period 2000–2012 is 9.2%. This figure does take into account the volume of the real estate investments. The fact that the weighted average is significantly higher than the unweighted average indicates that larger institutional real estate investors on average achieved significantly higher real estate returns than the smaller ones. This does not mean, however, that the returns were higher because the investors were larger; the higher returns could also be related to the different composition of their portfolios, as we will see later.

Table 1 gives an overview of the returns by investment method, region and sector.



Table 1: Summary of the data set.

|                                | Period             | Unweighted average return | Weighted average return | Variance (st. dev.) around average* | Standard deviation on the return** | Number of data points |
|--------------------------------|--------------------|---------------------------|-------------------------|-------------------------------------|------------------------------------|-----------------------|
| <b>Total</b>                   | <b>2000 – 2012</b> | <b>7.5</b>                | <b>9.2</b>              | <b>6.7</b>                          | <b>10.5</b>                        | <b>380</b>            |
| <i>Investment method: ***</i>  |                    |                           |                         |                                     |                                    |                       |
| • Direct                       | 2000 – 2012        | 6.6                       | 6.8                     | 2.7                                 | 5.5                                | 195                   |
| • Indirect                     | 2000 – 2012        | 8.3                       | 9.3                     | 8.6                                 | 11.8                               | 94                    |
| - Non-listed                   | 2000 – 2012        | 7.5                       | 6.8                     | 4.7                                 | 8.7                                | 138                   |
| - Listed                       | 2001 – 2012        | 10.1                      | 10.1                    | 6.5                                 | 25.6                               | 49                    |
| <i>Geografisch:</i>            |                    |                           |                         |                                     |                                    |                       |
| • The Netherlands              | 2000 – 2012        | 7.1                       | 8.5                     | 3.8                                 | 4.8                                | 168                   |
| • Other European countries     | 2001 – 2012        | 5.8                       | 8.1                     | 6.1                                 | 12.1                               | 68                    |
| • North America                | 2001 – 2012        | 5.0                       | 7.9                     | 11.2                                | 21.9                               | 59                    |
| • Asia Pacific                 | 2002 – 2012        | 7.1                       | 8.4                     | 9.1                                 | 14.3                               | 50                    |
| <i>Sector</i>                  |                    |                           |                         |                                     |                                    |                       |
| • Residential                  | 2000 – 2012        | 6.1                       | 6.3                     | 2.9                                 | 4.9                                | 157                   |
| • Retail                       | 2000 – 2012        | 8.0                       | 8.1                     | 2.6                                 | 4.3                                | 144                   |
| • Offices                      | 2000 – 2012        | 5.0                       | 5.2                     | 3.1                                 | 5.9                                | 136                   |
| • Industrial and logistics**** | 2000 – 2012        | 2.3                       | 1.1                     | 5.5                                 | 7.1                                | 86                    |
| • Other and mixed funds        | 2000 – 2012        | 6.8                       | 7.0                     | 6.9                                 | 6.8                                | 101                   |

\* First, the annual standard deviation on the average rate of return was calculated, and these standard deviations were then averaged. That figure is shown in this column.

\*\* First, the standard deviation on the rate of return per investor was calculated, after which the (unweighted) average standard deviation for all investors involved was calculated. That figure is shown in this column.

\*\*\* Especially with direct real estate, 'smoothing' and 'lagging' also play a role, effects which are not taken into account in this study.

\*\*\*\* After removing two exceptional cases.

Interestingly, the data set shows that the variance of the return within the categories is often – but not always – smaller than the variance of the return of the total portfolios. This suggests that the different compositions of the portfolios could explain the differences in returns.



## Investment methods

There appear to be large differences in the data set between the (unweighted average) returns of the various investment methods. The chart and table below show that in the period 2001–2012 direct real estate realised the lowest (average = 5.8%), but also the most stable (st. dev. = 4.8%) returns, and achieved the most favourable Sharpe ratio ( $S = 0.63$ ). Direct real estate is followed by non-listed indirect real estate (average = 6.3%, st. dev. = 7.2%,  $S = 0.49$ ). Finally, listed real estate shows a return of 10.1% with a standard deviation of 24.6% and a Sharpe ratio of 0.30. It should be noted, however, that the data have not been corrected for 'smoothing' and 'lagging', which particularly affect the results of direct real estate.

### The Sharpe ratio

The Sharpe ratio shows how much compensation investors receive for the risks they run. In this, compensation is calculated as the return above the risk-free interest, divided by the standard deviation of the total return (the 'risk standard'). Because the average return on an investment approach is not a product one can invest in, in this paper the Sharpe ratio only serves to illustrate to which degree the different investment methods in the past offered compensation for risks run.

Figure 6: Unweighted average return 2000–2012, by investment method (in %).

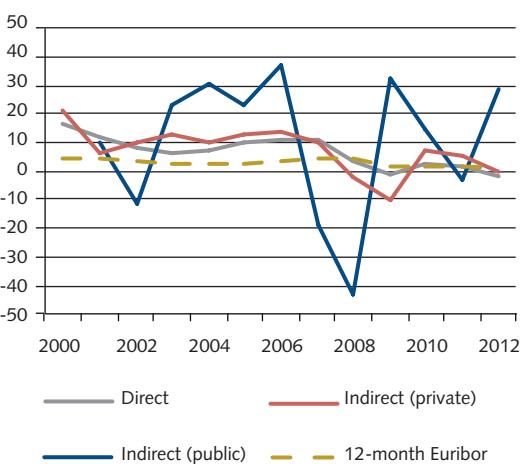


Table 2: Unweighted average return, risk and Sharpe ratio, by investment method (in %).

|                      | Unweighted average return | Risk**     | Sharpe ratio*** |
|----------------------|---------------------------|------------|-----------------|
| <b>2001 – 2012*</b>  |                           |            |                 |
| • Direct             | 5.8                       | 4.8        | 0.63            |
| • Indirect           | 7.2                       | 10.5       | 0.42            |
| -Indirect non-listed | 6.3                       | 7.2        | 0.49            |
| -Indirect listed     | 10.1                      | 24.6       | 0.30            |
| <b>Total</b>         | <b>6.6</b>                | <b>7.5</b> | <b>0.51</b>     |
| 12-month Euribor     | 2.8                       | 1.2        |                 |

\* Because no indirect listed data are available for the year 2000, data are given for the period 2001–2012. Within this period, the data can be compared.

\*\* Standard deviation from the annual unweighted average return. Particularly in the case of direct real estate, the effects of 'smoothing' and 'lagging' play a role. The data in this study have not been corrected for this.

\*\*\* In the calculation of the Sharpe ratio, the risk-free return is based on the average 12-month Euribor rate as published by the Dutch central bank (T1.2.1 'Marktrentevoeten', table 2.1.13).

Within the data set, there is a very strong correlation ( $r = 0.900$ , sig.  $< 0.001$ ) between the return on indirect investments and the total return. This means that changes in the total return are mainly caused by changes in the return on indirect real estate investments.

No significant correlation was found between the returns on the individual investment methods. This may be due to the effect of smoothing and/or lagging of the results of direct real estate investments, as well as market sentiment, which affects the share prices of listed real estate. This was not analysed further in this paper. It does mean, however, that distribution over various investment methods leads to different results, which may result in diversification benefits.

According to the theory, the higher returns and volatility of indirect real estate are related to the use of leverage within these investment methods. Within the data set, the indirect real estate portfolios indeed show a higher return and a higher risk. A negative correlation was also found between the degree of leverage and the return on the total portfolio ( $r = -0.411$ , sig.  $< 0.05$ ). In other words, the higher the leverage, the lower the return, with 1 percentage point extra leverage leading to 0.04 of a percentage point lower return. The correlation is therefore significant, but the effect is small.

This negative correlation is in line with earlier research, which shows that too high a leverage has a negative effect on the return. In this, it should be taken into account that the average reported leverage on the indirect portfolio was 31%, ranging between 0% and approximately 50%.

### Leverage

The analysis shows a (very limited) negative correlation between the degree of leverage on indirect portfolios and the return achieved: the higher the leverage, the lower the result. In 2011, each extra percentage point of leverage (LTV) on an indirect portfolio led to, on average, 0.04% lower return. However, this difference becomes larger when corrected for the composition of the portfolios. When corrected for size and composition of the portfolio, 1% extra leverage on an indirect portfolio turns out to lead to 0.13% lower return in the long term (2000–2012).

### Regions

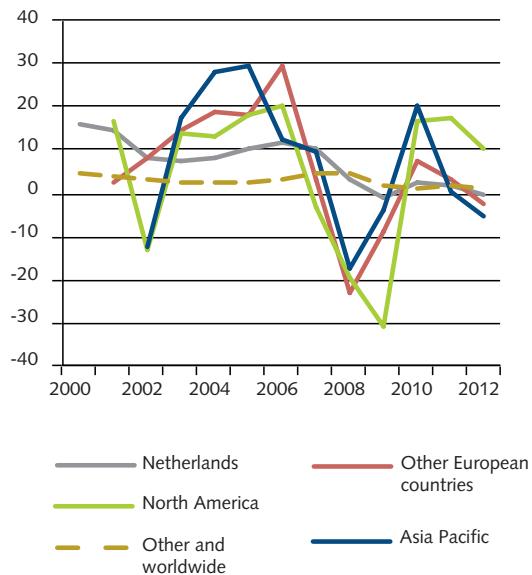
A similar analysis can be made of the regional dimension, from which it becomes clear that Dutch real estate shows a limited but relatively stable return. With an average return of 5.6% over the period 2002–2012, a standard deviation on the return of 4.5% and a Sharpe ratio of 0.65, the risk-corrected return of Dutch real estate compares favourably with alternatives in Other European countries (average = 6.1%, st. dev. = 14.6%, S = 0.24), North America (average = 3.9%, st. dev. = 17.8%, S = 0.07) and Asia (average = 7.1%, st. dev. = 16.1%, S = 0.28).

In the period 2002–2012, the returns on foreign real estate are sometimes higher and sometimes lower than returns realised on Dutch real estate, but they are always more volatile. Asian real estate may have led to slightly higher returns in the period 2002–2012, but if we correct that return for risks run, the overall performance was actually disappointing. Another influential factor that seems to have played a role here is the rather limited time horizon of the data, which makes mutual comparison only useful up to a point.

Explanations for the attractive risk-corrected return on Dutch real estate are that (1) Dutch investors know their own markets better, which explains why they are better able to manage their domestic assets, (2) the Dutch real estate market is relatively small, and investors therefore demand an illiquidity premium, and (3) the composition of Dutch portfolios is different from those of foreign ones (e.g., foreign portfolios more often contain trophy buildings in mega cities, which leads to lower prime yields; in Dutch portfolios we find fewer of those kinds of assets).

The relatively good risk-corrected performance of Dutch real estate cannot be seen in isolation from the investment approach taken. More than average, Dutch real estate is owned in the form of direct investment in ‘bricks’. This means that the return is relatively stable, which translates into low volatility and low risk. The higher volatility of foreign real estate then results from the fact that this real estate is mainly owned in the form of indirect investments, which have a more volatile nature.

Figure 7: Unweighted average return, by region (in %)



**Table 3: Unweighted average return, risk and Sharpe ratio, by region (in %).**

|                            | Unweighted average return | Risk**     | Sharpe ratio*** |
|----------------------------|---------------------------|------------|-----------------|
| <b>2002 – 2012*</b>        |                           |            |                 |
| • Netherlands              | 5.6                       | 4.5        | 0.65            |
| • Other European countries | 6.1                       | 14.6       | 0.24            |
| • North America            | 3.9                       | 17.8       | 0.07            |
| • Asia Pacific             | 7.1                       | 16.1       | 0.28            |
| <b>Total</b>               | <b>6.1</b>                | <b>7.7</b> | <b>0.45</b>     |
| 12-month Euribor           | 2.7                       | 1.2        |                 |

\* Because for some regions data are not available for all years, the data in the figure relate to the period 2002–2012. Within this period the data can be compared.

\*\* Standard deviation from the annual unweighted average return. Dutch real estate contains a relatively high amount of direct investments. The effects of 'smoothing' and 'lagging' on these investments have not been taken into account in this study.

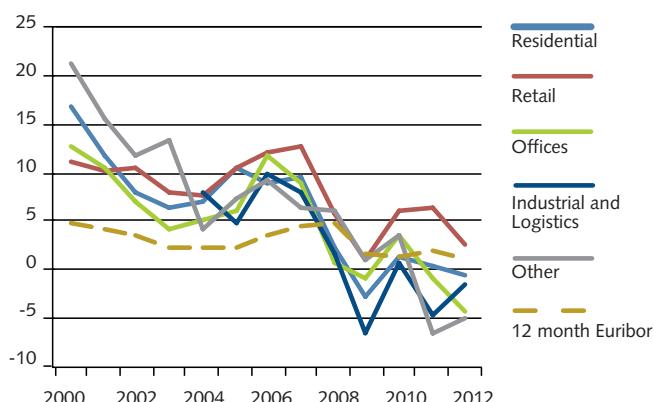
\*\*\* In the calculation of the Sharpe ratio, the risk-free return is based on the average 12-month Euribor rate as published by the Dutch central bank (T1.2.1 'Marktrentevoeten', table 2.1.13).

## Sectors

Finally, we consider differences in returns by sector. The chart below shows that 'other' segments lead to the most volatile returns, while the residential sector leads to less stable returns than the retail sector. The latter is mainly due to the spectacular developments on the housing market until 2006. The higher growth in value automatically led to higher total returns as well as lower direct returns. Since the crisis, both the direct and the indirect returns on residential properties have been very low or even negative. This downward value adjustment translates into a higher risk (st. dev. = 5.7).

The highest returns, the lowest risk, and (therefore) the most attractive Sharpe ratio ( $S = 1.40$ ) are realised by retail investments. Industrial and logistic real estate investments on the other hand show a low return, high risk and an unattractive Sharpe ratio ( $S = -0.11$ ). Residential and offices are somewhere in between ( $S = 0.56$  and  $S = 0.39$  respectively).

**Figure 8: Unweighted average return, by sector (in %).**



**Table 4: Unweighted average return, risk and Sharpe ratio, by sector (in %).**

|                            | Unweighted average return | Risk*      | Sharpe ratio** |
|----------------------------|---------------------------|------------|----------------|
| <b>2000 – 2012</b>         |                           |            |                |
| • Residential              | 6.1                       | 5.7        | 0.56           |
| • Retail                   | 8.0                       | 3.6        | 1.40           |
| • Offices                  | 5.0                       | 5.3        | 0.39           |
| • Industrial and logistics | 2.3                       | 5.9        | -0.11          |
| • Other and mixed funds    | 6.8                       | 7.8        | 0.50           |
| <b>Total</b>               | <b>7.5</b>                | <b>7.8</b> | <b>0.58</b>    |
| 12-month Euribor           | 2.9                       | 1.3        |                |

\* Standard deviation from the annual unweighted average return

\*\* Risk-free return based on the average 12-month Euribor rate as published by the Dutch central bank (T1.2.1 'Marktrentevoeten', table 2.1.13).

At first sight, the relatively low risk shown here for offices may seem strange. The values of office investments would be expected to show sharper rises and falls than those of retail and residential. A possible explanation for this low figure is that the downward adjustments in value are not yet sufficiently reflected in these figures.

### 3. A typology of institutional real estate portfolios

Tables 2, 3 and 4 show that the composition of large institutional real estate portfolios differs substantially. These differences are due to the fact that each investor follows his own unique strategy, based on, amongst other things, future obligations, risk preference and investment beliefs. However, the tables also show a number of similarities between the portfolios. For example, one group of investors mainly invests in direct real estate. In addition, there are several investors who have a relatively large proportion of residential investments in their real estate portfolios.

By means of a statistical cluster analysis, four archetypes of real estate strategies can be distinguished in the real estate portfolios:

1. *Strongly diversified investors* with large mandates and diversification across all dimensions.
2. *Real estate specialists with a home bias*, who particularly own direct Dutch real estate.

3. *Diversified fund investors*, who invest in real estate funds and divide their investments 50/50 between private and public funds.

4. *Private fund investors*, who mainly invest in non-listed real estate funds.

Over the past years, these strategies have led to different returns. With hindsight, it turns out that Strategy 1 resulted in the highest returns, mainly due to the high returns on listed indirect investments and investments in Asia. Since the returns of these listed and Asian real estate investments also come with relatively high volatility, the funds using this strategy also ran higher risks.

Table 5: Size, return and allocation of the four investment strategies (2000–2011).

|  | Strategy |        |       |       | Total         |
|--|----------|--------|-------|-------|---------------|
|  | I        | II     | III   | IV    |               |
| No. of investors in cluster                | 6        | 17     | 7     | 8     | <b>38</b>     |
| Total market value of the cluster (€m)     | 33,119   | 25,995 | 2,923 | 6,494 | <b>83,320</b> |
| Average total market value (€m)            | 5,520    | 1,529  | 418   | 812   | <b>2,192</b>  |
| Unweighted average total return            | 8.7%     | 7.7%   | 8.0%  | 7.1%  | <b>7.8%</b>   |
| Weighted average total return              | 11.5%    | 7.1%   | 8.0%  | 6.5%  | <b>8.9%</b>   |
| Risk (st. dev. from the unw. av. return)   | 9.4%     | 6.5%   | 13.1% | 8.4%  | <b>8.1%</b>   |
| Sharpe ratio*                              | 0.51     | 0.63   | 0.39  | 0.39  | <b>0.61</b>   |
| Unweighted average allocation**            |          |        |       |       |               |
| Share of direct real estate                | 42%      | 66%    | 5%    | 11%   | <b>39%</b>    |
| Share of indirect real estate              | 60%      | 32%    | 95%   | 89%   | <b>60%</b>    |
| - <i>listed</i>                            | 34%      | 8%     | 49%   | 9%    | <b>20%</b>    |
| - <i>non-listed</i>                        | 23%      | 24%    | 46%   | 81%   | <b>40%</b>    |
| Share of the Netherlands                   | 56%      | 86%    | 32%   | 31%   | <b>66%</b>    |
| Share of other European countries          | 15%      | 8%     | 36%   | 42%   | <b>18%</b>    |
| Share of North America                     | 17%      | 5%     | 31%   | 20%   | <b>13%</b>    |
| Share of Asia                              | 11%      | 2%     | 6%    | 6%    | <b>5%</b>     |
| Share of other and worldwide               | 5%       | 0%     | 1%    | 1%    | <b>1%</b>     |
| Share of residential                       | 23%      | 42%    | 8%    | 19%   | <b>29%</b>    |
| Share of retail                            | 29%      | 17%    | 15%   | 24%   | <b>20%</b>    |
| Share of offices                           | 13%      | 16%    | 15%   | 29%   | <b>16%</b>    |
| Share of industrial and logistics          | 5%       | 2%     | 4%    | 8%    | <b>3%</b>     |
| Share of other real estate and mixed funds | 23%      | 12%    | 58%   | 20%   | <b>25%</b>    |

\* Calculated as (weighted average return minus average 12-month Euribor 2000–2011 (3.08%)) / risk.

\*\* Partly due to rounding differences, the totals do not always add up to 100%.

### Strategy I: Strongly diversified investors

This strategy assumes that optimal diversification can be obtained by spreading investments well over the different investment methods, regions and sectors. On average, in the period 2000–2011, just over 40% of the investments based on this strategy concerned direct real estate investments (although this group also includes investors who have now phased out their direct real estate portfolios). In addition, investors following this strategy invested on average slightly more in listed real estate and slightly less in non-listed indirect real estate than the total group. Although investors adopting this strategy on average have more than half of their real estate assets in the Netherlands, this group is also most active in faraway markets such as Asia. In addition, they have a relatively low share of offices in their portfolio, and more retail than average. This deviation from the benchmark weights indicates that these are active investors, who also have their own vision of the market. It is clearly a successful approach, as shown by the fact that, in the period 2000–2011, this strategy led to the highest return of 11.5%, accompanied by an also higher-than-average risk. This strategy of diversification is mainly adopted by very large pension funds. In this study, six pension funds following this strategy were involved, including ABP, Zorg & Welzijn, Rabobank, and ING Pension Fund.

### Strategy II: Real estate specialists with a home bias

This strategy is based on specialisation in direct Dutch real estate. On average, 86% of the real estate of these institutional investors is located in the Netherlands. In this group, two-thirds of the investments concerns direct real estate, which means that this strategy also leads to a relatively stable return. At 6.5%, the standard deviation of the return is the lowest of all strategies. Investors adopting this strategy also have a relatively large share of residential investments, which points at portfolios with a relatively low total return. They mainly complement their direct real estate investments with private funds (also predominantly Dutch). Listed real estate plays only a minor role and may be invested in to keep some liquidity in the portfolio. Although at 7.1% the total return on these portfolios is slightly below average, the stability of the return leads to a good Sharpe ratio. This strategy is mainly followed by medium-sized and large pension funds and insurers. Within the group researched, 17 investors took this approach. Examples are the Dutch pension funds for the construction industry, national railways, agriculture, the metal and electrical engineering industry and transport, the Philips Pension Fund, ASR, Dela and Achmea.

### Strategy III: Diversified fund investors

Diversification can also be achieved by investing in varied funds in mature real estate markets. That is the third strategy that can be distinguished. Investors adopting this strategy have a mix of approximately 50% listed and 50% non-listed. The relatively high percentage of listed real estate also means that these investors run a lot more risk. At 13.1%, the standard deviation of the return is twice that of Strategy II. This makes it the riskiest strategy. These portfolios contain relatively little residential and therefore particularly commercial real estate. This seems to suggest that the investments comprise a relatively large proportion of multi-sector funds. This strategy also enables smaller pension funds to keep a well-diversified real estate portfolio, both in terms of regions and sectors. The management of these portfolios is often outsourced to specialised administration agencies. With an average market value of €418m, this target group mainly concerns the smaller pension funds. Nevertheless, these seven pension funds still have more than €250m in real estate on their balance sheet. Examples of investors adopting this strategy are the KLM pension fund, the pension fund for housing corporations, the pension fund for the hospitality sector, and the AkzoNobel pension fund.

### Strategy IV: Private fund investors

The fourth strategy concerns specialisation in private real estate funds. This strategy is employed by investors who, due to their size or strategy, cannot or do not want to invest in direct real estate, and wish to avoid the volatility and limited diversification of listed real estate shares. The choice of private (i.e., non-listed) real estate funds also enables these investors to spread their investments across regions and sectors. In contrast with Strategy III, however, this diversification does not focus on multi-sector funds, but rather on single-sector funds. That implies that the investors are more directly involved with their investment strategy. The regional diversification depresses the volatility due to the limited correlation between Dutch and other European real estate (0.64) and that between Dutch and North American real estate (0.47). The relative high proportion of offices has also depressed the average return (5%) due to the low long-term returns achieved in this real estate category. In the context of this study, this strategy was adopted by the eight medium-sized and large pension funds and insurers, i.e., the pension funds for general practitioners, medical specialists, TNT, KPN, the painting sector, Hoogovens, ABN-AMRO, and the ING Group (insurer).



## 4. Conclusions

- The 38 large pension funds and insurers in this study represent the lion's share of the institutional investments in real estate in the Netherlands. At the end of 2011, they together represented €83.3 bn in real estate investments.
- Within this group of institutional investors, the degree of concentration is very high, with the four largest investors together owning 63% of this real estate.
- In the period 2000–2011, the share of non-listed real estate funds in these portfolios rose substantially, at the cost of direct real estate investments in bricks and listed real estate shares. At the end of 2011, 28% was invested in direct real estate, 44% in non-listed real estate funds and 28% in listed real estate shares.
- Direct investments achieved a relatively low return (6.8%), but the compensation for risks taken was the highest (Sharpe ratio 0.68). Listed real estate shares achieved the highest returns (11.8%) but were also the riskiest.
- At the end of 2011, 37% of the real estate investments investigated concerned Dutch real estate. In the period 2000–2012, with a weighted average return of 8.5%, these domestic investments may not have achieved higher returns than foreign real estate investments, but the returns were more stable.
- Retail investments, which comprised 27% of the portfolios, yielded the highest returns in the period under investigation, and they also came with the lowest risk. Of the real estate portfolios under investigation, logistic real estate achieved the lowest return in the period 2000–2012.
- Larger real estate portfolios performed better in the period 2000–2011 than smaller ones. Each €1 bn in size yielded on average 0.2% extra return. However, this difference is entirely due to the fact that the composition of larger portfolios differs from that of the smaller ones. Larger investors take higher risks by investing a larger part of their real estate portfolios in listed real estate shares and in Asian real estate. If the figures are corrected for this fact, the larger portfolios turn out not to perform any better than the smaller ones.

- In the period 2000–2011, leverage had a negative effect on the average results achieved by real estate investments. In 2011, each extra percentage point of leverage (LTV) on the indirect portfolio led to an average of 0.04% less return.
- On the basis of the data, 4 different portfolio strategies can be distinguished:
  - I Strongly diversified investors*, who strive for optimal diversification by spreading their real estate portfolios across investment methods, regions and sectors.
  - II Real estate specialists with a home bias*, who mainly have direct Dutch real estate in their portfolio and prefer residential investments.
  - III Diversified fund investors*, who invest half their portfolio in private and the other half in public real estate funds.
  - IV Private fund investors*, who mainly participate in non-listed real estate funds.
- Over the years, these strategies have yielded different returns. With hindsight it turns out that Strategy I yielded the highest return, which is mainly due to the high returns on foreign listed real estate. Because the returns of these listed investments also come with a relatively high volatility, the funds adopting this strategy also ran the highest risks.



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