

# The effect of appraiser change Dutch institutional investors' experience

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## Executive summary

Institutional investors experience a larger revaluation of properties when they change appraiser, than when there is no change of appraiser. We find that changing appraiser leads to a significant effect on the valuations of investment properties in the Office and Residential sector in The Netherlands. Comprehensive valuations, performed after a change of appraiser, have shown a -2.1 and -0.9% larger revaluation than their desktop counterparts. For retail we have not found a significant difference in valuation process.

Moreover the Office sector shows an extra significant difference of -8.8% if the appraiser has no knowledge of the prior valuation. Retail and Residential properties do not exhibit this difference.

Appraisers without prior knowledge of recent valuations use comparables that have been sold more recently and as a result, in the current downward trending market, exhibit a higher yield. For Offices this leads to a lower capital value.

Since all appraisers have access to the same market information regarding comparable investment deals, the explanation for their choice of comparables is likely to be the well-known anchoring behavioural explanation. This behavioural bias is relevant for institutional investors that strongly rely on external valuations of their real estate portfolio.

# 1 Introduction

## 1.1 Institutional experience with appraiser change

Dutch institutional investors experience a large revaluation of properties when they change appraiser on the same property. In accordance with good policy most of them change appraising firm every three years. IPD Netherlands also recommends investors participating in the IPD benchmark to change external appraiser every 3 to 5 years (IPD, 2013, p8). Altera (2012) reports incidental differences as large as 46% when they receive the first draft report from a new appraiser. After a process of explanation and potential adjustment Altera still experiences downwards revaluation of 31%. These differences are not explainable by market circumstances alone, Altera argues. Further consultation revealed that new appraisers weighed the little available market evidence substantially different from other appraisers.

Van der Ende and Van der Meulen (2013), when analysing a full set of Altera Vastgoed data, find a lower valuation after a property changes appraiser compared to properties where the appraiser stays the same. They control for market changes by correcting the initial difference by the IPD index for the specific sector. Properties with the same appraiser exhibit a mean difference of -0.5 to 0.5% for the three different sectors compared to the market average where properties with changing appraiser exhibit mean differences as large as -2% and -5% for retail and offices respectively and +1.5% for residential property. More importantly, they find a much larger range of differences when properties change appraiser. For residential, the range is only 4% with the same appraiser and it increases to 11% when properties change appraiser, so the range is nearly three times as large. For retail and offices the ranges increase to 13 and 20% respectively compared to 4 and 7% when the appraiser stays the same, so it also nearly triples.

Van der Ende and Van der Meulen (2013) finally conclude that changing appraising firm will lead to less confidence about the value at property level, whilst it could lead to more confidence in the total value of a portfolio.

## 1.2 Appraisal process

Institutional investors have their portfolios appraised for several reasons. One reason is the submission of performance data to the IPD Netherlands that is benchmarking real estate performance for the Dutch real estate sector. IPD requires investors to have their portfolio appraised quarterly either internally or externally. IPD distinguishes three different ways to appraise property. When a certain appraiser is new on the job he has to perform a *full valuation*. The full valuation requires the appraiser to actually visit the property, perform a full investigation into legal, technical and financial characteristics and assess all available market information and finally deliver his report. After a certain period, most often a year, he has to perform a so called *re-valuation*, which comprises of (nearly) similar activities as a full valuation. Quarterly between those full and re-valuations appraisers deliver a *market update* which comprises of a desktop valuation only. Appraisers generally do not visit the property for a *market update*, though rely on previous visits and assessment of legal and technical information. They do, however, receive the most recent financial information on the property from the investor and do assess the latest market information from recent comparable properties. Until two years ago a number of investors had internal appraisers perform those market updates some or every quarter in between the full or re-valuations.

Concluding we discriminate between 3 types of valuations:

1. Full valuation performed by a new appraiser
2. (Yearly) Revaluation performed by the same appraiser
3. Market update performed by the same appraiser or the internal appraiser

Within a certain quarter, the process of appraising and reporting to Dutch institutional investors is described below. At the start of the quarter (12 weeks), the investor collects all relevant data for the specific property and sends it (digitally) to the appraising company. They start appraising right away and have to deliver their first draft report around week 6. After a process of evaluation properties with substantial re-valuations (upwards or downwards) compared to last quarter, are being assessed by the investor to find causes for these differences. Appraisers are asked to provide additional evidence to support their judgment. Consultations are held with the specific appraisers to find out whether their judgment holds in the light of possible new information. At the end of the quarter all valuations are finalised and dated at the end of the quarter. However, in most cases not many comparable properties from the specific quarter will be included in the valuation report since the first value needs to be delivered in week 5 or 6. Although appraisers will continuously monitor market changes, it is fair to say that valuations dated 31 March will contain comparable properties with transaction dates at least prior to 1 February and possibly even prior to 1 January. Obviously this causes a general delay in prices and therefore values of approximately 2-3 months. Prior evidence suggests however that real estate valuations are lagging market prices by (far) more than 2-3 months.

## 2 Literature review

Although a large body of evidence points at the existence of anchoring to previous valuations performed by either the same valuer or other expert appraisers, not much research has been performed on the effect of changing valuation company on the value at disaggregate level. Clayton et al. (2001) are the first academics that studied the effect of appraiser change on the amount of anchoring to older comparable transactions used by both new appraisers and appraisers performing a repeat valuation.

### 2.1 Anchoring

Tversky and Kahneman (1974) were among the first to examine and describe the anchoring phenomenon by asking respondents about the percentage of African countries in the United Nations. First they spun a wheel of fortune and respondents had to consider whether they thought the percentage was higher or lower than the number on the wheel. Subsequently they had to answer the question itself. Tversky and Kahneman (1974) found that respondents were significantly influenced by their initial anchors (i.e. the number on the wheel of fortune). Respondents with a low number on the wheel (mean of 10) responded with an average of 25% where respondents with a high number on the wheel (mean of 65) responded with an average of 45%.

Furnham and Boo (2011) review the literature on the anchoring effect up to 2011. They conclude that *anchoring is one of the most robust cognitive heuristics* (Furnham and Boo, 2011, p35). They argue that there is no unisonous evidence on the question whether experts are more or less prone to the anchoring heuristic. Northcraft and Neale (1987) found that expert appraisers are significantly influenced by irrelevant anchors when making decisions in real estate industry. Finally Furnham and Boo argue that *it would benefit academic research by examining real world data as well as the personal theories of those whose livelihoods depend in part on the anchoring effect* (Furnham and Boo, 2011 p. 41).

### 2.2 Anchoring to prior valuation or transaction

Diaz III (1997) was one of the first to investigate whether expert real estate appraisers were influenced by previous expert value estimates. He expected, but did not find, strong support for the claim that expert appraisers would be influenced by the previous valuations of other experts. Diaz and Wolverton (1998) adjusted this study by having expert appraisers value the same property eight months apart therefore relying on their own previous estimate. At the second valuation moment they expanded the experiment by a control group of expert appraisers which were given exactly the same information as the appraisers that performed the repeat valuation, although without knowledge of the previous valuation. They found that expert appraisers did significantly anchor on their *own previous opinion*. The treatment group of expert appraisers performing a repeat valuation showed an adjusted mean of -225,533 USD (5.2% of initial mean) where the control group of new (expert) appraisers showed an adjusted mean of -319,554 USD (7.4% of initial mean). The former adjustment was significantly lower than the latter (p-value 0.027). This was the first of a number of studies into this phenomenon.

Thereafter Hansz and Diaz (2001) and Hansz (2004) used either transaction price feedback or pending mortgage reference point on valuation judgment. Hansz (2004) found that agent-client considerations led to a valuation bias.

From this experimental research one can conclude that expert appraisers do not always follow the normative appraisal model and use heuristic behaviours to shortcut complex thinking. These different types of thinking have been described by Stanovich and West (2000) as system 1 and system 2 thinking. System 1 thinking refers to our intuitive system, which is typically fast, automatic, effortless, implicit and emotional, whereas system 2 thinking equals reasoning which is slower, conscious, effortful, explicit and logical. Stanovich and West (2000) argue that we use system 1 thinking for most day to day decisions like grocery shopping. More importantly, they argue that stress situations and time pressure leads managers to use system 1 thinking for situations which basically require them to use their system 2 thinking. This forms the basis for the anchoring heuristics.

### 2.3 Appraiser change in property valuations

Van der Ende and Van der Meulen (2013) found larger ranges in valuation deltas of Dutch properties when properties change appraiser, but could not find significant effects of changing appraiser on valuation deltas.

Clayton et al (2001), while studying the effect of appraisal lag and appraiser change on the differences perceived, find that appraiser change has a significant effect on the so called smoothing variable. First-time appraisers seem to use more contemporaneous market evidence than appraisers performing a repeat valuation. This suggests that they are more likely to approach the market value of the properties assuming the latest market evidence is a better forecast of market value than evidence prior to the latest valuation date.

### 2.4 Downward vs upward markets

If the lagging theory would be a valid one, we would also expect to find different levels of revaluations in rising and declining markets. Fisher, Miles and Webb (1999) find a difference between valuations and transaction prices in upwards and downward markets. Transaction prices were on average 4.6% *higher* than appraisals in an upward US market (1978-1985) followed by 4.5% *lower* transaction prices in a downward market (1988-1992) and again 3.8% *higher* in the following rising market (1993-1998). However, Havard (1999) finds that (student) appraisers have a greater tendency to adjust a previous valuation upwards than downwards, therefore suggesting that in a downward market appraisers are more reluctant to deviate from a previous valuation than in rising markets. However, he fails to explain what the rationale behind this bias is.

### 2.5 Research hypothesis

Most of previous research suggests that appraisers rely on previous valuations or observable transaction prices. If this is true, absence of that knowledge would lead expert appraisers to track the unobservable market price more closely. Changing appraisers creates the circumstance of valuing without knowledge of previous valuations (or observable transaction

prices) and therefore we expect a change of appraising firm to lead to a larger upward (downward) re-valuation in rising (declining) markets. Clayton et al. (2001) argue that the cause of this lower level of lagging is due to the use of more contemporaneous comparable transactions by showing that new appraisers use significantly more contemporaneous data of comparable transactions.

Appraiser change without knowledge of prior valuation leads expert appraisers to put more weight on new comparable transaction information. In a declining market this would result in a more than average negative adjustment of asset values and in a rising market to positive adjustments.

To examine this hypothesis we will first try to establish whether appraiser change leads to a significant negative effect on appraised asset values and if so whether this effect is due to the use of comparable properties. In addition, we examine if the process of appraisal (desktop appraisal/market update versus comprehensive appraisal) has a significant impact on the appraisal outcome.

## 3 Data and Methodology

Four Dutch institutional investors have provided access to a unique database of valuations of individual properties. The dataset comprises quarterly valuations from Q1 2008 to Q4 2013 for industrial, healthcare, parking, residential, retail and office properties. Since the number of parking, industrial and health care properties in the portfolios was fairly low we excluded those from the dataset. Furthermore we excluded internal valuations from the dataset since we are interested in the behaviour of external appraisers and their potential anchoring to their own previous valuations. Exhibit 1 shows the remaining properties as at 31 December 2012 since that was the last year end for which we received data from all four investors.

Exhibit 1 Number and size of properties included in database at 31 December 2012

|                            | Vesteda     | Altera      | Bouwinvest  | Syntrus     | Total |
|----------------------------|-------------|-------------|-------------|-------------|-------|
| Total number of properties | 357         | 189         | 203         | 1.162       | 1.911 |
| Percentage nr of props     | 19%         | 10%         | 11%         | 60%         | 100%  |
| • Residential              | 357         | 88          | 203         | 748         | 1.396 |
| • Retail                   |             | 80          |             | 275         | 355   |
| • Offices                  |             | 21          |             | 139         | 160   |
| Total Asset value (€ bn))  | 4.0         | 1.4         | 2.5         | 7.5         | 15.4  |
| Percentage of asset value  | 26%         | 9%          | 16%         | 49%         | 100%  |
| Average value (€ mn)       | 11.2        | 7.5         | 12.1        | 6.5         | 8.0   |
| Av. Year build             | 1992        | 1994        | 1992        | 1984        | 1987  |
| Period                     | Q1-09 Q2-13 | Q2 10 Q2 13 | Q4-09 Q3-13 | Q1-08 Q4-13 |       |

Exhibit 1 shows that over 70% of the number of properties are residential properties, 19% retail and 8% offices. Syntrus Achmea is the largest investor in our dataset with 60% of the number of properties and nearly 50% in asset value. Notably, the average property size of Vesteda and Bouwinvest is substantially larger than that of Altera and Syntrus Achmea. This is not caused by the retail and offices in the portfolios of Altera and Syntrus since those property types have even larger mean size. The higher average age of the Syntrus portfolio is fully due to the number of retail units in their portfolio with a average building year of 1961.

The combined dataset is an unbalanced and staggered dataset of 24 quarters of valuations starting in Q1 2008 and ending in Q4 2013. Not every investor provided quarterly external valuations for the first couple of quarters and not every investor provided quarterly valuations for every single property. One investor previously had its appraisers perform revaluations at the year-end and only one market update in one of the three remaining quarters. Since the end of 2011 quarterly external valuations are commonplace with all investors. Every investor had their appraisers perform a *full valuation* after assigning them to a new property and subsequently perform either *re-valuations* or *market updates*.

### 3.1 Valuation differences

Firstly we are interested in the difference between two consecutive valuations of the properties in our dataset. To be able to compare the two consecutive valuations we have selected only those valuations where there was a valuation in the quarter prior to that quarter. Exhibit 2 shows the number of valuations distributed over investors and property type that qualified for that requirement.

Exhibit 2: Number of valuations by investor and property type with a valuation in the prior quarter

|             | Vesteda | Altera | Bouwinvest | Syntrus | Totaal |
|-------------|---------|--------|------------|---------|--------|
| Offices     | 0       | 247    | 0          | 1,048   | 1,295  |
| Retail      | 0       | 345    | 0          | 1,945   | 2,290  |
| Residential | 1,578   | 484    | 3,043      | 3,536   | 8,641  |
| Totaal      | 1,578   | 1,076  | 3,043      | 6,529   | 12,226 |

For all these 12,226 valuations we have computed the difference between the valuation under concern and its predecessor in the quarter before.

$$\Delta Valuation_t = \frac{Valuation_t - Valuation_{t-1}}{Valuation_{t-1}} \quad 1)$$

Where  $Valuation_t$  is the valuation of a certain property at quarter t.

Since we have experienced a downwards market since 2008 which, according to IPD benchmarks has not reversed yet until the end of 2013, and we are not interested in generic market movements, we have controlled for generic market movements by making corrections on the differences in valuation by subtracting the IPD indirect returns for that specific property sector i.

$$\Delta Valuation_{corr_{ti}} = \Delta Valuation_{ti} - \Delta IPD_{ti} \quad 2)$$

Where  $\Delta IPD_{ti}$  represents the indirect return for property sector i at quarter t. The means for  $\Delta Valuation_{corr_{ti}}$  are expressed in exhibit 3. This shows that our sample of retail and residential properties were on average similar to the IPD database, where offices in our sample were revalued a bit more (-0.50%) than the IPD average.

Exhibit 3: Mean differences in valuation 2008-2013 for residential, retail and offices controlled for generic market movements (IPD indirect return)

| Sector             | Office  | Retail  | Residential |
|--------------------|---------|---------|-------------|
| Mean difference    | - 0.50% | - 0.01% | - 0.14%     |
| Standard deviation | 7.27%   | 5.31%   | 3.64%       |

Our aim is to determine whether valuations with a change of appraiser exhibit similar differences compared with valuations where the same appraiser performs a repeat valuation.

### 3.2 Methodology

Surveyors tend to be assigned for a typically 3-year period. In these three years external valuations exhibit 3 different types. Every period starts with a so-called *Full valuation* which comprises a site visit, a comprehensive assessment of all relevant elements of the building, an assessment of all leases, legal, constructive and planning issues and an assessment of comparable market transactions for rental prices as well as yields. After a year a *revaluation* will be undertaken where the same activities need to be done. At each other quarter end a so

called market update will be provided to the principal (investor). These *market updates* are basically an assessment of the market changes or market situation since the last valuation. For this type of valuation the surveyor will not visit the actual property, but stay behind his desk (i.e. desktop valuation) and assess comparable sales and rental transactions.

Although all types of valuations are called valuation it is clear from the description above that the rigour of the three types might differ.

For this study we are interested in the difference between the valuation types on two different levels. Firstly we are distinguishing between the valuation types at the level of process. We classify the valuations into two groups with the surveyor undertaking a desktop study or a comprehensive valuation.

Secondly we distinguish the group of comprehensive valuations between those valuations that have knowledge of the prior valuation (*revaluations*) or when they don't (*full valuations*). Graphically this is shown in exhibit 4.

Exhibit 4. Different valuation types classified to process and knowledge of prior valuation

|         |                         | Knowledge                         |                                 |
|---------|-------------------------|-----------------------------------|---------------------------------|
|         |                         | With knowledge of prior valuation | No knowledge of prior valuation |
| Process | Desktop valuation       | Market update                     | none                            |
|         | Comprehensive Valuation | Yearly Revaluation                | Full Valuation                  |

Since most full valuations, after a change of valuer, will succeed a market update, the effect of the change of valuer could have double origin. It could be due to the fact that the new valuer performs a comprehensive valuation, but it could also be a result of (not) having knowledge of the last valuation. Our method will separate those effects.

## 4 Results

### 4.1 Differences in process

First of all we consider the difference in valuation between two different types of process. Appraisers perform either a comprehensive valuation or a desktop valuation. Exhibit 4 shows that two types of valuations are comprehensive and only the market updates are desktop. We group our sample along these processes and assess the difference in value. The mean corrected differences as described in formula 2 are shown in Exhibit 5.

Exhibit 5: Mean difference consecutive external valuations (controlled for IPD indirect return) grouped to process.

|                          | Offices       | Retail | Residential   |
|--------------------------|---------------|--------|---------------|
| N                        | 1,000         | 1,693  | 6,904         |
| Desktop valuations       | <b>0,19%</b>  | 0,08%  | <b>0,26%</b>  |
| Comprehensive valuations | <b>-1,90%</b> | -0,22% | <b>-0,63%</b> |
| P-value                  | <b>0,000</b>  | 0,399  | <b>0,000</b>  |

(**Bold** indicates significance  $p < 0,05$ )

Exhibit 5 clearly shows that offices as well as residential properties exhibit a significant difference between desktop valuations and comprehensive valuations. The difference is -2.1% respectively -0.9% on a quarterly basis. For retail properties the difference is not significant.

### 4.1 Differences in knowledge of prior valuation

After establishing the difference between the valuation processes we are subsequently interested in the impact of having knowledge of the prior valuation which is drafted one quarter before. Exhibit 6 shows the results of this inference.

Exhibit 6: Mean difference consecutive external valuations (controlled for IPD indirect return) grouped to knowledge of prior valuation.

|                                     | Offices       | Retail | Residential |
|-------------------------------------|---------------|--------|-------------|
| N                                   | 331           | 521    | 3,096       |
| Repeat valuations (with knowledge)  | <b>-0,78%</b> | -0,05% | -0,55%      |
| Full valuations (without knowledge) | <b>-9,60%</b> | -1,22% | -0,73%      |
| P-value                             | <b>0,000</b>  | 0,410  | 0,259       |

(**Bold** indicates significance  $p < 0,05$ )

Exhibit 6 shows that for the office sector the impact of having knowledge of the prior valuation, or in contrast not having that knowledge, has a substantial effect on the valuation of investment properties. In the case of a *full valuation* when the new appraiser does not have knowledge of the prior valuation valuations are on average -9.60% lower than the IPD average where repeat valuations exhibit a 0.78% lower average. The difference between the groups is a significant 8.8%.

Retail and residential properties show only slight material differences that are moreover not significant.

Results are fairly in line with Niemeijer (2014) who finds a significant difference for the office sector of -5.8% for the 2009-2013 period and Van der Ende and Van der Meulen (2013) who

find lower mean differences for offices but higher for residential and retail for 2008-2013Q2. Moreover Van der Ende and van der Meulen find a much larger spread of differences when properties change appraiser. They do not discriminate between revaluations and market updates however although these types of appraisal are pretty different in its nature, process and the fees applicable.

## 4.2 Use of comparable evidence in valuations

To find out why first time appraisers, when performing a *full valuation*, come to lower values on average in the study period of six years, when property prices were slowly decreasing, we have focused on the comparable evidence used by these valuers. Clayton et al. (2001) argue that the difference could be caused by the use of less contemporaneous market information by appraisers performing a repeat valuation or market update. Canadian valuers performing repeat valuations were prone to partial adjustment by not updating their prior valuations sufficiently and therefore using older comparable market transactions than their colleagues performing a first time full valuation.

### 4.2.1 Office sector

To examine whether Dutch appraisers behave similar to their Canadian colleagues we have examined the comparable evidence used for the office valuations. Since every valuation uses several comparables and these comparables are not registered in a single database it is hard to capture all comparables on all valuations. Therefore we have focused on a representative quarter with a sufficient number of *full valuations* performed by a first time valuer. That representative quarter is Q1 2012. Exhibit 7 shows some characteristics of the used comparable evidence for office sector investment sales transactions.

Exhibit 7. Characteristics comparable transactions office appraisals Q1 2012

|  | With change of valuer | No change of valuer | p-value         |
|--|-----------------------|---------------------|-----------------|
| <b>Number comparables (mean)</b>                 | 3.00                  | 2.98                | 0.669           |
| <b>Age<sup>1</sup> used comparables (months)</b> | <b>9.45</b>           | <b>14.31</b>        | <b>0.003***</b> |
| <b>Yield used comparables</b>                    | 9.35%                 | 8.96%               | 0.555           |
| <b># comparables &lt; 6 months</b>               | 1.75                  | 1.50                | 0.467           |

\*\*\* p-value < 0.01

This shows that although first time valuers do not use more comparables than appraisers performing repeat valuations, they do use comparables that have been transacted much more recently, i.e. 9.45 months versus 14.31 months before the date of valuation. The average yield they use is higher but not statistically significant.

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<sup>111</sup> Mean difference in months between date of valuation and date of transaction used comparable

## 4.2.2 Residential sector

To underpin the existence of this phenomenon we have examined this behavior for the residential and retail market as well. The residential market is covered by a quarter (Q2 2013) of comparables from Vesteda.

To make sure the difference in the age of the comparables is not caused by a difference in the characteristics of the comparable evidence we have first examined the comparables on basic descriptive information. Exhibit 8 shows the descriptives.

Exhibit 8. Descriptives of comparables used for residential valuations Vesteda (Q2 2013)

|                                      | With change of valuer | No change of valuer | p-value |
|--------------------------------------|-----------------------|---------------------|---------|
| <b>Year of construction (mean)</b>   | 1979                  | 1980                | 0.376   |
| <b>Number of units (mean)</b>        | 70.3                  | 78.6                | 0.568   |
| <b>Total rent complex (mean EUR)</b> | 550,058               | 683,522             | 0.210   |
| <b>Total asset value (mean EUR)</b>  | 8.7 m                 | 9.9 m               | 0.220   |

The results of the comparison between the comparables used for the group of valuations with and without change of valuer are shown below in exhibit 9.

Exhibit 9. Characteristics of comparables used for residential valuations Vesteda (Q2 2013)

|  | With change of valuer | No change of valuer | p-value         |
|--|-----------------------|---------------------|-----------------|
| <b>Number comparables (mean)</b>                 | 4.31                  | 4.13                | 0.459           |
| <b>Age<sup>2</sup> used comparables (months)</b> | <b>8.53</b>           | <b>9.81</b>         | <b>0.051*</b>   |
| <b>Yield used comparables</b>                    | <b>6.51%</b>          | <b>6.26%</b>        | <b>0.005***</b> |
| <b># comparables &lt; 6 months</b>               | <b>2.06</b>           | <b>1.14</b>         | <b>0.000***</b> |

\* p-value < 0.10 \*\*\* < 0.01

Exhibit 9 clearly shows that for residential properties first time appraisers use relatively younger comparables to establish the yield they apply to the cashflows. The number of comparables used does not differ significantly but the age and the yield does differ. Furthermore they use more comparables that have been transacted during the 6 month before valuation date, therefore capturing a more contemporaneous yield. In a downwards market this is expected to lead to a higher yield derived from the comparables and a consecutively lower capital value.

## 4.2.3 Retail sector

To ascertain ourselves of an effect that exists across all major property sectors we analysed the retail sector as well. For retail we have considered the first quarter of 2012 due to the existence of a substantial number of appraiser changes.

The results of this analysis are shown in exhibit 10.

<sup>2</sup> Mean difference in months between date of valuation and date of transaction used comparable

Exhibit 10. Characteristics of comparables used for retail valuations (Q1 2012)

|  | With change of valuer | No change of valuer | p-value         |
|--|-----------------------|---------------------|-----------------|
| Number comparables (mean)                  | 3.00                  | 2.99                | 0.887           |
| Age <sup>3</sup> used comparables (months) | <b>9.58</b>           | <b>14.24</b>        | <b>0.000***</b> |
| Yield used comparables                     | 5.84%                 | 6.18%               | 0.131           |
| # comparables < 6 months                   | 1.71                  | 1.69                | 0.945           |

\*\*\* p-value < 0.01

Exhibit 10 shows that for the valuations in the retail sector valuers use much younger comparables after a property changes appraiser. The significant difference is nearly 5 months.

<sup>3</sup> Mean difference in months between date of valuation and date of transaction used comparable

## 5 Conclusion

Changing appraiser leads to a significant effect on the valuations of investment properties in the Office and Residential sector in The Netherlands. Comprehensive valuations, performed after a change of appraiser, have shown a -2.1 and -0.9% larger revaluation than their desktop counterparts. For retail we have not found a significant difference in valuation process.

Moreover the office sector shows an extra significant difference of -8.8% if the valuer has no knowledge of the prior valuation, which is the case with appraisers performing a first time appraisal. Retail and Residential properties do not exhibit this difference.

The explanation of this effect has been found in the 'age' of the comparables used to determine the yield for the valuation. First time valuers use comparables that have been sold more recently and as a result, in the experienced downwards market, exhibit a higher yield. For offices this led to a lower capital value.

Since all appraisers should have access to the same market information regarding comparable investment deals it is striking to see that valuers, depending on the role they take, make choices to use different, younger, market comparables. Further research could focus on the question whether these choices are significantly different between and within appraisers and why they behave differently.

We have examined the use of comparables for all three subsectors although the office sector exhibits the largest effect on values. All three sectors indicate that first time appraisers behave differently, they make different choices regarding the comparables they use for their valuations and as a result deliver valuations that have been significantly lower (for the office sector) in the past period of economic downturn.

Our results suggest that in a period of economic prosperity and rising property values the opposite effect should be expected. Anecdotal evidence from one of the investors participating in this research confirms this view. However the statistical significance and robustness should be tested after a longer period of economic growth and rising property prices.

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